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*Alice at Five*¹

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Abstract. This paper updates the statistics on the five years after *Alice v. CLS Bank* and discusses 19 Federal Circuit cases (including their exemplary patent claims) that found eligibility upon *Alice* challenges. The *Alice* invalidation rate at the Federal Circuit and district courts has lowered over time, averaging cumulatively 56.2% at its near-five-year mark.

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Introduction

*Alice Corp. v. CLS Bank Int'l*³ (commonly known as “Alice”) is no stranger to IP readers and needs little introduction. Briefly, the Supreme Court five years ago decided *Alice* and raised the patentability standard for (mostly) computer-implemented inventions under 35 U.S.C. § 101,⁴ such that implementing an abstract idea on a computer is insufficient to transform that idea into patentable subject matter.⁵ At the time, a Supreme Court justice even considered *Alice* a “minor case” in following its prior § 101 framework set forth in *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*⁶ two years earlier.⁷

³ 573 U.S. 208 (2014).

⁴ Certain categories are enumerated as patentable in 35 U.S.C. § 101: “process[es], machine[s], manufacture[s], [and] composition[s] of matter.” However, there are several exceptions “implicit” in § 101: patents cannot be obtained for “[l]aws of nature, natural phenomena, and abstract ideas.” *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 70 (2012) (quoting *Diamond v. Diehr*, 450 U.S. 175, 185 (1981)).

⁵ *Alice*, 573 U.S. at 218–21.

⁶ 566 U.S. 66 (2012).

⁷ Jasper L. Tran, *Two Years After Alice v. CLS Bank*, 98 J. PAT. & TRADEMARK OFF. SOC'Y 354, 357 (2016); see also Hon. Timothy B. Dyk, *Thoughts on the Relationship Between the Supreme Court and the Federal Circuit*, 16 CHI.-KENT J. INTELL. PROP. 67, 74 (2016) (“Before the Supreme Court’s decisions in *Bilski*, *Mayo*, *Myriad*, and *Alice*, challenges to patentability based on 35 U.S.C. § 101 were rare. Those challenges now consume a significant portion of our [Federal Circuit] docket.”). In fact, the decade preceding *Mayo* only saw a handful of district court cases that invalidated patents under § 101. See *Climax Molybdenum Co. v. Molychem, LLC*, No. 02-cv-311, 2007 WL 3256698 (D. Colo. Nov. 1, 2007); *Perfect Web Techs., Inc. v. Infousa, Inc.*, 89 U.S.P.Q.2d 2001 (S.D. Fla. 2008), *aff'd on other ground*, 587 F.3d 1324 (Fed. Cir. 2009); *CyberSource Corp. v. Retail Decisions, Inc.*, 620 F. Supp. 2d 1068 (N.D. Cal. 2009), *aff'd*, 654 F.3d 1366 (Fed. Cir. 2011); *DealerTrack, Inc. v. Huber*, 657 F. Supp. 2d 1152 (C.D. Cal. 2009), *aff'd in part, vacated in part, rev'd in part*, 674 F.3d 1315 (Fed. Cir. 2012); *Fort Props., Inc. v. Am. Master Lease LLC*, 609 F. Supp. 2d 1052 (C.D. Cal. 2009), *aff'd*, 671 F.3d 1317 (Fed. Cir. 2012); *Bancorp Servs., L.L.C. v. Sun Life Assurance Co. of Can.*, 771 F. Supp. 2d 1054 (E.D. Mo. 2011), *aff'd*, 687 F.3d 1266 (Fed. Cir. 2012); *Glory Licensing LLC v. Toys “R” Us, Inc.*, 2011 WL 1870591 (D.N.J. May 16, 2011); *VS Techs., LLC v. Twitter, Inc.*, 2012 WL 1481508 (E.D. Va. Apr. 27, 2012); *CLS Bank Int'l v. Alice Corp. Pty. Ltd.*, 768 F. Supp. 2d 221 (D.D.C. 2011), *aff'd*, 717 F.3d 1269 (Fed. Cir. 2013) (en banc), *aff'd* 134 S. Ct. 2347 (2014); *Ass'n for Molecular Pathology v. USPTO*, 702 F. Supp. 2d 181 (S.D.N.Y. 2010), *aff'd in part, rev'd in part*, 689 F.3d 1303 (Fed. Cir. 2012), *aff'd in part, rev'd in part*, *Ass'n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576 (2013); *King Pharms., Inc. v. Eon Labs, Inc.*, 593 F. Supp. 2d 501 (E.D.N.Y. 2009) (finding four claims ineligible), *aff'd on other grounds, vacated in part*, 616 F.3d 1267

But the reality has been the opposite – *Alice* has been a major force in patentability determinations under § 101.

For example, in the first month and a half following *Alice*'s release, 830 patent applications were withdrawn from the USPTO.⁸ At *Alice*'s one-year anniversary (June 19, 2015), lower courts (namely district courts, the Patent Trial and Appeal Board ("PTAB"), and the Federal Circuit) applied *Alice* to invalidate or reject software-based patent claims at an average invalidation rate of 82.9%: 69.7% at the district courts and 94.1% at the Federal Circuit.⁹ At *Alice*'s two-year mark (June 19, 2016), the numbers were slightly lower, at an average cumulative invalidation rate of 78.2%: 66.5% at the district courts and 92.3% at the Federal Circuit.¹⁰ Near the five-year mark (as of March 1, 2019), the cumulative numbers, as shown in TABLE 1,¹¹ were even lower (though still the majority); the average cumulative invalidation rate was 56.2%: 53.7% at the district courts and 76.3% at the Federal Circuit.¹²

(Fed. Cir. 2010) (reversing § 101 invalidity determination).

⁸ Tristan Gray-Le Coz & Charles Duan, *Apply It to the USPTO: Review of the Implementation of Alice v. CLS Bank in Patent Examination*, 2014 PATENTLY-O PAT. L.J. 1, 3 (2014).

⁹ Jasper L. Tran, *Software Patents: A One-Year Review of Alice v. CLS Bank*, 97 J. PAT. & TRADEMARK OFF. SOC'Y 532, 545 (2015). Among other things, this *One-Year Review* article discusses *Alice*'s procedural posture in detail.

¹⁰ Tran, *Two Years*, *supra* note 7, at 370.

¹¹ The data, calculated by the number of cases, covers software/technology patents (as the unsurprising majority) and biotechnology/life science patents, but excludes *Alice* challenges for covered business method (CBM) review. For the list of cases and their brief summary, see <https://bit.ly/2LPIE8F>. If calculated by the number of patents invalidated at the district courts and the Federal Circuit between July 2014 and April 2019, the invalidation rate is 65.4%, or 615 patents invalidated out of 1292 patents total. See Robert R Sachs et al., *Benevolent Despot or Tyrant? Alice v CLS Bank Five Years on*, IAM (May 23, 2019), <https://www.iam-media.com/benevolent-despot-or-tyrant-alice-v-cls-bank-five-years>.

¹² As a point of reference, the invalidation rate for patents challenged under *Alice* in the last year and a half has dropped to approximately 44%, since *Berkheimer* (February 2018). Matthew Bultman, *Happy Birthday! What We Know As Alice Turns 5*, LAW360 (June 19, 2019), <https://www.law360.com/articles/1169278?scroll=1&latest=1?copied=1>. Put differently, the observable trend is that the invalidation rate has been decreasing since *Alice*'s issuance, such that the invalidation rate was higher in cases closer to *Alice*'s release. Also worth noting is that the invalidation rate does not follow a normal Gaussian distribution, but is rather left-skewed (or negative skewness, with higher invalidation rate on the right of the x-axis). While the average, as in all statistics, does not tell much about the distribution of each individual data point, it does provide

Specifically, the district courts found ineligibility in 338 out of 629 *Alice* challenges and the Federal Circuit in 58 out of 76. Courts (including the PTAB) have invalidated more than 970 patents, and more than 60,000 patent applications have been abandoned before the USPTO following § 101 rejections.¹³

Table 1	Ineligible	Eligible	Premature to Determine	Total
District Court	338 cases 53.7%	181 cases 28.8%	110 cases 17.5%	629 cases
Federal Circuit	58 cases 76.3%	16 cases 21.1%	2 cases 2.63%	76 cases
Total	396 cases 56.2%	197 cases 27.9%	112 cases 15.9%	705 cases

The reasoning for such a high invalidation rate is simple: *Alice* set forth a two-step test to determine whether a challenged patent or patent application is subject matter eligible, and the majority of patents and patent applications have not been able to meet this test.¹⁴ At step one, courts ask “whether the claims at issue are directed to one of those patent-ineligible concepts” (laws of nature, natural phenomena, and abstract ideas).¹⁵ Patent-eligible claims under this step are specific and clearly indicate the improvement over the prior art.¹⁶ Eligible system claims tend to improve the functioning of the computer system itself,¹⁷ while eligible method claims focus on a specific

some perspective on the whole group.

¹³ Sachs, *supra* note 11.

¹⁴ *Alice Corp. v. CLS Bank Int’l*, 573 U.S. 208, 217–18 (2014).

¹⁵ *Alice*, 573 U.S. at 217.

¹⁶ *See, e.g.*, *Visual Memory LLC v. NVIDIA Corp.*, 867 F.3d 1253, 1258 (Fed. Cir. 2017) (noting that “key question” in *Enfish* step one was whether “focus of the claims [is] . . . on the specific asserted improvement” (citing *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335–36 (Fed. Cir. 2016))).

¹⁷ *See, e.g.*, *Enfish*, 822 F.3d at 1335 (holding that step one requires deciding “whether the claims are directed to an improvement to computer functionality versus being directed to an abstract idea”).

process and how that process is “new and useful.”¹⁸ The specification can provide helpful evidence to support eligibility, if it identifies particular improvements over the prior art.¹⁹

If the claims are directed to “one of [the] patent-ineligible concepts,” such as an abstract idea, then the courts proceed to step two to determine whether “the elements of each claim both individually and ‘as an ordered combination’” disclose an “inventive concept.”²⁰ If an inventive concept is present, then the claims are patent-eligible.²¹ The Federal Circuit explained step two in *Bascom* that “an inventive concept can be found in the non-conventional and non-generic arrangement of known, conventional pieces.”²² Additionally, the Federal Circuit clarified in *Berkheimer* and *Aatrix* that “whether a claim element or combination of elements would have been well-understood, routine, and conventional to a skilled artisan in the relevant field at a particular point in time is a question of fact.”²³ The test appears, in practice, to be highly subjective²⁴ and many judges have been confused as to how to apply the *Alice* test.²⁵ For example, the Federal Circuit’s recent 7-5 denial of

¹⁸ *CellzDirect*, 827 F.3d at 1048 (finding that “the claims are directed to a *new and useful method*” (emphasis added)).

¹⁹ *See, e.g., Visual Memory*, 867 F.3d at 1259, 1260 (The specification “discusses the advantages offered by the technological improvement.”).

²⁰ *Alice*, 573 U.S. at 217–18 (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 72, 78–80 (2012)).

²¹ *Alice*, 573 U.S. at 217–18. In contrast, “[i]t is well settled, though, that automating conventional activities using generic technology does not amount to an inventive concept.” *LendingTree, LLC v. Zillow, Inc.*, 656 F. App’x 991, 996 (Fed. Cir. 2016). *See, e.g., id.* (finding claims for internet-based loan applications ineligible); *In re Salwan*, 681 F. App’x 938, 941 (Fed. Cir. 2017) (finding claims for electronic medical record management ineligible); *FairWarning IP, LLC v. Iatric Sys., Inc.*, 839 F.3d 1089, 1094 (Fed. Cir. 2016) (finding claims for detecting fraudulent access of medical information ineligible); *Tranxition, Inc. v. Lenovo (United States) Inc.*, 664 F. App’x 968, 972 (Fed. Cir. 2016) (finding claims for automated migration of computer configuration information ineligible); *OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1364 (Fed. Cir. 2015) (finding claims for automated price optimization ineligible).

²² *Bascom Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1350 (Fed. Cir. 2016). *Bascom* is discussed in more detail *infra* as case #3.

²³ *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1368 (Fed. Cir. 2018); *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121, 1128 (Fed. Cir. 2018). *Aatrix* is discussed in more detail *infra* as case #11.

²⁴ *See, e.g., Sachs, supra* note 11 (“*Alice* test is a fancy ‘I know it when I see it’ shorthand for judges to use to decide whether patent claims have so-called ‘inventive merit.’”).

²⁵ For testimonies on such confusion by current and former Federal Circuit judges as

rehearing *en banc* in *Athena Diagnostics, Inc. v. Mayo Collaborative Servs., LLC* includes *eight* separate opinions.²⁶ All eight opinions call for Supreme Court²⁷ or Congressional intervention (*e.g.*, the current proposed § 101 bill).²⁸

well as former USPTO Commissioners, among others, see David O. Taylor, *Confusing Patent Eligibility*, 84 TENN. L. REV. 157, 240–44 (2016). *Cf.* Jasper L. Tran, *Abstracting About Abstract Idea*, 102 IOWA L. REV. ONLINE 60 (2016) (joking about the ongoing confusion in applying “abstract idea” under *Alice*). Interestingly, with enough data points post-*Alice*, artificial intelligence (machine learning) has been utilized (to assist humans) to predict which claims would be rejected under the *Alice* test. See Ben Dugan, *Mechanizing Alice: Automating the Subject Matter Eligibility Test of Alice v. CLS Bank*, 2018 U. ILL. J.L. TECH. & POL’Y 33.

²⁶ No. 2017-2508, 2019 WL 2847219 (Fed. Cir. July 3, 2019); see also Dennis Crouch, *Athena Loses on Eligibility – Although 12 Federal Circuit Judges Agree that Athena’s Claims Should Be Eligible*, PATENTLYO (July 3, 2019), <https://patentlyo.com/patent/2019/07/eligibility-although-eligible.html> (succinctly summarizing the eight opinions).

²⁷ See, *e.g.*, *Va. Innovation Scis. Inc. v. Amazon.com, Inc.*, 227 F. Supp. 3d 582, 592 n.3 (E.D. Va. 2017) (The Federal Circuit “cases in which patents were upheld as directed to patent-eligible subject matter are often the most instructive because they help set the boundaries of § 101 invalidity determinations.”), *aff’d sub nom.*, *Va. Innovation Scis., Inc. v. HTC Corp.*, 718 F. App’x 988 (Fed. Cir. 2018). Since *Alice*, the Supreme Court has denied more than 40 *certiorari* petitions on § 101 grounds. See, *e.g.*, Bultman, *supra* note 12.

²⁸ See also, *e.g.*, *Berkheimer v. HP Inc.*, 890 F.3d 1369, 1374 (Fed. Cir. 2018) (Lourie, J., joined by Newman, J., concurring) (per curiam) (“I believe 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.”); *accord* *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 890 F.3d 1354, 1360 (Fed. Cir. 2018) (Lourie, J., joined by Newman, J., concurring) (per curiam); *Interval Licensing LLC v. AOL, Inc.*, 896 F.3d 1335, 1353 (Fed. Cir. 2018) (Plager, J., concurring-in-part, dissenting-in-part) (“go[ing] on record as joining [his] colleagues who have recently expressed similar views about the current state of our patent eligibility jurisprudence, [including Judges Lourie and Newman in *Berkheimer*, as well as] Judge Richard Linn’s concurring and dissenting in *Smart Systems Innovations, LLC v. Chicago Trans-t Authority*, [873 F.3d 1364, 1376 (Fed. Cir. 2017) that] critiqued at length the ‘abstract ideas’ idea”); Kristen Osenga, *Institutional Design for Innovation: A Radical Proposal for Addressing § 101 Patent-Eligible Subject Matter*, 68 AM. U. L. REV. 1191, 1191 (2019) (“The doctrine of patent-eligible subject matter is a mess, and it is weakening patent rights in this country. Nearly everyone, from the bar to the bench and from academia to industry, has called for reform.”). In fact, Congress is already considering a patent eligibility reform bill. See <https://www.tillis.senate.gov/services/files/E8ED2188-DC15-4876-8F51-A03CF4A63E26>. Consequently, commentators have speculated whether 2019 would be *Alice*’s last birthday. Even if that turns out to be true (in a few years, or it may not),

While the Federal Circuit has heard more than eighty § 101 cases in the five years since *Alice*, 19 cases stood out from the crowd: those that applied the *Alice* two-step test and actually found *eligibility* in light of *Alice*.²⁹ Because the Federal Circuit's patent cases are binding on the lower courts (district courts and the PTAB), these 19 Federal Circuit cases have been elevated to a status where they operate as a protective shield for patent owners. Because the challenged patents' claims in these cases have survived the *Alice* test, these claims have become exemplary such that many other challenged patent claims want to analogize to, in hopes of being similarly shielded from the *Alice* scythe.³⁰ Given *Alice*'s subjective test, patent litigators who represent alleged infringers may also benefit by understanding the facts of these Federal Circuit opinions that found eligibility to better prepare their cases. To that end, this paper showcases these 19 exemplary cases to illuminate what claims the Federal Circuit has considered patent eligible in applying *Alice*.³¹ Each case

this paper would still provide historical value and perspective on how the Federal Circuit has developed its § 101 positive jurisprudence post-*Alice*.

²⁹ For an ongoing tally of post-*Alice* Federal Circuit cases, not including affirmances issued without an opinion under Federal Circuit Rule 36, see <https://www.bitlaw.com/patent/section-101-cases.html>.

³⁰ See, e.g., *Amdocs (Israel) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288 (Fed. Cir. 2016) (analogizing the representative claim at issue to those in *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1248 (Fed. Cir. 2014) and *Bascom Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341 (Fed. Cir. 2016) (stating "Claim 1 is similar to the claims in *DDR Holdings* and *BASCOM*"). These 19 cases together have formed the Federal Circuit's *positive* jurisprudence on § 101 in the five years post-*Alice*. In contrast, the Federal Circuit cases that found no patent-eligible subject matter in the five years post-*Alice* – though less but still nonetheless informative – belong to the Federal Circuit's *negative* jurisprudence on § 101.

³¹ As the father of the Patent Act of 1952 put it, "the name of the game is the claim." *CLS Bank Int'l v. Alice Corp. Pty.*, 717 F.3d 1269, 1331 (Fed. Cir. 2013) (Linn & O'Malley, J., dissenting) (quoting Hon. Giles Sutherland Rich, *Extent of Protection and Interpretation of Claims: American Perspectives*, 21 INT'L REV. INDUS. PROP. & COPYRIGHT L. 497, 499 (1990)); see also *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) ("It is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude.").

discussion³² includes a claim chart illustrating the representative claims at issue for ease of comparison to other claims of interest.³³

³² To be absolutely clear, the case summary, including especially the discussion of the inventions, is meant for a strictly factual construction, and should not be attributed as opinions of the authors' employer (and its former/current clients). That is, any statements that lack "plaintiff alleged" or "according to the court" should be construed as though they already have such a qualifier.

³³ The Federal Circuit did not specifically find a representative claim in every case. In the cases with no explicit finding, the case discussion highlights the claim or claims which the Federal Circuit focused its analysis on.

Opinions

1) **DDR Holdings, LLC v. Hotels.com (Dec. 5, 2014)**³⁴

Representative Claim 19 of U.S. Patent No. 7,818,399 ³⁵	
[19]	A system useful in an outsource provider serving web pages offering commercial opportunities, the system comprising:
[19(a)]	a computer store containing data, for each of a plurality of first web pages, defining a plurality of visually perceptible elements, which visually perceptible elements correspond to the plurality of first web pages;
[19(a)(i)]	wherein each of the first web pages belongs to one of a plurality of web page owners;
[19(a)(ii)]	wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and
[19(a)(iii)]	wherein the selected merchant, the out-source provider, and the owner of the first web page displaying the associated link are each third parties with respect to each other;
[19(b)]	a computer server at the outsource provider, which computer server is coupled to the computer store and programmed to:
[19(b)(i)]	receive from the web browser of a computer user a signal indicating activation of one of the links displayed by one of the first web pages
[19(b)(ii)]	automatically identify as the source page the one of the first web pages on which the link has been activated;
[19(b)(iii)]	in response to identification of the source page, automatically retrieve the stored data corresponding to the source page; and
[19(b)(iv)]	using the data retrieved, automatically generate and transmit to the web browser a second web page that displays: (A) information associated with the commerce object associated with the link that has been activated, and (B) the plurality of visually perceptible elements visually corresponding to the source page.

In *DDR Holdings, LLC v. Hotels.com*, the Federal Circuit considered the eligibility of a patent “directed to systems and methods of generating a

³⁴ 773 F.3d 1245 (Fed. Cir. 2014).

³⁵ See *id.* at 1249–50. Claim 19 is representative of claims 1, 3, and 19. See *id.* at 1249–50, 1255.

composite web page that combines certain visual elements of a ‘host’ website with content of a third-party merchant.”³⁶ Prior to this patent, when a visitor clicked on an advertisement for a third-party merchant, the link would direct traffic away from the “host” website and to the third-party’s website.³⁷ The patent at issue prevents merchants from taking web traffic away from the host.³⁸ When a visitor clicks a link on the host’s website (*e.g.*, a third-party advertisement), the patented system creates a combined page which “retains the host website’s ‘look and feel’” while simultaneously “display[ing] product information from the third-party merchant.”³⁹

The Federal Circuit held the patent at issue “clear[ed] the § 101 hurdle” and was patent-eligible.⁴⁰ In making its decision, the court looked to the two-step test identified in *Alice*.⁴¹

The Federal Circuit began its analysis by examining what constitutes a patent-ineligible abstract idea, noting the difficulty of distinguishing between claims that are patent-eligible and those that “add too little to a patent-ineligible abstract concept”⁴² Claims that are ineligible are those that are “in substance . . . directed to nothing more than the performance of an abstract business practice on the Internet or using a conventional computer,” even if they “recite[] various computer hardware elements”⁴³ Thus, claims should not be “recited too broadly and generically to be considered sufficiently specific and meaningful applications of their underlying abstract ideas.”⁴⁴

The Federal Circuit recognized that it not easy to determine “the precise nature of the abstract idea” as required by step one of *Alice*.⁴⁵ Because the claims were eligible under step two, the court moved on without making a specific step one holding.⁴⁶

³⁶ *Id.* at 1248.

³⁷ *Id.*

³⁸ *See id.*

³⁹ *Id.* at 1248–49.

⁴⁰ *Id.* at 1255.

⁴¹ *See id.*

⁴² *Id.*

⁴³ *Id.* at 1256.

⁴⁴ *Id.*

⁴⁵ *Id.* at 1257.

⁴⁶ *See id.*

It explained that, though the claims solve a “business challenge” (“retaining website visitors”), that challenge is “particular to the Internet.”⁴⁷ In other words, the claims “do not merely recite the performance of some business practice known from the pre-Internet world, along with the requirement to perform it on the Internet.”⁴⁸ These claims do more than that: “the claimed solution is *necessarily rooted* in computer technology in order to overcome a problem specifically arising in the realm of computer networks.”⁴⁹ The court found an inventive concept because the claims do not involve a computer network “operating in its normal, expected manner . . .”⁵⁰ Instead, the claims send the “visitor to [a] . . . hybrid web page that presents product information from the third party and visual ‘look and feel’ elements from the host website.”⁵¹

In his dissent, Judge Mayer did not agree with the majority’s inventive concept.⁵² He found that the claims “simply describe an abstract concept . . . and apply that concept using a generic computer.”⁵³ He would have held no inventive concept for “achieving [the] goal” described by the claims.⁵⁴ In his view, the claims were simply the well-known “idea of having a ‘store within a store’” accomplished over the internet.⁵⁵

⁴⁷ *Id.*

⁴⁸ *Id.*

⁴⁹ *Id.* (emphasis added).

⁵⁰ *Id.* at 1258. The “normal, expected” operation, according to the court, was “sending the website visitor to the third party website that appears to be connected with the clicked advertisement . . .” *Id.* at 1258–59.

⁵¹ *Id.* at 1259.

⁵² *See id.* at 1263 (Mayer, J., dissenting).

⁵³ *Id.* (Mayer, J., dissenting).

⁵⁴ *Id.* at 1264 (Mayer, J., dissenting).

⁵⁵ *Id.* at 1264–65 (Mayer, J., dissenting). The majority disagreed with this characterization: a physical “‘store within a store’ . . . [does] not have to account for the ephemeral nature of an internet ‘location’ or the near-instantaneous transport between these locations . . . which introduces a problem that does not arise in the ‘brick and mortar’ context.” *Id.* at 1258.

2) Enfish, LLC v. Microsoft Corp. (May 12, 2016)⁵⁶

Representative Claim 17 of U.S. Patent No. 6,151,604 ⁵⁷	
[17]	A data storage and retrieval system for a computer memory, comprising:
[17(a)]	means for configuring said memory according to a logical table, said logical table including:
[17(a)(i)]	a plurality of logical rows, each said logical row including an object identification number (OID) to identify each said logical row, each said logical row corresponding to a record of information;
[17(a)(ii)]	a plurality of logical columns intersecting said plurality of logical rows to define a plurality of logical cells, each said logical column including an OID to identify each said logical column; and
[17(a)(iii)]	means for indexing data stored in said table.

The Federal Circuit considered a patent on database software in *Enfish, LLC v. Microsoft Corp.*⁵⁸ Enfish asserted two patents against Microsoft: U.S. Patent No. 6,151,604 (“the ‘604 patent”) and U.S. Patent No. 6,163,775 (“the ‘775 patent”).⁵⁹

Prior to the patents at issue, databases stored information in different tables, separated by the type of information each table contained.⁶⁰ For example, databases would have a table called “Document Table” that stored information about various documents, while information about various companies would be stored in a separate “Company Table.”⁶¹ In the patented system, everything could be stored in one table.⁶² The inventive table was also self-referential: the characteristics of each column in the table was defined by a row in the same table.⁶³

⁵⁶ 822 F.3d 1327 (Fed. Cir. 2016).

⁵⁷ *See id.* at 1336. Claim 17 is representative of claims 17, 31, and 32 of the ‘604 patent, as well as claims 31 and 32 of the ‘775 patent. *See id.*

⁵⁸ *See id.* at 1330.

⁵⁹ *See id.* at 1330, 1333.

⁶⁰ *See id.* at 1330–31.

⁶¹ *Id.* at 1330.

⁶² *See id.* at 1332.

⁶³ *See id.* at 1332–33.

The *Enfish* Court stopped its analysis at step one of the *Alice* inquiry: it held the claims at issue were not directed to an abstract idea and were therefore patent-eligible.⁶⁴

According to the Federal Circuit, the first step of *Alice* requires more than merely “ask[ing] whether the claims *involve* a patent-ineligible concept, because” even the “routinely patent-eligible claim[s]” involve a patent ineligible concept.⁶⁵ Instead, the court considered the first step a “stage-one filter to [the] claims, considered in light of the specification, based on whether ‘their character as a whole is directed to excluded subject matter.’”⁶⁶

The *Enfish* Court held that, similar to the step two inquiry into inventiveness, *Alice* step one requires questioning “whether the claims are directed to an improvement to computer functionality versus being directed to an abstract idea.”⁶⁷ It further explained that abstract ideas include “fundamental economic and conventional business practices,” as well as math equations.⁶⁸ Patents directed to those concepts still fail the first step of *Alice*, even if the steps are “performed on a computer.”⁶⁹

The decision counseled courts against “describing the claims at . . . a high level of abstraction and untethered from the language of the claims” because that “all but ensures the exceptions to § 101 swallow the rule.”⁷⁰ The district court held the claims were “directed to the abstract idea of ‘storing, organizing, and retrieving memory in a logical table’”⁷¹ The Federal Circuit rejected this characterization, instead holding the claims at issue were “specifically directed to a *self-referential* table for a computer database.”⁷²

The Federal Circuit concluded that the claims were “directed to an improvement of an existing technology,” rather than an abstract idea.⁷³ This conclusion was “bolstered by the specification’s teachings that the claimed invention achieves other benefits over conventional databases, such as

⁶⁴ *See id.* at 1336, 1346.

⁶⁵ *Id.* at 1335.

⁶⁶ *Id.*

⁶⁷ *Id.*

⁶⁸ *Id.*

⁶⁹ *Id.*

⁷⁰ *Id.*

⁷¹ *Id.* at 1337.

⁷² *Id.*

⁷³ *Id.*

increased flexibility, faster search times, and smaller memory requirements.”⁷⁴

The fact that the invention could “run on a general purpose computer” did not doom the claims because they did not “simply add[] conventional computer components to well-known business practices” or “mathematical formula[e].”⁷⁵ Likewise, the improvement does not have to be “defined by reference to ‘physical’ components”⁷⁶

The Federal Circuit looked to “[t]he specification’s disparagement of conventional data structures,” as well as the description of the invention “as including the features that make up a self-referential table,” to “confirm that [its] characterization . . . ha[d] not been deceived by the ‘draftsman’s art.’”⁷⁷ The invention was not merely carrying out an abstract idea on a computer.⁷⁸ Instead, “the claims [were] directed to a specific implementation of a solution to a problem in the software arts.”⁷⁹

3) **Bascom Global Internet Servs. v. AT&T Mobility (June 27, 2016)**⁸⁰

Representative Claim 1 of U.S. Patent No. 5,987,606 ⁸¹	
[1]	A content filtering system for filtering content retrieved from an Internet computer network by individual controlled access network accounts, said filtering system comprising:
[1.1]	a local client computer generating network access requests for said individual controlled access network accounts;
[1.2]	at least one filtering scheme;
[1.3]	a plurality of sets of logical filtering elements; and
[1.4]	a remote ISP server coupled to said client computer and said Internet computer network, said ISP server associating each said network account to at least one filtering scheme and at least one

⁷⁴ *Id.*

⁷⁵ *Id.* at 1338.

⁷⁶ *Id.* at 1339.

⁷⁷ *Id.*

⁷⁸ *See id.*

⁷⁹ *Id.*

⁸⁰ 827 F.3d 1341 (Fed. Cir. 2016).

⁸¹ *See id.* at 1345. The court did not make a specific finding regarding a representative claim, but “BASCOS point[ed] to Claim 1” of U.S. Patent No. 5,987,606 (“the ‘606 patent”) as “instructive” of the “individually customizable filtering” group of claims. *Id.*

	set of filtering elements, said ISP server further receiving said network access requests from said client computer and executing said associated filtering scheme utilizing said associated set of logical filtering elements.
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Representative Claim 23 of U.S. Patent No. 5,987,606 ⁸²	
[22]	An ISP server for filtering content forwarded to controlled access network account generating network access requests at a remote client computer, each network access request including a destination address field, said ISP server comprising:
[22.1]	a master inclusive-list of allowed sites;
[22.2]	a plurality of sets of exclusive-lists of excluded sites, each controlled access network account associated with at least one set of said plurality of exclusive-lists of excluded sites; and
[22.3]	a filtering scheme, said filtering scheme allowing said network access request if said destination address exists on said master inclusive-list but not on said at least one associated exclusive-list, whereby said controlled access accounts may be uniquely associated with one or more sets of excluded sites.
[23]	The ISP server of claim 22 further comprising:
[23.1]	a plurality of inclusive-lists of allowed sites, each controlled access user associated with at least one of said plurality of inclusive-lists of allowed sites, said filtering program further allowing said network access request if said requested destination address exists on said at least one associated inclusive-list.

BASCOM sued AT&T, alleging infringement of its patent on internet filtering.⁸³ In prior art systems, an internet content filter was installed in one of three locations: (1) on each individual computer, (2) on a local network server, or (3) on remote Internet Service Provider (ISP) servers.⁸⁴ Under the patented invention, the filter is located on the ISP server.⁸⁵ When website access is requested from the ISP server, the server is able to identify the user requesting

⁸² See *id.* at 1345–46. The court did not make a specific finding regarding a representative claim, but “BASCOM point[ed] to Claim 23” of the ‘606 patent as instructive of the “hybrid filtering scheme” group of claims. *Id.* at 1345.

⁸³ See *id.* at 1346.

⁸⁴ See *id.* at 1343–44.

⁸⁵ See *id.* at 1344.

access and can filter the content differently based on who is requesting the access.⁸⁶

The Federal Circuit held the claims were directed to an abstract idea, but were still patent eligible under step two of *Alice* because there was a sufficiently inventive concept.⁸⁷

In its step one analysis, the Federal Circuit held the claims were “directed to filtering content on the internet.”⁸⁸ The court explained that “filtering content is an abstract idea because it is a longstanding, well-known method of organizing human behavior”⁸⁹ Thus, the ’606 patent is directed to an abstract idea.⁹⁰

The Federal Circuit moved on to analyze the claims under step two.⁹¹ For the claims to be patent eligible, the inventive concept “must be significantly more than the abstract idea itself”⁹² The Federal Circuit agreed with the district court’s ruling that, separately, the claim limitations “recite generic computer, network and Internet components, none of which is inventive by itself.”⁹³

But the Federal Circuit disagreed with the lower court’s holding that the combination of limitations recited something “well-understood, routine, [and] conventional.”⁹⁴ Importantly, the appellate court held “an inventive concept can be found in the non-conventional and non-generic arrangement of known, conventional pieces.”⁹⁵ In this case, “[t]he claims do not merely recite the abstract idea of filtering content along with the requirement to perform it on the Internet Nor do the claims preempt all ways of filtering content on the

⁸⁶ *See id.* at 1344–45.

⁸⁷ *See id.* at 1352.

⁸⁸ *Id.* at 1348. (“Specifically, claim 1 is directed to a ‘content filtering system for filtering content retrieved from an Internet computer network.’ Claim 22 similarly is directed to an ‘ISP server for filtering content.’”).

⁸⁹ *Id.*

⁹⁰ *See id.* at 1348–49. The court recognized it “sometimes incorporates claim limitations into its articulation of the idea to which a claim is directed,” but explained this case is different because the “claims and their specific limitations do not readily lend themselves to a step-one finding that they are directed to a nonabstract idea.” *Id.* at 1349.

⁹¹ *See id.* at 1349.

⁹² *Id.*

⁹³ *Id.*

⁹⁴ *Id.* at 1349–50.

⁹⁵ *Id.* at 1350.

Internet . . .”⁹⁶ Instead, “they recite a specific, discrete implementation of the abstract idea of filtering content.”⁹⁷ Because “the patent describes how its particular arrangement of elements is a technical improvement over prior art ways of filtering such content, . . . the claims may be read to ‘improve[] an existing technological process.”⁹⁸

The Federal Circuit analogized this case to *DDR Holdings*: the patent in that case claimed “a technical way to satisfy an existing problem for website hosts and viewers”; it was “not claiming a business method *per se* . . .”⁹⁹ Likewise, the ’606 patent survives step two because it is “claiming a *technology-based solution* . . . to filter content on the Internet that overcomes existing problems with other Internet filtering systems”; it “is not claiming the *idea* of filtering content simply applied to the Internet.”¹⁰⁰

4) Rapid Litigation Management v. CellzDirect, Inc. (July 5, 2016)¹⁰¹

Representative Claim 1 of U.S. Patent No. 7,604,929 ¹⁰²	
[1]	A method of producing a desired preparation of multi-cryopreserved hepatocytes, said hepatocytes being capable of being frozen and thawed at least two times, and in which greater than 70% of the hepatocytes of said preparation are viable after the final thaw, said method comprising:
[1.1]	subjecting hepatocytes that have been frozen and thawed to density gradient fractionation to separate viable hepatocytes from nonviable hepatocytes,
[1.2]	recovering the separated viable hepatocytes, and
[1.3]	cryopreserving the recovered viable hepatocytes to thereby form said desired preparation of hepatocytes without requiring a density gradient step after thawing the hepatocytes for the second time, wherein the hepatocytes are not plated between the first and second cryopreservations, and wherein greater than 70% of the hepatocytes of said preparation are viable after the final thaw.

⁹⁶ *Id.*

⁹⁷ *Id.* The court noted that merely adding extra “conventional” steps to “perform[] the abstract idea” does not make a patent any less abstract. *Id.* at 1352.

⁹⁸ *Id.* at 1350–51.

⁹⁹ *Id.* at 1351.

¹⁰⁰ *Id.* (emphasis added).

¹⁰¹ 827 F.3d 1042 (Fed. Cir. 2016).

¹⁰² *See id.* at 1046. Claim 1 is representative of asserted claims 1 and 5. *Id.*

U.S. Patent No. 7,604,929 (“the ’929 patent”) at issue in *CellzDirect* resulted from a discovery that certain liver cells could be frozen twice, and those cells would “behave[] like cells that were once frozen.”¹⁰³ The process of the ’929 patent is an improved process for preserving those cells by freezing a group of cells once, then setting apart and refreezing only the viable cells.¹⁰⁴ This allows liver cells to be “thawed and used later without unacceptable loss of viability.”¹⁰⁵ Moreover, the ability to refreeze the cells makes it easier to pool together liver cells from multiple donors.¹⁰⁶

The district court rejected the claims under § 101.¹⁰⁷ It held that the claims (1) were directed to a law of nature (the ability of liver cells to be frozen multiple times), and (2) lacked the inventive step to make them patent eligible.¹⁰⁸ The Federal Circuit vacated and remanded, holding that the claims were “not directed to a patent-ineligible concept” under step one of *Alice*.¹⁰⁹

According to the Federal Circuit, the ’929 patent is “directed to a new and useful laboratory technique for preserving hepatocytes,” not “the ability of hepatocytes to survive multiple freeze-thaw cycles.”¹¹⁰ The court noted that the inventors were not attempting to patent the discovery of the ability of cells to survive, they were instead “claim[ing] applications of that knowledge.”¹¹¹

The *CellzDirect* Court distinguished this case from previous cases finding ineligibility: “[a]lthough the claims in each of th[o]se cases employed method steps, the end result of the process, the essence of the whole, was a patent-ineligible concept.”¹¹² However, “the claims [here] are directed to a new and useful method of preserving hepatocyte cells.”¹¹³ As evidence that the claims are not directed to a patent-ineligible concept, the court noted “the claims

¹⁰³ *Id.* at 1045.

¹⁰⁴ *See id.*

¹⁰⁵ *Id.*

¹⁰⁶ *See id.* at 1045–46.

¹⁰⁷ *See id.* at 1046.

¹⁰⁸ *See id.*

¹⁰⁹ *Id.* at 1052.

¹¹⁰ *Id.* at 1048.

¹¹¹ *Id.* (quoting *Ass’n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 596 (2013)) (“They employed their natural discovery to create a new and improved way of preserving hepatocyte cells for later use.”).

¹¹² *Id.*

¹¹³ *Id.*

recite a ‘*method of producing* a desired preparation of multi-cryopreserved hepatocytes.’”¹¹⁴ It did not matter to the court that one way to explain the invention was by describing “the natural ability of the subject matter to *undergo* the process”¹¹⁵ If that were the *Alice* test, then many patent-eligible methods would be ineligible.¹¹⁶

The Federal Circuit addressed three Supreme Court cases in its decision.¹¹⁷ Two of those cases did not contain method claims.¹¹⁸ The first “held that a mixture of different bacterial species was not patent eligible,” while the second held “composition claims to isolated DNA [are] patent ineligible.”¹¹⁹ However, the ’929 patent is “directed to a new and useful process of creating that pool, not to the pool itself.”¹²⁰ This implies that, had the ’929 patent been a product claim it would not have survived step one of the *Alice* test. But because the ’929 patent is claiming a “new and useful” method, it passes step one.¹²¹ The third case contained “process claims, [but] the court concluded that they were ‘directed to’ . . . patent-ineligible cffDNA itself.”¹²² Thus, because the ’929 patent is not directed to the liver cells themselves, it can survive step one.¹²³

The Federal Circuit briefly addressed step two, holding that there is a sufficiently inventive step: the process the claims recite is a significant improvement over the prior art.¹²⁴ Moreover, the fact that the steps disclosed in the patent were known separately does not mean there is no inventive step.¹²⁵ Combining those steps in a new way can be patent-eligible.¹²⁶ Although the individual steps were well known, the prior art disclosed

¹¹⁴ *Id.*

¹¹⁵ *Id.* at 1049.

¹¹⁶ *See id.* (observing that a patent on “treating cancer with chemotherapy” would be ineligible if explained in terms of “cancer cells’ inability to survive chemotherapy”).

¹¹⁷ *Id.*

¹¹⁸ *Id.* (citing *Funk Bros. Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127, 130–131 (1948); *Myriad*, 569 U.S. at 594–596).

¹¹⁹ *Id.* (citing *Funk Bros.*, 333 U.S. at 131; *Myriad*, 569 U.S. at 594–596).

¹²⁰ *Id.*

¹²¹ *Id.*

¹²² *Id.* (citing *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1376 (2015)).

¹²³ *See id.*

¹²⁴ *See id.* at 1050.

¹²⁵ *See id.* at 1051.

¹²⁶ *See id.*

freezing and thawing the hepatocytes *once*.¹²⁷ Thus, at step two, it was the “particular ‘combination of steps’” that was patentable.¹²⁸

5) McRO, Inc. v. Bandai Namco Games Am. Inc. (Sept. 13, 2016)¹²⁹

Representative Claim 1 of U.S. Patent No. 6,307,576 ¹³⁰	
[1]	A method for automatically animating lip synchronization and facial expression of three-dimensional characters comprising:
[1.1]	obtaining a first set of rules that define output morph weight set stream as a function of phoneme sequence and time of said phoneme sequence;
[1.2]	obtaining a timed data file of phonemes having a plurality of sub-sequences;
[1.3]	generating an intermediate stream of output morph weight sets and a plurality of transition parameters between two adjacent morph weight sets by evaluating said plurality of sub-sequences against said first set of rules;
[1.4]	generating a final stream of output morph weight sets at a desired frame rate from said intermediate stream of output morph weight sets and said plurality of transition parameters; and
[1.5]	applying said final stream of output morph weight sets to a sequence of animated characters to produce lip synchronization and facial expression control of said animated characters.

McRO, Inc. sued a collection of video game developers and publishers for patent infringement.¹³¹ The asserted patent involved a method of automatically synchronizing the lips of animated characters with the words they are speaking.¹³² The prior art method involved manually setting the position of the character’s lips “at certain important times (‘keyframes’),” then interpolating between the manually set positions to achieve smooth

¹²⁷ *See id.*

¹²⁸ *Id.* (“Repeating a step that the art taught should be performed only once can hardly be considered routine or conventional.”).

¹²⁹ 837 F.3d 1299 (Fed. Cir. 2016).

¹³⁰ *See id.* at 1307 n.3. Claim 1 of U.S. Patent No. 6,307,576 (“the ‘576 patent”) is representative of asserted claims 1, 7–9, and 13 of the ‘576 patent and claims 1–4, 6, 9, 13, and 15–17 of U.S. Patent No. 6,611,278 (“the ‘278 patent”). *Id.*

¹³¹ *See id.* at 1308.

¹³² *See id.* at 1303.

transitions that match the words.¹³³ Not only does the patent use a ruleset to automatically define the lip position at each keyframe, but it creates added realism by adjusting the mouth position based on the context of what is being said.¹³⁴

The Federal Circuit performed its analysis under step one of *Alice* and held that the claims survived the § 101 challenge because they were not directed to patent-ineligible subject matter.¹³⁵

The Federal Circuit began its analysis by explaining that *Alice* step one requires courts to look at the claims “as a whole”¹³⁶ On the other hand, courts also should not over-simplify the claims “by looking at them generally and failing to account for the specific requirements of the claims.”¹³⁷ Although the ’576 patent did not identify specific rules the invention must use, the claims limited the rules to those “with certain common characteristics”¹³⁸ In other words, the patented method claims a genus of rules.¹³⁹

The Federal Circuit explained that limits on the breadth of claims come from the disclosure requirements of 35 U.S.C. § 112, not § 101.¹⁴⁰ The only § 101 concern implicated by broad claims is preemption, which arises when the claims “are not directed to a specific invention and instead improperly monopolize ‘the basic tools of scientific and technological work.’”¹⁴¹ To satisfy this preemption concern, courts must ask “whether the claims . . . focus on a specific means or method that improves the relevant technology or are instead directed to a result or effect that itself is the abstract idea and merely invoke generic processes and machinery.”¹⁴² According to the court, it is possible to patent a *method of producing* a particular effect, even if the effect itself is not patentable.¹⁴³

¹³³ *Id.* at 1307.

¹³⁴ *See id.*

¹³⁵ *See id.* at 1316.

¹³⁶ *Id.* at 1312–13.

¹³⁷ *Id.* at 1313.

¹³⁸ *Id.*

¹³⁹ *See id.*

¹⁴⁰ *See id.* at 1313–14.

¹⁴¹ *Id.* at 1314.

¹⁴² *Id.*

¹⁴³ *See id.*

The Federal Circuit applied these principles to determine whether the claims at issue were directed to an abstract idea.¹⁴⁴ It began by noting that Claim 1 does not simply utilize a computer to automate “conventional activity.”¹⁴⁵ The court emphasized the fact that the claimed method was not the same as was previously practiced.¹⁴⁶ Under the prior art method, an animator used “subjective determinations” to synchronize the lips, but under the claimed process, a computer used “specific, limited mathematical rules” to accomplish the goal.¹⁴⁷ Thus, it was “the incorporation of the claimed rules, not the use of the computer, that ‘improved [the] existing technological process’”¹⁴⁸

Although the patented method did not produce a tangible result, “the concern underlying the exceptions to § 101 is not tangibility, but preemption.”¹⁴⁹ McRO was able to show that an alternative process to its patented method exists, but that was not entirely sufficient.¹⁵⁰ Preemption was further prevented by the “specific structure of the claimed rules.”¹⁵¹ The Federal Circuit explained that “[b]y incorporating the specific features of the rules as claim limitations, claim 1 is limited to a specific process . . . and does not preempt approaches that use rules of a different structure or different techniques.”¹⁵²

¹⁴⁴ *See id.* at 1314–16.

¹⁴⁵ *Id.* at 1314.

¹⁴⁶ *See id.*

¹⁴⁷ *Id.*

¹⁴⁸ *Id.*

¹⁴⁹ *Id.* at 1315.

¹⁵⁰ *See id.* (quoting *Ariosa*, 788 F.3d at 1379) (“[T]he absence of complete preemption does not demonstrate patent eligibility.”).

¹⁵¹ *Id.*

¹⁵² *Id.* at 1316.

6) Amdocs (Israel) Ltd. v. Openet Telecom, Inc. (Nov. 1, 2016)¹⁵³

Representative Claim 1 of U.S. Patent No. 7,631,065 ¹⁵⁴	
[1]	A computer program product embodied on a computer readable storage medium for processing network accounting information comprising:
[1.1]	computer code for receiving from a first source a first network accounting record;
[1.2]	computer code for correlating the first network accounting record with accounting information available from a second source; and
[1.3]	computer code for using the accounting information with which the first network accounting record is correlated to enhance the first network accounting record.

Amdocs (Israel) Ltd. asserted four patents against Opnet Telecom, Inc.: U.S. Patent Nos. 7,631,065 (“the ’065 patent”), 7,412,510 (“the ’510 patent”), 6,947,984 (“the ’984 patent”), and 6,836,797 (“the ’797 patent”).¹⁵⁵ All four patents involved a system created for accounting and billing by “network service providers.”¹⁵⁶

Prior to Amdocs’ patents, the requisite accounting information would all be stored in one place, which resulted in large databases processing considerable amounts of incoming data.¹⁵⁷ The patented system arranges its data processing components in a “distributed architecture” that spreads the processing across the network.¹⁵⁸ As a result, information is “collect[ed] and

¹⁵³ 841 F.3d 1288 (Fed. Cir. 2016).

¹⁵⁴ *See id.* at 1299. Claim 1 of U.S. Patent No. 7,631,065 is representative of asserted claims 1, 4, 7, 13 and 17 of the ’065 patent. *Id.* at 1299. The court found other claims representative of the other asserted patents, but applied the same logic to the eligibility analysis. *See id.* at 1302, 1304, 1305. Thus, the other representative claims are not included here.

¹⁵⁵ *See id.* at 1290.

¹⁵⁶ *Id.* at 1291.

¹⁵⁷ *See id.* at 1292.

¹⁵⁸ *Id.* at 1291–92.

process[ed] . . . close to its source.”¹⁵⁹ This prevents the network from bottlenecking, but still allows data access from a “central location.”¹⁶⁰

A majority of the Federal Circuit held all four patents were eligible under step two of *Alice*.¹⁶¹ For each patent, the majority “accepted the district court’s view of the disqualifying abstract ideas,” then explained the inventive concept it found.¹⁶²

The Federal Circuit began its analysis of the ’065 patent by examining precedent containing “somewhat facially similar claims” it had previously found both eligible and ineligible.¹⁶³ Because the court felt the claims at issue were similar to those in *Bascom* and *DDR*, it moved to step two without making a specific step one holding.¹⁶⁴ Like *DDR*, the claim limitations, when considered individually and as an ordered combination, result in an inventive concept via the distributed architecture.¹⁶⁵ Like *Bascom*, the benefits of the invention here are only possible because of the specific architecture disclosed by the claims.¹⁶⁶

In the Federal Circuit’s view, the “distributed enhancement” recited by the Amdocs patents was a “critical advancement over the prior art . . .”¹⁶⁷ Despite the use of generic components, the enhancement limitation requires those components to “operate in an unconventional manner to achieve an improvement in computer functionality.”¹⁶⁸ Therefore, the claims of the ’065 patent contain an inventive concept.¹⁶⁹

¹⁵⁹ *Id.* at 1291.

¹⁶⁰ *Id.* at 1292.

¹⁶¹ *See id.* at 1307.

¹⁶² *Id.* at 1306.

¹⁶³ *Id.* at 1300.

¹⁶⁴ *Id.* (citing *Bascom Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341 (Fed. Cir. 2016); *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245 (Fed. Cir. 2014)).

¹⁶⁵ *See id.* at 1301–02 (citing *DDR Holdings*, 773 F.3d at 1259).

¹⁶⁶ *See id.* at 1302 (citing *Bascom*, 827 F.3d 1341).

¹⁶⁷ *Id.* at 1300.

¹⁶⁸ *Id.* at 1300–01.

¹⁶⁹ *See id.* at 1301.

The majority held that each of the other patents was eligible for “reasons similar to” the ’065 patent analysis.¹⁷⁰ Thus, the court found all four patents eligible under *Alice* step two.¹⁷¹

Judge Reyna disagreed with the majority’s “mechanical comparison” of the claims here with the claims in previous § 101 cases.¹⁷² He also took issue with what he viewed as the importation of “innovative limitations” to the claims from the specification.¹⁷³

The dissent found that the ’065 and the ’797 patents are ineligible under *Alice*.¹⁷⁴ In Judge Reyna’s view, claim 1 of the ’065 patent only recites functional limitations and does not contain a “specific process for accomplishing the abstract goal of combining data”¹⁷⁵ Moreover, none of the limitations “confine the claim to a particular means” of performing the abstract idea, so there was no inventive concept.¹⁷⁶ Similarly, the ’797 patent only recites steps that “comprise the [ineligible] abstract concept of collecting information about network services”¹⁷⁷

Judge Reyna did agree with the majority that both the ’510 and the ’984 patents were eligible, but disagreed with their methodology.¹⁷⁸ At step one, the court should have determined if the patents were simply “directed to [an abstract] goal” or if they were directed to “a method of achieving” that goal.¹⁷⁹ This method “must [have] meaningfully limit[ed] the claim to a manner of achieving the desired result without unduly foreclosing future innovation.”¹⁸⁰ Because the ’510 and ’984 patents “capture at least some of the *process* by which the disclosed system” achieves its goal, they survive step one.¹⁸¹

¹⁷⁰ *Id.* at 1302, 1304, 1305.

¹⁷¹ *See id.* at 1307.

¹⁷² *Id.*

¹⁷³ *Id.*

¹⁷⁴ *See id.*

¹⁷⁵ *Id.* at 1313.

¹⁷⁶ *Id.* at 1314.

¹⁷⁷ *Id.* at 1319.

¹⁷⁸ *See id.* at 1307.

¹⁷⁹ *Id.* at 1314.

¹⁸⁰ *Id.*

¹⁸¹ *Id.* at 1315. The quoted language refers specifically to the ’510 patent, but Judge Reyna viewed the ’984 patent as “analogous to . . . the ’510 patent” *Id.* at 1317.

7) Thales Visionix Inc. v. United States (Mar. 8, 2017)¹⁸²

Independent Claim 1 of U.S. Patent No. 6,474,159 ¹⁸³	
[1]	A system for tracking the motion of an object relative to a moving reference frame, comprising:
[1.1]	a first inertial sensor mounted on the tracked object;
[1.2]	a second inertial sensor mounted on the moving reference frame; and
[1.3]	an element adapted to receive signals from said first and second inertial sensors and configured to determine an orientation of the object relative to the moving reference frame based on the signals received from the first and second inertial sensors.

Independent Claim 22 of U.S. Patent No. 6,474,159 ¹⁸⁴	
[22]	A method comprising determining an orientation of an object relative to a moving reference frame based on signals from two inertial sensors mounted respectively on the object and on the moving reference frame.

The asserted patent in Thales relates to a system for tracking an object's movement relative to a moving platform.¹⁸⁵ Under the prior art, sensors mounted on an object could measure and calculate "position, orientation, and velocity of the object" relative to a predefined starting position.¹⁸⁶ Because small errors in the measurement of the object could propagate into larger

¹⁸² 850 F.3d 1343 (Fed. Cir. 2017).

¹⁸³ *See id.* at 1345. The court did not make a specific finding as to which claim was representative of U.S. Patent No. 6,474,159 ("the '159 patent"). *See id.* The patentees asserted claims 1-5, 11-13, 20, 22-26, 32-34, and 41. *See id.* at 1344. Of the asserted claims, only 1 and 22 are independent, so the court considered those two claims. *See id.* at 1345.

¹⁸⁴ *See id.* at 1345-46. The court did not make a specific finding as to which claim was representative of the '159 patent. *See id.* The patentees asserted claims 1-5, 11-13, 20, 22-26, 32-34, and 41. *See id.* at 1344. Of the asserted claims, only 1 and 22 are independent, so the court considered those two claims. *See id.* at 1345.

¹⁸⁵ *See id.* at 1344.

¹⁸⁶ *Id.* at 1344-45.

ones, tracking systems “generally include[d] at least one other sensor . . . to intermittently correct [those] errors”¹⁸⁷ The ’159 patent identified a problem in this prior art: the object’s tracking sensors measured motion relative to earth, while the error-correcting sensors measured “position relative to the moving platform.”¹⁸⁸ Combining this data led to “inconsistent position information when the moving platform accelerated or turned.”¹⁸⁹

The patented system purported to solve this problem.¹⁹⁰ The patent disclosed tracking sensors on the platform measuring the direction of gravity, and sensors on the object taking measurements relative to the moving platform.¹⁹¹ Changing the reference frame in this way allowed the object to be tracked without calculating the position or orientation of the moving platform.¹⁹² This resulted in three improvements: (1) an increased measurement accuracy, (2) a reduced need for extra hardware on the moving platform, and (3) simpler installation.¹⁹³

The lower court granted a motion for judgment on the pleadings because, in its view, the claims were “directed to the abstract idea of using laws of nature governing motion to track two objects” and had no inventive concept.¹⁹⁴ The Federal Circuit rejected this ruling, and instead held that the claims were not directed to an abstract idea under step one.¹⁹⁵

In its analysis, the Federal Circuit recognized that, at step one, it “must . . . articulate what the claims are directed to with enough specificity to ensure the step one inquiry is meaningful.”¹⁹⁶ The court devoted the majority of its § 101 analysis drawing parallels from this case to a Supreme Court case, *Diamond v. Diehr*.¹⁹⁷ In *Diehr*, the patent’s “claimed method used [a] well-known . . . equation to calculate the optimal cure time” of rubber.¹⁹⁸ The Supreme Court noted that the mathematical equation itself would not have been patent-

¹⁸⁷ *Id.* at 1345.

¹⁸⁸ *Id.*

¹⁸⁹ *Id.*

¹⁹⁰ *See id.*

¹⁹¹ *See id.*

¹⁹² *See id.*

¹⁹³ *See id.*

¹⁹⁴ *Id.* at 1346.

¹⁹⁵ *See id.* at 1349.

¹⁹⁶ *Id.* at 1347.

¹⁹⁷ *Id.* at 1347–48 (citing *Diamond v. Diehr*, 450 U.S. 175 (1981)).

¹⁹⁸ *Id.* at 1347 (citing *Diehr*, 450 U.S. at 177 n.2).

eligible, even if it was limited to a particular technology.¹⁹⁹ But the claims at issue in *Diehr* were eligible because “when a claim containing a mathematical formula implements or applies that formula in a structure or process which, when considered as a whole, is performing a function which the patent laws are designed to protect,” it is patent eligible.²⁰⁰

The Federal Circuit viewed the claims of the '159 patent as “nearly indistinguishable” from *Diehr*.²⁰¹ The claims here use “navigation equations . . . derived from [the] particular arrangement of sensors” to calculate the position and orientation of the object.²⁰² The patent’s use of equations is simply to facilitate this particular configuration of the sensors.²⁰³ And by using this configuration, the claims “result in a system that reduces errors” present in the prior art systems, “[j]ust as the claims in *Diehr* reduced the likelihood” of error in the prior art rubber curing process.²⁰⁴

The patent specification adds further support to the idea that the claims are not directed to an abstract idea.²⁰⁵ It identifies the difficulties in the prior art and notes that the claimed arrangement “may seem somewhat strange,” but results in the improvements cited by the patent.²⁰⁶

The claims are patent eligible under step one because they are “directed to systems and methods that use inertial sensors in a non-conventional manner to reduce errors in measuring the relative position and orientation of a moving object on a moving reference frame.”²⁰⁷

¹⁹⁹ *See id.* (citing *Diehr*, 450 U.S. at 191–92).

²⁰⁰ *Id.* at 1347–48 (quoting *Diehr*, 450 U.S. at 192).

²⁰¹ *Id.* at 1348.

²⁰² *Id.*

²⁰³ *See id.*

²⁰⁴ *Id.* (citing *Diehr*, 450 U.S. at 187).

²⁰⁵ *See id.*

²⁰⁶ *Id.*

²⁰⁷ *Id.*

8) Visual Memory LLC v. NVIDIA Corp. (Aug. 15, 2017)²⁰⁸

Claim 1 of U.S. Patent No. 5,953,740 ²⁰⁹	
[1]	A computer memory system connectable to a processor and having one or more programmable operational characteristics, said characteristics being defined through configuration by said computer based on the type of said processor, wherein said system is connectable to said processor by a bus, said system comprising:
[1.1(a)]	a main memory connected to said bus; and
[1.1(b)]	a cache connected to said bus;
[1.2]	wherein a programmable operational characteristic of said system determines a type of data stored by said cache.

The '740 patent at issue in *Visual Memory* relates to computer memory that can be configured to be used with different types of processors.²¹⁰ Computers often utilize “a three-tiered memory hierarchy.”²¹¹ The first tier is a slow, inexpensive memory (*e.g.*, a hard disk).²¹² The second tier is “medium speed memory” used for the computer’s main memory.²¹³ The third tier is a fast, expensive memory known as “processor cache memory.”²¹⁴ Under the prior art to the '740 patent, memory systems had to be “designed and optimized based on the specific type of processor” used.²¹⁵ This meant prior art memory lacked versatility and was expensive.²¹⁶ Using a different type of processor decreased the memory system’s efficiency, and even systems designed to operate with multiple types of processors had decreased performance for “one or all of the computers.”²¹⁷

²⁰⁸ 867 F.3d 1253 (Fed. Cir. 2017)

²⁰⁹ *See id.* at 1257. The court did not make a specific finding as to which claim was representative of U.S. Patent No. 5,953,740 (“the '740 patent”). *See id.* Instead, it cited claim 1 as an example. *See id.*

²¹⁰ *See id.* at 1255.

²¹¹ *Id.*

²¹² *See id.*

²¹³ *Id.*

²¹⁴ *Id.*

²¹⁵ *Id.*

²¹⁶ *See id.*

²¹⁷ *Id.*

The '740 patent discloses a memory system that can be programmed to operate differently depending on the processor type it is used with.²¹⁸ It consists of a main memory and three separate caches.²¹⁹ The caches “self-configure” to use the correct operational characteristic when powered on, allowing the system to perform as well or better than prior art cache memory “many times larger than the cumulative size” of the patented caches.²²⁰ The system also improves the main memory by dividing it into different sections to be accessed by different processor types.²²¹ Overall, the patent recites a system that “confers a substantial advantage by” creating the ability to use different types of processors with the same memory without harming performance.²²²

The district court granted a 12(b)(6) motion to dismiss because the claims were “directed to the ‘abstract idea of categorical data storage’” and it found the patent recites “generic and conventional” computer components, not an inventive concept.²²³ The Federal Circuit held the opposite: it ruled the claims were eligible under step one of Alice.²²⁴

The Federal Circuit cited *Enfish*, explaining that the claims there were directed to an improvement in computer function.²²⁵ To the court, the “key question” in *Enfish*’s step one analysis was whether the “focus of the claims [is] . . . on the specific asserted improvement . . . or, instead, on a process that qualifies as an ‘abstract idea’ for which computers are invoked merely as a tool.”²²⁶

The *Visual Memory* Court briefly discussed *Thales* as well.²²⁷ It explained the claims there were eligible because they were “directed to ‘systems and methods that use inertial sensors in a *non-conventional manner* to reduce errors in measuring”²²⁸

²¹⁸ See *id.* at 1255–56.

²¹⁹ See *id.*

²²⁰ *Id.* at 1256.

²²¹ See *id.*

²²² *Id.* at 1256–57.

²²³ *Id.* at 1257.

²²⁴ See *id.* at 1262.

²²⁵ See *id.* at 1258 (citing *Enfish LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016)).

²²⁶ *Id.* (quoting *Enfish*, 822 F.3d at 1335–36).

²²⁷ See *id.* at 1259 (citing *Thales Visionix Inc. v. United States*, 850 F.3d 1343 (Fed. Cir. 2017)).

²²⁸ *Id.* (quoting *Thales*, 850 F.3d at 1348–49).

The claims were eligible under step one as “directed to a technological improvement”²²⁹ The claims focus on the specific improvement, rather than an abstract idea placed on generic computer components.²³⁰ Moreover, the specification identifies improvements over the prior art and “discusses the advantages offered by the technological improvement.”²³¹

Another reason the Federal Circuit held the patent step one eligible related to preemption concerns.²³² The '740 patent does not attempt to preempt “all types and all forms” of data storage.²³³ The court found evidence of this in the specification because it identifies improvements over the prior art.²³⁴ According to the specification, the patent enables use of processors of different types without sacrificing performance.²³⁵ Additionally, manufacturers “no longer need to design a separate memory system for each type of processor.”²³⁶ Finally, the specification teaches that the disclosed caches outperform larger ones due to their configurability.²³⁷

The claims here were distinct from ineligible claims in prior cases because these claims “recite an allegedly new, improved, and more efficient memory system.”²³⁸

Judge Hughes’ dissent found that the claims are not directed to an improvement because they do not describe the specific “means or method of implementing” the claimed “programmable operational characteristic” and thus “lack[] any details” describing how the invention is realized.²³⁹ In his view, there was also no inventive concept because the patent only describes “generic computer components,” and the claim only uses those components “to perform generic computer functions.”²⁴⁰ The majority found three problems with this.²⁴¹ First, at this procedural stage (a 12(b)(6) motion to

²²⁹ *Id.*

²³⁰ *See id.* at 1259–60.

²³¹ *Id.* at 1259, 1260.

²³² *See id.* at 1259.

²³³ *Id.*

²³⁴ *See id.*

²³⁵ *See id.*

²³⁶ *Id.*

²³⁷ *See id.*

²³⁸ *Id.* at 1260.

²³⁹ *Id.* at 1263.

²⁴⁰ *Id.* at 1264.

²⁴¹ *See id.* at 1261.

dismiss), the facts must be read in the light most favorable to the non-moving party (here, the patentee).²⁴² Second, issues of adequate disclosure fall under enablement requirements, not § 101 eligibility.²⁴³ Third, the claimed invention is the ability to configure the memory, not the specific programming required to implement that configurability.²⁴⁴

9) Finjan, Inc. v. Blue Coat Systems, Inc. (Jan. 10, 2018)²⁴⁵

Representative Claim 1 of U.S. Patent No. 6,154,844 ²⁴⁶	
[1]	A method comprising:
[1.1]	receiving by an inspector a Downloadable;
[1.2]	generating by the inspector a first Downloadable security profile that identifies suspicious code in the received Downloadable; and
[1.3]	linking by the inspector the first Downloadable security profile to the Downloadable before a web server makes the Downloadable available to web clients.

Finjan owned several patents related to malware identification and protection.²⁴⁷ The eligibility issue arose with respect to U.S. Patent No. 6,154,844 (“the ‘844 patent”), which “recite[s] a system and method for providing computer security by attaching a security profile to a downloadable.”²⁴⁸ The patent involves a method of scanning an application downloaded from the web, creating a “security profile” that identifies malware in the application, then attaching the security profile to the downloaded application.²⁴⁹

²⁴² *See id.*

²⁴³ *See id.* at 1261.

²⁴⁴ *See id.* at 1261–62.

²⁴⁵ 879 F.3d 1299 (Fed. Cir. 2018).

²⁴⁶ *See id.* at 1303. Claim 1 is representative of claims 1, 7, 11, 14, and 41. *See id.* at 1302, 1303.

²⁴⁷ *See id.* at 1302.

²⁴⁸ *Id.*

²⁴⁹ *Id.* at 1303.

The Federal Circuit held the '844 patent is eligible under step one of the *Alice* test because it is not directed to an abstract idea.²⁵⁰

In its step one analysis, the Federal Circuit noted an earlier holding relating to screening applications for dangerous code: “[b]y itself, virus screening is well-known and constitutes an abstract idea.”²⁵¹ Even introducing an “intermediary computer” to perform the task is “‘perfectly conventional’ . . . and is also abstract.”²⁵²

The prior art “code-matching” method of virus scanning compared the code in the downloaded application with code of *previously-known* viruses, whereas the '844 patent produces a security profile (including *potential* threats) using a “behavior based” method of scanning.²⁵³ Thus, the Federal Circuit had to determine whether the behavior based method “constitute[d] an improvement in computer functionality.”²⁵⁴ The court found it “does a good deal more.”²⁵⁵ The invention’s ability to identify *potentially* dangerous code protects against both unknown viruses and viruses that are disguised to avoid detection by code-matching.²⁵⁶ Moreover, the invention enables flexibility in virus scanning: users can create or be assigned a “security policy” that is easily tailored to the individual and can be “alter[ed] . . . in response to evolving threats.”²⁵⁷

Like the claims in *Enfish*, the '844 patent “employs a new kind of file that enables a computer security system to do things it could not do before.”²⁵⁸ Citing the improvements conferred by the patent, the Federal Circuit held it was “directed to a non-abstract improvement in computer functionality.”²⁵⁹

Finally, the Federal Circuit rejected the arguments of the defendants, who asserted that the claims were still abstract (even if “directed to a new idea”) “because they do not sufficiently describe how to implement that idea.”²⁶⁰ The

²⁵⁰ *See id.* at 1306.

²⁵¹ *Id.* at 1304.

²⁵² *Id.*

²⁵³ *Id.*

²⁵⁴ *Id.* at 1304.

²⁵⁵ *Id.*

²⁵⁶ *See id.*

²⁵⁷ *Id.*

²⁵⁸ *Id.* at 1304–05 (citing *Enfish LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016)).

²⁵⁹ *Id.* at 1305.

²⁶⁰ *Id.* at 1305–06.

court explained the claims at issue are patent eligible because they “recite more than a mere result. Instead, they recite specific steps . . . that accomplish the desired result.”²⁶¹ In other words, the claims disclose “an inventive arrangement for accomplishing the result,” so the ’844 patent is eligible.²⁶²

10) Core Wireless Licensing S.A.R.L. v. LG Elecs. (Jan. 25, 2018)²⁶³

Representative Claim 1 of U.S. Patent No. 8,713,476 ²⁶⁴	
[1]	A computing device comprising a display screen, the computing device being configured to display on the screen a menu listing one or more applications, and additionally being configured to display on the screen an application summary that can be reached directly from the menu, wherein the application summary displays a limited list of data offered within the one or more applications, each of the data in the list being selectable to launch the respective application and enable the selected data to be seen within the respective application, and wherein the application summary is displayed while the one or more applications are in an un-launched state.

In *Core Wireless*, the Federal Circuit considered the eligibility of two patents: US Patent No. 8,713,476 and US Patent No. 8,434,020.²⁶⁵ Both of these patents are designed to improve display interfaces, especially for displays with small screens.²⁶⁶ The prior art to these patents required users to do lots of scrolling, changing views, and navigating through layers of information to access data or a function they wanted.²⁶⁷ The improvement described in these patents allowed for faster access to the data and applications by creating a summary window containing data or functions.²⁶⁸

²⁶¹ *Id.* at 1305.

²⁶² *Id.* at 1305–06.

²⁶³ 880 F.3d 1356 (Fed. Cir. 2018).

²⁶⁴ *See id.* at 1359. The district court found independent claim 1 of U.S. Patent No. 8,713,476 (“the ’476 patent”) representative of asserted (dependent) claims 8, and 9 of the ’476 patent, and dependent claims 11 and 13 of U.S. Patent No. 8,434,020 (“the ’020 patent”). *See id.* at 1360.

²⁶⁵ *See id.* at 1359.

²⁶⁶ *See id.*

²⁶⁷ *See id.* at 1363.

²⁶⁸ *See id.*

The district court denied a motion for summary judgment, holding that the claims were patent eligible.²⁶⁹ On appeal, the Federal Circuit affirmed this decision.²⁷⁰ It recognized the claims were not directed to an abstract idea under step one of *Alice*.²⁷¹

The Federal Circuit began by summarizing many of its prior decisions finding eligibility.²⁷² It first explained that the patent(s) in *Enfish* were eligible because they claimed a “*specific type of data structure designed to improve the way a computer stores and retrieves data . . .*”²⁷³ Next, the court addressed the claims at issue in *Thales*.²⁷⁴ There, the claims related to specific configurations and methods that improved computer function by eliminating difficulties in conventional methods.²⁷⁵ The court then summarized the *Visual Memory* holding: the invention in that case introduced flexibility not available in the prior art and simultaneously eliminated the need to design multiple types of memory for each type of processor.²⁷⁶ Thus, the claims were eligible.²⁷⁷ Finally, the court noted that the claims in *Finjan* were eligible because they enabled computer security systems to do new things.²⁷⁸

The Federal Circuit held the claims are directed to an improved user interface, not to an index, as asserted by the alleged infringers.²⁷⁹ The court reached this conclusion because the claimed ways of summarizing and presenting information were specific.²⁸⁰ Under the claim limitations, the summary window must be accessed in a certain way, the information to be displayed must be limited to certain types, and the relevant applications must be in a particular state (unlaunched).²⁸¹ Thus, the patent claims a specific

²⁶⁹ *See id.* at 1360.

²⁷⁰ *See id.* at 1359.

²⁷¹ *See id.* at 1363.

²⁷² *See id.* at 1361–62.

²⁷³ *Id.* at 1362 (quoting *Enfish LLC v. Microsoft Corp.*, 822 F.3d 1327, 1338–39 (Fed. Cir. 2016)).

²⁷⁴ *See id.* (citing *Thales Visionix Inc. v. United States*, 850 F.3d 1343 (Fed. Cir. 2017)).

²⁷⁵ *See id.* (citing *Thales*, 850 F.3d at 1348–49).

²⁷⁶ *See id.* (citing *Visual Memory LLC v. NVIDIA Corp.*, 867 F.3d 1253, 1259 (Fed. Cir. 2017)).

²⁷⁷ *See id.* (citing *Visual Memory*, 867 F.3d at 1259).

²⁷⁸ *See id.* (citing *Finjan, Inc. v. Blue Coat Systems, Inc.*, 879 F.3d 1299, 1304, 1305 (Fed. Cir. 2018)).

²⁷⁹ *See id.*

²⁸⁰ *See id.* at 1362–63.

²⁸¹ *See id.*

improvement over the prior art: an improved user interface.²⁸² The specification also supports the court’s conclusion because its language teaches the invention as an improvement over the prior art.²⁸³ Therefore, the claims are directed to an improvement in computer functionality and are eligible under *Alice* step one.²⁸⁴

11) Aatrix Software v. Green Shades Software (Feb. 14, 2018)²⁸⁵

Representative Claim 1 of U.S. Patent No. 7,171,615 ²⁸⁶	
[1]	A data processing system for designing, creating, and importing data into, a viewable form viewable by the user of the data processing system, comprising:
[1.1(a)]	a form file that models the physical representation of an original paper form and establishes the calculations and rule conditions required to fill in the viewable form;
[1.1(b)]	a form file creation program that imports a background image from an original form, allows a user to adjust and test-print the background image and compare the alignment of the original form to the background test-print, and creates the form file;
[1.1(c)]	a data file containing data from a user application for populating the viewable form; and
[1.1(d)]	a form viewer program operating on the form file and the data file, to perform calculations, allow the user of the data processing system to review and change the data, and create viewable forms and reports.

The Federal Circuit considered two patents which relate to systems and methods of generating a “viewable form” of data that users can manipulate on

²⁸² *See id.* at 1363.

²⁸³ *See id.*

²⁸⁴ *See id.*

²⁸⁵ 882 F. 3d 1121 (Fed. Cir. 2018).

²⁸⁶ *See id.* at 1223–24. Claim 1 is representative of asserted claims 1, 2 and 22 of U.S. Patent No. 7,171,615 (“the ’615 patent”), and claims 1, 13 and 17 of U.S. Patent No. 8,984,393 (“the ’393 patent”). *See id.*

their computer.²⁸⁷ The prior art to these patents only allowed extraction of data from databases that were “widely available” and had “published . . . schemas.”²⁸⁸ The claims at issue allegedly improved the prior art in two ways: (1) they allowed the use of data from third party applications without having to customize for each application, and (2) they eliminated the need to hand-type data, which resulted in elimination of transcription errors.²⁸⁹

The district court held that all the claims were ineligible and granted Green Shades’ 12(b)(6) motion to dismiss.²⁹⁰ Aatrix subsequently asked to file a second amended complaint, arguing that the amended complaint provided allegations and evidence “preclud[ing] a [12(b)(6)] dismissal”²⁹¹ The district court denied this request.²⁹²

The Federal Circuit vacated the dismissal because the second amended complaint contained factual allegations that the district court should have considered.²⁹³ The Federal Circuit recognized that eligibility can be decided during a 12(b)(6) motion to dismiss, but held that can only be the case where there are no “plausible factual allegations” which, when taken as true, prevent such a decision.²⁹⁴ In other words, the issue of eligibility is a question of law with underlying fact questions that may preclude dismissal under 12(b)(6).²⁹⁵

The Federal Circuit explained the proposed second amended complaint had factual allegations which impact the § 101 analysis.²⁹⁶ First, the proposed amended complaint alleges the patent is directed to an improvement in importing data from third party software.²⁹⁷ Second, it raises the question of whether a particular claim term “constitutes an inventive concept, alone or in combination with other elements”²⁹⁸ Third, it describes the invention’s development, the prior art’s problems, and “presents specific allegations”

²⁸⁷ *Id.* at 1123.

²⁸⁸ *Id.* at 1127.

²⁸⁹ *See id.*

²⁹⁰ *See id.* at 1124.

²⁹¹ *Id.*

²⁹² *See id.*

²⁹³ *See id.*

²⁹⁴ *Id.* at 1125.

²⁹⁵ *See id.* at 1126.

²⁹⁶ *See id.*

²⁹⁷ *See id.* at 1127.

²⁹⁸ *Id.* at 1126.

about the improvements of the invention.²⁹⁹ According to the court, “these allegations suggest [the patent] is directed to an improvement in the computer technology itself, and not directed to generic computer components performing conventional activities.”³⁰⁰

In addition, Alice step two requires determining whether the claims recite something “well-understood, routine, and conventional . . .”³⁰¹ That question “is a question of fact” which “cannot be answered adversely to the patentee based on the sources properly considered on a motion to dismiss . . .”³⁰² Here, the proposed second amended complaint raised “concrete allegations” related to that inquiry, and the record presented no reason to reject them.³⁰³

Judge Reyna dissented-in-part; he took issue with adding a “significant factual component” for two reasons.³⁰⁴ First, adding a fact question opens the door to a flood of extrinsic evidence.³⁰⁵ Under the majority’s holding, all a patentee must do to defeat a motion to dismiss is amend the complaint to allege extrinsic evidence, even if it is inconsistent with the “intrinsic record.”³⁰⁶ This goes against the “utility of the 12(b)(6) procedure” because it is “converted into a full-blown factual inquiry . . .”³⁰⁷ Second, “[t]he motion to dismiss on appeal only challenges the first amended complaint,” not the second.³⁰⁸ Judge Reyna felt that the majority was improperly “prejudg[ing]” what it thought the result should be on remand, and found the opinion on the second amended complaint was entirely dicta.³⁰⁹

²⁹⁹ *Id.* at 1127 (explaining Aatrix alleged improvements such as decreased memory usage and faster processing).

³⁰⁰ *Id.*

³⁰¹ *Id.* at 1128.

³⁰² *Id.* (noting proper sources include complaint, patent, and materials subject to judicial notice).

³⁰³ *Id.*

³⁰⁴ *Id.* at 1130 (Reyna, J., dissenting).

³⁰⁵ *See id.* (Reyna, J., dissenting).

³⁰⁶ *See id.* (Reyna, J., dissenting).

³⁰⁷ *Id.* at 1130–31 (Reyna, J., dissenting).

³⁰⁸ *Id.* at 1131 (Reyna, J., dissenting).

³⁰⁹ *Id.* (Reyna, J., dissenting).

12) Vanda Pharms. Inc. v. West-Ward Pharms. Int'l (Apr. 13, 2018)³¹⁰

Representative Claim 1 of U.S. Patent No. 8,586,610 ³¹¹	
[1]	A method for treating a patient with iloperidone, wherein the patient is suffering from schizophrenia, the method comprising the steps of:
[1.1]	determining whether the patient is a CYP2D6 poor metabolizer by:
[1.1(a)]	obtaining or having obtained a biological sample from the patient; and
[1.1(b)]	performing or having performed a genotyping assay on the biological sample to determine if the patient has a CYP2D6 poor metabolizer genotype; and
[1.2]	if the patient has a CYP2D6 poor metabolizer genotype, then internally administering iloperidone to the patient in an amount of 12 mg/day or less, and
[1.3]	if the patient does not have a CYP2D6 poor metabolizer genotype, then internally administering iloperidone to the patient in an amount that is greater than 12 mg/day, up to 24 mg/day,
[1.4]	wherein a risk of QTc prolongation for a patient having a CYP2D6 poor metabolizer genotype is lower following the internal administration of 12 mg/day or less than it would be if the iloperidone were administered in an amount of greater than 12 mg/day, up to 24 mg/day.

The *Vanda* Court considered the eligibility of the claims recited by U.S. Patent No. 8,586,610 (“the ‘610 patent”).³¹² The method claims at issue cover treating schizophrenia patients using a drug called iloperidone.³¹³ According to the

³¹⁰ 887 F.3d 1117 (Fed. Cir. 2018).

³¹¹ *See id.* at 1121. Claim 1 is representative of claims 1–9, 11–13, and 16. *See id.* at 1120.

³¹² *See id.* at 1133–36.

³¹³ *See id.* at 1121.

patent, the dosage of the drug is determined based on the activity of a certain gene in the patient.³¹⁴ For those patients who have lower activity from that gene (“poor metabolizers”), ordinary treatment could lead to “serious cardiac problems.”³¹⁵ The ’610 patent teaches that poor metabolizers can be more safely treated by giving them a lower than normal dose.³¹⁶

The lower court held that the claims were eligible under § 101 because it was not convinced they recited routine or conventional steps.³¹⁷ The Federal Circuit also held the claims were eligible, but it did not address the inventive concept inquiry because it found them eligible under step one.³¹⁸

The Federal Circuit reached its conclusion by distinguishing these claims from similar claims that were previously held patent-ineligible.³¹⁹ Unlike the claims in *Mayo*, the inventors here “recognized the relationships between” the drug and the body’s response, “but that [was] not what [was] claimed.”³²⁰ Instead, the patentees “claimed an *application* of that relationship.”³²¹ This was evidenced by the claims themselves, which required a specific dosage to be administered.³²² The court found further support in the specification, which “highlight[ed] the significance of the specific dosages” by explaining the correlation between the dosage and the risk of heart problems.³²³

The Federal Circuit also noted that preemption was not a concern for the ’610 patent because the claims involved actually “*using* the natural relationship.”³²⁴ In *Mayo*, the claimed test “simply ‘indicate[d]’ a need to increase or decrease dosage, without . . . other added steps to take,” while these claims “recite the steps of *carrying out a dosage regimen* based on the results” of a test.³²⁵

Because the claims at issue were “directed to a specific method of treatment for specific patients using a specific compound at specific doses to achieve a

³¹⁴ *See id.*

³¹⁵ *Id.*

³¹⁶ *See id.*

³¹⁷ *See id.* at 1123.

³¹⁸ *See id.* at 1134.

³¹⁹ *See id.* at 1134–35 (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66 (2012)).

³²⁰ *Id.* at 1135.

³²¹ *Id.* (emphasis added).

³²² *See id.*

³²³ *Id.*

³²⁴ *Id.* (citing *Mayo*, 566 U.S. at 77).

³²⁵ *Id.* (quoting *Mayo*, 566 U.S. at 75).

specific outcome,” the Federal Circuit found them patent eligible under *Alice* step one.³²⁶

Chief Judge Prost dissented, arguing that the claims are indistinguishable from *Mayo*.³²⁷ She explained that, like *Mayo*, the claims of the ’610 patent “also set[] forth a natural relationship”³²⁸ In response to the majority’s focus on the specificity of the claims, Chief Judge Prost noted that “reciting specific metes and bounds in the claims did not prevent the Supreme Court from concluding those claims set forth a natural law in *Mayo*.”³²⁹ In her view, the patent was directed to a natural law and did not add an inventive concept because “[i]t claim[ed] no more than instructions directing [the] audience to apply the natural law in a routine and conventional manner.”³³⁰

13) Data Engine Technologies LLC v. Google LLC (Oct. 9, 2018)³³¹

Representative Claim 12 of U.S. Patent No. 5,590,259 ³³²	
[1]	In an electronic spreadsheet system for storing and manipulating information, a computer-implemented method of representing a three-dimensional spreadsheet on a screen display, the method comprising:
[1.1]	displaying on said screen display a first spreadsheet page from a plurality of spreadsheet pages, each of said spreadsheet pages comprising an array of information cells arranged in row and column format, at least some of said information cells storing user-supplied information and formulas operative on said user-supplied information, each of said information cells being uniquely identified by a spreadsheet page identifier, a column identifier, and a row identifier;

³²⁶ *Id.* at 1136.

³²⁷ *Id.* at 1140 (Prost, C.J., dissenting).

³²⁸ *Id.* at 1141 (Prost, C.J., dissenting).

³²⁹ *Id.* (Prost, C.J., dissenting).

³³⁰ *Id.* at 1142 (Prost, C.J., dissenting).

³³¹ 906 F.3d 999 (Fed. Cir. 2018).

³³² *See id.* at 1004–05. Claim 12 is “representative of all asserted claims of the Tab Patents” (claims 1–2, 12–13, 16–17, 19, 24, 46–47, and 51 of U.S. Patent No. 5,590,259 (“the ’259 patent”), claims 1–2, 5–7, 10, 13, and 35 of U.S. Patent No. 5,784,545 (“the ’545 patent”), and claims 1, 3, 6–7, 10, 12–13, 15, and 18 of U.S. Patent No. 6,282,551 (“the ’551 patent”)). *Id.*

[1.2]	while displaying said first spreadsheet page, displaying a row of spreadsheet page identifiers along one side of said first spreadsheet page, each said spreadsheet page identifier being displayed as an image of a notebook tab on said screen display and indicating a single respective spreadsheet page, wherein at least one spreadsheet page identifier of said displayed row of spreadsheet page identifiers comprises at least one user-settable identifying character;
[1.3]	receiving user input for requesting display of a second spreadsheet page in response to selection with an input device of a spreadsheet page identifier for said second spreadsheet page;
[1.4]	in response to said receiving user input step, displaying said second spreadsheet page on said screen display in a manner so as to obscure said first spreadsheet page from display while continuing to display at least a portion of said row of spreadsheet page identifiers; and
[1.5]	receiving user input for entering a formula in a cell on said second spreadsheet page, said formula including a cell reference to a particular cell on another of said spreadsheet pages having a particular spreadsheet page identifier comprising at least one user-supplied identifying character, said cell reference comprising said at least one user-supplied identifying character for said particular spreadsheet page identifier together with said column identifier and said row identifier for said particular cell.

In *Data Engine Techs.*, the Federal Circuit considered a group of patents it referred to as the “Tab Patents.”³³³ The court noted the patents disclose systems and methods of adding “familiar, user-friendly interface objects—specifically notebook tabs” to electronic spreadsheets.³³⁴ According to the court, prior to these patents, operating electronic spreadsheets required users to enter various commands to carry out simple tasks, and such commands were often found buried in various menus, but users often memorized the

³³³ *See id.* at 1002. The Tab Patents include the ’259 patent, the ’545 patent, and the ’551 patent. *See id.* The Federal Circuit also considered U.S. Patent No. 5,303,146, but held it ineligible. *See id.* Thus, it is outside the scope of this article.

³³⁴ *Id.* at 1002.

most common commands.³³⁵ The court also noted some prior art electronic spreadsheets allowed three-dimensional data storage via the creation of multiple “pages,” but this only served to increase the complexity of using the spreadsheets.³³⁶

According to the Federal Circuit, compared with the prior art, the invention makes multipage electronic spreadsheets more manageable because the user does not have to remember complicated commands.³³⁷ The court explained the patented system gives the user the ability to switch between multiple different “pages” of spreadsheets by selecting a tab at the bottom of the screen, rather than the prior art method of finding and entering a command.³³⁸

The district court held that the Tab Patents are ineligible because they are directed to abstract ideas and do not have an inventive step.³³⁹ Specifically, it found they are “directed to the abstract idea of using notebook-type tabs to label and organize spreadsheets.”³⁴⁰ The district court deemed this an abstract idea “that humans have commonly performed entirely in their minds, with the aid of columnar pads and writing instruments.”³⁴¹

The Federal Circuit reversed the eligibility decision with respect to the Tab Patents.³⁴² It held that the claims of the Tab Patents are eligible because they are not directed to an abstract idea, except for claim 1 of the ’551 patent.³⁴³

The Federal Circuit began its analysis of the Tab Patents at step one of *Alice*.³⁴⁴ According to the court, the patents “provide[] a specific solution to then-existing technological problems in computers and prior art electronic spreadsheets.”³⁴⁵ As discussed above, these spreadsheets were complex and “hindered a user’s ability to find or access the many commands and features

³³⁵ *Id.*

³³⁶ *See id.*

³³⁷ *See id.* at 1003.

³³⁸ *Id.* at 1003–04.

³³⁹ *See id.* at 1006.

³⁴⁰ *Id.*

³⁴¹ *Id.*

³⁴² *See id.*

³⁴³ *See id.* at 1002. The court’s analysis with respect to claim 1 of the ’551 patent is not discussed here because that claim was found ineligible. *See id.* at 1101. It is thus outside the scope of this article.

³⁴⁴ *See id.* at 1007–11.

³⁴⁵ *Id.* at 1008.

available”³⁴⁶ According to the court, the invention disclosed by the Tab Patents addresses this problem with its “highly intuitive, user-friendly interface”³⁴⁷ The court made specific mention of the industry praise received by the invention for its improvements to the ability of computers to function “as a tool able to instantly access all parts of complex three-dimensional electronic spreadsheets.”³⁴⁸

The Federal Circuit explained that representative claim 12 “recites specific steps detailing the method of navigating through spreadsheet pages.”³⁴⁹ According to the court, the patent “does not recite the idea of navigating . . . using buttons or a generic method of labeling and organizing spreadsheets.”³⁵⁰ Instead, the court found that it “require[s] a specific interface and implementation for navigating complex three-dimensional spreadsheets using techniques unique to computers.”³⁵¹

The Federal Circuit analogized the claims of the Tab Patents to those in *Core Wireless*.³⁵² In that case, the invention was different than the prior art in that it “spared users from time-consuming operations of navigating to, opening up, and then navigating within, each separate application.”³⁵³ The court found the Tab Patents also recite methods different from the prior art, and those methods improve the ability of users to “rapidly access[] and process[] information.”³⁵⁴

The Federal Circuit found the claims in *Affinity Labs*, *Capital One*, and *Erie Indemnity* were all dissimilar to the Tab Patents.³⁵⁵ According to the court, those cases involved claims “directed to displaying a graphical user interface or collecting, manipulating, or organizing information to improve navigation

³⁴⁶ *Id.* at 1008.

³⁴⁷ *Id.*

³⁴⁸ *Id.*

³⁴⁹ *Id.*

³⁵⁰ *Id.*

³⁵¹ *Id.*

³⁵² *See id.* at 1009 (citing *Core Wireless Licensing S.A.R.L. v. LG Electronics, Inc.*, 880 F.3d 1356 (Fed. Cir. 2018)).

³⁵³ *Id.* (citing *Core Wireless*, 880 F.3d at 1363).

³⁵⁴ *Id.* (citing *Core Wireless*, 880 F.3d at 1363).

³⁵⁵ *See id.* at 1010 (citing *Affinity Labs of Tex., LLC v. DirecTV, LLC*, 838 F.3d 1253 (Fed. Cir. 2016); *Intellectual Ventures I LLC v. Capital One Fin. Corp.*, 850 F.3d 1332 (Fed. Cir. 2017); *Intellectual Ventures I LLC v. Erie Indem. Co.*, 850 F.3d 1315 (Fed. Cir. 2017)).

through three-dimensional spreadsheets.”³⁵⁶ On the other hand, the court found the Tab Patents include “a *specific* structure (i.e., notebook tabs) within a *particular* spreadsheet display that performs a *specific* function (i.e., navigating within a three-dimensional spreadsheet).”³⁵⁷ Therefore, the court held the claims here were dissimilar from the claims the Federal Circuit had previously found ineligible.³⁵⁸

According to the Federal Circuit, despite the fact that tabbed notebooks have long been used to organize information, “[i]t is not enough . . . to merely trace the invention to some real-world analogy.”³⁵⁹ The court explained “[t]he eligibility question is not whether anyone has ever used tabs to organize information”³⁶⁰ Instead, the “question . . . is whether the claim is ‘directed to’ the abstract idea itself”³⁶¹ The court answered that question: the claims of the Tab Patents “when read as a whole, in light of the specification, . . . [are] directed to more than a generic or abstract idea as [they] claim[] a particular manner of navigating three-dimensional spreadsheets, implementing an improvement in electronic spreadsheet functionality.”³⁶²

³⁵⁶ *Id.*

³⁵⁷ *Id.* (emphasis added).

³⁵⁸ *See id.* (“[U]nlike ineligible claims that merely ‘collect[], organiz[e], and display . . . information on a generic display device,’ claim 12 recites ‘a specific improvement to the way computers . . . operate.’”).

³⁵⁹ *Id.* at 1011.

³⁶⁰ *Id.*

³⁶¹ *Id.*

³⁶² *Id.*

14) Ancora Technologies, Inc. v. HTC America, Inc. (Nov. 16, 2018)³⁶³

Claim 1 of U.S. Patent No. 6,411,941 ³⁶⁴	
[1]	A method of restricting software operation within a license for use with a computer including an erasable, non-volatile memory area of a BIOS of the computer, and a volatile memory area; the method comprising the steps of:
[1.1]	selecting a program residing in the volatile memory,
[1.2]	using an agent to set up a verification structure in the erasable, non-volatile memory of the BIOS, the verification structure accommodating data that includes at least one license record,
[1.3]	verifying the program using at least the verification structure from the erasable non-volatile memory of the BIOS, and
[1.4]	acting on the program according to the verification.

The asserted patent the Federal Circuit considered in *Ancora* relates to a method for preventing a computer from running software outside its license.³⁶⁵ Under one prior art method, license information for software was stored on a hard drive, but that method was susceptible to hacking.³⁶⁶ Another method involved installing a physical “dongle” in the computer to authenticate software, but that was “costly, inconvenient, and not suitable for internet distribution.”³⁶⁷

The method in the '941 patent uses a “key” (a unique identifier for a computer which cannot be changed) and a “license record” (a license for each application containing the author’s name, the program’s name, and the number of users licensed to use the program).³⁶⁸ The invention of the patent involves storing

³⁶³ 908 F.3d 1343 (Fed. Cir. 2018).

³⁶⁴ *See id.* at 1345–46. The court did not make a specific finding as to which claim was representative of U.S. Patent No. 6,411,941 (“the '941 patent”), nor did it specify which claims were asserted. *See id.* However, it only considered claim 1 because that was where “the parties focused their arguments . . .” *Id.* at 1345.

³⁶⁵ *See id.* at 1344.

³⁶⁶ *See id.*

³⁶⁷ *Id.*

³⁶⁸ *Id.* at 1345.

authentication information in the modifiable “Basic Input Output System” (BIOS) memory instead of on a hard disk or dongle.³⁶⁹ Under the patent, the license record is encrypted using the computer’s key, then stored in BIOS, which is relatively difficult to hack.³⁷⁰ When the program in question starts up, the computer takes a copy of the license record from the program, encrypts that, then checks to see if the result matches what is stored in BIOS memory.³⁷¹ This method is different than the standard use of BIOS memory; it is ordinarily used to store programs that help the computer boot up.³⁷²

The district court held the claims of the ’941 patent ineligible and granted a motion to dismiss, but the Federal Circuit reversed because it found the claims eligible under step one of *Alice*.³⁷³ According to the appellate court, “the claimed advance is a concrete assignment of specified functions among a computer’s components to improve computer security,” and therefore patentable.³⁷⁴

The Federal Circuit began its analysis with a review of eligibility case law.³⁷⁵ The court characterized its *Core Wireless* holding, explaining that the claims there were not directed to an abstract idea because they were directed to a “specific type of index for a specific type of user.”³⁷⁶ It also cited the *Data Engine* decision.³⁷⁷ The court explained the claims in *Data Engine* were not directed to an abstract idea because they presented “a specific solution to then-existing technological problems,” which were “addressed in a particular way”³⁷⁸ The *Data Engine* Court distinguished other cases because its claims “recite[d] ‘a specific structure (i.e., notebook tabs) within a particular spreadsheet display that performs a specific function (i.e., navigating within a three-dimensional spreadsheet).”³⁷⁹ According to the *Ancora* Court, § 101 precedent also shows improvements to computer security can be “non-

³⁶⁹ *Id.*

³⁷⁰ *See id.*

³⁷¹ *See id.*

³⁷² *See id.*

³⁷³ *See id.* at 1344.

³⁷⁴ *Id.*

³⁷⁵ *Id.* at 1347–48.

³⁷⁶ *See id.* at 1348 (citing *Core Wireless Licensing S.A.R.L. v. LG Electronics, Inc.*, 880 F.3d 1356, 1362–63 (Fed. Cir. 2018)).

³⁷⁷ *See id.* (citing *Data Engine Techs. LLC v. Google LLC*, 906 F.3d 999 (Fed. Cir. 2018)).

³⁷⁸ *Id.* (quoting *Data Engine*, 906 F.3d at 1008).

³⁷⁹ *Id.* (quoting *Data Engine*, 906 F.3d at 1010–11).

abstract” improvements to computer function, “if done by a specific technique that departs from earlier approaches to solve a specific computer problem.”³⁸⁰

Here, the patent “specifically identifies” how it improves computer function “in an assertedly unexpected way[.]”³⁸¹ It relies on the unique properties of BIOS memory, which, according to the patent, had not previously been used this way.³⁸² This unexpected use results in improvements to licensing software.³⁸³ The Federal Circuit further noted the prosecution history supports the assertion that the invention is unexpected.³⁸⁴

Because the Federal Circuit found the patent survived step one, it did not continue to step two.³⁸⁵ However, due to the overlap between the two steps, it explained some of its step two precedent indirectly reinforces the decision.³⁸⁶ According to the court, the same logic it applied in *Bascom* applied here.³⁸⁷ There, the claims were eligible despite the fact that internet filtering was known at the time.³⁸⁸ In both cases, “the patent describes how its particular *arrangement* of elements is a technical improvement over the prior art” methods.³⁸⁹

15) Natural Alternatives v. Creative Compounds (Mar. 15, 2019)³⁹⁰

Natural Alternatives asserted five patents against Creative Compounds, LLC: Patent No. 5,965,596, Patent No. 7,825,084, Patent No. 7,504,376, Patent No. 8,993,610, Patent No. 8,470,865, and Patent No. RE45,947.³⁹¹ The asserted

³⁸⁰ *Id.* (The security improvement was “against a computer’s unauthorized use of a program . . .”).

³⁸¹ *Id.* at 1348–49.

³⁸² *See id.* at 1348–49.

³⁸³ *See id.*

³⁸⁴ *See id.* at 1349.

³⁸⁵ *See id.*

³⁸⁶ *See id.*

³⁸⁷ *See id.* (citing *Bascom Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341 (Fed. Cir. 2016)).

³⁸⁸ *See id.* (citing *Bascom*, 827 F.3d at 1349–50).

³⁸⁹ *Id.* (emphasis added) (quoting *Bascom*, 827 F.3d at 1349–50).

³⁹⁰ 918 F.3d 1338 (Fed. Cir. 2019).

³⁹¹ *See id.* at 1341.

patents concern dietary supplements which use an amino acid called beta-alanine to prevent fatigue in muscle tissue.³⁹²

The district court entered a judgment on the pleadings, holding that the asserted claims are not patent eligible.³⁹³ But the Federal Circuit reversed, holding that the claims survive step one of *Alice* because they are not directed to an ineligible concept.³⁹⁴ The Federal Circuit divided the patents into three sections: method claims,³⁹⁵ product claims,³⁹⁶ and manufacturing claims.³⁹⁷

a) The “Method Claims”

Representative Claim 1 of U.S. Patent No. 5,965,596 ³⁹⁸	
[1]	A method of regulating hydronium ion concentrations in a human tissue comprising:
[1.1]	providing an amount of beta-alanine to blood or blood plasma effective to increase beta-alanylhistidine dipeptide synthesis in the human tissue; and
[1.2]	exposing the tissue to the blood or blood plasma, whereby the concentration of beta-alanylhistidine is increased in the human tissue.

Representative Claim 1 of U.S. Patent No. 8,470,865 ³⁹⁹	
[1]	A method of increasing anaerobic working capacity in a human subject, the method comprising:
[1.1(a)]	providing to the human subject an amount of an amino acid to blood or blood plasma effective to increase beta-

³⁹² *See id.*

³⁹³ *See id.*

³⁹⁴ *See id.* at 1350.

³⁹⁵ *See id.* at 1343.

³⁹⁶ *See id.* at 1347.

³⁹⁷ *See id.* at 1349.

³⁹⁸ *See id.* at 1343. Claim 1 of U.S. Patent No. 5,965,596 (“the ‘596 patent”) is representative, but the court did not specifically identify which claims were asserted. *See id.*

³⁹⁹ *See id.* at 1343–44. Claim 1 of U.S. Patent No. 8,470,865 (“the ‘865 patent”) is representative, but the court did not specifically identify which claims were asserted. *See id.*

	alanylhistidine dipeptide synthesis in the tissue, wherein said amino acid is at least one of:
[1.1(a)(i)]	beta-alanine that is not part of a dipeptide, polypeptide or oligopeptide;
[1.1(a)(ii)]	an ester of beta-alanine that is not part of a dipeptide, polypeptide or oligopeptide; or
[1.1(a)(iii)]	an amide of beta-alanine that is not part of a dipeptide, polypeptide or oligopeptide; and
[1.1(b)]	exposing the tissue to the blood or blood plasma, whereby the concentration of beta-alanylhistidine is increased in the tissue,
[1.2]	wherein the amino acid is provided through a dietary supplement.

The Federal Circuit considered two representative claims from this set: claim 1 of the '596 patent, and claim 1 of the '865 patent.⁴⁰⁰ Though both of these claims “utilize an underlying natural law,” that does not mean they are directed to the natural law.⁴⁰¹ Similar to the claims in *Vanda*, the Method Claims “contain specific elements that clearly establish they are doing more than simply reciting a natural law.”⁴⁰² Those specific elements include identifying the result the method achieves, identifying “a compound to be administered to achieve the claimed result,” and placing a limitation on the dosage to be administered.⁴⁰³ Following the *Vanda* Court’s analysis, the Federal Circuit found further support in the specification, which identifies a method to determine the dosage.⁴⁰⁴ As a result, the Method Claims go “far beyond merely stating a law of nature”⁴⁰⁵

It did not matter to the Federal Circuit that the active ingredient was “a molecule that occurs in nature and is consumed as part of the human diet”⁴⁰⁶ It explained that claiming a method *using* a natural product is different than claiming the natural product itself.⁴⁰⁷ Furthermore, the claims required

⁴⁰⁰ *See id.* at 1343.

⁴⁰¹ *Id.* at 1345.

⁴⁰² *Id.*

⁴⁰³ *Id.* at 1345–46.

⁴⁰⁴ *See id.* at 1346.

⁴⁰⁵ *Id.*

⁴⁰⁶ *Id.*

⁴⁰⁷ *See id.*

administering an amount of the active ingredient that is not naturally occurring, and in fact “greatly exceeds natural levels.”⁴⁰⁸

Because the Method Claims were treatment claims which “cover using a natural product in unnatural quantities to alter a patient’s natural state” and because they outline particular dosages to be applied, the Federal Circuit held the Method Claims survive step one.⁴⁰⁹ Even if the court reached step two of *Alice*, it recognized there were factual questions about whether the “dietary supplement limitation was well-understood, routine, and conventional”⁴¹⁰ This factual dispute meant that the eligibility question should not have been determined adversely to the non-movant (patentee) at this procedural stage.⁴¹¹

b) The “Product Claims”

Representative Claim 6 of U.S. Patent No. 7,504,376 ⁴¹²	
[1]	A composition, comprising:
[1.1]	glycine; and
[1.2(a)]	an amino acid selected from the group consisting of a beta-alanine, an ester of a beta-alanine, and an amide of a beta-alanine, or
[1.2(b)]	a di-peptide selected from the group consisting of a beta-alanine di-peptide and a beta-alanylhistidine di-peptide.
[5]	The composition of claim 1, wherein the composition is a dietary supplement or a sports drink.
[6]	The composition of claim 5, wherein the dietary supplement or sports drink is a supplement for humans.

Representative Claim 1 of U.S. Patent No. 7,825,084 ⁴¹³	
[1]	A human dietary supplement, comprising a beta-alanine in a unit dosage of between about 0.4 grams to 16 grams, wherein the supplement provides a unit dosage of beta-alanine.

⁴⁰⁸ *Id.*

⁴⁰⁹ *Id.* at 1346–47.

⁴¹⁰ *Id.* at 1347.

⁴¹¹ *See id.*

⁴¹² *See id.* at 1347–48. Claim 6 of U.S. Patent No. 7,504,376 is representative, but the court did not specifically identify which claims were asserted. *See id.*

⁴¹³ *See id.* at 1347–48. Claim 1 of U.S. Patent No. 7,825,084 is representative, but the court did not specifically identify which claims were asserted. *See id.*

The Federal Circuit held the Product Claims were not “directed to beta-alanine,” a natural product.⁴¹⁴ Although these claims “incorporate natural products” into their specific formulations, the court recognized those formulations “have different characteristics” than in the naturally occurring state and, consequently, can be used differently than the natural products themselves.⁴¹⁵ Those characteristics include “particular dosage forms.”⁴¹⁶ According to the court, the allegations relating to the utility of the particular dosage forms were sufficient to survive a judgment on the pleadings.⁴¹⁷

The Federal Circuit further noted that the fact that two natural products were combined into one was “not necessarily sufficient” to show the claims should fail step one.⁴¹⁸ Here, it was important that glycine and beta-alanine were combined to produce “synergistic effects allowing for outcomes that the individual components would not have.”⁴¹⁹

Even if the Federal Circuit had moved on to step two, the Product Claims raised the same factual question as the Method Claims, so a determination was not appropriate at this procedural phase.⁴²⁰

c) The “Manufacturing Claims”

Representative Claim 1 of U.S. Patent No. 8,993,610 ⁴²¹	
[1]	Use of beta-alanine in manufacturing a human dietary supplement for oral consumption;
[1.1]	supplying the beta-alanine, which is not part of a dipeptide, polypeptide or oligopeptide, as a single ingredient in a manufacturing step of the human dietary supplement or

⁴¹⁴ *Id.* at 1348.

⁴¹⁵ *Id.*

⁴¹⁶ *Id.*

⁴¹⁷ *See id.* at 1349. For example, the '376 patent requires enough beta-alanine in a sports drink to “effectively increase[] athletic performance,” and the patent “provides a method for determining such an amount.” *See id.* at 1346.

⁴¹⁸ *Id.* at 1349.

⁴¹⁹ *Id.* An expert declaration, an article attached to an expert report, and a sentence in the specification supported the allegations of synergistic effect. *See id.*

⁴²⁰ *See id.*

⁴²¹ *See id.* at 1349–50. Claim 1 of U.S. Patent No. 8,993,610 is representative, but the court did not specifically identify which claims were asserted. *See id.*

[1.2]	mixing the beta-alanine, which is not part of a dipeptide, polypeptide or oligopeptide, in combination with at least one other ingredient for the manufacture of the human dietary supplement,
[1.3]	whereby the manufactured human dietary supplement is for oral consumption of the human dietary supplement in doses over a period of time increases beta-alanyl histidine levels in muscle tissue sufficient to delay the onset of fatigue in the human.

The Federal Circuit only addressed the Manufacturing Claims briefly.⁴²² It noted that these claims were “even further removed from the natural law and product of nature at issue in the Method Claims and Product Claims.”⁴²³ Given that the other two sets of claims were not directed to laws or products of nature, the court did not see how the “manufacture of [that] non-natural supplement” could fail step one.⁴²⁴

16) SRI Int’l v. Cisco (Mar. 20, 2019, modified July 12, 2019)⁴²⁵

Representative Claim 1 of U.S. Patent No. 6,711,615 ⁴²⁶	
[1]	A computer-automated method of hierarchical event monitoring and analysis within an enterprise network comprising:
[1.1]	deploying a plurality of network monitors in the enterprise network;
[1.2]	detecting, by the network monitors, suspicious network activity based on analysis of network traffic data selected from one or more of the following categories: {network packet data transfer commands, network packet data transfer errors, network packet data volume, network connection requests, network connection denials, error codes included in a network packet, network connection acknowledgements, and network packets indicative of

⁴²² *See id.*

⁴²³ *Id.* at 1350.

⁴²⁴ *Id.*

⁴²⁵ 918 F.3d 1368 (Fed. Cir. Mar. 20 2019); 930 F.3d 1295 (Fed. Cir. July 12 2019). The Federal Circuit modified its opinion without changing anything of substance in its § 101 analysis.

⁴²⁶ *See id.* at 1373. Claim 1 is representative of claims 1–4, 14–16, and 18 of the ’615 patent, as well as claims 1–4, 12–15, and 17 of the ’203 patent. *See id.*

	well-known network-service protocols};
[1.3]	generating, by the monitors, reports of said suspicious activity; and
[1.4]	automatically receiving and integrating the reports of suspicious activity, by one or more hierarchical monitors.

In *SRI International*, the Federal Circuit addressed two patents regarding the detection of hackers in a computer network.⁴²⁷ The court explained that some security threats to computer networks are only detectable by analyzing information from several different sources.⁴²⁸ Without this type of analysis, it would be difficult or impossible to detect attacks where an intruder tries to log into several different computers in a network simultaneously.⁴²⁹ SRI researched the detection of intrusion into networks, and attempted to solve this problem with U.S. Patent Nos. 6,484,203 (“the ’203 patent”) and 6,711,615 (“the ’615 patent”).⁴³⁰

Cisco moved for summary judgment, asserting the claims were ineligible under § 101.⁴³¹ The district court denied the motion, so Cisco appealed.⁴³² The Federal Circuit held the claims were eligible under step one of *Alice* and affirmed.⁴³³

The majority noted that the claims focus on an improvement to computer technology: “providing a network defense system that monitors network traffic in real-time to automatically detect large-scale attacks.”⁴³⁴ The specification supported this conclusion because it laid out problems in the prior art and explained how the invention overcomes them.⁴³⁵ According to the specification, the integration of the networks makes them vulnerable to

⁴²⁷ *See id.* at 1372.

⁴²⁸ *See id.*

⁴²⁹ *See id.*

⁴³⁰ *See id.*

⁴³¹ *See id.* at 1373.

⁴³² *See id.* at 1373, 1374.

⁴³³ *See id.* at 1376.

⁴³⁴ *Id.* at 1375.

⁴³⁵ *See id.* (“The specification bolsters our conclusion that the claims are directed to a technological solution to a technological problem.”).

hacking.⁴³⁶ Even “localized” problems can lead to much larger scale effects.⁴³⁷ The specification explained the invention was designed to solve these problems.⁴³⁸

Cisco argued that the claims were analogous to *Electric Power Group, LLC v. Alstom S.A.*⁴³⁹ The Federal Circuit disagreed because those claims “were drawn to using computers as tools to solve a power grid problem, rather than improving the functionality of computers and computer networks themselves.”⁴⁴⁰ Like the *DDR Holdings* case, the ’615 claims do more than recite the conventional operation of a computer network; here, they actually *prevent* normal functioning of ordinary computer networks.⁴⁴¹

Judge Lourie dissented from the Federal Circuit’s eligibility analysis.⁴⁴² In his view, the claims “differ very little from the claims in *Electric Power Group*”⁴⁴³ He found the claims were “directed to the abstract idea of monitoring network security” because they simply use a computer as a tool to move information.⁴⁴⁴ The claims have no inventive concept because, even viewed in light of the specification, they only require conventional components.⁴⁴⁵ The claims were “result-focused, functional claims that effectively cover any solution to an identified problem,” so they were ineligible.⁴⁴⁶

⁴³⁶ *See id.*

⁴³⁷ *Id.*

⁴³⁸ *See id.*

⁴³⁹ 830 F.3d 1350 (Fed. Cir. 2016). *See SRI Int’l*, 918 F.3d at 1375.

⁴⁴⁰ *See SRI Int’l*, 918 F.3d at 1375.

⁴⁴¹ *See id.* at 1376 (citing *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1258 (Fed. Cir. 2014)).

⁴⁴² *See id.* at 1384 (Lourie, J., dissenting).

⁴⁴³ *Id.* (Lourie, J., dissenting).

⁴⁴⁴ *Id.* at 1385 (Lourie, J., dissenting).

⁴⁴⁵ *See id.* (Lourie, J., dissenting).

⁴⁴⁶ *Id.* (Lourie, J., dissenting).

17) Endo Pharms. Inc. v. Teva Pharms. USA, Inc. (Mar. 28, 2019)⁴⁴⁷

Representative Claim 1 of U.S. Patent No. 8,808,737 ⁴⁴⁸	
[1]	A method of treating pain in a renally impaired patient, comprising the steps of:
[1.1(a)]	providing a solid oral controlled release dosage form, comprising:
[1.1(a)(i)]	about 5 mg to about 80 mg of oxymorphone or a pharmaceutically acceptable salt thereof as the sole active ingredient; and
[1.1(a)(ii)]	a controlled release matrix;
[1.1(b)]	measuring a creatinine clearance rate of the patient and determining it to be
[1.1(b)(a)]	less than about 30 ml/min,
[1.1(b)(b)]	about 30 mL/min to about 50 mL/min,
[1.1(b)(c)]	about 51 mL/min to about 80 mL/min, or
[1.1(b)(d)]	above about 80 mL/min; and
[1.1(c)]	orally administering to said patient, in dependence on which creatinine clearance rate is found, a lower dosage of the dosage form to provide pain relief;
[1.2]	wherein after said administration to said patient, the average AUC of oxymorphone over a 12-hour period is less than about 21 ng·hr/mL.

The *Endo Pharmaceuticals* Court considered a patent disclosing a method for treating the pain of patients with “renal impairment” (*i.e.*, poor kidney function) using a drug called oxymorphone.⁴⁴⁹ Impaired kidney function can

⁴⁴⁷ 919 F.3d 1347 (Fed. Cir. 2019).

⁴⁴⁸ *See id.* at 1350–51. Claim 1 is representative of claims 1–6. *See id.*

⁴⁴⁹ *Id.* at 1348.

result in the buildup of drugs in a person's body, because the drugs would normally be filtered out by the kidneys.⁴⁵⁰ The inventor of U.S. Patent No. 8,808,737 ("the '737 patent") discovered that people with more severe impairment need less oxymorphone than was typical.⁴⁵¹

The treatment method claimed in the '737 patent "advantageously allows" for those with reduced kidney function to take less oxymorphone, but still reduce their pain.⁴⁵² As described in the specification, the claimed method "'avoid[s] possible issues in dosing' and 'allows for treatment with 'the lowest available dose'"⁴⁵³ Thus, the '737 patent allegedly improves on the prior art by allowing "renally impaired pain patients to be treated safely and effectively"⁴⁵⁴

The district court held the claims were not patent eligible.⁴⁵⁵ In its view, they were directed to the natural law that "the bioavailability of oxymorphone is increased in people with severe renal impairment."⁴⁵⁶ The district court found no inventive concept because the patent simply requires using a "well known method" to "obtain the necessary information to apply a law of nature," then merely "instructs the administration of the correct dosage . . . depending on the severity of the renal impairment"⁴⁵⁷

The Federal Circuit held the claims were not directed to an ineligible concept, and survived Alice step one.⁴⁵⁸ It reasoned the claims were actually directed to a "method of using oxymorphone . . . to treat pain in a renally impaired patient."⁴⁵⁹

The Federal Circuit reached its conclusion first by noting that the claims recite specific steps.⁴⁶⁰ Next, it explained that other parts of the patent (including the

⁴⁵⁰ *See id.* at 1349.

⁴⁵¹ *See id.*

⁴⁵² *Id.* at 1349.

⁴⁵³ *Id.* at 1350.

⁴⁵⁴ *Id.* at 1349.

⁴⁵⁵ *See id.* at 1351.

⁴⁵⁶ *Id.*

⁴⁵⁷ *Id.*

⁴⁵⁸ *See id.* at 1353.

⁴⁵⁹ *Id.*

⁴⁶⁰ *See id.* (describing the steps as "(a) providing a pharmaceutical . . . , (b) testing the patient for a disease state . . . , and then (c) administering the pharmaceutical . . . based on" an indicator in the amount necessary to maintain a certain level of oxymorphone in the body).

abstract, title, and summary) also support the holding because they “all describe the invention as a ‘method of treating pain’ in patients with renal impairment.”⁴⁶¹ Finally, the specification lends support by “predominantly describ[ing] the invention” in terms of its advantages.⁴⁶²

According to the Federal Circuit, these claims are “legally indistinguishable” from those in *Vanda*.⁴⁶³ Both sets of claims are treatment methods, both “recite the steps of carrying out a dosage regimen based on the results of . . . testing,” and both “require specific treatment steps.”⁴⁶⁴ Like in *Vanda*, the inventor of the ’737 patent recognized the natural law, but did not claim only that.⁴⁶⁵ Instead, he claimed an application of the relationship he recognized.⁴⁶⁶ Therefore, the claims were “directed to more than just reciting the natural relationship.”⁴⁶⁷

The Federal Circuit also distinguished the claims at issue from those in *Mayo*.⁴⁶⁸ First, the claim in *Mayo* “as a whole was not directed to the application of a drug to treat a particular disease.”⁴⁶⁹ Second, the “administering step in *Mayo* . . . simply describe[d] giving the drug to a patient,” whereas here, “the administering step . . . describes giving a specific dose of the drug based on the results of kidney function testing.”⁴⁷⁰ In other words, the *Mayo* claims did not “confine their reach to particular applications of” natural laws, while the ’737 claims do limit their reach.⁴⁷¹ Third, this case does not raise concerns of preemption.⁴⁷² Unlike *Mayo*, the claims in this case do not

⁴⁶¹ *Id.*

⁴⁶² *Id.*

⁴⁶³ *Id.* (citing *Vanda Pharm. v. West-Ward Pharm. Int’l Ltd.*, 887 F.3d 1117 (Fed. Cir. 2018)).

⁴⁶⁴ *Id.* at 1353–54 (citing *Vanda*, 887 F.3d at 1135).

⁴⁶⁵ *See id.* at 1354.

⁴⁶⁶ *See id.*

⁴⁶⁷ *Id.* This was also because, in the court’s view, the combination of the “administering step” and the “wherein clause” sufficiently “identif[ied] the appropriate schedule and dose . . . to administer,” so the claims did “more than just recognize the need to lower a dose.” *Id.* at 1355.

⁴⁶⁸ *See id.* at 1354.

⁴⁶⁹ *Id.* (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 74 (2012)).

⁴⁷⁰ *Id.* (citing *Mayo*, 566 U.S. 66).

⁴⁷¹ *Id.*

⁴⁷² *See id.* at 1354–55.

“tie up the doctor’s subsequent treatment decision” because they “provide a specific dosage regimen through the wherein clause.”⁴⁷³

Moreover, the Federal Circuit found the end result of the ’737 patent “not simply an observation or detection.”⁴⁷⁴ Because these claims recite “a *treatment* method, not a detection method,” and because that method is recited “specific[ally,]” they are directed to a “new and useful method of treating pain in patients with” renal failure.⁴⁷⁵ Thus, they are patent eligible.⁴⁷⁶

18) Uniloc USA, Inc. v ADP, LLC (May 24, 2019)⁴⁷⁷

The Federal Circuit considered four patents in its *Uniloc* decision, but only found two of them eligible.⁴⁷⁸ U.S. Patent Nos. 7,069,293 (“the ’293 patent”) and 6,324,578 (“the ’578 patent”) both relate to software installation, but the court separated its analysis with respect to each patent.⁴⁷⁹

The district court dismissed the complaint because it held the patents to be ineligible.⁴⁸⁰ The Federal Circuit reversed and remanded with respect to both the ’293 patent and the ’578 patent because it found them eligible under *Alice* step one.⁴⁸¹

⁴⁷³ *Id.* at 1354–55.

⁴⁷⁴ *Id.* at 1356 (citing *Rapid Litigation Management Ltd. v. CellzDirect, Inc.*, 827 F.3d 1042 (Fed. Cir. 2016)).

⁴⁷⁵ *Id.* at 1354.

⁴⁷⁶ *See id.* at 1353.

⁴⁷⁷ No. 2018-1132, 2019 WL 2245938 (Fed. Cir. May 24, 2019).

⁴⁷⁸ *See id.* at *1. Two of those patents (U.S. Patent Nos. 6,510,466 and 6,728,766) were found ineligible, and are not considered here because they are outside the scope of this article. *See id.* at *8, *9.

⁴⁷⁹ *See id.* at *8, *9.

⁴⁸⁰ *See id.* at *1.

⁴⁸¹ *See id.* at *1, *6.

a) The '293 Patent

Claim 1 of U.S. Patent No. 7,069,293 ⁴⁸²	
[1]	A method for distribution of application programs to a target on-demand server on a network comprising the following executed on a centralized network management server coupled to the network:
[1.1]	providing an application program to be distributed to the network management server;
[1.2]	specifying a source directory and a target directory for distribution of the application program;
[1.3]	preparing a file packet associated with the application program and including a segment configured to initiate registration operations for the application program at the target on-demand server; and
[1.4]	distributing the file packet to the target on-demand server to make the application program available for use by a user at a client.

U.S. Patent No. 7,069,293 (“the ‘293 patent”) relates to distributing and installing software from a centralized location on a network.⁴⁸³ In its analysis, the Federal Circuit explained that, although the claims’ “goal” is functional,⁴⁸⁴ “the patent claims a particular improvement in *how*” that goal is accomplished.⁴⁸⁵ The court recognized the claims are obviously focused on that improvement, and the specification has a similar focus.⁴⁸⁶ Moreover, the court noted the record does not indicate “such network architecture was so conventional as to exclude that . . . limitation in” determining what the patent is directed to.⁴⁸⁷

The Federal Circuit further held the fact that the specification illustrates the invention using “off-the shelf components” did not automatically make it

⁴⁸² See U.S. Patent No. 7,069,293 col. 21 l. 21–37. The court did not designate a representative claim, but Uniloc cited Claim 1 when arguing *Alice* step one. See *Uniloc*, 2019 WL 2245938, at *4.

⁴⁸³ See *Uniloc*, 2019 WL 2245938, at *4–5.

⁴⁸⁴ Specifically, the goal is “to allow centralized distribution of software.” See *id.* at *5.

⁴⁸⁵ *Id.* at *5 (“[I].e. by use of a file packet to enable the further functionality of initiating on-demand registration of the application.”).

⁴⁸⁶ See *id.*

⁴⁸⁷ *Id.*

directed to an ineligible category.⁴⁸⁸ The specification described *implementing* the invention using those off-the shelf components; it did not simply claim their “routine activity.”⁴⁸⁹ This implementation actually enhanced the function of those prior art components, which, according to the court, “was the heart of the patent’s allowance.”⁴⁹⁰ Because “the focus of the claimed advance” here was a “particular improvement in the functioning of [the] prior art,” the claims of the ’293 patent are not directed to an abstract idea.⁴⁹¹

b) The ’578 Patent

Representative Claim 1 of U.S. Patent No. 6,324,578 ⁴⁹²	
[1]	A method for management of configurable application programs on a network comprising the steps of:
[1.1]	installing an application program having a plurality of configurable preferences and a plurality of authorized users on a server coupled to the network;
[1.2]	distributing an application launcher program associated with the application program to a client coupled to the network;
[1.3]	obtaining a user set of the plurality of configurable preferences associated with one of the plurality of authorized users executing the application launcher program;
[1.4]	obtaining an administrator set of the plurality of configurable preferences from an administrator; and
[1.5]	executing the application program using the obtained user set and the obtained administrator set of the plurality of configurable preferences responsive to a request from the one of the plurality of authorized users.

Claim 1 of U.S. Patent No. 6,324,578 (“the ’578 patent”) recites the existence of both user preferences and administrator preferences for a software

⁴⁸⁸ *Id.*

⁴⁸⁹ *Id.*

⁴⁹⁰ *Id.*

⁴⁹¹ *Id.*

⁴⁹² See U.S. Patent No. 6,324,578 col. 14 l. 63–col. 15 l. 13. The lower court designated claim 1 representative, and the Federal Circuit “analyze[d] all the asserted claims in the ’578 patent based on claim 1.” See *Uniloc*, 2019 WL 2245938, at *6 n.4.

program.⁴⁹³ The administrator preferences are specifically stored on a server.⁴⁹⁴ Under the patent, a user is given an application launcher for the program in question.⁴⁹⁵ This setup allows users to install applications on-demand with their custom preferences and the administrator's custom preferences.⁴⁹⁶

In the Federal Circuit's view, claim 1 of the '578 patent is "directed to a particular way of using a conventional application server to nevertheless allow on-demand installation of an application incorporating preferences from two different sources by adding the application manager and configuration manager as additions to each application."⁴⁹⁷ The added application manager and configuration manager are not "merely fulfill[ing] their ordinary roles"; they are being used together in "a different way of achieving" the claimed improvement.⁴⁹⁸ Therefore, the patent is not directed to an abstract idea.⁴⁹⁹

Had the Federal Circuit held the claims abstract under step one, it clarified that they would survive step two.⁵⁰⁰ The court would have found an inventive concept because the claims recite an unconventional arrangement of components that achieved the asserted improvement, like the claims in *Bascom*.⁵⁰¹

⁴⁹³ See *Uniloc*, 2019 WL 2245938, at *6.

⁴⁹⁴ See *id.*

⁴⁹⁵ See *id.*

⁴⁹⁶ See *id.*

⁴⁹⁷ *Id.*

⁴⁹⁸ *Id.*

⁴⁹⁹ See *id.*

⁵⁰⁰ See *id.*

⁵⁰¹ See *id.* (citing *Bascom Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1350 (Fed. Cir. 2016)).

19) Cellspin Soft, Inc. v. Fitbit, Inc. (June 25, 2019)⁵⁰²

Representative Claim 1 of U.S. Patent No. 8,738,794 ⁵⁰³	
[1]	A method for acquiring and transferring data from a Bluetooth enabled data capture device to one or more web services via a Bluetooth enabled mobile device, the method comprising:
[1.1]	providing a software module on the Bluetooth enabled data capture device;
[1.2]	providing a software module on the Bluetooth enabled mobile device;
[1.3]	establishing a paired connection between the Bluetooth enabled data capture device and the Bluetooth enabled mobile device;
[1.4]	acquiring new data in the Bluetooth enabled data capture device, wherein new data is data acquired after the paired connection is established;
[1.5]	detecting and signaling the new data for transfer to the Bluetooth enabled mobile device, wherein detecting and signaling the new data for transfer comprises:
[1.5(a)]	determining the existence of new data for transfer, by the software module on the Bluetooth enabled data capture device; and
[1.5(b)]	sending a data signal to the Bluetooth enabled mobile device, corresponding to existence of new data, by the software module on the Bluetooth enabled data capture device automatically, over the established paired Bluetooth connection, wherein the software module on the Bluetooth enabled mobile device listens

⁵⁰² No. 2018-1817, 2019 WL 2588278 (Fed. Cir. June 25, 2019).

⁵⁰³ See *id.* at *1-*2. The court treated claims 1 and 16 as representative of asserted claims 1-4, 7, 9, 16-18, and 20-21 of the '794 patent because Cellspin only offered "separate arguments" for those two claims. The court considered other claims representative of the remaining three patents, but noted that the representative claims were all "substantially similar." *Id.* at *3. As a result, the court only explicitly detailed claim 1 of the '794 patent; the other claims were described in terms of their differences. See *id.* at *1-*3.

	for the data signal sent from the Bluetooth enabled data capture device, wherein if permitted by the software module on the Bluetooth enabled data capture device, the data signal sent to the Bluetooth enabled mobile device comprises a data signal and one or more portions of the new data;
[1.5(c)]	transferring the new data from the Bluetooth enabled data capture device to the Bluetooth enabled mobile device automatically over the paired Bluetooth connection by the software module on the Bluetooth enabled data capture device;
[1.5(d)]	receiving, at the Bluetooth enabled mobile device, the new data from the Bluetooth enabled data capture device;
[1.5(e)]	applying, using the software module on the Bluetooth enabled mobile device, a user identifier to the new data for each destination web service, wherein each user identifier uniquely identifies a particular user of the web service;
[1.5(f)]	transferring the new data received by the Bluetooth enabled mobile device along with a user identifier to the one or more web services, using the software module on the Bluetooth enabled mobile device;
[1.5(g)]	receiving, at the one or more web services, the new data and user identifier from the Bluetooth enabled mobile device, wherein the one or more web services receive the transferred new data corresponding to a user identifier; and
[1.5(h)]	making available, at the one or more web services, the new data received from the Bluetooth enabled mobile device for public or private consumption over the internet, wherein one or more portions of the new data correspond to a particular user identifier.

The Federal Circuit considered the eligibility of four patents in the *Cellspin Soft* case: U.S. Patent Nos. 8,738,794 (“the ’794 patent”), 8,892,752 (“the ’752 patent”),⁵⁰⁴ 9,258,698 (“the ’698 patent”),⁵⁰⁵ and 9,749,847 (“the ’847

⁵⁰⁴ Cellspin asserted claims 1, 2, 4–5 and 12–14 of the ’752 patent. *Id.* at *3. However, the court only addressed claim 1 because Cellspin “only offer[ed] separate arguments as to eligibility with respect to claim 1.” *Id.*

⁵⁰⁵ Cellspin asserted claims 1, 3–5, 7–8, 10–13, and 15–20 of the ’698 patent. *Id.* at *3.

patent”).⁵⁰⁶ All four patents share a specification and relate to uploading content to a website through a “mobile device,” which is connected to a “data capture device”⁵⁰⁷ Under the prior art, a person looking to capture content (such as a digital picture) and upload it to the internet needed a “memory stick or cable” separate from the data capture device.⁵⁰⁸

The '794 patent attempts to solve that problem by pairing the data capture device with a mobile device “via short-range wireless communication . . . such as Bluetooth.”⁵⁰⁹ An application stored on the mobile device “detects and receives content” over that connection.⁵¹⁰ Then, the mobile device “automatically” uploads that content to a website.⁵¹¹

Claim 1 of the '794 patent involves a “push” mode where the data capture device starts the data transfer by sending a signal to the mobile device.⁵¹² Claim 16 “is essentially the same as claim 1,” but it involves a “pull” mode where the mobile device starts the transfer by asking the data capture device if there is content to upload.⁵¹³

The limitations of claim 1 of the '752 patent effectively only differ from that of the '794 patent in two ways.⁵¹⁴ First, the '752 patent specifically requires establishing a connection between the mobile device and data capture device with an encryption key for the devices to identify themselves.⁵¹⁵ Second, the '752 patent states that the mobile device must transmit content to an “internet service” using hypertext transfer protocol (HTTP).⁵¹⁶

However, the court only addressed claim 5 because Cellspin “only offer[ed] separate arguments as to claim 5.” *Id.*

⁵⁰⁶ *See id.* at *1–*3. Cellspin asserted claims 1–3 of the '847 patent. *Id.* at *3. However, the court only addressed claim 1 because Cellspin “only offer[ed] separate arguments as to claim 1.” *Id.*

⁵⁰⁷ *Id.* at *1.

⁵⁰⁸ *Id.*

⁵⁰⁹ *Id.*

⁵¹⁰ *Id.*

⁵¹¹ *Id.*

⁵¹² *Id.* at *2.

⁵¹³ *Id.*

⁵¹⁴ *See id.* at *3.

⁵¹⁵ *See id.*

⁵¹⁶ *Id.*

Claim 5 of the '698 patent is “substantially similar” to claim 1 of the '752 patent.⁵¹⁷ The only differences are that the '698 patent specifies a digital camera instead of a data capture device, and that the '698 patent does not reference Bluetooth.⁵¹⁸

According to the Federal Circuit, claim 1 of the '847 patent is “substantially similar” to claim 1 of the '752 patent.⁵¹⁹

The district court granted a 12(b)(6) motion to dismiss, finding the claims ineligible as directed to an abstract idea without an inventive concept.⁵²⁰ With respect to the '794 claims, Cellspin argued “there was a factual dispute about whether the ‘combination’ of these elements was ‘well-understood, routine and conventional.’”⁵²¹ But the district court “did not reach the issue” in part because Cellspin did not identify support in the specification for the inventive concepts it alleged.⁵²² With respect to the other patents, the district court held they were directed to an abstract idea, and the differences with the '794 claims were not enough to evidence an inventive concept.⁵²³

The Federal Circuit found the claims directed to an abstract idea.⁵²⁴ But it explained that the district court should not have “ignor[ed] [the] allegations that, when properly accepted as true, preclude the grant of a motion to dismiss.”⁵²⁵ Thus, the Federal Circuit vacated the decision and remanded the case.⁵²⁶

Under step one, the Federal Circuit held the claims are not directed to an improvement in functionality, but are directed to “the [abstract] idea of capturing and transmitting data from one device to another.”⁵²⁷ The specification acknowledges that content could already be transferred from an “internet-incapable” data capture device to the internet.⁵²⁸ In the court’s view,

⁵¹⁷ *Id.*

⁵¹⁸ *See id.*

⁵¹⁹ *Id.*

⁵²⁰ *See id.* at *4.

⁵²¹ *Id.*

⁵²² *Id.*

⁵²³ *See id.* at *5.

⁵²⁴ *See id.* at *6.

⁵²⁵ *Id.*

⁵²⁶ *See id.*

⁵²⁷ *Id.*

⁵²⁸ *Id.* at *7.

these patents merely automate that existing process.⁵²⁹ Thus, “the claims as a whole, across all four patents, are directed to an abstract idea.”⁵³⁰

The Federal Circuit next turned to step two of *Alice* to search for an inventive concept.⁵³¹ It explained that the district court should not have disregarded Cellspin’s allegations merely because Cellspin did not cite support in the specification.⁵³² As long as the inventive concept is “recited by the claims, the specification need not expressly list all the reasons why the claimed structure is unconventional.”⁵³³ In *Aatrix*, the allegations in the complaint were sufficient to survive a motion to dismiss.⁵³⁴ But allegations are not automatically sufficient; they must be “plausible and specific factual allegations that aspects of the claims are inventive”⁵³⁵

Here, the allegations were sufficient because they were specific and plausible, and related to why the invention was unconventional.⁵³⁶ Cellspin’s allegations contained multiple ways the claims were (arguably) unconventional.⁵³⁷ In the prior art, data capture devices with built-in wireless internet were bulky and expensive.⁵³⁸ The complaints alleged several benefits over this prior art.⁵³⁹ First, the claimed data capture device only has one function, so it is smaller and cheaper.⁵⁴⁰ Second, the patented system as a whole is simpler to operate.⁵⁴¹ Third, users can “access and upload data even if the capture device is physically inaccessible”⁵⁴² Cellspin also argued that separating the capturing content step from the publishing step was unconventional, in light of the prior art.⁵⁴³ Lastly, the allegations asserted that the ordered

⁵²⁹ *See id.* (“[T]he need to perform tasks automatically is not a unique technical problem.”).

⁵³⁰ *Id.* at *6.

⁵³¹ *See id.* at *7.

⁵³² *See id.* at *8.

⁵³³ *Id.*

⁵³⁴ *See id.* (citing *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121, 1128 (Fed. Cir. 2018)).

⁵³⁵ *Id.*

⁵³⁶ *See id.*

⁵³⁷ *See id.* at *7.

⁵³⁸ *See id.*

⁵³⁹ *See id.*

⁵⁴⁰ *See id.*

⁵⁴¹ *See id.*

⁵⁴² *Id.*

⁵⁴³ *See id.*

combination of the claimed elements was inventive.⁵⁴⁴ Prior art methods merely forwarded content as it was captured.⁵⁴⁵ The claims here require a connection with the mobile device first, which “ensures that data is only transmitted if the mobile device is capable of receiving it.”⁵⁴⁶ Therefore, the Federal Circuit could not, as a matter of law, conclude that the claims were ineligible under *Alice* step two.⁵⁴⁷

Conclusion

In the five years since conception, *Alice*’s subjective two-prong test remains unsurprisingly confusing to apply. Hopefully, these illustrated 19 Federal Circuit cases (and their exemplary patent claims) that found eligibility upon *Alice* challenges will serve as helpful guideposts for patent-eligibility analysis, in both claim drafting as well as patent litigation. Worth pointing out is the pattern of the timing of when these Federal Circuit cases came out – only 4 out of 19 were issued in the first (approximately) two years; in the latter three years, 15 cases followed. It appears as though the Federal Circuit took a while to find their feet, waiting for the percolation of the district court cases before becoming bolder in applying *Alice*’s two-prong test and finding eligibility.

Statistically, the *Alice* invalidation rate at its near-five-year mark, though relatively lower, still remains the majority (averaging cumulatively 56.2%), but it has decreased over time. At *Alice*’s one-year mark (June 2015), the invalidation rate was averaging 82.9%.⁵⁴⁸ Since the Federal Circuit’s *Berkheimer* decision in February 2018, the *Alice* invalidation rate has dropped to approximately 44%.⁵⁴⁹ In short, the § 101 landscape has evidently calmed (somewhat) and become more predictable since *Alice*’s issuance, but that may very well change with Congress’s current § 101 bill.⁵⁵⁰

⁵⁴⁴ *See id.* at *8.

⁵⁴⁵ *See id.*

⁵⁴⁶ *Id.*

⁵⁴⁷ *See id.* at *10.

⁵⁴⁸ Tran, *One-Year Review*, *supra* note 9, at 545.

⁵⁴⁹ Bultman, *supra* note 12.

⁵⁵⁰ *See discussion, supra* note 28.