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The Integrated Approach: A Solution to Patent Subject Matter Eligibility Standards in the Software Context

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THE INTEGRATED APPROACH: A SOLUTION TO PATENT SUBJECT MATTER ELIGIBILITY STANDARDS IN THE SOFTWARE CONTEXT

Carrie Moss*

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I. INTRODUCTION

The Court of Appeals for the Federal Circuit is "hopelessly divided" over an appropriate standard for patent subject matter eligibility, creating a current state of crisis. Patents, which serve "[t]o promote the Progress of Science and useful Arts," aid 40 million jobs and contribute $5 trillion to the gross national product. Patent subject matter eligibility is governed by 35 U.S.C. § 101, which creates four statutory categories of patent-eligible subject matter: "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof." However, courts have developed three exceptions to the statutory categories: "[l]aws of nature, natural phenomena, and abstract ideas." With the growth of technology in the last several decades, thousands of patents now cover various aspects of the Internet, and scholars estimate that 40,000 software patents are granted each year. It is the patent eligibility of these computer-related method or software inventions, which often fall under the exception for abstract ideas, that have especially contributed to the disastrous upheaval surrounding patent law in the Federal Circuit. Consequently, many commentators believe the United States Patent and Trademark Office (USPTO), which processes hundreds of thousands of patent applications each year, is also perplexed regarding how to properly evaluate these patent claims and is conducting inconsistent examinations. Patentees
fear the possibility of validity attacks on their patents, but are uncertain how to
draft future patent claims that will withstand attack. Not only is the state of
ambiguity making “investments riskier and stif[ling] innovation” in the
technology sector,” but it is also burdening the courts with high administration
costs.10

Litigation concerning patent infringement is growing, and “software patents
account for 89% of this increase.”11 According to one scholar, this is because
“[s]oftware is a technology that represents broad classes of interactions
abstractly. That makes it inherently difficult to tie down a software patent to a
specific inventive concept.”12 Similarly, another scholar attributes this inherent
difficulty to the “intrinsic nature of software: ... [S]oftware inventions are
pure functionality ... [T]hey cannot be defined with references to the physical,
structural properties of either a tangible copy of the software on a storage
medium or a computer programmed with the software. They can only be
defined by their behavior or function.”13 This in turn leads to “patent law’s
functionality malfunction: the invention-structure equation.”14 The invention-
structure equation focuses on the structure of the claimed invention to rule out
overbroad claims;15 however, it “is ineffective whenever it is brought to bear on
inventions, such as software, that are pure functionality.”16 To complicate the
matter, the software industry is a fast-growing component of our nation’s
economy,17 rendering it especially critical for a clear and effective standard to
determine patent eligibility. Moreover, opportunistic patent trolls18 are thriving


10 WildTangent’s Petition for Certiorari, supra note 1, at 31–32.
11 James Bessen, The Patent Troll Crisis is Really a Software Patent Crisis, WASH. POST (Sept. 3,
12 Id.
13 Kevin Emmerson Collins, Patent Law’s Functionality Malfunction and the Problem of Overbroad,
14 Id. at 1403.
15 “Software patents are overbroad ... [because] they routinely grant investors rights that
extend further beyond the technology that an inventor has actually invented and disclosed.” Id. at
1400.
16 Id.
17 Ronald J. Mann, Do Patents Facilitate Financing in the Software Industry?, 83 TEX. L. REV. 961,
963 (2005).
18 For a definition of patent trolls, see Burns, supra note 7, at 65 (“Patent-assertion entities [(PAEs)] ... are often led by patent attorneys who see opportunities to acquire patents
and then sue businesses that are allegedly infringing those patents. PAEs, like modern-day
mythical trolls hiding under IP bridges, buy IP created by others and then opportunistically
extract licensing fees as a form of bridge troll.”).
on the abundance of overbroad software claims, increasing transaction costs and causing frivolous patent litigation.\footnote{19} Bilski v. Kappos,\footnote{20} the first Supreme Court case addressing 35 U.S.C. § 101 in over a decade, sparked the recent controversy in the courts regarding the patent eligibility of processes.\footnote{21} Prior to Bilski, the courts routinely applied the "machine-or-transformation test" (MOT), which defines a claimed process as "patent-eligible under § 101: [i]f (1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing."\footnote{22} The Federal Circuit addressed the issue in 2008, and concluded that the MOT test was the "governing test for determining [the] patent-eligibility of [process claims]."\footnote{23} However, the Supreme Court granted certiorari in 2010 and rejected the Federal Circuit’s approach,\footnote{24} declaring instead that the MOT test is merely a "useful and important clue, an investigative tool, for determining whether some claimed inventions are processes under § 101."\footnote{25} But to the dismay of the patent community, the Court failed to provide any alternatives to the test.\footnote{26} Of similar significance, the Court repudiated the Federal Circuit’s categorical exclusion of business methods claims,\footnote{27} clarifying that there may be "at least some processes that can be fairly described as business methods that are within patentable subject matter under § 101."\footnote{28} Nevertheless, allowing Bilski, the MOT test has persisted in the district courts.\footnote{29}

In its most recent opinion on the topic of patent eligibility, the Supreme Court addressed the patent eligibility of a process for determining the optimal drug dosage for treating autoimmune diseases in Mayo Collaborative Services v.
Prometheus Laboratories, Inc. Although the Court categorized the process under the laws of nature rather than the abstractness exception, its analytical framework is also applicable to software claims. Specifically, the Court declared that “one must do more than simply state the law of nature while adding the words ‘apply it,’ ” and insisted that “the use of a natural law also contain other elements or a combination of elements, sometimes referred to as an ‘inventive concept.’ ” Unfortunately, the meaning of “inventive concept” generated confusion and an abundance of commentary, with many scholars predicting that the decision “would radically change the landscape of patent law.”

Most recently, in May of 2013, the Federal Circuit issued a highly anticipated en banc rehearing of CLS Bank Int’l v. Alice Corp. Pty, which many people expected to provide clarity on the appropriate standard for eligibility of process and methods claims under § 101. The Federal Circuit disappointed all by issuing a total of five separate opinions, with additional reflections by Judge Rader, demonstrating the law’s colossal uncertainty and perpetuating the state of mayhem for anxious patent claimants. Judge Lourie delineated a “strong view” of the eligibility requirement that would have found all of Alice’s claims ineligible, referred to as an “Integrated Approach” by some lower courts. Chief Judge Rader presented a “weak view,” which lower courts have referred to as the “Meaningful Limitations Approach.” Judge Newman favored an “even weaker view,” such that all the claims would have been eligible under § 101. Chief Judge Rader’s concurring opinion provides a summary of the discord that currently exists between the Federal Circuit judges:

31 Id. at 1294.
32 Id.
33 See Jessica Belle, Prometheus v. Mayo: Limited Implications for § 101 Jurisprudence, 8 WASH. J.L. TECH & ARTS 555, 563–64 (2013) (“The patent law community was generally shocked by the Court’s decision in Prometheus and numerous law review articles have been written on the decision in just over a year.”).
35 See, e.g., Bernard Chao, Finding the Point of Novelty in Software Patents, 28 BERKELEY TECH. L.J. 1217, 1249 (“The judges were badly divided and the decision failed to give the guidance that so many followers of the court sought.”).
36 CLS Bank, 717 F.3d 1269.
39 Chao, supra note 37.
41 Chao, supra note 37.
In a subsequent opinion, Chief Judge Rader further remarked that "prior to granting en banc review in CLS Bank, this court commented: 'no one understands what makes an idea abstract.' After CLS Bank, nothing has changed." 43

Since CLS Bank, the Federal Circuit has decided several other software patent eligibility cases under § 101 to no avail: The division between the judges persists, leaving patentees, the USPTO, and lower courts hopelessly searching for clarity on the proper eligibility standard. Their search may be nearing a conclusion; on December 6, 2013, the Supreme Court granted certiorari for CLS Bank, 44 presenting the perfect opportunity for the Court to clarify the appropriate subject matter eligibility standard for software and computer-related inventions. In setting this standard, this Note argues that the Supreme Court should formally adopt Judge Lourie’s Integrated Approach for three reasons. First, it is the approach most consistent with the Court’s precedent in Mayo. Second, it dictates results consistent with the Federal Circuit’s jurisprudence in prior software patent cases, providing an easily adoptable resolution to the perceived ambiguity. Finally, its “strong view” 45—embodied in a substantive vision of the invention—best promotes the underlying goals of patent law by excluding overbroad claims that would otherwise work to (1) suppress future innovation and competition, and (2) exacerbate the patent troll problem.

Part II of this Note discusses the relevant modern cases that provide necessary background to the recent controversy surrounding patent subject matter eligibility standards in the Federal Circuit. Throughout this discussion, Part II elaborates on the statutory interpretation of § 101 and the varying views regarding the proper patent eligibility standard. Part III analyzes the Federal Circuit judges’ proposed standards, as expressed in CLS Bank, and then suggests that the Court should adopt Judge Lourie’s Integrated Approach because it is most consistent with its opinion in Mayo. Part III continues by analyzing five additional software patent cases decided by the Federal Circuit in

42 CLS Bank, 717 F.3d at 1292 n.1 (Rader, C.J., concurring and dissenting in part).
45 Chao, supra note 37.
recent years. This analysis will demonstrate that Judge Lourie’s approach generates outcomes consistent with those cases, thus exemplifying that uniform reasoning is readily available to resolve the perceived ambiguity and confusion. Next, Part III also discusses how the Integrated Approach best effectuates the purposes underlying patent law by both excluding overbroad claims that hurt innovation and mitigating the patent troll problem. Finally, Part IV concludes by summarizing why the Supreme Court should adopt the Integrated Approach to settle the cloud of confusion hovering over patent subject matter eligibility standards.

II. BACKGROUND

A. STATUTORY SUBJECT MATTER AND COMMON LAW EXCEPTIONS

As previously stated, patent eligible subject matter is statutorily limited to “any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof.”46 These four categories—process, method, manufacture, and composition of matter—can be split into two general categories: product claims and method claims.47 Product claims cover tangible items and include “machine[s], manufacture[s], or composition[s] of matter.”48 Patents tied to machines are also generally referred to as system or apparatus claims.49 Method, or process claims, are defined as “process[es], art[s] or method[es], and include[s] new use[s] of... known process[es], machine[s], manufacture[s], composition[s] of matter, or material[s].”50 Generally, method claims “recite a series of steps that lead to a useful result,” and include “intangible” items as opposed to “tangible matter.”51

The Supreme Court has identified three exceptions to the statutory categories of patentable subject matter: “[l]aws of nature, natural phenomena, and abstract ideas.”52 These exceptions embody the “basic tools of scientific and technological work,”53 and therefore must remain in the public domain to

47 Petition for a Writ of Certiorari at 5, Alice Corp., 134 S. Ct. 734 (2013) (No. 13-298) [hereinafter Alice’s Petition for Certiorari].
48 Id. at 6 (quoting 1 DONALD S. CHISUM, CHISUM ON PATENTS § 1.02 (2013)) (internal quotation marks omitted).
49 Id.
51 Alice’s Petition for Certiorari, supra note 47, at 6.
53 Id. (quoting Mayo, 132 S. Ct. at 1293) (internal quotation marks omitted).
ensure that patent rights neither “‘tie up’ the use of such tools [nor] ‘inhibit future innovation premised upon them.’”54 In Myriad Genetics, the Supreme Court explained, “‘all inventions at some level embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas,’ and ‘too broad an interpretation of this exclusionary principle could eviscerate patent law.’”55 The Court recognizes, however, that it must find a “delicate balance between cheating ‘incentives that lead to creation, invention, and discovery “and” impeding the flow of information that might permit, indeed spur, invention.’”56

The exception for abstract ideas, often applicable to method claims, underlies the cause of debate surrounding eligibility standards, specifically in the realm of software inventions.57 In order for a process to be patentable, it must have “additional features that provide practical assurance that the process is more than a drafting effort designed to monopolize the law of nature [or abstract idea] itself.”58 These additional features must encompass an “‘inventive concept’ and amount to more than merely steps involving well-understood, routine, conventional activity previously engaged in by researchers in the field.”59 Currently, the Federal Circuit is “hopelessly divided” on an appropriate test to determine the subject matter eligibility for computer-related patents under § 101.60

It should be noted that the eligibility standard under § 101 is separate from the substantive patentability requirements of novelty (§ 102), non-obviousness (§ 103), and formalities (§ 112).61 As the Federal Circuit points out, “title 35

54 Id. (quoting Mayo, 132 S. Ct. at 1301).
55 Id. (quoting Mayo, 132 S. Ct. at 1293).
56 Id. (quoting Mayo, 132 S. Ct. at 1305).
58 Mayo, 132 S. Ct. at 1297.
59 Id. at 1294.
60 WildTangent's Petition for Certiorari, supra note 1, at 4; see also CLS Bank, 717 F.3d at 1321 (Newman, J., dissenting) (“[W]e have propounded at least three incompatible standards, devoid of consensus, serving simply to add to the unreliability and cost of the system of patents as an incentive for innovation.”); Jason Rantanen, Surprise! The Law of Subject Matter Eligibility Remains Unsettled, PATENTLY-O (Sept. 5, 2013), http://www.patentlyo.com/patent/2013/09/surprise-the-law-of-subject-matter-eligibility-remains-unsettled.html (“It is difficult to think of an issue that has more deeply divided the Federal Circuit over the past few years than subject matter eligibility.”).
does not list a single ineligible category, suggesting that any new, non-obvious, and fully disclosed technical advance is eligible for protection, subject to the... limited judicially created exceptions." In other words, § 101 sets forth categories of items that are eligible for patent protection, and the other patentability sections exclude claims that fail to meet the respective requirements. The Supreme Court has clearly stated that these other patentability requirements should not factor into a patent-eligibility test under § 101.

B. FOUNDATIONAL PRECEDENT FOR § 101'S APPLICATION TO COMPUTER-RELATED INVENTIONS

The Supreme Court's precedential opinions have also established a foundation of useful guidance regarding the patent eligibility of software and computer-related inventions. First, Gottschalk v. Benson considered a process claim for a computer-implemented method to convert binary-coded decimal (BCD) numerals into pure binary numerals. The Court predicted the practical effect that would result from granting a patent on the method and concluded that the claims lacked any substantial practical application, besides a connection with a digital computer, to prevent the patent from pre-empting the algorithm itself. In holding the claim ineligible under § 101, Justice Douglas noted that the claim was "so abstract and sweeping as to cover both known and unknown uses of the [conversion process]," suggesting that courts should consider a patent's likely impact on technology and seek to foster future innovation.

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62 Ultramercial, LLC v. Hulu, LLC, 657 F.3d 1323, 1326 (Fed. Cir. 2011), vacated and remanded sub nom. WildTangent, Inc. v. Ultramercial, LLC, 132 S. Ct. 2431 (2012); see also CLS Bank, 717 F.3d 1269, 1297 (Roger, C.J., concurring in part and dissenting in part) ("[A]ny analysis of subject matter eligibility for patenting must begin by acknowledging that any new and useful process, machine, composition or matter, or manufacture, or an improvement thereof, is eligible for patent protection. While a claim may not later meet the rigorous conditions for patentability, section 101 makes these broad categories of claimed subject matter eligible for that consideration.").

63 Mayo, 132 S. Ct. at 1304; see also SmartGene Inc. v. Advanced Biological Labs., SA, 852 F. Supp. 2d 42, 51–52 ("[In Mayo,] the Supreme Court... clarified that a 35 U.S.C. § 101 subject matter patentability inquiry is the threshold analysis for determining patent validity. The Supreme Court explicitly rejected that the 'screening function' of 35 U.S.C. § 101 may be performed by determining the novelty, non-obviousness, or the adequacy of the written specification of a patentable claim. The Court cautioned that [shifting] the patent-eligibility inquiry entirely to these later sections risks creating significantly greater legal uncertainty, while assuming that those sections can do work that they are not equipped to do." (second alteration in original) (citations omitted) (quoting Mayo, 132 S. Ct. at 1303–04)).

64 409 U.S. 63 (1972).

65 Id. at 71–72.

66 Id. at 68.
The Supreme Court took a similar position in *Parker v. Flook*, which involved a method for calculating alarm system values by utilizing a mathematical formula and well-known catalytic conversion processes. The Court reasoned that the application "simply provid[ed] a new and presumably better method for calculating alarm limit values," and concluded that the mathematical formula itself was not transformed into eligible subject matter simply because the formula was tied to "post-solution activity." Justice Stevens further explained that the process fell under the abstract idea exception because there was no "inventive concept" tied to the application of the mathematical formula.

In contrast, the Court held the process in *Diamond v. Diehr* for molding raw, uncured synthetic rubber into cured precision products using a mathematical formula and programmed digital computer eligible under §101. Justice Rehnquist distinguished this process from those in *Benson* and *Flook* and found that the application of the formula here undisputedly "involve[d] the transformation of an article . . . into a different state or thing," and that the patentees "[sought] only to foreclose from others the use of that equation in conjunction with all of the other steps in their claimed process." The Court was careful to clarify that a claim "does not become nonstatutory simply because it uses a mathematical formula, computer program, or digital computer," and that "an application of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection." Additionally, the Court emphasized that "claims must be considered as a whole."

It is inappropriate to dissect the claims into old and new elements and then to ignore the presence of the old elements in the analysis. This is particularly true in a process claim because a new combination of steps in a process may be patentable even though all the constituents of the combination were well known and in common use before the combination was made. The "novelty" of any element or steps in a process, or even of the process itself, is of no relevance in determining whether the subject matter of a

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68 *Id.* at 595–96.
69 *Id.* at 590.
70 *Id.* at 594.
72 *Id.* at 184.
73 *Id.* at 187.
74 *Id.*
75 *Id.* at 188.
claim falls within the § 101 categories of possibly patentable subject matter.76

The preceding passage is commonly quoted in subsequent cases and has become integral to the analysis of subject matter eligibility, even inciting contention between some of the Judges in CLS Bank.77 Overall, Benson, Flook, and Diehr constitute the “trilogy of useful guideposts,” as recently affirmed by the Supreme Court in both Bilski and Mayo, for “considering exceptions to patent subject matter eligibility under 35 U.S.C. § 101.”78

Finally, Bilski v. Kappos involved claims to processes reciting a hedging strategy for consumers to balance risk.79 The Court, comparing the case to Benson, Flook, and Diehr, argued that the claims “add[ed] even less to the underlying abstract principle than the invention in Flook,” and therefore concluded that the strategy was simply a patent-ineligible mathematical formula.80 Focusing on the importance of technological advancement, the Court refused to extend a patent monopoly over an abstract idea that would preempt it from use in other fields.81

The Bilski Court also considered two categorical limitations on patent-eligible processes: the machine-or-transformation (MOT) test and business methods patents. Under the MOT test, a process is patent eligible “only if: ‘(1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing.’”82 Justice Kennedy clarified that “adopting the [MOT] test as the sole test for what constitutes a ‘process’ (as opposed to just an important and useful clue) violates [the] statutory interpretation principles,”83 and rather it is just an “investigative tool.”84 While he recognized “that patents for inventions that did not satisfy [MOT] were rarely granted in early eras,” Justice Kennedy explained that “[t]echnology and

76 Id. at 188–89.
77 See 717 F.3d 1269, 1314 (Moore, J., and Rader, C.J., dissenting in part) ("My colleagues erroneously apply Prometheus 'inventive concept' language by stripping away all known elements from the asserted system claims and analyzing only whether what remains as opposed to the claim as a whole, is an abstract idea. See Laurie Op. at 1290–91." (emphasis added)); see also, e.g., Ultramercial, 722 F.3d 1335, 1344; Accenture, 800 F. Supp. 2d 613, 619.
79 130 S. Ct. 3218.
80 Id. at 3231.
81 Id.
82 Id. at 3225 (quoting In re Bilski, 545 F.3d 943, 954 (Fed. Cir. 2008)).
83 Id. at 3226.
84 Id. at 3227.
other innovations progress in unexpected ways.” Accordingly, “([§] 101 is a ‘dynamic provision designed to encompass new and unforeseen inventions,’” which “may call for new inquiries.”

For similar reasons, the Court elucidated the inappropriateness of categorically excluding business methods patents. Process under § 101 may include, at least in some circumstances, business methods (defined vaguely as “a method of doing or conducting business”). However, the Court explicitly noted that even if a business method fits into the definition of process under the statute, to be patentable it must still meet the requirements of novelty (§ 102), nonobviousness (§ 103), and be fully and particularly described (§ 112). These limitations filter out patents not justified by the statutory requirements, thus balancing the tension between “stimulating innovation” without “impeding progress.”

C. POST-BILSKI CONFUSION

After Bilski, courts and the USPTO continued to apply the MOT test. Although courts recognized that it was not the sole test for subject matter eligibility, they relied on it as a “key indicator,” as they knew of no alternative standard to analyze method claims.

For example, in CyberSource Corp. v. Retail Decisions, Inc., the Federal Circuit applied the MOT test to affirm the invalidity of claims reciting “a ‘method and system for detecting fraud in a credit card transaction between [a] consumer and a merchant over the Internet.’” In addition to failing the MOT test, the claims were also held ineligible for reciting nothing more than a mental process: “[m]ethods which can be performed entirely in the human mind are unpatentable . . . because . . . [they] embody the ‘basic tools of scientific and

85 Id.
86 Id. (quoting J.E.M. Ag Supply, Inc. v. Pioneer Hi-Brad Int'l, Inc., 853 U.S. 124, 135 (2001)).
87 Id. at 3228.
88 Id.
90 Id. at 3229.
91 Id.
92 Lemley et al., supra note 21, at 1315.
93 Id. at 1319 (quoting Ultramercial, LLC v. Hulu, LLC, No. CV 09-06918 RGK (PLAx), 2010 WL 3360098, at *3 (C.D. Cal. Aug. 13, 2010), rev'd sub nom. Ultramercial, Inc. v. Hulu, LLC, 722 F.3d 1335 (Fed. Cir. 2013)).
95 Id. at 1371.
The court also concluded that CyberSource's Baker claim—"a claim to a computer readable medium (e.g., a disk, hard drive, or other data storage device) containing program instructions for a computer to perform a particular process"—should be treated the same way as the ineligible mental process since "simply reciting the use of a computer to execute an algorithm that can be performed entirely in the human mind" does not "demonstrate that [the claim] is 'truly drawn to a specific' computer readable medium, rather than to the underlying [mental process]."

D. THE SUPREME COURT'S GUIDANCE IN MAYO

In 2012 the Supreme Court granted certiorari for Mayo Collaborative Services v. Prometheus Laboratories, Inc. Although the case pertains to the "laws of nature" exception, its subject matter eligibility analysis is useful for assessing claims that fall under the abstractness exception. Here, the Court held ineligible "patent claims covering processes that help doctors who use thiopurine drugs to treat patients with autoimmune diseases determine whether a given dosage level is too low or too high." After laying out the statutory categories and judicial exceptions, Justice Breyer posed the patent-eligibility question as "whether the claims do significantly more than simply describe [the unpatentable] natural... correlations between thiopurine metabolite levels and the toxicity and efficacy of thiopurine drug dosages"—i.e., "do the patent claims add enough to their statements of the correlations to allow the processes they describe to qualify as patent-eligible processes that apply natural laws?"

In unanimously concluding that the claims failed to do so, the Court relied on its precedent for three important principles: (1) precedent warns "against interpreting patent statutes in ways that make patent eligibility 'depend simply on the draftsman's art' without reference to the 'principles underlying the

96 Id. at 1373 (quoting Gottschalk v. Benson, 409 U.S. 63, 67 (1972)).
97 Id.
98 Id. at 1374–75.
99 Id. at 1293–94, 1297–98, 1300–02. See also Bernard Chao, Finding the Point of Novelty in Software Patents, 28 BERKELEY TECH. L.J. 1217, 1233–36 (describing Mayo's applicability to the abstractness exception).
100 Id. at 1296–1304.
101 Id. at 1296–97.
prohibition against patents for [natural laws]," 105 (2) precedent warns "against
upholding patents that claim processes that too broadly preempt the use of a
natural law," 106 and (3) precedent "insist[s] that a process that focuses upon the
use of a natural law also contain other elements or a combination of elements,
sometimes referred to as a 'inventive concept,' sufficient to ensure that the
patent in practice amounts to significantly more than a patent upon the natural
law itself." 107

Justice Breyer began his analysis with a statement summarizing these
principles: "[i]f a law of nature is not patentable, then neither is a process
reciting a law of nature, unless that process has additional features that provide
practical assurance that the process is more than a drafting effort designed to
monopolize the law of nature itself." 108 "[A]ny additional steps consisting of
well-understood, routine, conventional activity already engaged in by the
scientific community" that "add nothing significant beyond the sum of their
parts taken separately . . . are not sufficient to transform [an] unpatentable [idea]
into [a] patentable application[ ] of [the idea]." 109 In the case at hand, the Court
found the steps insufficient because "methods for determining metabolite levels
were well known in the art. Indeed, scientists routinely measured metabolites as
part of their investigations . . . ." 110 Quoting Bilski, Justice Breyer explained,
"the prohibition against patenting abstract ideas "cannot be circumvented by
attempting to limit the use of the formula to a particular technological
environment." 111 The Court reiterated that claims should be considered as a
whole and that the § 101 exceptions should be retained and not made "a dead
letter." 112 Justice Breyer also alluded to the Court's concern for the recent
problems patents have created in the technological sector, arguing that the right
of "exclusivity [granted by patents] can impede the flow of information that
might permit, indeed spur, invention." 113 Although Mayo arguably offered more
guidance to the Federal Circuit and other courts suffering from post-Bilski
confusion, the following opinions demonstrate fundamental discord persists
within the Federal Circuit.

105 Id. at 1294 (quoting Parker v. Flook, 437 U.S. 584, 593 (1978)).
106 Id. (citing Gotschalk v. Benson, 409 U.S. 63, 71–72 (1972); O’Reilly v. Morse, 56 U.S. (15
How.) 62, 114–15 (1853)).
107 Id. (citing Bilski v. Kappos, 130 S. Ct. 3218, 3230 (2010); Flook, 47 U.S. at 594).
108 Id. at 1297.
109 Id. at 1298.
110 Id.
111 Id. at 1297 (quoting Bilski, 130 S. Ct. at 3230 (quoting Diamond v. Diehr, 450 U.S. 175, 191–
92 (1981))).
112 Id. at 1303–04.
113 Id. at 1305.
E. RECENT FEDERAL CIRCUIT SOFTWARE PATENT CASES

In Dealertrack, Inc. v. Huber, decided in January 2012, the Federal Circuit affirmed the ineligibility of Dealertrack's computer-aided method claims "for processing credit applications over electronic networks"—i.e., "a clearinghouse specifically to apply for car loans." The court rationalized that the "steps . . . [did] not impose meaningful limits on the claim's scope" because they failed to "specify how the computer hardware and database are specifically programmed to perform the steps claimed in the patent." Although the court did not explicitly state it was applying the MOT test, it pointed out the claims "do not require a specific application, nor are they tied to a particular machine," overall finding the "phrase 'computer aided . . . no less abstract than the idea of a clearinghouse itself.'"

Another case, Bancorp Services, L.L.C. v. Sun Life Assurance Co., involved ineligible method, medium, and corresponding system claims for managing a life insurance policy, each of which preempted an abstract idea. The Federal Circuit treated all the claims alike because "the specified machines appear to be no more than object[s] on which the method operates" and "the form of the claims should not trump basic issues of patentability." Turning to the question of subject matter eligibility, the Federal Circuit noted that "[m]odern computer technology offers immense capabilities" that may be patent eligible: "[a] digital computer operates on data expressed in digits, solving a problem by doing arithmetic as a person would do it by head and hand." Hence, the "interchangeability of [abstract] mental processes and basic digital computation . . . help[s] explain why the use of a computer in an otherwise patent-ineligible process for no more than its most basic function—making calculations or computations—fails to circumvent the prohibition against patenting abstract ideas and mental processes." The court continued, "to salvage an otherwise patent-eligible process, a computer must be integral to the claimed invention, facilitating the process in a way that a person making

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114 674 F.3d 1315, 1317, 1334 (Fed. Cir. 2012).
115 Id. at 1333 (quoting In re Bilski, 545 F.3d 943, 961-62 (Fed. Cir. 2008)).
116 Id. (quoting Dealertrack, Inc. v. Huber, 657 F. Supp. 2d 1152, 1156 (C.D. Cal. 2009)).
117 Id.
118 Id. at 1333 (emphasis added).
119 687 F.3d 1266, 1277 (Fed. Cir. 2012).
120 Id. at 1276 (quoting Bancorp Servs., L.L.C. v. Sun Life Assurance Co., 771 F. Supp. 2d 1054, 1064 (E.D. Mo. 2011)).
121 Id. at 1277 (quoting Parker v. Flook, 437 U.S. 584, 593 (1978)).
122 Id. (quoting Gottschalk v. Benson, 409 U.S. 63, 65 (1972)) (internal quotation marks omitted).
123 Id. at 1278.
calculations or computations could not;\textsuperscript{124} more generally, for "a machine to impose a meaningful limit on the scope of a claim... it must play a significant part in permitting the claimed method to be performed, rather than function solely as an obvious mechanism for permitting a solution to be achieved more quickly, i.e., through the utilization of a computer for performing calculations."\textsuperscript{125} Despite these declarations, the Federal Circuit still lacked a clearly elucidated test for routine application.

Heeding the Supreme Court's advice in \textit{Mayo}, the Federal Circuit next granted an en banc rehearing of \textit{CLS Bank},\textsuperscript{126} an opinion many in the patent community hoped would resolve the confusion over the correct § 101 eligibility standard.\textsuperscript{127} Unfortunately, the court issued a one paragraph \textit{per curiam} opinion by an equally divided court, merely affirming the ineligibility of method, medium, and system claims for mitigating settlement risk. Four concurring and dissenting opinions, and additional reflections by Judge Rader, followed.\textsuperscript{128} The fragmented result demonstrates the Federal Circuit's division over a uniform standard for analyzing method claims under § 101,\textsuperscript{129} and whether or not all claims (whether characterized as method, medium, or system) should "rise and fall together"\textsuperscript{130}—i.e., whether all claims must be found either patent eligible or ineligible because they contain only "minor differences in terminology" and merely "require performance of the same basic process."\textsuperscript{131} An overview of the ten judges' views can be seen in Table 1, below:

\begin{table}[h!]
\centering
\begin{tabular}{|c|c|c|}
\hline
Judge & View & Reasoning
\hline
Judge Lourie & Majority & "Eight judges, a majority, have concluded that the particular method, medium, and system claims at issue in this case should rise or fall together in the § 101 analysis." \textit{CLS Bank}, 717 F.3d at 1274 n.1 (Lourie, J., concurring).
\hline
Judge Moore & Dissenting & "The fragmented result demonstrates the Federal Circuit's division over a uniform standard for analyzing method claims under § 101, and whether or not all claims (whether characterized as method, medium, or system) should "rise and fall together.""
\hline
\end{tabular}
\end{table}

\textsuperscript{124} Id.
\textsuperscript{125} Id. (quoting \textit{SiRF Tech., Inc. v. Int'l Trade Comm'n}, 601 F.3d 1319, 1333 (Fed. Cir. 2010)) (internal quotation marks omitted).
\textsuperscript{126} \textit{CLS Bank Int'l v. Alice}, 717 F.3d 1269 (Fed. Cir. 2013) (en banc).
\textsuperscript{127} See, e.g., Gene Quinn, \textit{Federal Circuit Nightmare in CLS Bank v. Alice Corp.}, IPWATCHDOG (May 10, 2013, 1:26 PM), http://www.ipwatchdog.com/2013/05/10/federal-circuit-nightmare-in-cls-bank-v-alice-corp/id=40230/ ("[A]ll the important questions that we thought might be answered remain completely and totally unanswered ... ").
\textsuperscript{128} \textit{CLS Bank}, 717 F.3d at 1273 (per curiam); \textit{id.} at 1273–92 (Lourie, J., concurring) (finding all of the claims ineligible and joined by Circuit Judges Dyk, Prost, Reyna, and Wallach); \textit{id.} at 1292–1313 (Rader, C.J., concurring in part and dissenting in part) (finding all of the systems claims patent eligible and joined by Circuit Judges Linn, Moore, and O'Malley in Parts I–V and VII while finding the method computer-related medium claims ineligible and joined by Circuit Judge Moore in Parts VI and VIII); \textit{id.} at 1313–20 (Moore, J., dissenting in part).
\textsuperscript{129} WildTangent's Petition for Certiorari, \textit{supra} note 1.
\textsuperscript{130} Judge Lourie summarizes: "eight judges, a majority, have concluded that the particular method, medium, and system claims at issue in this case should rise or fall together in the § 101 analysis." \textit{CLS Bank}, 717 F.3d at 1274 n.1 (Lourie, J., concurring).
\textsuperscript{131} Id. at 1291.
In their respective opinions, Judge Lourie, Chief Judge Rader, and Judge Newman proposed starkly contrasting subject matter eligibility tests, each of which will be separately outlined in the following paragraphs.

Judge Lourie’s “Integrated Approach”\cite{133} presents a “strong view”\cite{134} (finding all of Alice’s claims ineligible) that identifies a two-step process for determining patent eligibility under § 101.\cite{135} First, one must ask “whether the claimed invention fits within one of the four statutory classes set out in § 101.”\cite{136} Second, “[a]ssuming [the first] condition is met, the analysis turns to the judicial exceptions to subject-matter eligibility.”\cite{137} In considering whether “the abstractness exception applies, one must determine whether “the claim pose[s] any risk of preempting an abstract idea.”\cite{138} To do so, one should (a) “identify and define whatever fundamental concept appears wrapped up in the claim,” (Step 2(a)) and then (b) ask if there are any “additional substantive limitations that narrow, confine, or otherwise tie down the claim so that, in practical terms,

\begin{table}
\centering
\begin{tabular}{|c|c|c|c|c|}
\hline
\hline
Lourie & No & No & No & Yes \\
Reyna & No & No & No & Yes \\
Dyk & No & No & No & Yes \\
Prost & No & No & No & Yes \\
Wallach & No & No & No & Yes \\
Rader & Yes & Yes & No & ? \\
Linn & Yes & Yes & Yes & Yes \\
Moore & No & No & Yes & No \\
O’Malley & Yes & Yes & Yes & Yes \\
Newman & Yes & Yes & Yes & Yes \\
\hline
\end{tabular}
\caption{CLS Bank III, 717 F.3d 1269 (Fed. Cir. 2013): Rulings by Judge\textsuperscript{132}}
\end{table}


\textsuperscript{134} Chao, supra note 37.

\textsuperscript{135} CLS Bank, 717 F.3d at 1282 (Lourie, J., concurring).

\textsuperscript{136} Id.

\textsuperscript{137} Id.

\textsuperscript{138} Id.
it does not cover the full abstract idea itself” (Step 2(b)).\textsuperscript{139} Judge Lourie’s “substantive,” limitation in Step 2(b) “has ‘sometimes’ been referred to as an ‘inventive concept,’ ”\textsuperscript{140} but he emphasizes that \textit{inventiveness} in the § 101 sense is separate from the \textit{novelty} and \textit{nonobviousness} requirements of patentability found in 35 U.S.C. §§ 102 and 103.\textsuperscript{141} Instead, “an ‘inventive concept’ in the § 101 context refers to a genuine human contribution to the claimed subject matter.”\textsuperscript{142} Overall, steps 2(a) and 2(b) of Judge Lourie’s “§ 101 preemption analysis center [\ldots] on the practical, real-world effects of the claim.”\textsuperscript{143} Accordingly, he emphasized that if the only limitations found in step 2(b) “represent \ldots human contribution[s] but are merely tangential, routine, well-understood, or conventional, or in practice fail to narrow the claim relative to the fundamental principle [found in Step 2(a)],” then those limitations “cannot confer patent eligibility.”\textsuperscript{144}

Chief Judge Rader’s “Meaningful Limitations Approach”\textsuperscript{145} represents a “weak”\textsuperscript{146} finding the method and medium claims ineligible, but the systems claims eligible. This approach, also involving two steps, does not require that the claims “rise and fall together.” First, one identifies the abstract idea in the claim.\textsuperscript{147} Second, one must ask “whether [the] claim includes meaningful limitations restricting it to an application, rather than merely an abstract idea.”\textsuperscript{148} Chief Judge Rader emphasizes the Court’s language in \textit{Mayo} that “one must do more than simply state the law of nature while adding the words ‘apply it’ ”;\textsuperscript{149} but, at the same time, “[o]ne cannot go hunting for abstractions by ignoring the concrete, palpable, tangible limitations of the invention the patentee actually

\begin{footnotes}
\item[139] Id.
\item[141] Id. (citing 35 U.S.C. §§ 102, 103 (2012)); see also Mayo, 132 S. Ct. at 1303–04 (“[D]eclin[ing] the Government’s [argument] to substitute §§ 102 [and] 103 … inquiries for the better established inquiry under § 101.”).
\item[142] \textit{CLS Bank}, 717 F.3d at 1283 (“[A] person cannot truly ‘invent’ an abstract idea or scientific truth. … Accordingly, an ‘inventive concept’ … must be ‘a product of human ingenuity.’ ” (quoting Diamond v. Chakrabarty, 447 U.S. 303, 309 (1980))).
\item[143] Id.
\item[144] Id.
\item[146] Chao, supra note 37.
\item[147] \textit{See C.L.S. Bank}, 717 F.3d at 1297–98 (Rader, C.J., concurring in part and dissenting in part) (“The concern … is whether the claim seeks to patent an idea itself, rather than an application of that idea.”).
\item[148] Id. at 1292 (citing \textit{Mayo}, 132 S. Ct. at 1297).
\item[149] Id. at 1297 (quoting \textit{Mayo}, 132 S. Ct. at 1294).
\end{footnotes}
THE INTEGRATED APPROACH

claims."150 Chief Judge Rader interprets Mayo’s inventive concept to mean “whether implementing the abstract idea in the context of the claimed invention inherently requires the recited steps.”151 Others have characterized his interpretation as meaning “that any system claim which contains structural limitations satisfies the inventive concept requirement.”152 Concluding, Judge Rader proclaims in his additional reflections, “[w]hen all else fails, consult the statute!”153

Finally, Judge Newman asserts his own “even weaker view,” which would have found all of Alice’s claims eligible.154 Newman proposed using § 101 as a “threshold into the patent system” and then examining “the particular subject matter on the substantive criteria of patentability [(35 U.S.C. §§ 102, 103, 112)] to eliminate claims that are ‘abstract’ or ‘preemptive.’”155 In other words, he would eliminate the abstractness exception to § 101 and instead use §§ 102–103 address subject-matter eligibility.156 Judge Newman also argues that the form of the claim should not factor into the § 101 analysis, to ensure that “[p]atent eligibility does not turn on the ingenuity of the draftsman.”157 Thus, he agrees with the majority of the Federal Circuit judges that the claims should rise or fall together.158 However, in Mayo, the Supreme Court explicitly reaffirmed its intention to retain the three judicial exceptions to § 101, so Judge Newman’s approach should not be given much merit.159 Moreover, since CLS Bank, Judge Lourie’s and Chief Judge Rader’s approaches have been the only two applied by the Federal Circuit; accordingly this Note will only consider their proposals (the CLS Bank tests) for adoption by the Supreme Court.

150 Id. at 1298.
151 Id. at 1303.
153 CLS Bank, 717 F.3d at 1335 (Rader, C.J., additional reflections).
154 Chao, supra note 37.
155 CLS Bank, 717 F.3d at 1322 (Newman, J., concurring in part and dissenting in part).
156 See id. (“[E]xamination of the particular subject matter on the substantive criteria of patentability will eliminate claims that are ‘abstract’ or ‘preemptive,’ on application of the laws of novelty, utility, prior art, obviousness, description, enablement, and specificity. There is no need for an all-purpose definition of ‘abstractness’ or ‘preemption,’ as heroically attempted today.”).
157 Id.
158 Id. (“The court should hold that the form of the claim does not determine section 101 eligibility.”).
159 Mayo Collaborative Servs. v. Prometheus Labs., Inc., 132 S. Ct. 1289, 1304 (“[The Court] decline[s] the Government’s invitation to substitute §§ 102, 103, and 112 inquiries for the better established inquiry under § 101.”).
F. RECENT APPLICATIONS OF THE CLS BANK TESTS

The CLS Bank tests were first re-applied in Ultramercial, Inc. v. Hulu, LLC, which involved a method for “distributing copyrighted products . . . over the Internet where the consumer receives a copyrighted product for free in exchange for viewing an advertisement, and the advertiser pays for the copyrighted content.” Prior to this appeal the Federal Circuit reversed and remanded the district court’s holding of ineligibility regarding the same method claim, but the Supreme Court vacated that decision and remanded the case back to the Federal Circuit in light of Mayo. After CLS Bank, a three-member panel of the Federal Circuit (which happened to contain both Chief Judge Rader and Judge Lourie on the remand), unanimously found the method claim eligible subject matter, but on different grounds. Chief Judge Rader (joined by Judge O’Malley) authored the majority opinion and again delineated the Meaningful Limitations Approach. In concurring, Judge Lourie argued that Chief Judge Rader’s view is contrary to the Supreme Court’s precedent in Mayo and that the Integrated Approach more accurately reflects the Supreme Court’s guidance. Judge Lourie further criticized the majority, arguing that “[w]hile a computer or complex computer program, as discussed by [Chief Judge Rader], may be necessary to perform the method, it is not what the claim specifically requires and thus should not be the focus of the analysis.” However, he ultimately concurred with the court’s finding of eligibility because “[t]he additional claim limitations reciting how the idea [of ‘using advertising as an exchange or currency’] is implemented ‘narrow, confine, or otherwise tie down the claim so that, in practical terms, it does not cover the full abstract idea itself.’”

Both Judge Lourie and Chief Judge Rader predictably re-applied their own tests in Accenture Global Services v. Guidewire Software, Inc.; however, in this case they disagreed on the eligibility of system claims directed to a computer program for handling insurance-related tasks. Judge Reyna joined Judge

160 722 F.3d 1335, 1337 (Fed. Cir. 2013).
162 Ultramercial, 722 F.3d at 1337.
163 Id. at 1343–54.
164 Id. at 1354–55 (Lourie, J., concurring).
165 Id. at 1355.
166 Id. (quoting CLS Bank Int’l v. Alice Corp., 717 F.3d 1269, 1282 (Fed. Cir. 2013) (en banc) (Lourie, J., concurring); Ultramercial, LLC v. Hulu, LLC, No. CV 09-06918 RGK (PLAx), 2013 WL 3360098, at *6 (C.D. Cal. Aug. 13, 2010)).
167 728 F.3d 1336 (Fed. Cir. 2013). Accenture did not appeal the lower court’s determination that the related method claims were also invalid. Id. at 1337–38.
Lourie’s majority opinion, which found the system claims ineligible “because [they] offer no meaningful limitations beyond the method claims that have been held patent-ineligible and because, when considered on their own, under Mayo and [the] plurality opinion in CLS Bank, they fail to pass muster.” Judge Lourie found the system claim similar to the ineligible claims in CLS Bank and Bancorp for their insignificant post-solution activity that merely contained supplementing software to a computer for a limited field. On the other hand, the claims were distinguishable from the claims in Ultramercial, which possessed specific limits “contain[ing] significantly more than the underlying abstract concept (e.g., media products, websites, free access), instead of general steps of performing a task. Additionally: “[b]ecause the system claim[s] and method claim[s] contain only ‘minor differences in terminology [but] require performance of the same basic process,’ they should rise or fall together.” Chief Judge Rader dissented, noting that “no part of CLS Bank . . . carrie[d] the weight of precedent,” so the majority opinion mistakenly “relie[de] significantly on the [Integrated Approach] proposed by the plurality opinion in CLS Bank” instead of focusing on precedent from the Federal Circuit or the Supreme Court, which he believed did not support the majority’s proposition. Chief Judge Rader also challenged Judge Lourie’s reliance on a “majority” holding from CLS Bank for his position that system claims which closely track method claims and are grounded by the same meaningful limitations “will generally rise and fall together.” He states due to divergent reasoning for the holding in CLS Bank, in combination with the “claim-by-claim” approach affirmed in Ultramercial, Judge Lourie’s approach “actually follows a procedure rejected almost unanimously by [the Federal Circuit].” Instead Chief Judge Rader would have affirmed the patent-eligibility of the claimed systems because they “require a specific combination of computer components.” Overall, the case exemplified the court’s persisting inability to define an “abstract idea” and disagreement over the appropriate test for subject matter eligibility.

168 Id. at 1342.
169 Id. at 1346.
170 Id.
171 Id. at 1344 (fourth alternative in original) (quoting CLS Bank, 717 F.3d at 1291).
172 Id. at 1346–47 (Rader, C.J., dissenting).
173 Id. at 1347 (internal quotation marks omitted) (quoting id. at 1341 (majority opinion); Ultramercial, Inc. v. Hulu, LLC, 722 F.3d 1335, 1340 (Fed. Cir. 2013)) (“[F]ive of the judges who held that the method claims and system claims rise or fall together stated: [t]o be clear, the fact that one or more related method claims has failed under § 101, as here, does not dictate that all associated system claims or even all associated method claims must suffer the same fate.” (quoting CLS Bank, 717 F.3d at 1291 n.4 (Lourie, J., concurring))).
174 Id.
G. REASONS WHY THE SOFTWARE CONTEXT POSES SUCH A PROBLEM

The split between judges in the Federal Circuit persists partly because of the nature of software patents themselves, as the following scholars explain. One scholar recognizes that "[s]oftware is intrinsically different from most other patentable subject matter... [because] [i]t lacks the metaphorical bolt onto which patent law's primary scope-restricting doctrinal tool can attach to gain purchase and ratchet in permissible claim scope." Patent doctrine creates what the author calls "the invention-structure equation: it holds as an ontological matter that an invention 'is' its structure and that an invention's function is more peripherally only what an invention 'does.'" While this tool is useful for excluding overbroad claims in other contexts, it fails in the software context because "software inventions are pure functionality"; they "cannot be defined with reference to the physical, structural properties of either a tangible copy of the software on a storage medium or a computer programmed with the software. They can only be defined by their behavior or function." Hence, "[p]ermissible claim scope is usually tethered to the structure of an invention" (as exemplified by the application of the MOT test), "but purely functional technologies like software have no relevant structure to which claim scope can be tethered." The scholar next offers an alternative solution to other tests, which he describes as "a new software-exceptionalist approach to patent protection," or a "software-specific 'patch'" in the law, which would "treat algorithms as the metaphorical structure of software inventions." Similarly, another scholar offers another possible reason for the ambiguity in the software patent context. The "cult of the claim" believes that claims "directly delineate a patent's exclusionary rights," instead of "functioning as tools" that help to convey the "substantive, technical concept" (the invention) "disclosed in the application." The author rebuts patent law's commonly quoted premise that "[c]laims are the most important part of the modern patent document." While "claims still play an important part in [his view of the]..."
patent system, . . . [they] are written to help delineate the contours of the technical invention described in the patent.\textsuperscript{183} Thus, they "indirectly lead to the exclusive rights because they help courts determine what constitutes the patentable invention."\textsuperscript{184} "The invention," as best understood, "is the inventor's own solution to some technical problem for which the inventor seeks a patent."\textsuperscript{185} The scholar argues for adopting this "substantive, technical vision of the invention" partly because it "provides a comprehensive way to interpret the disclosure requirements that can resolve the ongoing debates preventing consensus."\textsuperscript{186} This "substantive vision gives claims critically important contextual meaning by tying the purpose of the claims to the overall purpose of the specification."\textsuperscript{187} "To determine if the patent application contains a 'patentable invention,'" he proposes "two distinct determinations."\textsuperscript{188} First, one must "determin[e] what was invented."\textsuperscript{189} This step involves looking at both § 101 and § 112. Second, one must "determin[e] if (or what portion of) the invention is patentable."\textsuperscript{190} This step involves using both § 102 and § 103.\textsuperscript{191} While the "cult allows claims that extend well beyond the subject matter disclosed or even contemplated by the inventor[,] . . . the substantive view inherently limits patent claims to subject matter that was conceived and disclosed by the inventor."\textsuperscript{192} Additionally, the scholar notes that "[Chief] Judge Rader and Judge Linn are likely the strongest and most vocal current supporters for the cult of the claim."\textsuperscript{193}

Another scholar further suggests that because software patents are often cloaked in overbroad claim language describing "the software only in . . . general terms of functionality," they become vulnerable to patent trolls.\textsuperscript{194} Moreover, the USPTO does not "provide[] any effective cataloging of software patent claims[,] . . . so it is impossible for software firms to do effective freedom-to-

\textsuperscript{183} Id. at 5.
\textsuperscript{184} Id.
\textsuperscript{185} Id.
\textsuperscript{186} Id.
\textsuperscript{187} Id. at 6.
\textsuperscript{188} Id. at 16 (quoting 35 U.S.C. § 271 (2006)).
\textsuperscript{189} Id. at 23.
\textsuperscript{190} Id.
\textsuperscript{191} Id.
\textsuperscript{192} Id. at 26.
\textsuperscript{193} Id. at 36.
\textsuperscript{194} See Burns, supra note 7, at 65–66 ("Software patents can have unpredictable claim interpretation, unclear scope, and questionable validity, in part because the patents rarely include actual code, often describing the software only in broad and general terms of functionality. As a result, the blurred boundaries of these patents provide greater opportunity to extract rents from software companies.").
operate searches to void [sic] infringing software patents." Therefore, infringement of software claims appears unavoidable, and there have even been complaints "about the 'culture of intentionally infringing patents' in the software industry." Accordingly, “[p]atent lawsuits involving [patent trolls] have increased dramatically over the last decade,” and “[s]oftware patents may account for over ninety percent of troll's [sic] most-litigated patents.”

Another commentator additionally reported that this patent troll problem due to overbroad software claims cost named defendants in frivolous, troll-related lawsuits “over $29 billion” in out-of-pocket expenses. Overall, these scholars describe how the patent troll problem is damaging the software and technology sector.

III. THE SUPREME COURT SHOULD ADOPT THE INTEGRATED APPROACH

To resolve the unique problems posed by the software context identified in Part II, the Supreme Court should adopt Judge Lourie's Integrated Approach for three reasons. First, it is the most consistent with the Supreme Court's analysis in Mayo. Second, it dictates results consistent with previous Federal Circuit cases involving software patents, thus readily resolving the perceived ambiguity with uniform reasoning. Finally, its strong view applies strict scrutiny to software patent eligibility through a substantive vision of the invention, which will effectuate the goals of patent law and mitigate the patent troll problem.

A. THE INTEGRATED APPROACH IS MOST CONSISTENT WITH MAYO

Judge Lourie's Integrated Approach closely mirrors several key aspects of Justice Breyer's analysis in Mayo: the analytical framework and terminology, understanding of inventive concept, and requirement that claims "rise and fall together." In Mayo, Justice Breyer first mentions the statutory categories in § 101 and the three judicial exceptions, paralleling Judge Lourie's first and second steps. Regarding the abstractness exception in Step 2, the Integrated

195 Id. at 56 (citing Christina Mulligan & Timothy B. Lee, Scaling the Patent System, 68 N.Y.U. ANN. SURV. AM. L. 289, 301–05 (2012)).
197 Id. at 65 (“[T]he number of PAE-instigated patent lawsuits in the United States [is] increasing by an estimated average of more than thirty-three percent per year since 2004.”).
198 Bessen, supra note 11.
199 Compare Mayo Collaborative Servs. v. Prometheus Labs., Inc., 132 S. Ct. 1289, 1293 (2012) (quoting the categories of patent-eligible subject matter in § 101 and continuing with an explanatory of each judicial exception), with CLS Bank, 717 F.3d 1269, 1282 (Laurie, J.), concurring (first, one must ask “whether the claimed invention fits when one of the four
THE INTEGRATED APPROACH

Approach asks whether the claim poses any risk of preempts an abstract idea. To answer this question, Steps 2(a) and 2(b) Judge Lourie draw language directly from Mayo. Step 2(a) asks one to "identify and define whatever fundamental concept appears wrapped up in the claim" and Step 2(b) asks if there are any "additional substantive limitations that narrow, confine, or otherwise tie down the claim so that practical terms, it does not cover the full abstract idea itself." The "substantive limitations" in Step 2(b) requires precisely what Justice Breyer demands—the claims must "add enough to their statements" to ensure that they "do significantly more than simply describe" natural laws or abstract ideas. Furthermore, Judge Lourie notes that his "requirement for substantive claim limitations" has sometimes been referred to as an "inventive concept," or a "genuine human contribution to the claimed subject matter," drawing from Justice Breyer's recitation of Flook and Bilski.

Chief Judge Rader criticized Judge Lourie's interpretation of "inventive concept" as violative of Diehr (as reaffirmed in Mayo) because it results in "stripping away all known elements from the asserted system claims and analyzing only whether what remains, as opposed to the claim as a whole, is an abstract idea." Other commentators have also suggested that Judge Lourie's

statutory classes set out in § 101.

200 CLS Bank, 717 F.3d 1269, 1282; supra text accompanying note 138.
201 Compare CLS Bank, 717 F.3d 1269, 1282, with Mayo, 717 F.3d at 1302 ("[T]he steps add nothing of significance to the natural laws themselves. . . . [T]he patent claims do not confine their reach to particular applications of those laws. . . . [T]hese patents tie up too much future use of laws of nature." (emphasis added)).
203 717 F.3d at 1282.
204 See supra note 107 and accompanying text (Justice Breyer characterized the "inventive concept" as an important principle in Mayo); see also Mayo, 132 S. Ct. at 1294 (precedent "insist[s] that a process that focuses upon the use of a natural law also contain other elements or a combination of elements, sometimes referred to as an 'incentive concept,' sufficient to ensure that the 'patent in practice amounts to significantly more than a patent upon the natural law itself'").
205 CLS Bank, 717 F.3d at 1315 (Moore, J., dissenting in part and joined by Chief Judge Rader); see also id. at 1335 (Rader, C.J., additional reflections) ("[T]o inject the patentability test of 'inventiveness' into the separate statutory concept of subject matter eligibility makes this doctrine again 'the plaything of the judges who, as they became initiated into its mysteries, delighted to devise and expound their own ideas of what it meant.' " (quoting Giles S. Rich, Principles of Patentability, 28 GEO. WASH. L. REV. 393, 404 (1960)); see also supra note 157 and accompanying text (highlighting Chief Judge Rader's similar argument made against Judge Lourie in reference to the views of the other Federal Judges).
The approach is inconsistent with the Court's precedent in *Mayo, Bilski, and Diehr.* However, these criticisms are overstated for several reasons. First, Judge Lourie cites *Mayo* for the proposition that the claim must be evaluated "as a whole" when "look[ing] for meaningful limitations," i.e., "substantive limitations that narrow, confine, or otherwise tie down the claim." Second, Judge Lourie explains his conception of "inventive concept" as referring to "a genuine human contribution to the claimed subject matter" with several citations to *Mayo.* Third, the practical effect of the Integrated Approach is to "consider[,] whether steps combined with a natural law or abstract idea are so insignificant, conventional, or routine as to yield a claim that effectively covers the natural law or abstract idea itself." Overall, Judge Lourie's Integrated Approach tracks Justice Breyer's conception of inventiveness in *Mayo* and explicitly cites precedent for its characterization of the correct subject matter eligibility analysis.

Moreover, it is Chief Judge Rader's Meaningful Limitations Approach that is actually inconsistent with the Supreme Court's prior precedent. Chief Judge Rader argues that inventiveness should be governed by § 103 and that *Mayo*'s use of "inventive concept" "should [not] be read to instill an 'inventiveness' or 'ingenuity' component into the [§ 101] inquiry." Instead, he argues that "inventive concept" should be read as an "inquiry into whether implementing the abstract idea in the context of the claimed invention inherently requires the recited steps." Continuing, he states "if, to implement the abstract concept, one must perform the additional step, then the step merely separately restates an element of the abstract idea, and thus does not further limit the abstract concept to a practical application." This interpretation of "inventive concept" appears in practice to require a structural component, and transforms an ineligible method claim into an eligible system claim merely because it satisfies the MOT test. As Moore's opinion (joined by C.J. Rader) states,

209 *Id.* at 1282 (citing *Mayo*, 132 S. Ct. at 1300).
210 *Id.* at 1283; *Planet Bingo*, 2013 WL 4427811, at *5.
211 CLS Bank, 717 F.3d at 1284; *Planet Bingo*, 2013 WL 4427811, at *5.
212 *Planet Bingo*, 2013 WL 4427811, at *5.
213 CLS Bank, 717 F.3d 1269, 1295–96 (Rader, C.J., concurring in part and dissenting in part) ("One final point confirming the breadth of Section 101 is the 1952 Act's deliberate decision to place the substantive requirement for 'invention' in Section 103.").
214 *Id.* at 1302.
215 *Id.* at 1303.
216 *Id.*
217 *Id.* at 1305 ("If tying a method to a machine can be an important indication of patent-eligibility, it would seem that a claim embodying the *machine itself*, with all its structural and
[A] system claim's structural limitations restrict the claimed machine by requiring certain physical components. These concrete elements are precisely the sort of 'inventive concept' that meaningfully limits the claim, preventing it from 'tying up' the underlying abstract idea itself. Although the individual components themselves may not be new or innovative, the particular combination of components recited in the claim results in a brand new machine—a special purpose computer. 218

However, the Supreme Court repeatedly emphasized in Bilski and Mayo that while it is "an important and useful clue," the MOT test "is not a definitive test of patent eligibility." 219

Additionally, the Integrated Approach is more consistent with Mayo than the Meaningful Limitations Approach since the former requires that the claims "rise and fall together." Although Justice Breyer did not explicitly decree that exact phrase in Mayo, he hinted at the idea by warning that the Court should not "make patent eligibility 'depend simply on the draftsman's art' without reference to the 'principles underlying the prohibition against patents for [natural laws]." 220 This requirement also stems from earlier cases such as Cybersource 221 and Bancorp. 222 Therefore, the Supreme Court supports the conclusion that the form of the claim—either method, medium, or system—should not alter the determination of subject matter eligibility when in reality, they all preempt the same abstract idea. Finally, eight of the ten judges in CLS Bank believed that the claims should rise or fall together, leaving only Chief Judge Rader and Judge O'Malley in disagreement. This overwhelming majority champions adopting the test that embraces substantive claim congruity, despite arbitrary differences in form based on the patentee's clever draftsmanship. To do otherwise would only further confuse the standard for subject matter eligibility.

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218 CLS Bank, 717 F.3d at 1316 (Moore, J., dissenting in part).
220 Mayo, 132 S. Ct. at 1294 (alteration in original) (quoting Parker v. Flook, 437 U.S. 584, 593 (1978)).
221 See supra notes 96–98 and accompanying text (concluding that the Beaurgard claim was ineligible based on the corresponding, and ineligible, method claim).
222 See supra notes 119–21 and accompanying text (treating system and medium claims the same as the ineligible method claim).
eligibility and distract from the accurate focus on the invention claimed in the patent document.

Overall, the Integrated Approach should be adopted because it is more consistent with Mayo than the Meaningful Limitations Approach for its analytical framework and terminology, interpretation of inventive concept, and requirement that claims should rise and fall together.

B. THE INTEGRATED APPROACH RECONCILES PRECEDENT AND CURES AMBIGUITY

The Integrated Approach should also be adopted because it produces outcomes consistent with the Federal Circuit’s recent software-patent decisions rendering the confusion and ambiguity moot by harmonizing its reasoning.

When applied to cases adjudicating the eligibility of claims within registered patents, Step one—identifying whether the claimed invention fits within one of the four statutory classes set out in § 101—is necessarily always met. The answer to Step Two—assessing whether one of the three exceptions applies to the subject matter—is almost invariably abstractness in the software context, and is the only exception under scrutiny in each of the subsequent cases discussed. Accordingly, when applying the Integrated Approach in CLS Bank, to determine if the claim preempts an abstract idea, Step 2(a) identifies “the abstract idea [as] reducing settlement risk by effecting trades through a third-party intermediary . . . empowered to verify that both parties can fulfill their obligations before allowing the exchange—i.e., a form of escrow.”

Regarding Step 2(b), Judge Lourie noted that “[n]one of [the] limitations adds anything of substance to the claim” because “[t]here is no specific or limiting recitation of essential, or improved computer technology, and no reason to view the computer limitation as anything but ‘insignificant postsolution activity’ relative to the abstract idea.” Instead, the method claim used “extravagant language to recite a basic function” and “add[ed] nothing of practical significance to the underlying idea.” Similarly, in evaluating the computer-readable medium claim, Judge Lourie explained that although it “appears to invoke a physical object, . . . every substantive limitation presented in the body of the claim . . . pertains to the method steps of the program code ‘embodied in the medium.’” Thus, “for § 101 purposes,” the computer-readable medium claims were practically “equivalent to the methods they recite[d]” because “the guise of a device . . . do[es] not overcome the Supreme Court’s warning to

223 CLS Bank, 717 F.3d 1269, 1286.
224 Id.
225 Id. at 1287 (emphasis added).
226 Id. at 1288.
THE INTEGRATED APPROACH

avoid permitting a ‘competent draftsman’ to endow abstract claims with patent-eligible status.” 227 Moreover, the system claims were “akin to stating the abstract idea of third-party intermediation and adding the words: ‘apply it’ on a computer”; 228 hence, the method, medium, and corresponding system claims all fell together.

The Integrated Approach also proved useful in both Ultramercial and Accenture. As discussed, the claim in Ultramercial involved eleven total steps for “distributing copyrighted products (e.g., songs, movies, books) over the Internet where the consumer receives a copyrighted product for free in exchange for viewing an advertisement, and the advertiser pays for the copyrighted content.” 229 In Judge Lourie’s concurring opinion, he utilized Step 2(a) of the Integrated Approach to define the claim’s abstract idea as “us[ing] advertising as an exchange or currency.” 230 Contrasting the claims to those in CLS Bank, Judge Lourie argued Ultramercial’s claims constituted eligible subject matter because “the added limitations in these claims represent significantly more than the underlying abstract idea of using advertising as an exchange or currency and, as a consequence, do not preempt the use of that idea in all fields.” 231 In other words, when applying Step 2(b), the additional limitations “narrow[ed], confine[d], or otherwise tie[d] down the claim.” 232

In Judge Lourie’s majority opinion in Accenture, he applied the Integrated Approach to find “a system for generating tasks to be performed in an insurance organization” ineligible subject matter. 233 Judge Lourie concluded that because the corresponding method claims were held ineligible, the system claims should fall accordingly; however, he noted that they “failed to pass muster.” 234 To determine whether the system claims risked preempting an abstract idea, Judge Lourie identified the abstract idea (Step 2(a)) as “generating tasks [based on] rules . . . to be completed upon the occurrence of an

227 Id.
228 Id. at 1291 (citing Mayo Collaborative Servs. v. Prometheus Labs., Inc., 132 S. Ct. 1289, 1294 (2012)).
229 Ultramercial, Inc. v. Hulu, LLC, 722 F.3d 1335, 1337–38 (Fed. Cir. 2013); supra notes 146–50 and accompanying text.
231 Id.
232 Id. (quoting CLS Bank Int’l v. Alice Corp., 717 F.3d 1269, 1282 (Fed. Cir. 2013) (Laurie, J., concurring) (internal quotation marks omitted).
234 Accenture Global Servs., 728 F.3d at 1342.
In applying Step 2(b), Judge Lourie said, the limitations "do not 'narrow, confine, or otherwise tie down the claim'... [because] simply implementing an abstract concept on a computer, without meaningful limitations to that concept, does not transform a patent-ineligible claim into a patent-eligible one." Judge Lourie added, when looking at the claim, "the complexity of the implementing software or the level of detail in the specification does not transform a claim reciting only an abstract concept into a patent-eligible system or method." In other words, there was no inventive concept or practical application, beyond the insubstantial limitation to a general-purpose computer, to prevent the claims from effectively preempting an abstract idea itself.

Applying the Integrated Approach to the facts in CyberSource, Dealertrack, and Bancorp would also result in the same outcome as the one reached by the panel of judges in each of these cases. This consistency demonstrates the Federal Circuit's incoherent reasoning can be easily reconciled, without constituting a dramatic shift in the law if the Supreme Court were to formally adopt the Integrated Approach.

The claim in CyberSource "recite[d] a "'method and system for detecting fraud in a credit card transaction between [a] consumer and a merchant over the Internet,'" which Judges Dyk, Bryson, and Prost found to be ineligible subject matter for reciting "an unpatentable mental process." Under the Integrated Approach, the claims would also be found ineligible for preempting an abstract idea. Applying Step 2(a), the abstract idea of each claim would be characterized as "any method or system for detecting credit card fraud which utilizes information relating credit card transactions to particular 'Internet address[es].'" Applying Step 2(b), there would be no substantial limitations to narrow, confine, or otherwise tie down the idea because the claimed "limitations" solely constitute mental processes. Basically, the claim method involves merely collecting data from the Internet, making a list, and then using logical reasoning to detect fraud, none of which is inventive or a product of 

235 Id. at 1344 (alterations in original) (quoting Component Based Interface to Handle Tasks During Claim Processing, U.S. Patent No. 7,013,284, Cal. 107 ll. 25, 38-31 (filed May 4, 1999) (issued Mar. 4, 2006)) (internal quotation marks omitted).
236 Id. at 1345.
237 Id.
239 Id. at 1368 (alteration in original) (quoting '154 Patent, Reexamination Certificate, col.2 ll. 38-47).
240 See id. at 1371 ("'[T]he '154 Patent fails to recite patent-eligible subject matter because it is drawn to an unpatentable mental process—a subcategory of unpatentable abstract ideas.'").
human ingenuity.\textsuperscript{241} Thus, although the judges in \textit{CyberSource} did not explicitly apply the Integrated Approach, their analysis in effect included the same steps and produced a consistent result.

Similarly, in \textit{Dealertrack}, Judges Linn, Plager, and Dyk found the "computer-aided method and system [claims] . . . for processing credit applications over electronic networks" ineligible subject matter.\textsuperscript{242} Applying Step 2(a) of the Integrated Approach, the abstract idea embedded in the claim is "sending information back and forth, at specified time intervals or in sequence, from a dealer to a lender or from a lender to another lender."\textsuperscript{243} These claims would not pass Step 2(b) because the limiting steps did not contain an inventive concept or meaningful limitations on the claim's scope.\textsuperscript{244} More specifically, as the court noted, "the claims here recite only that the method is 'computer-added' without specifying any level of involvement or detail. The fact that certain algorithms are disclosed in the specification does not change the outcome."\textsuperscript{245} Therefore, the claim preempts an abstract idea under the Integrated Approach, dictating a result consistent with the court's actual outcome.

Finally, in \textit{Bancorp}, the Integrated Approach would also produce the same result reached by the Federal Circuit panel, which included Judge Lourie, along with Judges Prost and Wallach.\textsuperscript{246} Although Judge Lourie did not explicitly employ the Integrated Approach in the case, his analytical framework was essentially equivalent. The method, medium, and system claims reciting a process "for administering and tracking the value of life insurance policies in separate accounts" fell together for preempts an abstract idea.\textsuperscript{247} Judge Lourie identified the abstract idea (Step 2(a)) as "[managing a stable value protected life insurance policy] and then instruct[ing] the use of well-known [calculations] to help establish some of the inputs into the equation."\textsuperscript{248} Under Step 2(b), there are no substantial limitations, because the computer is only used for its basic function of computations, and therefore does not tie the abstract

\textsuperscript{241} See \textit{id.} at 1372 ("All of claim 3's method steps can be performed in the human mind, or by a human using a pen and paper.").

\textsuperscript{242} \textit{Dealertrack, Inc. v. Huber}, 674 F.3d 1315, 1317, 1334 (Fed. Cir. 2012).


\textsuperscript{244} \textit{id.} at 1333 ("The claims here do not require a specific application, nor are they tied to a particular machine.").

\textsuperscript{245} \textit{id.} at 1333–34.

\textsuperscript{246} \textit{Bancorp Servs., L.L.C. v. Sun Life Assurance Co.}, 687 F.3d 1266 (Fed. Cir. 2012).

\textsuperscript{247} \textit{id.} at 1269, 1277–78.

\textsuperscript{248} \textit{id.} at 1278 (first and third alteration in original) (internal quotation marks omitted) (quoting \textit{Bilski v. Kappos}, 130 S. Ct. 3218, 3231 (2010)).
idea to a specific inventive concept.\textsuperscript{249} The "mathematical algorithm . . . is assumed to be within the prior art, [and thus] the application, considered as a whole, contains no patentable invention."\textsuperscript{250}

Altogether, applying the Integrated Approach to past cases involving patent eligibility of software or computer-related inventions garners results consistent with the understanding of the majority of the Federal Circuit judges and would reconcile the past outcomes with uniform reasoning. Therefore, the Supreme Court should adopt this approach to resolve the perceived ambiguity and grant necessary relief for uncertain patentees, the USPTO, and lower courts.

C. THE INTEGRATED APPROACH BEST EFFECTUATES THE POLICY BEHIND PATENT LAW

A final reason why the Supreme Court should adopt the Integrated Approach is because it best serves the underlying policy goals of patent law, as expressed recently in \textit{Mayo}, and would help resolve the current patent troll problem.

To reiterate, 35 U.S.C. § 101 declares subject matter eligible for patentability if it is "new and useful."\textsuperscript{251} Thus, the statutory language itself requires \textit{innovativeness} or \textit{inventiveness}, in light of its constitutional purpose—"[t]o promote the Progress of Science and useful Arts."\textsuperscript{252} The three judicial exceptions to § 101 were recognized by the Court because "monopolization of those [basic] tools [of scientific and technological work] through the grant of a patent might tend to impede innovation more than it would tend to promote it."\textsuperscript{253} Justice Breyer encompassed this notion in \textit{Mayo} by excluding "well-understood, routine, conventional activity, previously engaged in by those in the field."\textsuperscript{254} Judge Lourie incorporates these tenants into the Integrated Approach to invalidate claims.\textsuperscript{255} Although the language employed through the steps of both the Integrated Approach and Meaningful Limitations Approach otherwise

\textsuperscript{249} Id. at 1280 ("[W]ithout the computer limitations nothing remains in the claims but the abstract idea of managing a stable value protected life insurance policy by performing calculations and manipulating the results.").

\textsuperscript{250} Id. (internal quotation marks omitted) (quoting Parker v. Flook, 437 U.S. 584, 598 (1978)).


\textsuperscript{252} U.S. CONST. art. 1, § 8, cl. 8.


\textsuperscript{254} Id. at 1299.

\textsuperscript{255} See CLS Bank Int'l v. Alice Corp., 717 F.3d 1269, 1283 (Fed. Cir. 2013) (Lourie, J., concurring) ("Limitations that represent a human contribution but are merely tangential, routine, well-understood, or conventional, or in practice fail to narrow the claim relative to the fundamental principle therein, cannot confer patent eligibility.").
appear similar, these tenants are what effectively distinguish the CLS Bank tests and render the Integrated Approach the more efficient, reliable, and practically useful test for the software context.

Chief Judge Rader’s Meaningful Limitations Approach embodies the “invention-structure equation,” and is therefore an incorrect description of the law, regardless of its inconsistency with Mayo, because the use of a particular machine is not required to avoid preempting an abstract idea. For example, in Ultramercial, Chief Judge Rader found the method claim eligible because the steps involved programming that created an “extensive computer interface.” This programming, he argued, generated a new machine. However, Judge Lourie’s Integrated Approach also found Ultramercial’s method claim eligible, but without the requirement of a machine or structural components. Instead, he identified “[t]he additional claim limitations reciting how the idea was implemented [to] ‘narrow, confine, and otherwise tie down the claim.’” In other words, he focused on the important contextual meaning of the claim, looking at how the specific limitations effectuated the specification’s functional purpose as a whole. Judge Lourie noted, “[w]hile a computer or complex computer program, as discussed by Chief Judge Rader, may be necessary to perform the method, it is not what the claim specifically requires and thus should not be the focus of the analysis.”

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256 Compare supra text accompanying note 139, with supra text accompanying notes 147–48 (Judge Lourie’s step 2(a) and (b) involve identifying the fundamental concept and any substantial limitations. Chief Judge Rader’s two steps involve identifying the abstract concept and any meaningful limitations.).

257 See supra text accompanying notes 83–84, 176 (Bilski clarified that the MOT is not the exclusive test. The MOT fails in the software catalyst due to his pure functionality); see also Ultramercial, LLC v. Hulu, LLC, 657 F.3d 1323, 1328 (Fed. Cir. 2011), vacated and remanded sub nom. Wildtangent, Inc. v. Hulu, LLC, 132 S. Ct. 2431 (2012). In Ultramercial, Chief Judge Rader found the method claim eligible because one of the steps required complex computer programming, which he argued created a new machine. Ultramercial, Inc. v. Hulu, LLC, 722 F.3d 1335 (Fed. Cir. 2013). However, Judge Lourie found the same claim eligible for a different reason that did not require the use of a machine. Id. at 1354–55 (Lourie, J., concurring).

258 Ultramercial, 722 F.3d at 1398 (majority opinion) (“[P]rogramming creates a new machine, because a general purpose computer in effect becomes a special purpose computer once it is programmed to perform particular functions pursuant to instructions from program software.” (quoting In re Alappat, 33 F.3d 1526, 1545 (Fed. Cir. 1994), abrogated by In re Bilski, 545 F.3d 943 (Fed. Cir. 2008)).

259 Id. at 1354–55 (Lourie, J., concurring).

260 Id. at 1355 (quoting CLS Bank Int’l v. Alice Corp., 717 F.3d 1269, 1282 (Fed. Cir. 2013) (Lourie, J., concurring)).

261 Id.
Judge Lourie correctly criticizes Chief Judge Rader’s analysis because “it makes no sense” to discuss software inventions in terms of their structure. Software patents have a purely functional purpose, without requiring “the specification of any physical, structural propert[y]...[to] identify what a software inventor has invented.” Rather, in the software context, “[t]he invention is the inventor’s own specific way of solving some relevant problem.” Therefore, a software invention is not necessarily “tethered” to a particular machine or physical components, which Chief Judge Rader would require. Overall, Chief Judge Rader’s conception of inventiveness is not only inconsistent with Mayo’s incorporation of the requirement in the § 101 inquiry, but also with the nature of the software context itself.

On the other hand, the Integrated Approach’s strong view embodies a substantive understanding of the term invention, which is also consistent with Mayo. If explicitly adopted by the Supreme Court, it would improve the “completeness, accuracy, and precision” of the patent system. This substantive view of the invention would denounce the cult of the claim, of which Chief Judge Rader is a “vocal current supporter,” and once again “put the invention at the center of patent law,” while appreciating claims as an “administrative tool for securing exclusive rights in the invention.” This focus on functionality of the invention and the Integrated Approach, combined, would limit eligible patent claims to the “substantive invention created by the inventor.” Although patent law places great emphasis on the importance of patent claims, “the subject matter invented by the inventor exists before a patent is filed and before any claims have been written. The thing invented by inventors is their solution to same problem; it is the inventors means to same useful end.” The invention should be thought of as a “substantive, technical
concept,"272 and a § 101 analysis determines what this is. This interpretation
ties the purpose of the claim to the overall purpose of the specification, giving it
important contextual meaning. If the Supreme Court definitively adopts a
"substantive, technical vision of the invention,"273 as implemented in the
Integrated Approach, it will use § 101 and the judicially created exceptions to
rule out overbroad claims that fail to "promote the Progress of Science and
useful Arts."274

This focus on the invention in turn will allow the Court to aid in resolving the
current patent troll problem, largely attributable to software patents.275 The
approach will force the USPTO to deny patent applications for overbroad
software claims, decreasing the number of software patents potentially
vulnerable to trolls, and mitigating the costs associated with frivolous
litigation.276 As mentioned, Justice Breyer hints at the lurking patent troll
problem in Mayo: "[t]he exclusion from patent law of basic truths reflects
'both ... the enormous potential for rent seeking that would be created if
property rights could be obtained in them and ... the enormous transaction
costs that would be imposed on would-be users [of those truths].' "277 While
Justice Breyer notes that the law should attempt to balance competing
considerations of different fields, the Court seeks to limit the "very exclusivity
that

impede[s] the flow of information that might permit, indeed spur, invention, by, for example, raising the price of using the patented ideas once created, requiring potential users to conduct costly and
time-consuming searches of existing patents and pending patent applications, and requiring the negotiation of complex licensing arrangements.278

The patent troll problem in the software context is increasing these transaction
costs and litigation expenses referenced by the Supreme Court. Breyer's
language suggests that the Supreme Court in Mayo is concerned with this stark
persistence of the patent troll problem, extensively rampant in the software

272 Id. at 5.
273 Id. at 16.
274 U.S. CONST. art. 1, § 8, cl. 8.
275 See Burns, supra note 7, at 65 ("Software patents may account for over ninety percent of
troll's [sic] most-litigated patents.").
276 See supra notes 7, 11 and accompanying text; see also supra text accompanying notes 194–98.
PROPERTY LAW 305–06 (2003)).
278 Mayo, 132 S. Ct. at 1305.
context; therefore, the Supreme Court should adopt the stronger view presented in the Integrated Approach to mitigate the trolls from extensively "wreaking damage" in the technology sector.\textsuperscript{279}

Overall, the Integrated Approach, focusing on the invention rather than claim language, looks for a technical solution to an existing practical problem. By doing so, it forces patentees to forthrightly demonstrate their invention's genuine human contribution, making it easier for the USPTO to identify the invention and therefore to determine eligibility. The approach will also incentivize innovation by ruling out claims that monopolize abstract ideas; however, it will do so without excluding claims that lack structural limitations, which Chief Judge Rader's approach would require despite its incongruity in the software context and inconsistency with \textit{Mayo}. Instead, Judge Lourie's strong view, by excluding overbroad claims that only limited abstract ideas through "well-understood, routine, conventional activity previously engaged in by researchers in the field,"\textsuperscript{280} will best serve the goals of patent law and the technology sector while mitigating the patent troll problem. Altogether, the Integrated Approach should be adopted because it provides precisely "[w]hat is needed: a consistent, cohesive, and accessible approach to the §101 analysis—a framework that will provide guidance and predictability for patent applicants and examiners, litigants, and the courts."\textsuperscript{281}

\textbf{IV. CONCLUSION}

The Federal Circuit is fractured over a proper standard to govern the subject matter eligibility determination of software patents. Although the problem may be attributable to the inherently functional nature of software, rather than the Federal Circuit's ineptitude, the inconsistent reasoning has created ambiguity in the law. This confusion has sparked problems for patentees who fear for validity attacks on their patents, the USPTO who must process thousands of software patent applications each year, and lower courts that must deal with the extensive litigation over the validity of many software patent claims. The unclear ineligibility standard also contributes to the patent troll problem that is wreaking havoc in the software and technology sector. Thankfully, the Supreme Court has recently granted certiorari for \textit{CLS Bank}, presenting an opportunity to clarify the patent eligibility guidelines in the software context.

The Court should adopt the Integrated Approach, as opposed to Chief Judge Rader's Meaningful Limitations Approach or another test, for three

\textsuperscript{279} Burns, \textit{supra} note 7.
\textsuperscript{280} \textit{CLS Bank Int'l v. Alice Corp.}, 717 F.3d 1269, 1283 (Fed. Cir. 2013) (Lourie, J., concurring) (internal quotation marks omitted) (quoting \textit{Mayo}, 132 S. Ct. at 1294).
\textsuperscript{281} \textit{Id.} at 1277.
reasons. First, the Integrated Approach is the most consistent with Mayo for its closely tracked language, interpretation of inventive concept, and requirement that claims should rise and fall together. Second, an application of the Integrated Approach to facts of prior Federal Circuit precedent reveals that the perceived ambiguity can easily be reconciled with uniform reasoning that would not dramatically change the law, and would reflect the understanding of a majority of the Federal Circuit judges. Finally, the Supreme Court should adopt the Integrated Approach because it is consistent with the Supreme Court’s policy considerations, and because it takes a strong view that would invalidate more claims that risk preempting an abstract idea, thereby mitigating the patent troll problem that persists in the software context.

Until the Supreme Court resolves this confusion in the law, dire problems will persist among anxious patentees, the overwhelmed USPTO, and overburdened courts. Onlookers can now only hope that the Justices of the Supreme Court can work more cohesively than the judges on the Federal Circuit to apply a wise resolution and bring much needed clarity to the software patent context.