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THE POST-ALICE JURISPRUDENCE PENDULUM AND ITS EFFECTS ON PATENT ELIGIBLE SUBJECT MATTER

*John Robert Sepúlveda**

I. INTRODUCTION

For the last few years *Alice Corp. Pty. Ltd. v. CLS Bank International*¹ has dominated and changed the landscape for patent eligibility of business method and software inventions. The Supreme Court's unanimous decision in *Alice* has had the effect of eviscerating intellectual property rights in the field of software inventions.² In 2015 alone, district courts invalidated almost 70% of all patents challenged under *Alice* and the United States Patent and Trademark Office ("USPTO") technical centers that focus on e-commerce had monthly rejection rates of well over 85%.³ If left unclarified and uncorrected, this decision will continue to stifle innovation and deprive people of the incentive to create new software inventions.

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¹ 573 U.S. 208 (2014) (holding that claims directed to an electronic escrow service were an abstract idea and that mere implementation of an abstract idea on a computer system was insufficient to find the claims patent eligible).

² See, e.g., *Years After Alice: Eligibility-Rejections Outflow from a Different Part of the USPTO*, JDSUPRA (Mar. 5, 2019), <https://www.jdsupra.com/legalnews/years-after-alice-eligibility-70833/>.

³ See, e.g., Donald Zuhn, *Top Five Stories of 2016*, PATENT DOCS (Jan. 8, 2017), <https://www.patentdocs.org/2017/01/top-five-stories-of-2016.html> (noting that "the monthly 35 U.S.C. § 101 rejection rates for USPTO Technical Centers 3620, 3680, and 3690 were over 85% for most of the year"); see also *An Update On Section 101 Rejection Rates At The USPTO*, LAW 360 (Oct 21, 2015), <https://www.law360.com/articles/716742/an-update-on-section-101-rejection-rates-at-the-uspto>; James Cosgrove, *The Most Likely Art Units for Alice Rejections*, IPWATCHDOG (Dec. 14, 2015), <http://www.ipwatchdog.com/2015/12/14/the-most-likely-art-units-for-alice-rejections/id=63829/> ("While *Alice* rejections can be found all over the USPTO, roughly two-thirds of them are found in T[ech]C[enter] 3600.").

This article will primarily discuss how the post-*Alice* jurisprudence regarding patent subject matter eligibility for claims directed to software has swung like a pendulum, from the basic normal human activity implemented on a generic computer to the more sophisticated improvements in the field. Section II of this article discusses patent eligibility under 35 U.S.C. § 101. Section III discusses the Supreme Court's decision in *Alice*. Section IV analyzes developments in the law since *Alice*, primarily in the Federal Circuit. Finally, Section V explains how the post-*Alice* jurisprudence pendulum has swung.

II. PATENT ELIGIBILITY UNDER 35 U.S.C. § 101

35 U.S.C. § 101 allows inventors and discoverers of “any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof” to obtain a patent for their inventions and discoveries, subject to a few exceptions.⁴ Section 101 has four basic categories or classes for which patents may be granted: a process, a machine, an article of manufacture, or a composition of matter.⁵ The Supreme Court in *Chakrabarty* recognized that the legislative intent was to give patent laws a wide scope.⁶ For example, inventions ranging from a method of using living bacteria in *Chakrabarty* to software methods have been held patentable under United States patent law.⁷

Both the federal courts and the United States Patent and Trademark Office (“USPTO”) have developed exceptions to the statutory eligibility of claims under 35 U.S.C. § 101.⁸ The exceptions to the statutory eligibility of claims under 35 U.S.C. § 101 are: laws of nature, natural phenomena, naturally occurring substances, and

⁴ 35 U.S.C. § 101 (2018).

⁵ *Id.*

⁶ S. REP. NO. 82-1979, at 5 (1952) (stating that statutory subject matter should “include anything under the sun that is made by man”); *Diamond v. Chakrabarty*, 447 U.S. 303, 308 (1980) (recognizing “[i]n choosing such expansive terms . . . modified by the comprehensive ‘any,’ Congress plainly contemplated that the patent laws would be given wide scope.”).

⁷ See *Chakrabarty*, 447 U.S. 303 (holding genetically modified organisms were patentable); regarding the patentability of software see *infra* notes 69, 83, and 100.

⁸ ROBERT C. FABER, *FABER ON MECHANICS OF PATENT CLAIM DRAFTING* 1-7 (7th ed. 2016). See *Diamond v. Diehr*, 450 U.S. 175, 185 (1981); see also *Bilski v. Kappos*, 561 U.S. 593, 601 (2010); *Chakrabarty*, 447 U.S. at 309 (recognizing that “[t]he laws of nature, physical phenomena, and abstract ideas have been held not patentable”); *Le Roy v. Tatham*, 55 U.S. (14 How.) 156 (1853); *O’Reilly v. Morse*, 56 U.S. 62 (1854).

abstract ideas.⁹ The rationalization for these statutory exceptions is that they prevent a monopolization of basic scientific laws, naturally occurring substances, natural phenomena, and abstract ideas, while granting patents for such subject matter would stunt innovation.¹⁰ Several of these exceptions are clear, such as a law of nature like gravity or a naturally occurring substance like a mineral.¹¹ On the contrary, the concept of an abstract idea is considerably less clear. This has left the Federal Circuit, which is the court that hears all appeals from district courts regarding patents, groping in the dark, struggling to define an abstract idea.

The lack of clarity as to what is an abstract idea results from the Supreme Court's failure clearly to define the term "abstract idea." USPTO and the courts have had to compare claims to previous scenarios where claims were deemed either patent-eligible or ineligible.¹² The USPTO has identified that the following four concepts are abstract ideas: "Mathematical Relationships/Formulas," "An Idea 'Of Itself,'" "Fundamental Economic Practices," and "Certain Methods of Organizing Human Activity."¹³

In *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*,¹⁴ the Supreme Court addressed abstract ideas.¹⁵ The Court stated that for a process that recites a law of nature to be patentable, it must recite additional features that add something significant.¹⁶ The Court held that a claim which simply appends conventional steps, "specified

⁹ MPEP 2106 (9th ed. Rev. 8, Jan. 2018).

¹⁰ Judith Kim & Scott Schaller, *After Alice: The Two Step Rule*, LSIPR NEWSL. (Jan. 2015), http://www.skgf.com/uploads/1378/doc/LSIPR_Jan15_AfterALice.pdf.

¹¹ *Chakrabarty*, 447 U.S. at 309:

Thus, a new mineral discovered in the earth or a new plant found in the wild is not patentable subject matter. Likewise, Einstein could not patent his celebrated law that $E=mc^2$; nor could Newton have patented the law of gravity. Such discoveries are "manifestations of . . . nature, free to all men and reserved exclusively to none."

Id. (alteration in original) (quoting *Funk Bros. Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127, 130 (1948)).

¹² The USPTO regularly issues subject matter eligibility guidance memos to its staff covering the various Federal Circuit and Supreme Court decisions in this area of law. See *Subject Matter Eligibility*, USPTO, <https://www.uspto.gov/patent/laws-and-regulations/examination-policy/subject-matter-eligibility> (last visited Apr. 8, 2019).

¹³ *July 2015 Update: Subject Matter Eligibility*, USPTO (July 2015), <https://www.uspto.gov/sites/default/files/documents/ieg-july-2015-update.pdf>.

¹⁴ 566 U.S. 66 (2012).

¹⁵ *Id.*

¹⁶ *Id.*

at a high level of generality” to an already well known method is not enough to supply an “inventive concept.”¹⁷

The Supreme Court in *Mayo* set forth a two-part test.¹⁸ First, courts must determine whether the claims at issue are directed to a patent-ineligible concept, such as an abstract idea.¹⁹ Second, courts must consider the elements of each claim “both individually and as an ordered combination” and whether these additional elements “transform the nature of the claim into a patentable application.”²⁰ Courts must search for an “inventive concept.”²¹

III. THE SUPREME COURT’S *ALICE* FRAMEWORK

The Supreme Court in *Alice*, addressed patent subject matter eligibility and abstract ideas.²² In *Alice*, the patent at issue disclosed a computerized trading platform for mitigating “settlement risk.”²³ The Court held these claims invalid because they were drawn to the abstract idea of intermediated settlement, and merely implementing the claimed method on a generic computer was not enough to transform them into patent-eligible subject matter.²⁴ The Supreme Court reaffirmed the two-step framework set forth in *Mayo* for identifying the abstract idea and then determining whether the claim would preempt the abstract idea.²⁵

Alice Corporation (“Alice”) owned several patents that “claim (1) [a] method for exchanging [financial] obligations (the method claims), (2) a computer system configured to carry out the method for exchanging obligations (the system claims), and (3) a computer-readable medium containing program code for performing the method of exchanging obligations (the media claims).”²⁶ CLS Bank International (“CLS Bank”), an operator of an international financial network that facilitates multicurrency transactions, filed suit against

¹⁷ *Id.* at 82.

¹⁸ *See id.* at 87.

¹⁹ *Id.*

²⁰ *Id.*

²¹ *Id.* at 72.

²² *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 573 U.S. 208 (2014).

²³ *Id.* at 212.

²⁴ *Id.*

²⁵ *Id.* at 217-21.

²⁶ *Id.* at 214 (explaining “[a]ll of the claims are implemented using a computer”).

Alice.²⁷ CLS argued that the patent claims were invalid, were unenforceable, or were not infringed.²⁸ Alice counterclaimed, alleging infringement of its patents.²⁹

The district court, relying on *Bilski v. Kappos*,³⁰ held all the claims at issue in *Alice* as patent-ineligible under 35 U.S.C § 101.³¹ Consequently, the court held that the claims at issue were directed to the judicial exception of an abstract idea.³² The Federal Circuit, *en banc*, affirmed.³³

The Supreme Court in *Alice* elaborated on *Mayo*'s framework for the determination of patent eligibility and created a two-part test as a search for an inventive concept.³⁴ The first step is to determine whether the claims are directed to a patent-ineligible concept.³⁵ The second step is to determine whether the claims' elements contain an inventive concept and transform the claims into a patent-eligible application.³⁶

Under the first step of the analysis, the Court determined whether the claims at issue were directed to a patent-ineligible concept.³⁷ In other words, is the claim at issue a law of nature, a natural phenomenon, or an abstract idea?³⁸ However, the Supreme Court cautioned that the lower courts should "tread carefully in construing this exclusionary principle lest it swallow up all of patent law," because when taken to its logical conclusion, all concepts "embody, use, reflect, rest upon, or apply" the aforementioned patent-ineligible concepts.³⁹

²⁷ *Id.*; *About Us*, CLS, <https://www.cls-group.com/About/Pages/default.aspx> (last visited Apr. 8, 2019).

²⁸ *Id.*

²⁹ *Id.*

³⁰ 561 U.S. 593 (2010). For a further discussion of this issue, see *infra* notes 40-45 and accompanying text.

³¹ *Alice*, 573 U.S. at 214.

³² *Id.*

³³ *Id.* at 214-15.

³⁴ *Id.* at 217.

³⁵ *Id.* (explaining that the following categories are patent-ineligible concepts: "[l]aws of nature, natural phenomena, and abstract ideas").

³⁶ *Id.* at 221 (holding that the "abstract idea must include 'additional features' to ensure 'that the [claim] is more than a drafting effort designed to monopolize the [abstract idea].'" (internal quotation marks omitted)).

³⁷ *Id.*

³⁸ *Id.*

³⁹ *Id.* at 217.

Analogizing the claims at issue in *Alice* to those in *Bilski*, the Court found that, like the claims in *Bilski*, the claims at issue in *Alice* were directed to an abstract idea.⁴⁰ In *Bilski*, the claims were directed to the abstract idea of hedging against risk.⁴¹ Hedging against risk is a “fundamental economic practice long prevalent in our system of commerce and taught in any introductory finance class.”⁴² The claims in *Alice* are directed to the idea of intermediate settlement, which is “the use of a third party to mitigate . . . risk.”⁴³ As in *Bilski*, Alice’s use of a clearing house or a third party to mitigate risk “is a fundamental economic practice long prevalent in our system,” and therefore is an abstract idea.⁴⁴ This step in and of itself was not enough to render a claim patent-ineligible; the Court needed to examine “[w]hat else is there in the claims before us?”⁴⁵

Under the second step, the Court determined whether the claims’ elements contained an inventive concept and transformed the claims into a patent-eligible application.⁴⁶ The Supreme Court held that the implementation of the idea must be something beyond the “routine,” “conventional,” or “generic.”⁴⁷ This step is the search for an “inventive concept.”⁴⁸ The “inventive concept” must be enough to transform the “abstract idea into a patent-eligible” one.⁴⁹

The Court found the patent at issue in *Mayo* to be instructive.⁵⁰ In *Mayo*, the claims at issue were directed towards a method for measuring metabolites in order to calibrate the dosages of drugs that were being administered.⁵¹ The Court in *Mayo* found that methods for measuring metabolites were already “well known in the art.”⁵² The Court held that the claimed method was merely an “instruction to doctors to apply the applicable laws when treating their patients.”⁵³ The claims at issue in *Mayo* were found to be insufficient to supply the

⁴⁰ *Id.* at 218-19.

⁴¹ *Id.* at 219.

⁴² *Id.* (citing *Bilski v. Kappos*, 561 U.S. 593, 611 (2010)).

⁴³ *Id.*

⁴⁴ *Id.*

⁴⁵ *Id.* at 217 (alteration in original).

⁴⁶ *Id.* at 221.

⁴⁷ *Id.*

⁴⁸ *Id.*

⁴⁹ *Id.*

⁵⁰ *Id.*

⁵¹ *Id.*

⁵² *Id.*

⁵³ *Id.* at 222.

“inventive concept” because the claims were merely applying “conventional steps, specified at a high level of generality.”⁵⁴

The Supreme Court held that like the claims at issue in *Mayo*, the claims at issue in *Alice*, “add nothing of substance to the underlying abstract idea,” and are therefore not patent-eligible.⁵⁵ The Court began by examining whether the claims in *Alice* are directed to little more than the abstract idea of intermediated settlement as implemented on a generic computer by examining the claimed elements separately and as an ordered combination.⁵⁶

First, the Court looked at the claim elements separately. The claimed elements in *Alice* are merely “token references to performing the purported invention on a generic computer.”⁵⁷ The computer in the claimed elements performs functions that are “well-understood, routine, conventional activit[ies]” that are “previously known to the industry.”⁵⁸ The Court held that the function performed by the computer was merely a conventional function performed by a generic computer.⁵⁹ The Court affirmed that an abstract idea does not become non-abstract merely by limiting its field of use, in this case by using a generic computer to perform generic tasks.⁶⁰

Next, the Court considered the claimed elements as an ordered combination.⁶¹ When viewed as a whole, the method claims did not effect an improvement on “the functioning of the computer itself.”⁶² The claims were merely directed to the abstract idea of intermediated settlement performed on an unspecified generic computer.⁶³ The Court held that this was not enough of an “inventive concept” to transform this abstract idea into a patent-eligible one.⁶⁴

Therefore, the claims at issue in *Alice* were found to be a patent-ineligible abstract idea because they failed both prongs of the two-step analysis. The claims did no more than recite an abstract idea,

⁵⁴ *Id.*

⁵⁵ *Id.* at 227.

⁵⁶ *Id.*

⁵⁷ Dennis Crouch, *DDR Holdings – Federal Circuit Forges a Sensible Path on Software Patents*, PATENTLY-O (Dec. 14, 2014), <http://patentlyo.com/patent/2014/12/holdings-sensible-software.html>.

⁵⁸ *Alice*, 573 U.S. at 225 (alteration in original).

⁵⁹ *Id.*

⁶⁰ *Id.* (citing *Bilski v. Kappos*, 561 U.S. 593, 610-11 (2010)).

⁶¹ *Id.*

⁶² *Id.*

⁶³ *Id.* at 225-26.

⁶⁴ *Id.* at 226.

then merely added the instruction to “apply it” on an unspecified generic computer.⁶⁵

IV. FEDERAL CIRCUIT CASES POST-*ALICE*

The United States Court of Appeals for the Federal Circuit has issued several decisions on patent subject matter eligibility under § 101 since *Alice* was decided.⁶⁶ These decisions have covered various subject matter, from budgeting on a computer, e-commerce, and using advertising as a form of currency, to a self-referential database.⁶⁷ The following Federal Circuit decisions did not change the *Alice* framework, but have provided some clarification on identifying abstract ideas.⁶⁸

In one of the more important cases decided by the Federal Circuit, the claims at issue in *DDR Holdings, LLC v. Hotels.com, L.P.*,⁶⁹ were directed to a method for generating a composite web page that combines selected visual elements from a “host” web site and a third-party merchant.⁷⁰ The Federal Circuit affirmed the patent eligibility of these claims because they were not directed to an abstract idea.⁷¹

Relying on the framework set forth in *Alice*, the court analyzed the claims in DDR’s patent.⁷² First, the court determined whether the claims at issue were directed to a patent-ineligible abstract idea.⁷³ The

⁶⁵ *Id.*

⁶⁶ Robert W. Bahr, *Formulating a Subject Matter Eligibility Rejection and Evaluating the Applicant’s Response to the Subject Matter Eligibility Rejection*, USPTO (May 4, 2016), <https://www.uspto.gov/sites/default/files/documents/ieg-may-2016-memo.pdf>; Robert W. Bahr, *Recent Subject Matter Eligibility Decisions*, USPTO (Nov. 2, 2016), <https://www.uspto.gov/sites/default/files/documents/McRo-Bascom-Memo.pdf>. The USPTO has recently issued a new guidance, the 2019 Revised Patent Subject Matter Eligibility Guidance, that seems to help swing the pendulum more to the advantage of software inventors by limiting the groups of abstract ideas to mathematical concepts, mental processes, or certain methods of organizing human activity without a practical application. 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 (Jan. 7, 2019), <https://www.govinfo.gov/content/pkg/FR-2019-01-07/pdf/2018-28282.pdf>.

⁶⁷ *Infra* note 69, 76, and 83.

⁶⁸ There are very few positive examples of what is patent eligible under the *Alice* framework, making it difficult for a patent practitioner to make a convincing comparison when responding to an Office Action from the USPTO, or when litigating the validity of a claim.

⁶⁹ 773 F.3d 1245 (Fed. Cir. 2014).

⁷⁰ *Id.* at 1248.

⁷¹ *Id.*

⁷² *Id.* at 1255.

⁷³ *Id.*

claims in *DDR* did not recite a mathematical algorithm or “a fundamental economic or longstanding commercial practice.”⁷⁴ Instead, the claims in *DDR* addressed a business challenge particular to the internet.⁷⁵ Unlike the claims at issue in *Ultramercial, Inc. v. Hulu, LLC*,⁷⁶ the claims in *DDR* specified how interactions with the internet are manipulated to produce a desired result.⁷⁷

Next, the court considered the elements of a claim, individually and as an ordered combination to determine whether the additional elements transformed the nature of the claim into the patent-eligible application of an abstract idea.⁷⁸ In *DDR*, the ordered combination of the elements was not merely the routine or conventional use of the internet.⁷⁹ It is important to note that the claims at issue in *DDR* “recite[d] a specific way to automate the creation of a composite webpage” by a third-party provider to incorporate selected elements from a plurality of sources.⁸⁰ The claims here did not seek to monopolize an abstract idea.⁸¹ Ultimately, the court upheld the patent-eligibility of the claims at issue because they were “necessarily rooted in computer technology” that “overc[ame] a problem specifically arising in the realm of computer networks.”⁸²

In *Enfish, LLC v. Microsoft Corp.*,⁸³ the Federal Circuit found that claims which were directed to a “self-referential database” were patent-eligible under 35 U.S.C. § 101.⁸⁴ The court held that the claims

⁷⁴ *Id.* at 1257. Although, the Federal Circuit cautioned that “not all claims purporting to address Internet-centric challenges are eligible for patent.” *Id.* at 1258.

⁷⁵ *Id.* at 1255.

⁷⁶ 772 F.3d 709 (Fed. Cir. 2014). The claims at issue in *Ultramercial* were directed to a “[m]ethod and system for payment of intellectual property royalties by interposed sponsor on behalf of consumer over a telecommunications network.” *Id.*

⁷⁷ *DDR*, 773 F.3d at 1258 (holding the claims at issue in *DDR* “do not broadly and generically claim ‘use of the internet’ to perform an abstract business practice (with insignificant added activity)”). In *Ultramercial*, the claims at issue were not directed to patent-eligible subject matter. Instead, the claims were directed to “the abstract idea of showing an advertisement before delivering free content.” *Ultramercial*, 772 F.3d at 715.

⁷⁸ *DDR*, 773 F.3d at 1255.

⁷⁹ *Id.* at 1259.

⁸⁰ *Id.*

⁸¹ *Id.* (explaining that claims must “include ‘additional feature’ that ensure the claims are ‘more than a drafting effort designed to monopolize the [abstract idea]’” (quoting *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 573 U.S. 208, 221 (2014))).

⁸² *Id.* at 1275.

⁸³ 822 F.3d 1327 (Fed. Cir. 2016).

⁸⁴ *Id.*

at issue were not directed towards an abstract idea but were directed to the non-abstract idea of improving the way computers work.⁸⁵

First, the court discussed how the “directed to” inquiry, in the first step of the *Alice* framework, does not simply ask whether the claims merely “involve a patent-ineligible concept” but examines whether as a whole, they are directed to an excluded subject matter.⁸⁶ The court reasoned that *Alice* is not to be read so broadly that “all improvements in computer-related technology are inherently abstract” and all such improvements must be considered at the second step of the *Alice* framework.⁸⁷

The court contrasted the patent in *Enfish* with other patents that just “recited generalized steps to be performed on a computer using conventional computer activity.”⁸⁸ The court explained that the patent in *Enfish* was directed to “a specific type of data structure designed to improve the way a computer stores and retrieves data in memory.”⁸⁹ The claims were unambiguously directed to “an improvement to computer functionality itself.”⁹⁰

The Federal Circuit in *Enfish*, emphasized that “the first step in the *Alice* inquiry . . . asks whether the focus of the claims is on the specific asserted improvement in computer capabilities . . . or, instead, on a process that qualifies as an ‘abstract idea’ for which computers are invoked merely as a tool.”⁹¹ The Federal Circuit then explained that “the claims are directed to a specific implementation of a solution to a problem in the software arts,” and therefore are not directed to an abstract idea.⁹²

In summary, the Federal Circuit clarified that when claims are found to not be directed to an abstract idea under *Alice* step one, but “specific improvements to underlying computer-related technology,” there would be no need to evaluate the claims under *Alice* step two to determine whether the claim adds significantly more than an abstract idea.⁹³

⁸⁵ *Id.*

⁸⁶ *Id.* at 1335.

⁸⁷ *Id.*

⁸⁸ *Id.* at 1338.

⁸⁹ *Id.* at 1339.

⁹⁰ *Id.*

⁹¹ *Id.* at 1335-36.

⁹² *Id.* at 1339.

⁹³ *Id.*

In another case decided after *Alice*, *BASCOM Global Internet Services, Inc. v. AT&T Mobility LLC*,⁹⁴ the Federal Circuit vacated the district court's judgment of patent ineligibility.⁹⁵ The patents at issue claimed a system for filtering content retrieved from an internet computer network.⁹⁶

The Federal Circuit held that the district court correctly applied the first step in the *Alice* framework.⁹⁷ The claims were directed to the abstract idea of filtering content on the Internet.⁹⁸ Filtering content on the Internet is a "longstanding, well-known method of organizing human behavior," and is therefore an abstract idea.⁹⁹

The district court in *BASCOM* failed to correctly perform step two of the *Alice* framework.¹⁰⁰ The court examined the claimed elements individually and as an ordered combination.¹⁰¹ The Federal Circuit concurred with the district court's analysis that the individual elements: a generic computer, a network, and an internet connection individually did "not amount to significantly more."¹⁰² Although the Federal Circuit explained that when claimed elements are combined, "an inventive concept may be found in the non-conventional and non-generic arrangement" of the additional elements.¹⁰³ In *BASCOM*, this non-conventional and non-generic arrangement was the installation of the filtering tool at a specific location, remote from the end users, with customizable filtering features specific to each end user.¹⁰⁴

Therefore, the Federal Circuit found that the claimed system for filtering content retrieved from an internet computer network was not abstract, and that under the second step of the *Alice* framework there was an inventive concept.¹⁰⁵

⁹⁴ 827 F.3d 1341 (Fed. Cir. 2016).

⁹⁵ *Id.* at 1343.

⁹⁶ *Id.* at 1345.

⁹⁷ *Id.* at 1348.

⁹⁸ *Id.*

⁹⁹ *Id.*

¹⁰⁰ *Id.* at 1350.

¹⁰¹ *Id.* at 1348-50.

¹⁰² *Id.* at 1343.

¹⁰³ *Id.* at 1349-50 (disagreeing "with the district court's analysis of the ordered combination of limitations"). The Federal Circuit also held that "[t]he inventive concept inquiry requires more than recognizing that each claim element by itself, was known in the art." *Id.* at 1350.

¹⁰⁴ *Id.* at 1350-51.

¹⁰⁵ *Id.* at 1352.

The Federal Circuit in *Amdocs (Israel) Ltd. v. Openet Telecom, Inc.*¹⁰⁶ examined patents which concerned a system designed to solve an accounting and billing problem faced by network service providers.¹⁰⁷ Four separate patents were examined by the court: ‘065, ‘510, ‘984, and ‘797.¹⁰⁸

In the ‘065 patent the court held the claim patent-ineligible because it failed to recite any structure or process limiting the claim to a particular means of combining accounting data from different sources.¹⁰⁹ The court held that the claim was nothing more than the abstract idea of “gathering and combining data.”¹¹⁰

In the ‘510 patent, the court found that like the claims at issue in *Enfish* and *McRO*,¹¹¹ the claims are “directed to” a particular process that improves upon the manner in which systems collect and process network usage information, and the claimed process is limited in a specific way.¹¹² As such, the claims are patent-eligible under step one of the *Alice* test, and there is no need to consider step two.¹¹³

For the ‘984 patent the court held that the claims directed to “reporting on the collection of network usage information from a plurality of network devices” are patent eligible.¹¹⁴ The court noted “that the ‘process or machinery’ by which a result is accomplished need not be tangible to be patent eligible.”¹¹⁵ The court discussed how a claim is not patent-ineligible just because the claim is software.¹¹⁶

In the ‘797 patent the court held these claims patent-ineligible for lack of an inventive concept under the second step in the *Alice* framework.¹¹⁷ The court held that the ‘797 patent was nothing more than the abstract idea of “gathering and combining data” and that the claim added only “conventional computer functions in a conventional

¹⁰⁶ 841 F.3d 1288 (Fed. Cir. 2016).

¹⁰⁷ *Id.*

¹⁰⁸ *Id.*

¹⁰⁹ *Id.*

¹¹⁰ *Id.*

¹¹¹ See *supra* notes 83-93 and accompanying text; see *infra* notes 141-54 and accompanying text.

¹¹² *Amdocs*, 841 F.3d at 1304.

¹¹³ *Id.*

¹¹⁴ *Id.*

¹¹⁵ *Id.* at 1317.

¹¹⁶ *Id.*

¹¹⁷ *Id.*

manner” and therefore “amount[ed] to electronic recordkeeping” which is “one of the most basic functions of a computer.”¹¹⁸

The Federal Circuit in *Intellectual Ventures I LLC v. Capitol One Bank (USA)*,¹¹⁹ examined two patents for patentability under section 101 (hereinafter the ‘137 and ‘382 patents).¹²⁰ For the ‘137 patent, the court held claims directed to budgeting using a computer to give notification when a pre-set spending limit is reached was an abstract idea.¹²¹ With respect to the ‘382 patent, the court held that claims directed to “customizing web page content as a function of navigation history and information known about the user” were also abstract ideas.¹²²

First, the Federal Circuit analyzed the ‘137 patent, which had claims directed to budgeting using a computer to give notification when a pre-set spending limit is exceeded.¹²³ Under the first step of the *Alice* framework, the court noted that the claims recited budgeting using a “communication medium.”¹²⁴ Merely limiting the claims by using a “communication medium” was not sufficient to render the claims not abstract.¹²⁵

Next, the court moved to step two of the *Alice* framework to analyze the claims in search of an inventive concept.¹²⁶ The court held that the claims did not contain an inventive concept because all the recited elements were generic computer elements.¹²⁷ The budgeting calculations in the claim could easily be done with a pen and paper and were therefore unpatentable.¹²⁸

The Federal Circuit in *Intellectual Ventures* also analyzed the ‘382 patent, which had claims directed to “customizing a web page as a function of navigation history and information known about the

¹¹⁸ *Id.* at 1316.

¹¹⁹ 792 F.3d 1363 (Fed. Cir. 2015).

¹²⁰ *Id.*

¹²¹ *Id.* at 1367.

¹²² *Id.* at 1369.

¹²³ *Id.*

¹²⁴ *Id.* (indicating that the communication medium “broadly include[d] the Internet and telephone networks.”).

¹²⁵ *Id.* at 1368.

¹²⁶ *Id.*

¹²⁷ *Id.* (“Instructing one to ‘apply’ an abstract idea and reciting no more than generic computer elements performing generic computer tasks does not make an abstract idea patent-eligible.”).

¹²⁸ *Id.*

user.”¹²⁹ Under the first step of the *Alice* framework, the court analyzed the claim to determine whether the claims at issue cover a “fundamental . . . practice long prevalent in our system.”¹³⁰ The claim was directed to “customizing information based on (1) information known about the user and (2) navigation data.”¹³¹ First, the court determined that customizing information based on information known about the user is a “fundamental . . . practice long prevalent in our system.”¹³² The court compared this to newspaper inserts being customized based on the subscriber’s location.¹³³ Next, the court analyzed the second aspect, customization of information based on navigation data by comparing it to a website and updating its logo based on the time of day.¹³⁴ This was also found to be abstract because it is an “overly broad concept long-practiced in our society.”¹³⁵

The Federal Circuit in *Intellectual Ventures* held there to be no inventive step under the second step in the *Alice* framework.¹³⁶ Merely using a generic computer to increase the speed of the process is overly broad, and therefore is an abstract idea.¹³⁷

The Federal Circuit distinguished the claims here from those in *DDR*, in which the patent at issue solved a problem “unique to the Internet” without monopolizing other ways of solving that problem.¹³⁸ Unlike the claims in *DDR*, the claims at issue in *Intellectual Ventures* did not address a problem “unique to the Internet.”¹³⁹ Instead, the court held the claims at issue claimed an abstract idea that did not have an inventive concept.¹⁴⁰

In *McRO, Inc. v. Bandai Namco Games America Inc.*,¹⁴¹ the Federal Circuit held patent-eligible method claims for automatic lip synchronization and facial expression animation using computer implemented rules.¹⁴² Utilizing the first step of the *Alice* framework,

¹²⁹ *Id.* at 1369.

¹³⁰ *Id.* (alteration in original) (citation omitted).

¹³¹ *Id.*

¹³² *Id.*

¹³³ *Id.*

¹³⁴ *Id.*

¹³⁵ *Id.* at 1370.

¹³⁶ *Id.*

¹³⁷ *Id.*

¹³⁸ *Id.* at 1371.

¹³⁹ *Id.*

¹⁴⁰ *Id.*

¹⁴¹ 837 F.3d 1299 (Fed. Cir. 2016).

¹⁴² *Id.* at 1312.

the court found these claims were not directed towards an abstract idea.¹⁴³

The Federal Circuit disagreed with the district court's holding that the claims were "drawn to the [abstract] idea of automated rules-based use of morph targets and delta sets for lip-synchronized three-dimensional animation."¹⁴⁴ The Federal Circuit cautioned the district court against oversimplifying the claims by looking at them generally.¹⁴⁵

The court in *McRO*, when doing its analysis, focused on the nature of "directed to."¹⁴⁶ In step one of the *Mayo* test, the court's focus was to unpack the "directed to" inquiry.¹⁴⁷ For a claim to be "directed to" an abstract idea, first, the court determines whether the claim was directed to a judicial exception.¹⁴⁸ Next, the court turns to framing the abstract idea expression, as intended to exclude the claims themselves, rather than on the methods or processes that produce the results.¹⁴⁹

The court explained that allowing computers to produce "accurate and realistic lip synchronization and facial expression in animated characters" that could previously only be done by human animators was an "improvement in computer related technology."¹⁵⁰ The claimed methods improved computer animation through the use of specific rules to generate output morph weight sets and transition parameters between phenomes.¹⁵¹ The specification explained that the human artists do not use the claimed rules and rely instead on subjective determinations to set the morph weights and manipulate the animated face to match pronounced phenomes.¹⁵²

¹⁴³ *Id.* at 1309.

¹⁴⁴ *Id.* at 1313.

¹⁴⁵ *Id.*

¹⁴⁶ *Id.* at 1312.

¹⁴⁷ *Id.* at 1314.

¹⁴⁸ *Id.* at 1312.

¹⁴⁹ *Id.* ("The abstract idea exception prevents patenting a result where 'it matters not by what process or machinery the result is accomplished.'" (citation omitted)).

¹⁵⁰ *Id.* at 1307.

¹⁵¹ *Id.* at 1312. Phenomes are related to sounds made when speaking. See *Phenome*, BRITANNICA, <https://www.britannica.com/topic/phoneme> (last visited Apr. 8, 2019) ("Phoneme, in linguistics, smallest unit of speech distinguishing one word (or word element) from another, as the element *p* in 'tap,' which separates that word from 'tab,' 'tag,' and 'tan.'). Morph weights sets are related to facial expressions as an animated character speaks. *McRO*, 837 F.3d at 1312.

¹⁵² *McRO*, 837 F.3d at 1313.

The Federal Circuit explained it was the incorporation of the claimed rules in computer animation that “improved [the] existing technological process,” making the claims patent-eligible.¹⁵³ The claims at issue described a specific way to solve a problem as opposed to merely claiming the idea of a solution and therefore were not directed to an abstract idea.¹⁵⁴

The Federal Circuit in *In re TLI Communications LLC Patent Litigation*,¹⁵⁵ found invalid a patent directed to the generalized steps of classifying and then storing digital images in an organized manner which did not add an inventive concept.¹⁵⁶

First, the court analyzed the claims at issue under step one of the *Alice* framework by determining whether the claims extend to cover a “fundamental . . . practice long prevalent in our system.”¹⁵⁷ The court contrasted the claims to those at issue in *Enfish*.¹⁵⁸ In *Enfish*, the claims at issue were directed to “the functioning of a computer.”¹⁵⁹ In contrast, the claims at issue in TLI were directed to the use of generic technology in a well-known environment without any claim to an inventive concept in the combination of the two.¹⁶⁰ The claims’ generalized steps of recording, communicating, and administering a digital image “in an organized manner” were an abstract idea.¹⁶¹

Next, examining the claims at issue under the second step in the *Alice* analysis, the Federal Circuit in *TLI* found that the elements individually, and in an ordered combination, failed to transform the

¹⁵³ *Id.* at 1314.

¹⁵⁴ *Id.* at 1315-16. To find an “exception” during examination, the Examiners at the USPTO must consider case law such as *McRO*. However, many examiners are not attorneys and thus lack training in analysis of case law. See Brian Pangrle, *Putting Words in the Mouth of McRO: The PTO Memorandum of November 2, 2016*, IP WATCHDOG (Apr. 9, 2017), <http://www.ipwatchdog.com/2017/04/09/putting-words-mouth-mcro-pto-memorandum-november-2-2016/id=81690/>. The USPTO has provided guidance memorandum including cases such as *McRO*. However, some of these guidances are incorrect. For example, the USPTO Memorandum of November 2, 2016 as to Recent Subject Matter Eligibility Decisions incorrectly attributes the terms “computer related technology” to *McRO*. This adds a layer of confusion when responding to USPTO rejections under 35 U.S.C. § 101. However, some more recent cases, cited later in this article, may provide additional clarity.

¹⁵⁵ 823 F.3d 607 (Fed. Cir. 2016).

¹⁵⁶ *Id.*

¹⁵⁷ *Id.* at 611.

¹⁵⁸ *Id.* at 612.

¹⁵⁹ *Id.*

¹⁶⁰ *Id.*

¹⁶¹ *Id.* at 613.

abstract idea into a patent-eligible one.¹⁶² Merely applying the steps on a generic server or on a generic telephone did nothing to make the generic steps any less abstract because they were “well-understood, routine, conventional activities previously known to the industry.”¹⁶³

The Federal Circuit in *TLI* concluded that patent eligibility is not conferred by the performance of mere generic steps that state an abstract idea and then do no more than “apply it on a computer.”¹⁶⁴ The court held that the claims in *TLI* do no more than carry the abstract idea out on a generic telephone or server and thus do not confer patent eligibility.¹⁶⁵

In *Trading Technologies International, Inc. v. CQG, Inc.*,¹⁶⁶ the patents at issue claimed a method for increasing the chance that a stockbroker will have orders filled at a desired price on an electronic exchange by reducing the time required for a trader to place a trade.¹⁶⁷ The Federal Circuit found the claims patent-eligible and were not an abstract idea.¹⁶⁸

The Federal Circuit examined the district court’s application of the first step in the *Alice* framework.¹⁶⁹ The Federal Circuit noted that the district court found the patents at issue were not merely displaying information on a graphical user interface, but instead were directed to “improvements in existing graphical user interface devices that have no ‘pre-electronic trading analog’ and recite[d] more than ‘setting, displaying, and selecting’ data or information that is visible on a [graphical user interface] device.”¹⁷⁰ Therefore, the claims at issue met the subject matter eligibility standard under the first step in the *Alice* framework.¹⁷¹

The court continued its analysis of the claims under the second step in the *Alice* framework and found that there was an “inventive concept” recited in the claims.¹⁷² The court found that the static price index was the “inventive concept” because it “allow[ed] traders to

¹⁶² *Id.*

¹⁶³ *Id.*

¹⁶⁴ *Id.* at 615.

¹⁶⁵ *Id.*

¹⁶⁶ 675 F. App’x 1001 (Fed. Cir. 2017).

¹⁶⁷ *Id.*

¹⁶⁸ *Id.*

¹⁶⁹ *Id.* at 1003.

¹⁷⁰ *Id.* at 1004 (alteration in original).

¹⁷¹ *Id.*

¹⁷² *Id.*

more efficiently and accurately place trades using this electronic trading system.”¹⁷³ Therefore, the claims at issue met the criteria for the second step in the *Alice* framework.¹⁷⁴

The Federal Circuit affirmed the finding in *Enfish* that a claim is not abstract when the software is not simply using a computer to merely perform “a known or obvious process, but instead” improves the way computer systems work as a whole.¹⁷⁵ The Federal Circuit explained that for section 101 purposes, no consideration should be given to the substantive criteria of patentability.¹⁷⁶

More recently, the Federal Circuit in *Berkheimer v. HP Inc.*¹⁷⁷ issued a precedential decision holding that the question of whether certain claim limitations represent “well-understood, routine, conventional activity” raise a disputed factual issue.¹⁷⁸ In *Berkheimer*, the Federal Circuit reversed the United States District Court for the Northern District of Illinois holding that claims 1-7 and 9 of U.S. Patent No. 7,447,713 (‘713 patent) were invalid as ineligible under 35 U.S.C. § 101.¹⁷⁹ This disputed factual issue precluded summary judgment that all of the claims at issue were not patent eligible.¹⁸⁰ The impact of *Berkheimer* on patent prosecution has yet to be seen, but some believe that it may provide some additional clarity during prosecution by preventing patent examiners from providing unsupported factual findings during a rejection under 35 U.S.C. § 101.¹⁸¹

¹⁷³ *Id.*

¹⁷⁴ *Id.* at 1005.

¹⁷⁵ *Id.*

¹⁷⁶ *Id.* at 1008.

¹⁷⁷ 881 F.3d 1360 (Fed. Cir. 2018).

¹⁷⁸ *Id.* at 1368.

The question of whether a claim element or combination of elements is well-understood, routine and conventional to a skilled artisan in the relevant field is a question of fact. Any fact, such as this one, that is pertinent to the invalidity conclusion must be proven by clear and convincing evidence.

Id.

¹⁷⁹ *Id.*

¹⁸⁰ *Id.*

¹⁸¹ Jeremy Doerre & David Boundy, *Berkheimer, the Administrative Procedure Act, and PTO Motions to Vacate PTAB § 101 Decisions*, IP WATCHDOG (July 16, 2018), <http://www.ipwatchdog.com/2018/07/16/berkheimer-administrative-procedure-act-ptomotions-vacate-ptab-101-decisions/id=99194/> (“In particular, as outlined below, the PTO has recently moved to vacate PTAB decisions in several Federal Circuit appeals that had challenged eligibility conclusions as being improperly based on unsupported factual findings.”)

V. CONCLUSION: THE POST-ALICE JURISPRUDENCE PENDULUM AND ITS EFFECTS

The short-term effect of the Supreme Court's unanimous decision in *Alice* has been the massive rejection by the district courts and the USPTO of software patent claims.¹⁸² In the USPTO alone, *Alice* has caused the monthly rate of appeals and abandons to triple, while causing monthly allowances to drop to one-eighth of their pre-*Alice* rates.¹⁸³ Based on current trends, the lack of a clear definition of an abstract idea by either the Supreme Court or the legislature will only make this issue worse, thus thwarting the very purpose of the Patent Act, which is to promote innovation.¹⁸⁴

However, the pendulum has begun to swing from the simple idea of normal human activity being implemented on a computer providing no improvement at all as in *Ultramercial*, to the improvement to the functioning of a computer as illustrated by *Enfish* and *McRO*. This change in interpretation by the Federal Circuit, and the impact of *Berkheimer* during examination, will allow practitioners some direction and clarity in drafting claims and provide protection for inventors.

These cases are only the tip of the iceberg, and it is tough to estimate how many pending PTAB appeals will require reversal of examiner rejections for this same reason. When a party has to backtrack on this many cases, it is usually because multiple failsafes failed.”)

¹⁸² *Supra* note 2.

¹⁸³ Mark Nowotarski, *Surviving Alice In the Finance Arts*, BILSKI BLOG (Jan. 30, 2017), <http://www.bilskiblog.com/blog/alicestorm/>.

¹⁸⁴ *Supra* note 2.