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RETURNING PATENTABLE SUBJECT MATTER TO ANYTHING

UNDER THE SUN MADE BY MAN

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Returning Patentable Subject Matter to Anything Under the Sun Made by Man

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I. Introduction

When the founding fathers laid the bedrock of patent law, they created a list of conditions that an invention must meet to be patentable. An invention must be novel, non-obvious, described in a manner which allows others to practice it, and more. But the cardinal condition is that the invention be of the kind that can be patented—that the invention falls within a category of patent eligible subject matter. This fundamental condition, this threshold question, is codified in § 101.

On its face, 35 U.S.C. § 101 is not complicated. The statute simply lists patent-eligible inventions as processes, machines, manufactures, compositions of matter, or improvements thereof.¹ Early case law set forth three narrow exceptions to these categories: laws of nature, natural phenomena (or products of nature) and abstract ideas.² However, in recent years the courts have modified the requirements of § 101, greatly expanding the once narrow ineligible subject matter categories.³ The two-step eligibility test that emerged out of *Mayo*, *Myriad*, and *Alice* (hereafter referred to as the *Mayo/Alice* two-step test) took these once narrow ineligible subject matter categories and gave them broad reach, rendering entire classes of inventions ineligible. As a result, § 101 has transformed into an unwieldy and unworkable standard causing confusion and frustration. Instead of adding clarity, the courts' attempts to resolve these questions of patent eligibility have enlarged the problem, producing puzzling case holdings.⁴ It is clear that continuing down the *Alice* rabbit hole will not fix the problem, guidance is needed in the form of a legislative solution.

¹ 35 U.S.C. § 101 (2012).

² Comments from Mark L. Whitaker, President, Am. Intellectual Prop. L. Ass'n, on behalf of AIPLA on Patent Subject Matter Eligibility to Michelle K. Lee, Under Sec'y of Commerce for Intellectual Prop. & Dir., U.S. Patent & Trademark Office 10 (Jan. 18, 2017), https://www.uspto.gov/sites/default/files/documents/comments_aipla_jan182017.pdf [hereinafter AIPLA Comments].

³ *Id.* at 7–9 (question and response to the scope of the Supreme Court's interpretation of the exceptions under 35 U.S.C. § 101).

⁴ *Id.* at 2.

II. The History of 35 U.S.C. § 101

The origins of 35 U.S.C. § 101 go back to the Patent Act of 1952. The intent of Congress was that “statutory subject matter [is] to include anything under the sun that is made by man.”⁵ The legislative history expressly illustrates that § 101 was intended as an enabling provision, while “[s]ections 102, 103 and 112 set out the ‘conditions for patentability’, and were intended to provide a yardstick for judging novelty, non-obviousness, and the sufficiency of disclosure in the specification and the claims.”⁶ As aptly put by a law student, “[t]he language of § 101, on its face, renders this patent-eligibility statute a ‘coarse filter’ and leaves the other patent statutes to act as a fine filter.”⁷ The current language of § 101 comes from the 1952 Act and reads:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.⁸

After broadly defining the eligible categories of invention, the Supreme Court identified only a few, narrow exceptions to patent eligible subject matter under § 101: claims directed solely to laws of nature, natural phenomena, and abstract ideas.⁹ “As recently as 2010, the Court recognized that those exceptions do not ‘give[] the Judiciary *carte blanche* to impose other limitations that are inconsistent with the text and the statute’s purpose and design.’”¹⁰ But only a few years later, “the Court did exactly that, unnecessarily and confusingly applying those exceptions so broadly as to impose [inconsistent] limitations on patentability...”¹¹

In the notorious trio of cases, *Mayo*, *Myriad*, and *Alice*, the Supreme Court tackled each of the patent eligible subject matter exceptions. Beginning with the natural law exception in *Mayo*, the Court held that processes which identified correlations between thiopurine and metabolite levels and the toxicity and efficiency of thiopurine drugs were directed at natural laws and, thus, ineligible.¹² In reaching its decision, the Court established the two-step test to determine section 101 eligibility. Step one requires a court to determine if the patent at issue is directed at a law of

⁵ *Diamond v. Diehr*, 450 U.S. 175, 182 (1981) (citation and internal quotation marks omitted).

⁶ AM. INTELLECTUAL PROP. L. ASS’N, AIPLA LEGISLATIVE PROPOSAL AND REPORT ON PATENT ELIGIBLE SUBJECT MATTER 2 (2017) [hereinafter AIPLA PROPOSAL].

⁷ Megan Thobe, Note, *A Call to Action: Fixing the Judicially-Murkied Waters of 35 U.S.C. § 101*, 50 IND. L. REV. 1023, 1023–24 (2017).

⁸ 35 U.S.C. § 101 (2012).

⁹ AIPLA Comments, *supra* note 2, at 7–9.

¹⁰ *Id.* at 10 (citing *Bilski v. Kappos*, 561 U.S. 593, 603 (2010)).

¹¹ *Id.*

¹² *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66 (2012).

nature.¹³ If the answer is yes, then the court moves on to step two and asks, “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?”¹⁴ This second step allows courts to consider the state of the art and arguably injects a novelty or obviousness analysis into section 101.

Shortly after *Mayo*, *Myriad* similarly addressed the natural phenomena or product of nature judicial exception.¹⁵ In *Myriad*, the Court addressed whether particular forms of DNA were products of nature and thus patent ineligible.¹⁶ The Court held that “a naturally occurring DNA segment is a product of nature and not patent eligible merely because it has been isolated.”¹⁷ However, the Court held eligible cDNA, “an exons-only molecule that is not naturally occurring.”¹⁸ The Court reasoned that the cDNA “process technically creates new molecules with unique chemical compositions.”¹⁹ This holding expanded the product of nature exception by requiring a composition to be more than simply non-naturally occurring as had been previously held in *Diamond v. Chakrabarty*.²⁰

Finally, in *Alice* the Court applied the two-step test from *Mayo* to the abstract idea judicial exception.²¹ The Court held as ineligible a patent “designed to facilitate the exchange of financial obligations between two parties by using a computer system as a third-party intermediary.”²² Under the two-step test, the Court found the *Alice* patent ineligible because (1) the claims were directed to an abstract idea, and (2) the claims contained no “inventive concept” that “transform[s] that abstract idea into a patent-eligible invention.”²³

While the Court attempted to add guidance and clarity through *Mayo*, *Myriad*, and *Alice*, the cases produced more questions than answers. For example, what is the requisite level of human intervention required to sufficiently modify a law of nature or a product of nature? Is it enough to simply copy something existing in nature with small modifications, like the cDNA in *Myriad*?

¹³ *Id.* at 77–78. Interestingly, the Court in *Mayo* never expressly set forth the first step of the two-step test. The two steps were not clarified until the Court’s decision in *Alice*. See *Alice Corp. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2355 (2014).

¹⁴ *Mayo*, 566 U.S. at 77.

¹⁵ *Ass’n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576 (2013).

¹⁶ *Id.* at 582–86.

¹⁷ *Id.* at 580.

¹⁸ *Id.* at 594.

¹⁹ *Id.* at 587.

²⁰ *Diamond v. Chakrabarty*, 447 U.S. 303, 309–10 (1980) (holding manmade micro-organisms as patentable subject matter under § 101).

²¹ *Alice Corp.*, 134 S. Ct. 2347, 2352 (2014).

²² *Id.*

²³ *Id.*

What is required of an “inventive concept” in order to “transform an abstract idea?” Why is it not enough for software to perform more efficiently something that can occur in the human mind? These questions, and many more, are left unanswered.

Instead of creating a functional test, the Court created a “generalized inquiry framed at a high level of abstraction.”²⁴ The *Mayo/Alice* test “has produced the seemingly perverse effect of it being both *indeterminate*, as no one is certain how it will be applied in any particular case, and *overly restrictive*, as it has been applied to invalidate patents covering ‘everything from computer animation to database architecture to digital photograph management and even to safety systems for automobiles.’”²⁵ Further, in the second step of the two-step test, “[t]he Court commingled the analysis on which it relied with additional requirements necessarily derived from sections 102, 103 and 112.”²⁶ The result of the *Mayo/Alice* two-step test is confusing; it is unclear whether the analysis incorporates novelty and non-obviousness and how § 101 fits within the context of the other patent law statutes.

III. Why 35 U.S.C. § 101 Needs to Change

In a study aimed at illustrating the impact of *Alice*, Robert Sachs tracked Federal Circuit and district court § 101 decisions in the three years following the decision.²⁷ Of the 473 tracked cases, 60 percent of the challenged claims were found invalid and 66.4 percent of all the claims were invalidated.²⁸ Looking specifically at the Federal Circuit decisions, 80 of 88 (90.9 percent) patents were invalidated.²⁹ Of the various categories of invention, “the most significant increases in rejections have been in the areas of biotech and high-tech...key sectors of the twenty-first century innovation economy...”³⁰

After *Alice*, the Patent Trial and Appeal Board’s Covered Business Method Program (CBM)³¹ invalidated 97.8 percent of the patents it reviewed.³² Rejections in the business methods area

²⁴ Kevin Madigan & Adam Mossoff, *Turning Gold Into Lead: How Patent Eligibility Doctrine Is Undermining U.S. Leadership in Innovation*, 24 GEO. MASON L. REV. 939, 951 (2017).

²⁵ *Id.* at 952 (emphasis in original).

²⁶ AIPLA Comments, *supra* note 2, at 9.

²⁷ Robert Sachs, *AliceStorm Update for Q1 2017*, BILSKI BLOG (Apr. 6, 2017), <https://www.bilskiblog.com/2017/04/alicestorm-update-for-q1-2017>).

²⁸ *Id.*

²⁹ *Id.*

³⁰ Madigan & Mossoff, *supra* note 24, at 953–53.

³¹ *Id.* at 954. CBM is a post-grant review proceeding offered by the Patent Office that allows software and business method patents to be challenged for invalidity.

(tech center 3600) went from a pre-*Alice* rejection rate of 35.5 percent to a post-*Alice* rejection rate of 86.3 percent.³³ This sharp increase in rejections is troubling as it “reduces the incentive to innovate and undermines research, development, and production in industries that rely on software-based innovation.”³⁴ Life science inventions have experienced similar difficulty overcoming the *Alice* hurdle.³⁵ Rejections of patent applications in the field of chemical engineering (tech center 1700) more than doubled from 1.5 percent before *Alice* to 3.2 percent after *Alice*.³⁶

Additionally, the large amount of litigation and frequent changes to the analysis under § 101 have left the Patent Office and courts struggling to keep up. The § 101 decisions “shed no light on the quantum of evidence needed for the claim to cross the threshold from abstract to concrete . . . the conclusions can often be characterized as ‘I know it when I see it.’”³⁷ The Patent Office struggles to quickly interpret new eligibility holdings and produce guidance for examiners, PTAB judges, and agency policymakers.³⁸ “Without, at a minimum, a clear understanding of what claims fall under [the judicial exceptions] and what additional elements are enough to constitute an inventive concept,” it is not reasonable to expect the courts and examiners to make predictable decisions.³⁹

Overall, the *Mayo/Alice* test and subsequent § 101 decisions continue to have a significant impact on an inventor’s ability to obtain and enforce patents.⁴⁰ But despite this adverse impact, the courts continue to pursue the *Mayo/Alice* framework. A factor driving the courts is the “public backlash caused by the aggressive enforcement of low quality patents by so-called ‘patent trolls,’ and consequently much of the focus of recent patent reform efforts is on curbing the issuance and enforcement of such patents.”⁴¹ But many argue § 101 is the wrong tool to

³² *Id.* (citing Robert R. Sachs, *The One Year Anniversary: The Aftermath of #AliceStorm*, BILSKI BLOG (June 20, 2015), <https://www.bilskiblog.com/2015/06/the-one-year-anniversary-the-aftermath-of-alicestorm>).

³³ *Id.* at 954 fig.2.

³⁴ INTELLECTUAL PROP. OWNERS ASS’N, PROPOSED AMENDMENTS TO PATENT ELIGIBLE SUBJECT MATTER UNDER 35 U.S.C. § 101 25 (2017), https://www.ipo.org/wp-content/uploads/2017/02/20170207_IPO-101-TF-Proposed-Amendments-and-Report.pdf [hereinafter IPO PROPOSAL].

³⁵ AIPLA PROPOSAL, *supra* note 6, at 9.

³⁶ Madigan & Mossoff, *supra* note 24, at 954 fig.2.

³⁷ AIPLA PROPOSAL, *supra* note 6, at 9 (citing *Jacobellis v. Ohio*, 378 U.S. 184, 197 (1964) (Stewart, J., concurring) on the difficulty of defining hard core pornography).

³⁸ AIPLA PROPOSAL, *supra* note 6, at 9.

³⁹ Paxton M. Lewis, Note, *The Conflation of Patent Eligibility and Obviousness: Alice’s Substitution of Section 103*, 2 UTAH. L. REV. ONLAW 13, 14 (2017).

⁴⁰ IPO PROPOSAL, *supra* note 34, at 23.

⁴¹ *Id.* at 26.

address these problems.⁴² Section 101 is intended to be a threshold question, simply asking whether the particular invention is of the kind for which patents are allowed. Sections 112, 102, and 103, on the other hand, are used to ensure *good quality* patents. Section 112 requires that a patent provide adequate disclosure and §§ 102 and 103 ensure that the patent is novel over the prior art. “What distinguishes a good quality patent from a bad one is unrelated to the requirements of eligibility,” it is instead “the quality of the disclosure in terms of enablement, the novelty, and non-obviousness of the claims and their specificity—all factors being expressly mentioned by the courts in deciding patent eligibility cases.”⁴³

With increased § 101 rejections and findings of invalidity, the United States also risks losing inventors to foreign patent protection.⁴⁴ While applications in the U.S. are being rejected as ineligible for patent protection under § 101, the E.U. and China are granting patents on the exact same inventions and discoveries.⁴⁵ As a result, “innovators are driven overseas to create and commercialize new technologies.”⁴⁶ Another study by Robert Sachs, working with David Kappos, kept a database recording all patent applications that received an initial or final rejection under § 101 between August 1, 2014 and September 27, 2017.⁴⁷ Of the recorded applications, 17,743 were abandoned after receiving a final rejection from the USPTO on the basis of § 101.⁴⁸ “Among these 17,743 patent applications, 1,694 patent applications claiming the same or similar inventions were granted by the EPO, China, or both.”⁴⁹

Sharp upticks in eligibility rejections threaten the United States’ “gold standard” patent system.⁵⁰ “The U.S. has long been regarded as the world leader in securing property rights in technological innovation, granting patents for the next wave of discoveries when the rest of the world hesitates.”⁵¹ For example, in *Diamond v. Chakrabarty* the Court recognized that the results of biotech research, although they could be considered products of nature, had the potential to

⁴² *Id.*

⁴³ *Id.*

⁴⁴ Madigan & Mossoff, *supra* note 24, at 941.

⁴⁵ *Id.* at 941, 956.

⁴⁶ *Id.* at 959.

⁴⁷ *Id.* at 956 n.10.

⁴⁸ *Id.* at 956.

⁴⁹ *Id.*

⁵⁰ *Id.* at 939 (“The U.S. patent system is increasingly mired in legal uncertainty, except for the firm knowledge derived from data on the massive numbers of invalidations of issued patents and of rejections of patent applications.”).

⁵¹ *Id.* at 942.

create important advances in medical science.⁵² “By first securing property rights in the fruits of biotech research, the U.S. became the birthplace of the biotech revolution.”⁵³

This increase in foreign patent activity, coupled with the high rejection and invalidation rates, evidence the harm caused by this new § 101 jurisprudence. It is clear that the *Mayo/Alice* two-step test threatens to undermine crucial, growing areas of patent law such as the biotech and high-tech industries. It is time to correct § 101 and encourage innovation through broad categories of patent eligible subject matter.

IV. A Legislative Solution

In response to the *Mayo/Alice* two-step test, many members of the intellectual property community have spoken up with proposed solutions.⁵⁴ The American Intellectual Property Law Association (AIPLA), the Intellectual Property Owners Association (IPO), and the American Bar Association Section of Intellectual Property Law (ABA-IPL) have all proposed amendments to the language of 35 U.S.C. § 101.⁵⁵

Looking first at the AIPLA, the AIPLA proposal suggests breaking § 101 into three subsections: 101(a), 101(b), and 101(c).⁵⁶ In subsection 101(a), the amendment retains the existing language

⁵² *Diamond v. Chakrabarty*, 447 U.S. 303 (1980).

⁵³ *Madigan & Mossoff*, *supra* note 24, at 944.

⁵⁴ Philip Simon, *Time to Wake Up: Comparing Statutory Proposals to Escape Alice’s Looking Glass*, *JIPEL* (Oct. 19, 2017), <https://blog.jipel.law.nyu.edu/2017/10/time-to-wake-up-comparing-statutory-proposals-to-escape-alices-looking-glass>.

⁵⁵ See *AIPLA PROPOSAL*, *supra* note 6; *IPO PROPOSAL*, *supra* note 34; Supplemental Comments from Donna P. Suchy, Section Chair, Am. Bar Ass’n Section of Intellectual Prop. L., on behalf of ABA-IPL on Patent Subject Matter Eligibility to Michelle K. Lee, Under Sec’y of Commerce for Intellectual Prop. & Dir., U.S. Patent & Trademark Office (Mar. 28, 2017), <https://patentdocs.typepad.com/files/letter-5.pdf> [hereinafter *ABA-IPL Proposal*].

⁵⁶ *AIPLA PROPOSAL*, *supra* note 6, at 4. AIPLA’s proposed amendment reads as follows:

35 U.S.C. § 101—Inventions Patentable

- (a) Eligible Subject Matter.—Whoever invents or discovers any useful process, machine, manufacture, composition of matter, or any useful improvement thereof, shall be entitled to a patent thereof, subject only to the conditions and requirement set forth in this title.
- (b) Sole Exceptions to Subject Matter Eligibility.—A claimed invention is ineligible under subsection (a) only if the claimed invention as a whole exists in nature independent of and prior to any human activity, or can be performed solely in the human mind.
- (c) Sole Eligibility Standard.—The eligibility of a claimed invention under subsections (a) and (b) shall be determined without regard to the requirements or conditions of sections 102, 103 and 112 of this title, the manner in which the claimed invention was made or discovered, or whether the claimed invention includes an inventive concept.

of 101 with a few amendments; in particular, the proposal deletes the word “new” from the provision.⁵⁷ The APLIA advocates for the deletion of the word “new” “in response to the judicial decisions that import into eligibility determinations a novelty-like consideration which is inconsistently applied and less well-developed than the novelty analysis under 35 U.S.C. § 102.”⁵⁸ In subsection 101(b), the sole exceptions to subject matter eligibility are defined as “(1) where the claimed invention as a whole exists in nature independent of and prior to any human activity, or (2) where it can be performed solely in the human mind.”⁵⁹ Subsection 101(c) states the eligibility standard is distinct from the conditions of patentability set forth under 35 U.S.C. §§ 112, 102, and 103.⁶⁰ The intent of subsection (c) is to prohibit the courts and USPTO from importing a determination as to patent eligibility into the § 101 analysis, and to overturn the second part of the eligibility test set forth in *Mayo* and *Alice* (that an inventive concept transform the judicial exception).⁶¹

The proposals by the IPO and ABA-IPL follow a similar vein.⁶² Like AIPLA’s proposal, the IPO amendment also breaks § 101 into subsections 101(a), 101(b) and 101(c), whereas the ABA-

⁵⁷ *Id.* at 5. Compare 35 U.S.C. § 101, with AIPLA proposed amendment *infra* note 56.

⁵⁸ AIPLA PROPOSAL, *supra* note 6, at 5.

⁵⁹ *Id.*

⁶⁰ *Id.* at 16.

⁶¹ *Id.* at 17.

⁶² The IPO proposed amendment reads as follows:

35 U.S.C. § 101:

- (a) Eligible Subject Matter.—Whoever invents or discovers, and claims as an invention, any useful process, machine, manufacture, composition of matter, or any useful improvement thereto, shall be entitled to a patent for a claimed invention thereof, subject only to the exceptions, conditions, and requirement set forth in this Title.
- (b) Sole Exceptions to Subject Matter Eligibility.—A claimed invention is ineligible under subsection (a) if and only if the claimed invention as a whole, as understood by a person having ordinary skill in the art to which the claimed invention pertains, exists in nature independently of and prior to any human activity, or exists solely in the human mind.
- (c) Sole Eligibility Standard.—The eligibility of a claimed invention under subsections (a) and (b) shall be determined without regard to the requirements or conditions of sections 102, 103 and 112 of this Title, the manner in which the claimed invention was made or discovered, or the claimed invention’s inventive concept.

IPO PROPOSAL, *supra* note 34, at 1.

The ABA-IPL proposed amendment reads as follows:

35 U.S.C. § 101:

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

IPL amendment only includes subsections 101(a) and 101(b).⁶³ Subsection 101(a) of all three proposals tracks the historical language of section 101 and all three omit the word “new,” again emphasizing that the novelty requirement is not to be analyzed under § 101.⁶⁴ Similar to AIPLA’s proposal, subsection 101(b) for both the IPO and ABA-IPL proposals is “designed to supersede any case law concerning exceptions to patentable subject matter, i.e. supersede the judicial exemptions.”⁶⁵ Again reciting similar language, subsection 101(b) of the ABA-IPL and the AIPLA proposals, and subsection 101(c) of the IO proposal, expressly state that section 101 eligibility analysis is distinct from any analysis under §§ 102, 103, and 112.⁶⁶

The differences between the three proposals are subtle, but important, and lay mainly in subsection 101(b) and the scope of the eligible subject matter exceptions. Beginning with subsection 101(b), the AIPLA’s proposal uses the term “only if” in reference to ineligible subject matter.⁶⁷ The effect of this language is to “leav[e] the door open to further requirements for application to be created by the courts.”⁶⁸ In the IPO proposal, the term “if and only if” to reference patent ineligible subject matter “creates a necessary and sufficient condition for the applicability of § 101(b), precluding any other exceptions while affirmatively applying those provided.”⁶⁹ Finally, subsection 101(b) of the ABA-IPL proposal uses the term “may be denied”

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

ABA-IPL Proposal, *supra* note 55.

⁶³ Compare AIPLA proposed amendment *infra* note 56, with IPO proposed amendment *infra* note 62, and ABA-IPL proposed amendment *infra* note 62.

⁶⁴ Compare AIPLA proposed amendment *infra* note 56, with IPO proposed amendment *infra* note 62, and ABA-IPL proposed amendment *infra* note 62.

⁶⁵ Simon, *supra* note 54.

⁶⁶ AIPLA proposed amendment *infra* note 56; IPO proposed amendment *infra* note 62; ABA-IPL proposed amendment *infra* note 62.

⁶⁷ AIPLA proposed amendment *infra* note 56.

⁶⁸ Simon, *supra* note 54.

⁶⁹ *Id.*; IPO proposed amendment *infra* note 62.

in reference to ineligible subject matter; this language “creates a sufficient but not necessary condition, allowing for the possibility that alternative conditions may be created.”⁷⁰

Regarding the scope of the eligible subject matter exceptions, the IPO appendix defines the clause “exists in nature independently of any human activity” to “reflect[] the notion [that] inventions are the result of some act by a human upon the state of nature” (i.e. acts produced by human skill as opposed to nature).⁷¹ This explanation is stated to be consistent with *Myriad*.⁷²

The AIPLA goes a step further in stating that its proposal “diverges from current eligibility law in that it permits *any* human contribution to meet the eligibility requirement [regarding ‘natural products’].”⁷³ This interpretation is meant to overrule *Myriad*, rendering “all subunits of naturally occurring chromosomal DNA, RNA, etc. patent eligible if they meet the utility requirement of 101(a).”⁷⁴ AIPLA additionally offers commentary of the clause “can be performed solely in the human mind.” The AIPLA appendix states “[t]his exception does not apply, for example, when any part of a claim requires the use of a physical device such as computer hardware or involves a physical test such as a diagnostic assay.”⁷⁵

The ABA-IPL takes a somewhat different approach than the IPO and AIPLA, focusing on preemption to define the scope of eligible subject matter.⁷⁶ While the courts frequently discuss preemption, an analysis based on preemption ultimately seems to only leave another ambiguous and undefined standard. The problem is in determining the permissible scope of preemption, “[a]fter all, our patent system is inherently preemptive—that is how inventors are rewarded for disclosing their inventions.”⁷⁷

One final difference between the proposals is the additional language in the IPO and AIPLA proposals in subsection 101(c). Both proposals state that eligibility shall not be determined as a condition of “the manner in which the invention was made.”⁷⁸ “This provision can be read to forbid decisionmakers from considering whether the invention was made by automating a

⁷⁰ IPO proposed amendment *infra* note 62; ABA-IPL proposed amendment.

⁷¹ IPO PROPOSAL, *supra* note 34, at 32.

⁷² *Id.*

⁷³ Warren Woessner, *IPO, AIPLA and ABA IP Section Propose Legislative Fixes for Section 101*, PATENTS4LIFE (May 18, 2017), <http://www.patents4life.com/2017/05/ipo-aipla-and-aba-ip-section-propose-legislative-fixes-for-section-101>.

⁷⁴ *Id.*

⁷⁵ AIPLA PROPOSAL, *supra* note 6, at app. 4.

⁷⁶ ABA-IPL proposed amendment *infra* note 62 (proposing that matter that “would preempt the use by others” would be unpatentable). Preemption arguments focus on whether an invention *preempts* others from practicing it and whether there is an attempt to monopolize a field of invention.

⁷⁷ Woessner, *supra* note 73.

⁷⁸ IPO proposed amendment *infra* note 62; AIPLA proposed amendment *infra* note 56.

process, thereby ensuring the patentability of software inventions.”⁷⁹ Overall, while each of the proposals differ in their language and stated goals, the “end game of each of these proposals is to spur the largest change to Patentable Subject Matter in U.S. history.”⁸⁰ All three proposals seek to overturn the *Mayo/Alice* test and restore broad categories of patentable subject matter.⁸¹

It is clear that such a legislative solution is called for as the courts’ continued efforts to address the problems of § 101 have been largely unsuccessful.⁸² “The analysis developed in the 101 Decisions is contrary to Congressional intent, too restrictive, technologically incorrect, unsound from a policy standpoint, and bad law.”⁸³ The courts even recognized that such a restrictive test would be harmful, despite creating the very standard they warned about.⁸⁴ Concurring in the denial of rehearing en banc in *Sequenom*, Justice Lourie warned “it is unsound to have a rule that takes [certain] inventions...out of the realm of patent-eligibility on the grounds that they only claim a natural phenomenon plus conventional steps, or that they claim abstract concepts.”⁸⁵ The courts recognize that the *Mayo/Alice* two-step test is damaging, but attempted remedies have only aggravated the situation. Courts and patent examiners struggle to apply the case law and define the ambiguous line between eligible and ineligible subject matter.

In contrast to further judicial interpretation, a legislative solution will help add consistency to § 101 analysis, increase efficiency in our patent system, and promote innovation in the United States. The proposals by the AIPLA, IPO and ABA-IPL “represent[] a clean break from the existing judicial exceptions to eligibility by creating a new framework with clearly defined statutory exceptions.”⁸⁶ The proposals aspire to provide “a clear, objective test that will result in appropriately broad eligibility.”⁸⁷ Most importantly, these proposals provide the necessary constraints on judicial interpretation and stop the continued expansion of ineligible subject matter.⁸⁸

Of the three proposals, the AIPLA’s offers the broadest interpretation of patent eligible subject matter and is therefore the most likely to stop the increased ineligibility findings and spur innovation. The AIPLA proposal specifically addresses the two industries hit hardest by the

⁷⁹ Simon, *supra* note 54.

⁸⁰ *Id.*

⁸¹ *Id.*

⁸² AIPLA Comments, *supra* note 2, at 3.

⁸³ IPO PROPOSAL, *supra* note 34, at 2.

⁸⁴ *Id.*

⁸⁵ *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 809 F.3d 1286, 1987 (Fed. Cir. 2015) (Lourie, J., concurring).

⁸⁶ AIPLA PROPOSAL, *supra* note 6, at 2.

⁸⁷ *Id.*

⁸⁸ *Id.* at 17.

expanded ineligible subject matter exceptions: biotech and high-tech.⁸⁹ The AIPLA proposal may, however, leave the courts with too much flexibility to tailor the judicial exceptions by using the phrase “only if” in subsection 101(b) (which leaves the door open to further requirements for application to be created by the courts).⁹⁰ The problems under § 101 originated with the courts’ overly broad interpretations of the judicial exceptions. While courts may be cognizant of this fact, the wiser course is to eliminate the option and restrain the judiciaries’ ability to modify the ineligible subject matter categories. The IPO’s language in subsection 101(b) is the most restrictive—“*if and only if*” . . . preclud[es] any other exceptions while affirmatively applying those provided.”⁹¹

Keeping in mind the goal of the 1952 Patent Act, to have § 101 act as a coarse filter with broad categories of eligible subject matter, the solution best suited to return § 101 to its intended purpose is to use a hybrid of the AIPLA and IPO proposals. The language of the AIPLA proposal clearly carves out very narrow exceptions to patent eligible subject matter and the language of the IPO in subsection 101(b) restricts courts’ ability to alter those exceptions.

This hybrid statutory construction would read as follows:

35 U.S.C. § 101:

- (a) Eligible Subject Matter.—Whoever invents or discovers any useful process, machine, manufacture, composition of matter, or any useful improvement thereof, shall be entitled to a patent therefor, subject only to the conditions and requirement set forth in this title.
- (b) Sole Exceptions to Subject Matter Eligibility.—A claimed invention is ineligible under subsection (a) if and only if the claimed invention as a whole exists in nature independent of and prior to any human activity, or can be performed solely in the human mind.
- (c) Sole Eligibility Standard.—The eligibility of a claimed invention under subsections (a) and (b) shall be determined without regard to the requirements or conditions of sections 102, 103 and 112 of this title, the manner in which the claimed invention was made or discovered, or whether the claimed invention includes an inventive concept.

V. Other Tools to Address the *Alice* Concerns

This proposed legislative amendment clarifies § 101, but does this solution address concerns vocalized in recent 101 decisions? The Supreme Court’s primary motivation in creating the *Mayo/Alice* two-step test was to address systemic flaws within the patent system. “In the last

⁸⁹ Madigan & Mossoff, *supra* note 24, at 953–53.

⁹⁰ AIPLA proposed amendment *infra* note 56; Simon, *supra* note 54.

⁹¹ Simon, *supra* note 54 (emphasis in original).

forty years, the Supreme Court has developed non-statutory judicial exceptions to address concerns about broad claims, poorly drafted claims, the rise of patent-assertion entities, and its own sense of the appropriate balance of the rights of creators and users of technology.”⁹² However, these concerns can be addressed by other statutory tools, specifically §§ 112, 102 and 103.⁹³ Looking back at the recent § 101 decisions, “many of the claims found ineligible under § 101 could have been found unpatentable under 35 U.S.C. §§ 102, 103 or 112.”⁹⁴ In a 2009 to 2010 study by Dennis Crouch and Robert P. Merges, they found that 94 percent of the Board of Patent Appeals and Interferences were also rejected on at least one other ground.⁹⁵ In many of the § 101 decisions, the courts had trouble distinguishing why a rejection under § 101 was proper instead of a rejection under §§ 102, 103, or 112.⁹⁶

Instead of trying to stretch § 101 to address these problems, “[c]oncerns about the overbreadth or preemption of basic laws of nature or abstract ideas are generally best addressed by focusing on the specific facts of the case, especially during examination, and appropriately implementing sections 102, 103 and (in particular) 112.”⁹⁷ For example, concerns about business method patents applying algorithms using general-purpose computers could be addressed by examiners making well-reasoned scope and definiteness rejections under § 112.

In *Affinity Labs of Texas, LLC v. Amazon.com*, the Federal Circuit analyzed a § 101 challenge using arguments typical to a § 112 analysis.⁹⁸ The court’s § 101 analysis, that “neither the claim nor the specification reveals any concrete way of employing a customized user interface,”⁹⁹ seems to fall squarely under § 112.¹⁰⁰ Criticism regarding the vague nature of claims is primarily analyzed under the disclosure requirements of § 112, not § 101.¹⁰¹ In *Bascom Global Internet Services, Inc. v. AT&T Mobility LLC*, Judge Newman, in her concurrence suggests that abstract ideas may be better analyzed under §§ 102, 103 or 112.¹⁰² Judge Newman observed that “[s]ubject matter that complies with 112 averts the generality or vagueness or imprecision or

⁹² AIPLA PROPOSAL, *supra* note 6, at 17.

⁹³ IPO PROPOSAL, *supra* note 34, at 26.

⁹⁴ Thobe, *supra* note 7, at 1032.

⁹⁵ Dennis Crouch & Robert P. Merges, *Operating Efficiently Post-Bilski by Ordering Patent Doctrine Decision-Making*, 25 BERKELEY TECH. L. J. 1673, 1686, 1686 n.32 (2010).

⁹⁶ John Cox & Michael Nullet, *The Coupling of § 101 and § 112, and What It Means for Practitioners*, IPWATCHDOG (Mar. 14, 2017), <http://www.ipwatchdog.com/2017/03/14/coupling-101-112-patent-practitioners/id=79258>.

⁹⁷ AIPLA Comments, *supra* note 2, at 18.

⁹⁸ 838 F.3d 1266 (Fed. Cir. 2016).

⁹⁹ *Id.* at 1271.

¹⁰⁰ Cox & Nullet, *supra* note 96.

¹⁰¹ *Id.*

¹⁰² *Bascom Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1355 (Fed. Cir. 2016) (Newman, J., concurring).

over-breadth that characterizes abstract ideas. These are conditions of patentability, not eligibility.”¹⁰³ Judge Newman further suggested that §§ 102 and 103 could be used to “weed out the abstract idea.”¹⁰⁴

Along similar lines, the district court in *Intellectual Ventures I, LLC v. Canon Inc.* noted that “it is less than clear how a § 101 inquiry that is focused through the lens of specificity can be harmonized with the roles given to other aspects of patent law (such as enablement under § 112 and non-obviousness under § 103).”¹⁰⁵ These cases illustrate the trouble courts have in distinguishing what are supposed to be separate and distinct analyses under §§ 101, 102, 103, and 112.

While a legislative solution to § 101 does not specifically address the concerns voiced by the courts, §§ 102, 103, and 112 do. Section 112 is clearly suited to address the problem of overly-broad claims and preemption with the written description requirement of 112(a) and the definiteness requirement of 112(b). Sections 102 and 103 address novelty and the “inventive concept” by assessing the claims against the prior art. We already have the tools we need in §§ 112, 102, and 103, modifying § 101 to address these concerns would be redundant.

VI. Conclusion

The 1952 Patent Act set forth the original intent of § 101—broad categories of patent eligible subject matter with few, narrow exceptions.¹⁰⁶ Section 101 was to act as a “coarse gauge,”¹⁰⁷ not as an insurmountable hurdle. But the courts have taken this simple threshold test and greatly expanded the scope of the ineligible subject matter exceptions to the detriment of the U.S. patent system. Clarity is needed, and the courts have failed to provide it. A legislative solution is necessary to correct the wayward course taken by the courts. It is time to return innovation and once again let patents “include anything under the sun that is made by man.”¹⁰⁸

¹⁰³ *Id.* at 1354.

¹⁰⁴ *Id.*

¹⁰⁵ *Intellectual Ventures I, LLC v. Canon Inc.*, 143 F. Supp. 3d 143, 172 (D. Del. 2015).

¹⁰⁶ AIPLA Comments, *supra* note 2, at 10.

¹⁰⁷ *Intellectual Ventures I*, 143 F. Supp. 3d at 172.

¹⁰⁸ *Diamond v. Diehr*, 450 U.S. 175, 182 (1981) (citations omitted).