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Software Patents and Pretrial Dismissal Based on Ineligibility

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SOFTWARE PATENTS AND PRETRIAL DISMISSAL BASED ON INELIGIBILITY[*]

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ABSTRACT

Recent Supreme Court and Federal Circuit cases have redefined patent eligibility under §101. In 2012, the Supreme Court decided *Mayo Medical Laboratories v. Prometheus Laboratories, Inc.* and in 2014, the Court decided *Alice Corp. v. CLS Bank International*. Together, these two cases form what is known as the *Mayo/Alice* Two Step Test for subject matter eligibility. Although *Alice* discussed computer implemented inventions, it did not expressly answer whether software patents were eligible under § 101.

In the years since *Alice*, it has been difficult to define what is patent eligible. Thus, many software patents have been found ineligible under § 101. However, since 2014, the Federal Circuit has decided a series of § 101 cases which have helped define § 101 eligibility. These are particularly important to guide the district court judges during their § 101 analysis.

The Federal Circuit has previously instructed district courts to determine patent-eligibility at the pleadings stage to avoid unnecessary litigation. As

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[*] The intended audience of this paper is a patent litigator with a moderate amount of experience but has not had the opportunity to stay up to date on recent subject matter eligibility cases.

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a result, oftentimes district courts dismiss cases based on subject matter eligibility with pretrial pleadings. This paper will explore eligibility issues that software patents have faced post-*Alice* and whether recent Federal Circuit cases help software patentee avoid invalidity due to lack of eligibility at the pretrial stage.

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I. INTRODUCTION AND OVERVIEW

[1] Subject matter eligibility is an ever-evolving topic in the patent world; both in patent prosecution and in patent litigation. Eligibility is statutorily defined under 35 U.S.C. § 101 as "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof."[1] "These terms, characterized as the 'great and distinct classes of invention,'[2] have been part of the American patent landscape for more than 200 years."[3] However, software patents have had a difficult time with eligibility.

[2] As with many legal issues involving technology, the science far outpaced the law. Even though the Patent Act of 1952 is viewed as a major revision in patent law, computer software was in its infancy and was not a major concern when Congress passed the law.[4] In 2011, Congress enacted

[1] 35 U.S.C. § 101 (2012).

[2] *Ex parte* Blythe, 1884 Dec. Comm'r Pat. 82, 86.

[3] The 1793 Patent Act used the word "art" instead of "process;" however, courts commonly equated the two. In the 1952 Patent Act, Congress changed the word "art" to "process." CRAIG ALLEN NARD, THE LAW OF PATENTS 161 (4th ed. 2016) [hereinafter NARD, PATENTS].

[4] *See* SUZANNE S. HARRISON & PATRICK H. SULLIVAN, EDISON IN THE BOARDROOM REVISITED: HOW LEADING COMPANIES REALIZE VALUE FROM THEIR INTELLECTUAL PROPERTY 192 (2d ed. 2011); David Lund, *Congress Can Save Software Patents by Repeating One of Its Successes*, IPWATCHDOG (Dec. 11, 2016), http://www.ipwatchdog.com/2016/12/11/congress-can-save-software-patents-by-repeating-one-of-its-successes/id=75390/, https://perma.cc/CZN6-X7K2 (last visited Feb. 16, 2018).

the Leahy-Smith America Invents Act, which referred to tax software;[5] nevertheless, software was still not a major concern. The Supreme Court has previously acknowledged that Congress intended for patents to cover "anything under the sun that is made by man."[6] In theory, this interpretation would allow for software patents to be eligible subject matter, but in practice, both the courts and the United States Patent and Trademark Office ("USPTO") have had a difficult time in defining what is subject matter eligible.

[3] In an attempt to define subject matter eligibility, the Supreme Court issued a series of controversial decisions. In 2010, the Court decided *Bilski v. Kappos*, in which they held that the machine-or-transformation test was not the sole method for determining subject matter eligibility.[7] In 2012, the Court decided *Mayo Collaborative Servs. v. Prometheus Labs., Inc*., and held that "a process that focuses upon the use of a natural law … [must] contain other elements or a combination of elements, sometimes referred to as an 'inventive concept'" to transform it into patent eligible subject matter.[8] In 2014, after a highly fractured *en banc* Court of Appeals for the Federal Circuit decision[9], the Supreme Court issued their decision in *Alice Corp. Pty. v. CLS Bank*.[10] Here, the Court held that a generic computer which fails

[5] *See* Leahy-Smith America Invents Act, Pub. L. No. 112–29, § 14(c), 125 Stat. 284, 327–28 (2011).

[6] Diamond v. Chakrabarty, 447 U.S. 303, 309 (1980) (quoting S. REP. NO. 82-1979, at 5 (1952) and H.R. REP. NO. 82-1923, at 6 (1952)).

[7] *See* Bilski v. Kappos, 561 U.S. 593, 603–04 (2010).

[8] Mayo Collaborative Servs. v. Prometheus Labs., Inc., 566 U.S. 66, 72 (2012).

[9] *See* CLS Bank Int'l v. Alice Corp. Pty., 717 F.3d 1269 (Fed. Cir. 2013) (*en banc*) (five judges concurred, and 4 judges concurred in part and dissented in part).

[10] *See* Alice Corp. Pty. Ltd. v. CLS Bank Int'l, 134 S. Ct. 2347 (2014).

to "transform" an abstract idea is not subject matter eligible.[11] The former two cases created what is known as the *Alice* Two Step Test.[12]

[4] Part I of this paper will focus on the *Mayo* and *Alice* decisions. The purpose is to describe the impact that those cases have had on the §101 eligibility landscape. I will go into a brief description of the two cases and how their holdings have impacted the USPTO. The ultimate goal is to provide the reader with a basic understanding of the *Alice* Two Step Test.

[5] Part II will discuss how *Alice* has been interpreted to impact §101 eligibility for software patents. Section A will discuss the problems in defining what constitutes a "software patent." Section B will address the "abstract idea" doctrine and its impact on software patents. This section will give a brief history of the "abstract idea" doctrine, attempt to provide an understanding of what constitutes an "abstract idea," and finally how the USPTO handles the doctrine. Last, Section C will focus on pretrial motions used to dismiss cases for lack of subject matter eligibility.

[6] Part III will look at some of the major software cases decided by the Federal Circuit in the years since the *Alice* decision that have helped define § 101 jurisprudence. Here, I will discuss the holdings in *DDR Holdings*,[13]

[11] *See id.* at 2352.

[12] *See CLS Bank Int'l*, 717 F.3d at 1277 (This test has also been referred to as the *Mayo* Two Step Test and the *Mayo/Alice* Two Step Test. For the sake of consistency, I will refer to it as the *Alice* Two Step Test).

[13] *See* DDR Holdings, LLC v. Hotels.com, L.P., 773 F.3d 1245 (Fed. Cir. 2014).

Enfish,[14] *Bascom Global*,[15] and *McRO Inc*.[16] Although there have been other § 101 eligibility cases, this paper will focus exclusively on those that dealt with software patents.[17] The Federal Circuit has been left with a difficult task post-*Alice*, they must clarify what makes an invention subject matter eligible under § 101. As will be discussed in Part III, the Federal Circuit has taken the approach of defining what is subject matter eligible by way of example. The goal of this section is to highlight why these software patents survived § 101 challenges and how they may help future cases.

[7] In Part IV, I classify the claims from the cases in Part III into three categories. I will discuss how I believe that each category of successful claims may help software patentees survive § 101 motions to dismiss. I will then discuss some recent district court cases where patentees have successfully survived theses motions and allowed their case to reach claim construction. Last, I will discuss the outlook of software patents and subject matter eligibility.

[8] Finally, Part V concludes this paper and will summarize the important findings from the previous sections.

II. THE REVOLUTION IN PATENT ELIGIBILITY – THE ALICE TWO STEP

[14] *See* Enfish, LLC v. Microsoft Corp., 822 F.3d 1327 (Fed. Cir. 2016).

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

[16] *See* McRO, Inc. v. Bandai Namco Games Am. Inc., 837 F.3d 1299 (Fed. Cir. 2016).

[17] *See e.g.*, Rapid Litig. Mgmt. Ltd. v. CellzDirect, Inc., 827 F.3d 1042 (Fed. Cir. 2016) (the claims were directed towards an improvement in cryogenically freezing liver cells and §101 eligibility. Although relevant to the general §101 landscape, this did deal with software patents and therefore will not be addressed).

[9] Historically, subject matter eligibility had not been a significant obstacle to patentability.[18] One of the most common reasons courts cited for refusing to find subject matter ineligibility is that the times are constantly changing and technology and other innovations progress unexpectedly.[19] As a result, "patent law has erred on the side of inclusiveness."[20] This resulted in the requirements of novelty, nonobviousness, and disclosure doing most of the heavy lifting.[21] However, in the last decade, the Supreme Court has revolutionized patent eligibility by breathing new life into the § 101 requirement. Hence, § 101 can be viewed as the gateway to patentability.[22]

[10] In 2010, the Supreme Court began to reshape subject matter eligibility. In *Bilski v. Kappos*, the Court noted that Judge Dyk's concurring opinion in *In re Bilski*[23] was correct in stating that patents which failed the machine-or-transformation test were rarely granted.[24] Nonetheless, technology and innovation are constantly changing. There was a time when the "well-established principles of patent law probably would have prevented the issuance of a valid patent on almost any conceivable computer program."[25] Section 101 is a "dynamic provision designed to encompass

[18] *See* NARD, PATENTS, *supra* note 3, at 162.

[19] *See* Bilski v. Kappos, 561 U.S. 593, 606 (2010).

[20] NARD, PATENTS, *supra* note 3, at 162.

[21] *See id.*

[22] *See In re* Comiskey, 554 F.3d 967, 973 (Fed. Cir. 2009) (noting that before proceeding to the other requirements of patentability, an inventor must first pass § 101).

[23] *See In re* Bilski, 545 F.3d 943, 966–73 (Fed. Cir. 2008) (Dyk, J., concurring).

[24] *See Bilski*, 561 U.S. at 605.

[25] Diamond v. Diehr, 450 U.S. 175, 195 (1981) (Stevens, J., dissenting).

new and unforeseen inventions."[26] Therefore, the Court found that "[a] categorical rule denying patent protection for 'inventions in areas not contemplated by Congress . . . would frustrate the purposes of the patent law.'"[27] In doing so, the Court held that the well-established machine-or-transformation test was not the sole method for determining subject matter eligibility of a process under § 101.[28] In the wake of this decision, the USPTO issued an interim guideline for determining subject matter eligibility of process claims.[29] In 2012 and in 2014, the Supreme Court once again reshaped the subject matter eligibility landscape with their decisions on *Mayo* and *Alice*.[30]

A. Controversies in the Revolution

[11] The Supreme Court's holdings in *Mayo* and *Alice* shook up the § 101 landscape. *Mayo* made three things clear regarding § 101. First, *Mayo* established the subject matter exclusions on a utilitarian rational: the judicial exceptions are excluded because they are the "building blocks" of future innovation and the monopolization of these exceptions would impede such innovation rather than promote it.[31] Second, the *Mayo* court defined the § 101 inquiry as "a distinction between ineligible claims to fundamental

[26] J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred Int'l, Inc., 534 U.S. 124, 135 (2001).

[27] *Bilski*, 561 U.S. at 605 (quoting Diamond v. Chakrabarty, 447 U.S. 303, 315 (1980)).

[28] *See id*. at 603.

[29] *See generally* Interim Guidance for Determining Subject Matter Eligibility for Process Claims in View of *Bilski v. Kappos*, 75 Fed. Reg. 43,922, 43,923–28 (July 27, 2010) (aiding patent examiners when determining subject matter eligibility in wake of the *Bilski* decision).

[30] *See Alice Corp. Pty.*, 134 S. Ct. at 2352; *Mayo Collaborative Servs.*, 566 U.S. at 72.

[31] *See Mayo Collaborative Servs.*, 566 U.S. at 70–71.

principles themselves and claims to patent-eligible applications of those principles."[32] Third, *Mayo* held that the "inventive concept" is necessary to transform a judicial exception into patent eligible subject matter.[33] *Alice* reaffirmed the § 101 two step test initially introduced by *Mayo*; however, this time the Court focused on computer implemented processes.[34]

[12] This section will discuss the Supreme Court's holdings in *Mayo* and *Alice*. Both cases play an important role in determining what is subject matter eligible material. The section concludes by discussing the impact these cases had on the USPTO. The goal is to provide the reader with a basic understanding of the *Alice* Two Step Test.

B. Mayo: Biological Pathways and the Need for an Inventive Concept

[13] In 2012, the Supreme Court issued their decision in *Mayo Collaborative Servs. v. Prometheus Labs., Inc*.[35] The patents at issue involved dosage determination for drugs used to treat autoimmune diseases.[36] In particular, the patents set forth claims directed towards a process for identifying the "relationships between the concentration in the blood of certain thiopurine metabolites and the likelihood that the drug

[32] Jeffrey A. Lefstin, *The Three Faces of Prometheus: A Post-Alice Jurisprudence of Abstractions*, 16 N.C. J.L. & TECH. 647, 658 (2015) [hereinafter Lefstin, *Three Faces of Prometheus*]. *See Mayo Collaborative Servs.*, 566 U.S. at 70–73.

[33] *See Mayo Collaborative Servs.*, 566 U.S. at 72–73.

[34] *See Alice Corp. Pty.*, 134 S. Ct. at 2354.

[35] *See Mayo Collaborative Servs*., 566 U.S. 66.

[36] *See id*. at 72.

dosage will be ineffective or induce harmful side-effects."[37] Each claim recited an "administering" step, a "determining" step, and a "wherein" step to assist the doctor in determining the proper amount of medication to administer.[38]

[14] The district court found the patents to be ineligible for effectively claiming natural laws or natural phenomena.[39] The Federal Circuit reversed the district court using the machine-or-transformation test.[40] On remand from the Supreme Court, in the wake of the *Bilski* holding, the Federal Circuit reaffirmed their initial decision.[41] The Supreme Court granted cert and reversed the Federal Circuit.[42]

[15] The Supreme Court focused on the judicial exceptions to subject matter eligibility.[43] The primary concern behind these exceptions, as explained by the Court, is impeding innovation by creating a monopoly on scientific and technological building blocks.[44] The patenting of these exceptions is not *per se* ineligible under § 101. To make a judicial exception for using a natural law patent eligible, "one must do more than simply state

[37] *Id*.

[38] *See id*. at 78–79.

[39] *See id*.

[40] *See Mayo Collaborative Servs.*, 566 U.S. at 76.

[41] *See id.*

[42] *See id*. at 77, 92.

[43] *See id*. at 70.

[44] *See id*. at 71.

the law of nature while adding the words 'apply it.'"[45] There must be an "'inventive concept,' sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the natural law itself."[46]

[16] The Court invalidated the claims[47] at issue specifically because the claims simply "inform a relevant audience about certain laws of nature; any additional steps consist of well-understood, routine, conventional activity already engaged in by the scientific community; and those steps, when viewed as a whole, add nothing significant beyond the sum of their parts taken separately."[48] In other words, the claimed process simply involved a well-understood, routine, conventional activity previously used in the art and thus was insufficient to transform the use of the law of nature into a patent eligible subject matter.[49] Furthermore, the Court stated that granting a patent on this claim could inhibit future innovation based on the underlying natural law.[50]

C. Alice: Generic Computing Fails to Transform an Abstract Idea

[45] *Mayo Collaborative Servs.*, 566 U.S. at 72.

[46] *Id*. at 72–73.

[47] *See id*. at 74–75 (quoting claim 1 of the patent-in-suit, which described how to administer a drug to a subject, determine a level of the relevant metabolites in the blood of the subject, and determine the need to increase or decrease administration of the drug based on the level to).

[48] *Id*. at 79–80.

[49] *See id*. at 82.

[50] *See Mayo Collaborative Servs.*, 566 U.S. at 86.

[17] In 2014, the Supreme Court again revisited the § 101 landscape and decided *Alice Corp. Pty. v. CLS Bank Int'l*.[51] The patents at issue disclosed "a computer-implemented scheme for mitigating 'settlement risk'… by using a third-party intermediary."[52] The claims were directed towards a method for exchanging obligations, a computer configured to carry out the exchange, and a computer-readable medium containing the computer code for the mitigation scheme.[53]

[18] The district court held that the claims were directed towards the abstract idea of "employing a neutral intermediary to facilitate simultaneous exchange of obligations in order to minimize risk" and thus not patent eligible subject matter.[54] A divided panel of the Federal Circuit initially reversed the holding of the district court stating that it was not evident that the claims were directed towards an abstract idea.[55] The Federal Circuit granted a hearing *en banc*, vacated the panel decision, and affirmed the district court judgment.[56] Although the *en banc* court managed to obtain enough votes to affirm the district court, not one opinion garnered a majority resulting in a one paragraph *per curium* decision.[57] The Supreme Court ultimately granted cert and affirmed the *en banc* holding.[58]

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[51] *See Alice Corp. Pty. Ltd.*, 134 S. Ct. at 2347.

[52] *Id*. at 2352–53.

[53] *See id*. at 2353.

[54] CLS Bank Int'l v. Alice Corp. Pty., 717 F.3d 1269, 1275 (Fed. Cir. 2013) (quoting the district court's opinion, 768 F. Supp. 2d 221, 252 (D.D.C. 2011).

[55] CLS Bank Int'l v. Alice Corp. Pty., 685 F.3d 1341, 1352 (Fed. Cir. 2012).

[56] *Alice Corp. Pty.,* 717 F.3d at 1273.

[57] *See id.*

[58] *Alice Corp. Pty. Ltd.*, 134 S. Ct. at 2354.

[19] In *Alice*, the Supreme Court doubled-downed on the subject matter eligibility test introduced in *Mayo*, explaining that the same test prevents abstract ideas from being patent eligible.[59] The Court sought a balance between the basic scientific building blocks and the idea that all inventions involve or use laws of nature, natural phenomena, or abstract ideas.[60] Therefore, an invention does not lack subject matter eligibility simply because it involves an abstract idea.[61] Instead of focusing on whether the claim[62] at issue identified the application of an abstract idea, the Court focused on the § 101 test previously recited in *Mayo*.[63] The important part of the analysis is to distinguish between the basic building blocks of science and technology and the inventions that integrate them into "something more" such that they satisfy the § 101 eligibility requirement.[64]

[20] In applying the § 101 test in *Alice*, the Court reiterated the two-part test but this time, placed emphasis on part two – whether there is something in the claims that amounts to "something more" than the judicial exception

[59] *See id*. at 2354.

[60] *See id* at 2354–55.

[61] *See id*. at 2354.

[62] *Id.* at 2359 (summarizing the representative method claim as reciting the following steps: "(1) 'creating' shadow records for each counterparty to a transaction; (2) 'obtaining' start-of-day balances based on the parties' real-world accounts at exchange institutions; (3) 'adjusting' the shadow records as transactions are entered, allowing only those transactions for which the parties have sufficient resources; and (4) issuing irrevocable end-of-day instructions to the exchange institutions to carry out the permitted transactions").

[63] *See Alice Corp. Pty. Ltd.*, 134 S. Ct. at 2354.

[64] *See id*.

itself.[65] Once the Court concluded that the claims were directed towards the abstract idea of intermediate settlement, the focus shifted to part two of the test.[66] The Court found that the claims did not add enough to transform the abstract idea. In particular, simply using a generic computer fails to transform an abstract idea into patent eligible subject matter.[67] The invention at issue failed to improve any other technology or improve the functionality of the computer itself.[68]

[22] The *Mayo* decision introduced the new subject matter eligibility test while the *Alice* holding brought the focus to computer implemented technology.[69] Together, these two cases prompted a major shakeup regarding § 101 jurisprudence. In response, the USPTO issued new subject matter eligibility guidelines for examiners explaining this new *Alice* Two Step Test.[70]

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[65] *See id*. at 2355.

[66] *Id*. at 2356 (noting that intermediate settlement was a "building block of modern economy" and therefore qualified as an abstract idea).

[67] *See id*. at 2358.

[68] *See Alice Corp. Pty. Ltd.*, 134 S. Ct. at 2359–60.

[69] *See id*. at 2357.

[70] In 2014, the USPTO issued an interim eligibility guidance reference sheet for examiners to apply the *Alice* Two Step Test. The reference guideline lists Step One, Step 2A, and Step 2B. Step One is also known as "*Alice* Step Zero." Step 2A (also known as "*Alice* Step One,") refers to judicially recognized exceptions. Step 2B (also known as "*Alice* Step Two") refers to the "significantly more" requirement to turn a judicial exception in to patent eligible subject matter. Interim Eligibility Guidance Quick Reference Sheet, 79 Fed. Reg. 74,618-21 (December 16, 2014) [hereinafter 2014 Reference Sheet].

D. The Result: The Alice Two Step

[23] In response to the Supreme Court's decision in *Alice*, the USPTO issued the 2014 Interim Eligibility Guidance Quick Reference Sheet for examiners to evaluate inventions.[71] *Alice* Step One asks if "the claim is directed to a law of nature, a natural phenomenon, or an abstract idea?"[72] If so, the examiner is to proceed to *Alice* Step Two and ask if "the claim recites additional elements that amount to scientifically more than the judicial exception?"[73] Although simply stated, in practice this test has posed many issues for software patents.

[24] *Alice* Step One focuses on the judicial exceptions to subject matter eligibility.[74] Section 101 lists four categories that an invention must fit into to be subject matter eligible: a process, a machine, a manufacture, or a composition of matter.[75] A claim that, under the broadest reasonable interpretation, covers both statutory and non-statutory embodiments or embraces non-eligible subject matter, fails *Alice* Step One.[76] To support a §

[71] *See id*. at 74,621.

[72] *Id*. at 74,621.

[73] *Id*.

[74] Inventions that involve or use laws of nature, natural phenomena, or abstract ideas are considered the judicial exceptions to § 101. *See* Diamond v. Diehr, 450 U.S. 175, 185 (1981) (stating the judicially recognized exceptions).

[75] *See* 35 U.S.C. § 101 (1952).

[76] *See Section 2106 Patent Subject Matter Eligibility [R-08.2017]*, MANUAL OF PATENT EXAMINING PROCEDURE, U.S. Pat. & Trademark Off. *available at* https://www.uspto.gov/web/offices/pac/mpep/s2106.html, https://perma.cc/CQL5-2456 (last visited Apr. 12, 2017).

101 rejection based on *Alice* Step One, the examiner should point to the specific claim limitations that invoke the judicial exception.[77]

[25] In particular, the rejection "must identify the specific claim limitations and explain why those claim limitations set forth a judicial exception.... Where the claim describes, but does not expressly set forth, the judicial exception, the rejection must also explain what subject matter those limitations describe, and why the described subject matter is a judicial exception."[78]

[26] *Alice* Step Two asks whether the claims recite additional elements that 'amount to significantly more than the judicial exception?'"[79] These claims must be analyzed to determine whether the elements of the claim, considered both individually and as an ordered combination, are sufficient to ensure that the claim as a whole amounts to significantly more than the

[77] *See* Robert W. Bahr, *USPTO Memorandum: Formulating a Subject Matter Eligibility Rejection and Evaluating the Applicant's Response to a Subject Matter Eligibility Rejection*, U.S. PAT. & TRADEMARK OFF. Part II, *available at* https://www.uspto.gov/sites/default/files/documents/ieg-may-2016-memo.pdf, https://perma.cc/XD83-DM7S (last visited Apr. 6, 2017) [hereinafter Bahr, *USPTO Memo*].

[78] *Id*. at 2.

[79] *2014 Reference Sheet*, *supra* note 70, at 1.

exception itself - this has been termed a search for an inventive concept.[80] A rejection based on *Alice* Step Two should only be made if it is apparent to the examiner that the additional elements do not amount to "significantly more" than the judicial exception itself.[81] When making the rejection, the examiner should explain the rationale underlying their decision so that an applicant may respond appropriately.[82] The "inventive concept" of *Alice* Step Two is not to be confused with the "inventive step" requirement found

[80] *See id.* at 3. Limitations that may be enough to pass *Alice* Step Two include: "[i]mprovements to the functioning of the computer itself; [a]pplying the judicial exception with, or by use of, a particular machine; [e]ffecting a transformation or reduction of a particular article to a different state or thing; [a]dding a specific limitation other than what is well-understood, routine and conventional in the field, or adding unconventional steps that confine the claim to a particular useful application; or [o]ther meaningful limitations beyond generally linking the use of the judicial exception to a particular technological environment." Limitations that were found to fail *Alice* Step Two include: "[a]dding the words ''apply it'' (or an equivalent) with the judicial exception, or mere instructions to implement an abstract idea on a computer; [s]imply appending well-understood, routine and conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception, *e.g.*, a claim to an abstract idea requiring no more than a generic computer to perform generic computer functions that are well understood, routine and conventional activities previously known to the industry; [a]dding insignificant extra-solution activity to the judicial exception, *e.g.*, mere data gathering in conjunction with a law of nature or abstract idea; or [g]enerally linking the use of the judicial exception to a particular technological environment or field of use."

[81] *See* Bahr, *USPTO Memo*, *supra* note 77, at 1.

[82] *See id*. at 2, 4. A proper Step One rejection should: "identify the judicial exception by referring to what is recited… in the claim and explain why it is considered an exception; identify any additional elements (specifically point to claim features/limitations/steps) recited in the claim beyond the identified judicial exception; and explain the reason(s) that the additional elements taken individually, and also taken as a combination, do not result in the claim as a whole amounting to significantly more than the judicial exception.".

in many other patent systems.[83] Rather, the "inventive concept" in *Alice* Step Two refers to the requirement for § 101 subject matter eligibility.

[27] Once an examiner has identified the judicial exception in the rejection, they should identify any additional elements in the claims and explain why they fail to transform the claim into patentable material.[84] The explanation should consider the additional elements both individually and in combination.[85] This is a particularly important aspect of the test as a new combination of steps in a process may be patent eligible despite reciting non-patent eligible steps when considered individually.[86] Therefore, the examiner must address the combination of the additional steps and determine if they amount to something more than the judicial exception itself.[87]

III. HOW ALICE AFFECTS SOFTWARE PATENTS

[28] The *Alice* decision shook the landscape for subject matter eligibility. In the immediate aftermath, 830 patent applications were withdrawn from

[83] Dan L. Burk, *The Inventive Concept in Alice Corp. v. CLS Bank Int'l*, MAX PLANCK INST. INNOVATION & COMPETITION, http://www.law.uci.edu/faculty/full-time/burk/burk-inventive-concept-in-alicecorp-iic-2014.pdf, https://perma.cc/N9PD-8WLJ (Nov. 25, 2014) "Typically the 'inventive step' requirement, which is found in many patent systems, including as Art. 52 of the European Patent Convention, is considered equivalent to the 'non-obviousness' requirement found in Sec. 103 of the American patent statute, rather than equivalent to any U.S. subject matter provision.".

[84] *See* Bahr, *USPTO Memo*, *supra* note 77, at 3.

[85] *See id* at 2–3.

[86] *See id*.

[87] *See id*. at 4.

the USPTO between July 1 and August 15, 2014.[88] In a little over one year after *Alice*, the Federal Circuit had relied on the two step test to determine subject matter eligibility in ten cases regarding computer implemented inventions.[89] Of those, only one was found to recite eligible subject matter.[90] It quickly became clear that *Alice* would affect software patents in a great way, but confusion as to its application would make things difficult.

[88] *See* Jasper L. Tran, *Software Patents: A One-Year Review of Alice v. CLS Bank*, 97 J. PAT. & TRADEMARK OFF. SOC'Y, 532, 539–540 (2015) [hereinafter Tran, *One-Year Review*].

[89] As of August 1, 2015, the Federal Circuit had decided ten cases based on the *Alice* holding. This number has increased but it demonstrates the impact that *Alice* had in its first year. *See* Versata Dev. Grp., Inc. v. SAP America, 793 F.3d 1306 (Fed. Cir. 2015); Intellectual Ventures I LLC v. Capital One Bank (USA), 792 F.3d 1363, 1367–68 (Fed. Cir. 2015); Internet Patents Corp. v. Active Network, Inc., 790 F.3d 1343, 1345 (Fed. Cir. 2015) OIP Techs., Inc. v. Amazon.com, Inc., 788 F.3d 1359, 1362–63 (Fed. Cir. 2012); Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat'l Ass'n, 776 F.3d 1343, 1346–47 (Fed. Cir. 2014); DDR Holdings, LLC v. Hotels.com, L.P., 773 F.3d at 1245, 1256; Ultramercial, Inc. v. Hulu, LLC, 772 F.3d 709, 721–22 (Fed. Cir. 2014); buySAFE, Inc. v. Google, Inc., 765 F.3d 1350, 1351 (Fed. Cir. 2014); Planet Bingo, LLC v. VKGS LLC, 576 F. Appx. 1005, 1006 (Fed. Cir. 2014); Digitech Image Techs. v. Elecs. for Imaging, 758 F.3d 1344, 1348–51 (Fed. Cir. 2014).

[90] The *DDR Holdings* case will be discussed in a later section. *See infra DDR Holdings, LLC*, 773 F.3d at 1245; Part IV (A) - A. DDR Holdings: Rooted in Computer Technology - The First Victory.

[29] At the heart of the problem with *Alice* and software patents is the "abstract idea" doctrine.[91] This is not a new doctrine, but rather, one deeply rooted in controversial and, at times, confusing court decisions. To understand how recent cases may help clarify the current state of software patent subject matter eligibility status, it is important to understand what constitutes a "software patent" and what the "abstract idea" doctrine is. In theory, this should be a simple inquiry, but in practice, these two issues have been at the heart of much research and litigation.

A. Defining a "Software Patent"

[30] To understand the issues that software patents face, it is necessary to have an understanding of what is meant by a "software patent." This is helpful because the term "software patent" is not a term of art used in patent law.[92] In this section, I will discuss how others have attempted to define the term "software patent."

[31] The Institute of Electrical and Electronics Engineers defines software as "[c]omputer programs, procedures, and possibly associated documentation and data pertaining to the operation of a computer system."[93]

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[91] A common issue in the first ten post-*Alice* Federal Circuit cases is the disagreement about the reason for the abstract idea doctrine. *See supra* note 89; Of these ten cases, *Digitech Image Techs.v. Elecs. for Imaging* is perhaps the best example of the confusion amongst the judges. *See* Laura R. Ford, *Patenting the Social: Alice, Abstraction, & Functionalism in Software Patent Claims*, 14 CARDOZO PUB. L. POL'Y & ETHICS J. 259, 307–11 (2016) (discussing *Digitech Image Techs. v. Elecs* and the impact *Alice* had at the Federal Circuit).

[92] *See* Kristen Osenga, *Debugging Software's Schemas*, 82 GEO. WASH. L. REV. 1832, 1836 (2014) [hereinafter Osenga, *Debugging Software*] (acknowledging that the USPTO does not have specific classification for software patents).

[93] INST. OF ELEC. & ELECS. ENG'RS, IEEE STANDARD GLOSSARY OF SOFTWARE ENGINEERING TERMINOLOGY 66 (1990).

Studies on software have defined them as "a logic algorithm for processing data that is implemented via stored instructions residing on a disk."[94] Scholars have defined software patents as an "invention that is completely embodied in software, even if the claims of the patent refer to a system or article of manufacture."[95] Even Congress attempted to define software in the SHIELD Act of 2012.[96] Here, software was defined to be "any process that could be implemented in a computer regardless of whether a computer is specifically mentioned in the patent," as well as "any computer system that is programmed to perform [such] a process."[97] To make matters worse, neither the United States Patent Classification[98] system nor the Cooperative

[94] Osenga, *Debugging Software*, *supra* note 92, at 1836.

[95] In the early 2000's, scholars John R. Allison and Mark A. Lemley conducted a study of the complexity of the growing U.S. patent system. To conduct their study, they randomly chose a large number of U.S. patents and thoroughly studied each one. After doing so, they established definitions for fourteen different classifications. John R. Allison & Mark A. Lemley, *The Growing Complexity of the United States Patent System*, 82 B.U. L. Rev. 77, 88–90 (2002) [hereinafter Allison, *Growing Complexity*].

[96] *See* Saving High-Tech Innovators from Egregious Legal Disputes (SHIELD) Act of 2012, H.R. 6245, 112th Cong. (2012) [hereinafter *SHIELD*].

[97] *Id*. at 3.

[98] *See US Classes by Number with Title Menu*, U.S. PAT. & TRADEMARK OFF., http://www.uspto.gov/web/patents/classification/selectnumwithtitle.htm, https://perma.cc/69DQ-C8S5 (last visited Apr. 5, 2017) (listing U.S. patent classifications by number).

Patent Classification system[99] have a single simple category for classifying software patents.[100]

[32] Establishing a proper definition for software is extremely difficult.[101] Due to the inherent complexity of software, attempting to

[99] *See Classification Standards and Development*, U.S. PAT. & TRADEMARK OFF., https://www.uspto.gov/patents-application-process/patent-search/classification-standards-and-development, https://perma.cc/53H9-A7CB (last visited Apr. 5, 2017) (collaborating together in a joint partnership, the USPTO and the European Patent Office agreed to harmonize their existing classification systems (European Classification (ECLA) and United States Patent Classification (USPC) respectively) and migrate towards a common classification scheme).

[100] The USPTO does not have a specific category for software patents. Part of this could be due to the development and lifecycle is short and technology is ever changing. On the other hand, patent prosecution is a long process currently averaging over two years from filing to issuance. Some have even argued that twenty-year patent term acts as a barrier to innovation due it being highly disproportionate compared to the life span of software. *See USPTO Data Visualization Center: Patents Dashboard*, U.S. PAT. & TRADEMARK OFF., https://www.uspto.gov/dashboards/patents/main.dashxml, https://perma.cc/B37F-3P8H (last visited Apr. 10, 2017) (showing that as of February 2017, the average total pendency of a patent was 25.7 months); Shane D. Anderson, *Software, Abstractness, And Soft Physicality Requirements*, 29 HARV. J.L. & TECH. S. 16 n. 2. (2016) (noting that the patent term and the software lifecycle are disproportionate to each other); Eric Goldman, *The Problems with Software Patents (Part 1 of 3)*, FORBES (Nov. 28, 2012, 2:53 PM) https://www.forbes.com/sites/ericgoldman/2012/11/28/the-problems-with-software-patents/#3cb8764a4391, https://perma.cc/9TLM-ECBA (last visited Apr. 10, 2017) (discussing how the development and lifecycle of software patents do not sync well).

[101] Scholars John R. Allison and Ronald J. Mann acknowledged that defining what constituted a "software patent" was a highly difficult task. In their study, they reviewed three other significant studies from other scholars that attempted to define what constituted "software patent," however, they decide to use Allison's previous method. John R. Allison & Ronald J. Mann, *The Disputed Quality of Software Patents*, 85 WASH. U.L. REV. 297, 305–09 (2007); *See also* Allison, *Growing Complexity*, *supra* note 95, at 86–88.

establish a definition is difficult.[102] Some scholars believe that attempting to define software and fit it into strict categories may be "pointless."[103] This has resulted in many different problems; however, perhaps the most problematic is that patent attorneys have become creative and draft claims to "obscure the true nature of the patented invention."[104] Instead of solving the issue, practitioners made it worse.

[33] Due to the high complexity in defining a "software patent," for the sake of consistency, I will adopt the definition by John Allison and Mark Lemley.[105] That is a "software patent" is a patent that involves an "invention that is completely embodied in software, even if the claims of the patent

[102] Software is always evolving. What once took rooms full of computers can fit in the palm of your hand. The advancement in technology has opened the software market to many different types of companies ranging from Internet and social media company to those that to nonsoftware firm. *See, e.g.*, Clayton M. Christensen et al., *The Great Disruption*, FOREIGN AFF., 80, 83–85 (2001) (discussing the evolution of computers from 1946 and the room-sized computers to modern day personal computers); with modern technology, computers continue to push boundaries and range in various sizes. John Markoff, *Researchers Build a Working Carbon Nanotube Computer*, N.Y. TIMES, Sept. 26, 2013, at B3 (noting that the "shrinking of transistor size over the last half-century has been important because it has significantly lowered the cost of computing, making it possible to build ever more powerful computers that are faster and cheaper, and consume less power with each generation," and stating that wit new technology, transistors will continue to shrink in size). *See also* Wendy Seltzer, *Software Patents and/or Software Development*, 78 BROOK. L. REV. 929, 947 (2013) (discussing different makers of software).

[103] *See* Mark A. Lemley, et al., *Life After Bilski*, 63 STAN. L. REV. 1315, 1317, 1323 (2011).

[104] *See* Julie E. Cohen & Mark Lemley, *Patent Scope and Innovation in the Software Industry*, 89 CAL. L. R. 1, 9 (2001) [hereinafter Cohen, *Patent Scope*] (discussing the "doctrine of the magic words," the authors note that patent attorneys attempted to draft software patent claims to appear to cover something up to get patents issues).

[105] *See* Allison, *Growing Complexity*, *supra* note 95, at 89.

refer to a system or article of manufacture."[106] The purpose of adopting this definition is to have a basic understanding of what software patentees are attempting to claim as their invention. Therefore, the next issue is to determine, as best as possible, is what constitutes an "abstract idea."

B. Software Patents and the Abstract Idea

[34] Section 101 is simple on its face; however, as discussed above, there have been a lot of judicial decisions interpreting the statute.[107] One of the most troubling problems that § 101 has faced deals with the "abstract idea" doctrine. The purpose of this subsection is to give the reader an understanding, as best as possible, of what constitutes an "abstract idea" through the usage of history, definitions, and the USPTO treatment.

1. Formulation of the "Abstract Idea" Doctrine

[35] Simply put, software patents have had a long and strenuous time being classified as an "abstract idea." Although software-related inventions are currently eligible under § 101, it was not always a forgone conclusion. The courts have held that "'processes' describing existing natural laws … or reciting steps performable by the human mind do not fall within the category of 'useful arts.'"[108]

[106] *Id.*

[107] *See generally* Ted G. Dane, *Are the Federal Circuit's Recent Section 101 Decisions a Specific Improvement in Patent Eligibility Law*, 26 FED. CIR. B.J. 331 (2017) (providing a chronology of major federal cases interpreting Section 101).

[108] Cohen, *Patent Scope*, *supra* note 104, at 8.

[36] *Gottschalk v. Benson* was the first significant case which involved a computer implemented method.[109] Here the Court rejected mathematical algorithms as patent eligible subject matter.[110] Throughout the 1970s, courts relied on the holding in *Gottschalk* to reject software patent applications claiming they were an unpatentable algorithm.[111] As a result, patent applicants attempted to find creative ways to get around the decision.[112]

[37] In *Parker v. Flook*, the Court rejected a patent for a computerized method to continuously update values during a chemical conversion process and held that the computer program involved was not patent eligible subject matter.[113] The Court noted that "an inventive application of the principal" or "some other inventive concept" is required to make the application of the mathematical formula patent eligible subject matter.[114]

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[109] *See* Gottschalk v. Benson*,* 409 U.S. 63 (1972).

[110] *See id*. at 71–72 (stating that "[t]he mathematical formula involved here has no substantial practical application except in connection with a digital computer, which means that if the judgment below is affirmed, the patent would wholly pre-empt the mathematical formula and in practical effect would be a patent on the algorithm itself.").

[111] *See* Pamela Samuelson, *Benson Revisited: The Case Against Patent Protection for Algorithms and Other Computer Program-Related Inventions*, 39 EMORY L.J. 1025 (1990) (giving a history and impact of the *Benson* holding).

[112] *See* Cohen, *Patent Scope*, *supra* note 104, at 9 (stating that "[w]ith *Benson* apparently precluding the patenting of 'pure' software, patent applicants in the 1970s shifted their focus to patenting mechanical devices and processes that happened to include computer programs").

[113] *See* Parker v. Flook, 437 U.S. 584 (1978).

[114] *See id.* at 594.

[38] Three years after the *Flook* holding, the Court decided *Diamond v. Diehr* and found a process for continuously monitoring the temperature inside a synthetic rubber mold, using a computer and a specific application of a mathematical algorithm, was patent eligible subject matter.[115] This was a change in law when compared to *Benson*. The *Diehr* holding resulted in the "doctrine of magic words" where patent attorneys used "magic words" to make claims towards software.[116] Using this doctrine, patent attorneys could simply draft claims with almost any physical element or step to obtain patent eligible subject matter.[117]

[39] In 1994, an *en banc* Federal Circuit decided *In re Alappat*.[118] The holding established that the statutory process or apparatus requirement may be satisfied by including a general purpose computer, standard hardware, or memory unit necessary for the algorithm.[119] Patent applicants would no longer need to use "magic words" to make claims towards software.[120] In 1995, after not challenging a computer program product claim,[121] the USPTO began to accept claims reading on computer programs and issued

[115] *See* Diamond v. Diehr, 450 U.S. 175, 191–92 (1981).

[116] *See* Cohen, *Patent Scope*, *supra* note 104, at 9.

[117] *See id*. (stating that "[n]early any physical element or step would suffice to render statutory a claim that recited a mathematical or 'mental process' algorithm, even if the physical element or step was well known or an industry standard and the mathematical algorithm was the only novel component of the invention.").

[118] *See In re* Alappat, 33 F.3d 1526 (Fed. Cir. 1994) (*en banc*).

[119] *See id*. at 1545.

[120] *See id*.

[121] The Board of Patent Appeals and Interferences rejected Beauregard's computer program product claim. The Commissioner of Patents and Trademarks held that "computer programs embodied in a tangible medium, such as floppy diskettes" are patentable subject matter. However, the Commissioner dropped the case. *See In re* Beauregard, 53 F.3d 1583, 1584 (Fed. Cir. 1995).

new guidelines.[122] In 1998, the Federal Circuit decided *State Street Bank & Trust v. Signature Financial Group* and held that as long as the idea or process was useful, physical structure was unnecessary.[123] This was later reaffirmed in *AT&T v. Excel Communications* where the Federal Circuit applied the *State Street's* "useful, concrete and tangible result" rationale to find that claims were "useful."[124] It was clear from these cases that the courts were warming up to software patent subject matter eligibility. However, a little over a decade after the Federal Circuit's holding in *AT&T v. Excel Communications*, the Supreme Court would shake up the § 101 subject matter eligibility landscape.[125]

[40] The *Bilski* decision was the first time the Supreme Court returned to the concept of an "abstract idea" in nearly thirty years.[126] However, the decisions in *Mayo* and *Alice* truly brought the concept to the forefront of the software patent world. One of the main reasons is that the Supreme Court failed to provide a definition for what constituted an "abstract idea."[127]

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[122] *See* Examination Guidelines for Computer-Implemented Inventions, 61 Fed. Reg. 7478, 7479–80 (Feb. 28, 1996).

[123] *See* State St. Bank & Trust Co. v. Signature Fin. Grp., 149 F.3d 1368, 1373 (Fed. Cir. 1998).

[124] *See* AT&T Corp. v. Excel Commc'ns., Inc., 172 F.3d 1352, 1357 (Fed. Cir. 1999). In this case, the claims were directed towards "generating a message record for an interexchange call" and recording who to bill for the call. *Id*. at 1353.

[125] *See Bilski*, 561 U.S. at 597–98, 600, 603–04 (holding that "[a]dopting the machine-or-transformation test as the sole test for what constitutes a "process" (as opposed to just an important and useful clue) violates . . . statutory interpretation principles.").

[126] *See* Jeremy D. Roux, Note, *The Supreme Court and § 101 Jurisprudence: Reconciling Subject-Matter Patentability Standards and the Abstract Idea Exception*, 2014 U. ILL. L. REV. 629, 630–31 (2014).

[127] *See id.*

2. Attempting to Understand the "Abstract Idea" Doctrine

[41] Simply put, the "abstract idea" doctrine states that an idea cannot be patented.[128] However, nothing is as simple as it seems. The Court has long struggled with what makes something "abstract."[129] In fact, they have even appeared to contradict themselves.[130] Both *Mayo* and *Alice* failed to provide a firm definition of what constitutes an "abstract idea."

[42] Since the Supreme Court has not provided a definition for what constitutes an "abstract idea," the Federal Circuit and the USPTO have been left to fill in the gaps. If defining what constitutes "software" is a difficult task, then defining what makes an idea "abstract" is nearly impossible. Judge Linn, in his opinion of *CLS Bank Int'l v. Alice Corp. Pty*., stated:

> The abstractness of the "abstract ideas" test to patent eligibility has become a serious problem, leading to great

[128] *See* Rubber-Tip Pencil Co. v. Howard, 87 U.S. 498, 507 (1874) (stating that "[a]n idea of itself is not patentable, but a new device by which it may be made practically useful is").

[129] *Compare* O'Reilly v. Morse, 56 U.S. 62, 50 (1853) (finding that Samuel Morse's attempt to patent the "use of the motive power of [an] electric or galvanic current" to transmit messages without limitation was too broad a level of abstraction and noted that a principal cannot be patented), *with* Dolbear v. Am. Bell Tel. Co., 126 U.S. 1, 534 (1888) (upholding Alexander Graham Bell's patented of the method and apparatus for transmitting vocal messages by using "electrical undulations", although contrary to their decision in *O'Reilly*, since Bell identified a continuous current in a closed circuit rather than any time of electric current).

[130] Tun-Jen Chiang, *Defining Patent Scope by the Novelty of the Idea*, 89 WASH. U. L. REV. 1211, 1232 (2012) ("In *Bell*, the Court rhetorically states, 'Surely a patent for such a discovery [as the telephone] is not to be confined to the mere means [Bell] improvised to prove the reality of his conception.' Logically, this states a rule: patentees can cover more than the embodiment (or 'means') disclosed in the specification. But in *Morse*, the Court states flatly that a patent covers 'nothing more' than 'the means [the patentee] specifies.' Even taking the factual distinction concerning closed circuits at face value, the legal rules being stated still directly contradict each other.").

> uncertainty and to the devaluing of inventions of practical utility and economic potential... In *Bilski*, the Supreme Court offered some guidance by observing that "[a] principle, in the abstract, is a fundamental truth; an original cause; a motive; these cannot be patented, as no one can claim in either of them an exclusive right." ... This court has also attempted to define "abstract ideas," explaining that "abstract ideas constitute disembodied concepts or truths which are not 'useful' from a practical standpoint standing alone, i.e., they are not 'useful' until reduced to some practical application." ... More recently, this court explained that the "disqualifying characteristic" of abstractness must exhibit itself "manifestly" "to override the broad statutory categories of patent eligible subject matter." … Notwithstanding these well-intentioned efforts and the great volume of pages in the Federal Reporters treating the abstract ideas exception, the dividing line between inventions that are directed to patent ineligible abstract ideas and those that are not remains elusive. "Put simply, the problem is that no one understands what makes an idea 'abstract.'"[131]

[43] In other words, defining what makes an idea "abstract" is a legal mess that the Federal Circuit has had to attempt to sort out.

[44] Previously, an *en banc* Federal Circuit established the "machine-or-transformation" test to determine what is "abstract."[132] This two part test allowed for the patenting of an invention if: "(1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different

[131] CLS Bank Int'l v. Alice Corp. Pty., 685 F.3d 1341, 1348–49 (Fed. Cir. 2012).

[132] *In re* Bilski, 545 F.3d 943, 955 (Fed. Cir. 2008).

state or thing."[133] However, the Supreme Court took issue with this test as a strict rule. The Court stated that this was not the sole test in determining patentability.[134] Instead, the Court returned to the "trilogy" cases as they were guidelines as to determine what constituted an "abstract idea."[135] As a result, the Federal Circuit has taken a different approach in the post-*Alice* world. Instead of focusing on what an "abstract idea" is, the Federal Circuit has decided cases on a claim-by-claim basis by comparing them to those claims that have been found eligible and those that have not.[136] Yet, this is not an ideal approach as it seems to have only "blurred the lines" between the two steps in the *Alice* test.[137] Some district courts have acknowledged that there is no clear distinction between the two steps in *Alice*[138] and

[133] Bilski v. Kappos, 561 U.S. 593, 602 (2010).

[134] *See id*. at 594.

[135] *See* Osenga, *Debugging Software*, *supra* note 92, at 1840 (referring to the holdings of *Benson*, *Flook*, and *Diehr* as the "trilogy" of cases).

[136] *See* Amdocs (Isr.) Ltd. v. Openet Telecom, Inc., 841 F.3d 1288, 1294 (Fed. Cir. 2016) (recognizing that there is no single definition for what constitutes an "abstract idea," the Federal Circuit instead looks to decisions of the past to compare the current claims with those that have been found subject-matter eligible and those that have not); *see also* Eric Caligiuri, *Federal Circuit Takes A Common Law Approach to "Abstract Idea" Determinations in Alice Cases*, THE IP LAW BLOG (Nov. 17, 2016), http://www.theiplawblog.com/2016/11/articles/copyright-law/federal-circuit-takes-a-common-law-approach-to-abstract-idea-determinations-in-alice-cases/, https://perma.cc/C4NA-MW7Y [hereinafter Caligiuri, *Common Law Approach*] (discussing *Amdocs (Israel) Ltd.* and how it is a departure from previous cases).

[137] *See* Caligiuri, *Common Law Approach*, *supra* note 136.

[138] *See* Eclipse IP LLC v. McKinley Equip. Corp., 2014 U.S. Dist. LEXIS 125395, at *8 (C.D. Cal. Sept. 4, 2014) ("Describing this as a two-step test may overstate the number of steps involved."); Ameranth, Inc. v. Genesis Gaming Sols., Inc., No. 2014 U.S. Dist. LEXIS 175600, at *9–10 (C.D. Cal. Nov. 12, 2014) (Noting that judges have recognized that the two steps in *Alice* are easier to separate in theory than in application); Shortridge v. Found. Constr. Payroll Serv., LLC, 2015 U.S. Dist. LEXIS 49126, at *22 (N.D. Cal.

perhaps it is more of an "I know it when I see it" test.[139] To ease the burden on patent examiners, the USPTO has issued general guidance on subject matter eligibility[140], conducted various trainings[141] for patent examiners, and issued multiple sets of examples[142] of patents that have been found to be "abstract ideas."

[45] Despite the training and guidance provided by the USPTO, there is still no clear definition of what constitutes an "abstract idea." Rather, the culmination of the various teachings for patent examiners appears to mimic

Apr. 14, 2015), *aff'd*, 655 F. App'x 848 (Fed. Cir. 2016) (acknowledging that some courts "coalesce" their application of *Alice*).

[139] Eclipse IP LLC., 2014 U.S. Dist. LEXIS 125395, at *8 ("[T]he two-step test may be more like a one step test evocative of Justice Stewart's most famous phrase… 'I shall not today attempt further to define the kinds of material I understand to be embraced within that shorthand description; and perhaps I could never succeed in intelligibly doing so. But I know it when I see it . . . . '").

[140] *See Subject Matter Eligibility*, U.S. PAT. & TRADEMARK OFF., https://www.uspto.gov/patent/laws-and-regulations/examination-policy/subject-matter-eligibility, https://perma.cc/H3SS-BYHC (last updated Mar. 14, 2018) (providing general guidance on subject matter eligibility and examples of abstract ideas for examiners and patentees).

[141] *See Training Materials on Subject Matter Eligibility*, U.S. PAT. & TRADEMARK OFF., https://www.uspto.gov/patent/laws-and-regulations/examination-policy/training-materials-subject-matter-eligibility, https://perma.cc/L8HH-XYPC (last updated Feb. 12, 2018) (providing training material on subject matter eligibility and on abstract ideas for examiners and patentees).

[142] *See Examples: Abstract Ideas*, U.S. PAT. & TRADEMARK OFF., 1 (Jan. 27, 2015), https://www.uspto.gov/sites/default/files/documents/abstract_idea_examples.pdf, https://perma.cc/9YHH-H2ZN (listing a first set of abstract idea examples "numbers 1–8"); *see* also *July 2015 Update Appendix 1: Examples*, U.S. PAT. & TRADEMARK OFF. (Apr. 5, 2017), https://www.uspto.gov/sites/default/files/documents/ieg-july-2015-app1.pdf, https://perma.cc/Y5BR-GEJT (listing a second set of abstract idea examples "numbers 21-27").

what the Federal Circuit has done.[143] The material teaches examiners what is and is not subject matter eligible based on previous claim comparisons.

3. Categories of Abstract Ideas

[46] As noted above, it is nearly impossible to determine what constitutes an "abstract idea." Instead, we are left with a claim-by-claim comparison method to determine eligibility.[144] In response to this, the USPTO issued an interim guidance on subject matter eligibility.[145] There are effectively four recognized categories of "abstract ideas": 1.) those that concern a mental process; 2.) those that solve problems which can be figured out with pen and paper; 3.) those that replace an element of human interaction; and 4.) those which address a problem that existed before computers or the Internet.[146] The purpose of this section is to give the reader a basic understanding of how to think of the "abstract idea" doctrine.

[47] Category one, inventions that concern a "mental process," refers to inventions that solve a problem which a person could solve with their own mind.[147] These will likely lack subject matter eligibility unless there is an

[143] *See July 2015 Update: Subject Matter Eligibility*, U.S. PAT. & TRADEMARK OFF., 1, 3 (Apr. 26, 2017) (updating "abstract idea" doctrine to reflect and include modern judicial interpretations), https://www.uspto.gov/sites/default/files/documents/ieg-july-2015-update.pdf, https://perma.cc/ZD79-U6MG (responding to public comments receive in accordance with 79 Fed. Reg. 74,618).

[144] *See id*. at 4 (discussing the issues with defining what constitutes an "abstract idea" and how the Federal Circuit uses a common law comparison method).

[145] *See 2014 Reference Sheet*, *supra* note 70, at 74,618.

[146] *See* JAY P. KESAN & CAROL M. HAYES, *Patent Eligible Subject Matter After Alice*, *in* RESEARCH HANDBOOK ON ELECTRONIC COMMERCE LAW 244 (John A. Rothschild, ed., Edward Elgar Publishing 2016).

[147] *Id*. at 244–45.

"inventive concept.[148] Perhaps this is because merely "'accelerat[ing] an ineligible mental process' does not transform the abstract idea into patent eligible subject matter."[149] With this in mind, it is possible to argue that software simply "accelerates" what a person could solve on their own but in a faster manner. Therefore, absent a "something more," the software program will likely be considered an abstract.

[48] Category two classifies inventions that solve a problem which can be done by "pen and paper" as abstract.[150] Federal Circuit examples from this category include: 1) gathering data for managing an electric power grid;[151] 2) managing a bingo game using a computer which had formerly been done by hand;[152] 3) tracking and documenting shipping containers;[153] 4) tracking financial transactions to determine if they are over the budget;[154] and 5) price optimization to sell items.[155] At their core, each of these examples can be mentally performed by human beings. In *CyberSource Corp. v. Retail Decisions, Inc*, Judge Dyke stated that:

> Methods which can be performed entirely in the human mind are unpatentable not because there is anything wrong with

[148] *Id*. at 244.

[149] *See* Bascom Research, LLC v. LinkedIn, Inc., 77 F. Supp. 3d 940, 950 (N.D. Cal. 2015).

[150] *See* KESAN & HAYES, *supra* note 146, at 245.

[151] *See* Electric Power Grp., LLC v. Alstom S.A., 830 F.3d 1350, 1351 (Fed. Cir. 2016).

[152] *See* Planet Bingo, LLC v. VKGS, LLC, 576 F. App'x 1005, 1007 (Fed. Cir. 2014).

[153] *See* Wireless Media Innovations, LLC v. Maher Terminals, LLC, 100 F. Supp. 3d 405, 412–13 (D. N.J. 2015), *aff'd*, 636 F. App'x 1014 (Fed. Cir. 2016).

[154] *See* Intellectual Ventures I, LLC v. Capital One Bank, 792 F.3d 1363, 1367–68 (Fed. Cir. 2015).

[155] *See* OIP Techs., Inc. v. Amazon.com, Inc., 788 F.3d 1359, 1360 (Fed. Cir. 2015).

> claiming mental method steps as part of a process containing non-mental steps, but rather because computational methods which can be performed entirely in the human mind are the types of methods that embody the "basic tools of scientific and technological work" that are free to all men and reserved exclusively to none. [156]

[49] This category, and the "mental process" category, could theoretically prevent all software from being subject matter eligible.[157]

[50] Category three involves inventions that "automate, replace, or enhance human interaction."[158] In these cases, the task involved is not only something that can be accomplished by the human mind, but also relates to a process of human interaction.[159] For example, in *buySAFE, Inc. v. Google, Inc.* the court rejected claims that were directed towards guaranteeing a party's performance during an online transaction.[160] The claims did nothing more than create a performance guarantee in a contractual relationship which was a concept already rooted in human history.[161] Of all the

[156] CyberSource Corp. v. Retail Decisions, Inc., 654 F.3d 1366, 1373 (Fed. Cir. 2011) (citing Gottschalk v. Benson, 409 U.S. 63, 67 (1972)).

[157] *See* Cal. Inst. of Tech. v. Hughes Commc'ns, Inc., 59 F. Supp. 3d 974, 994-95 (C.D. Cal. 2014) (disagreeing with the defendant presented the pen and paper, the judge stated, "although a computer performs the same math as a human, a human cannot always achieve the same results as a computer"). All software can be viewed as inherently based on categories one and two, otherwise a "programmer would not know what directions to give the computer."

[158] KESAN & HAYES, *supra* note 146, at 245.

[159] *See id*. at 245–46.

[160] *See* buySAFE, Inc. v. Google, Inc., 765 F.3d 1350, 1351 (Fed. Cir. 2014).

[161] *See id*. at 1355.

categories, this may be the most problematic for software patents as many patents fail *Alice* under this reasoning.[162]

[51] Finally, category four, involves inventions that address problems which existed before the modern-day age of computers and the internet. For example, in *Intellectual Ventures v. Manufacturers and Traders Trust Company*, the Court found that claims towards managing finances were abstract, noting that financial management was a problem before computers were around.[163] In *Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat'l Ass'n* the Federal Circuit found claims for extracting data from documents, recognizing information, and storing the information in memory was not subject matter eligible.[164]] This was a well-known concept that humans had been previously performing, and the patentee failed to add an "inventive concept."[165] Although there is a lack of clarity with what constitutes an "abstract idea," these categories help provide some understanding for the ever-problematic doctrine.[166]

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[162] *See also, e.g.*, IpLearn, LLC v. K12 Inc., 76 F. Supp. 3d 525, 532–35 (D. Del. 2014) (rejecting learning via computers); Cogent Med., Inc. v. Elsevier Inc., 70 F. Supp. 3d 1058, 1063–66 (N.D. Cal. 2014) (rejecting use of medical resources searchable via library interface); Open Text S.A. v. Alfresco Software Ltd., 2014 U.S. Dist. LEXIS 132080, at *3–5, *13 (N.D. Cal. 2014) (rejecting facilitation of market dialogue in marketing practices); Tuxis Techs., LLC v. Amazon.com, Inc., 2014 U.S. Dist. LEXIS 122457, at *7– 8, *13–15 (D. Del. 2014) (rejecting upselling in remote commerce); Walker Dig., LLC v. Google, Inc., 66 F. Supp. 3d 501, 508–9, 513–14 (D. Del. 2014) (rejecting facilitation of anonymous communication while job searching).

[163] *See* Intellectual Ventures I LLC v. Mfrs. & Traders Tr. Co., 76 F. Supp. 3d 536, 545, 547 (D. Del. 2014).

[164] *See* Content Extraction & Transmission LLC v. Wells Fargo Bank, N.A., 776 F.3d 1343, 1347 (Fed. Cir. 2014).

[165] *See id*. at 1348.

[166] *See generally* KESAN & HAYES, *supra* note 146, at 244 (For more information on these categories and possible solutions).

C. Procedural Issues: Software Patents Struggle to Survive Pretrial Motions

[52] The lack of a clear definition for what constitutes an "abstract idea" has resulted in numerous pretrial dismissals of software patents in the post-*Alice* world of patent law. Since subject matter eligibility is a "threshold inquiry," it is understandable that courts and litigants attempt to address subject matter eligibility as soon as possible during trial.[167] In the first-year post-*Alice*, invalidity rates rose drastically.[168] In the second year post-*Alice*, invalidity rates dropped slightly but still remained relatively high.[169] Some of these challenges were made using summary judgment motions after the parties had adequate time for discovery under Rule 56 of the Federal Rules

[167] *See* Bilski v. Kappos, 561 U.S. 593, 601 (2010); *In re* Bilski, 545 F.3d 943, 951 (Fed. Cir. 2008).

[168] *See* Jasper L. Tran, *Software Patents: A One-Year Review of Alice v. CLS Bank*, 97 J. PAT. & TRADEMARK OFF. SOC'Y 532, 539–40 (2015) (Between July 1 and August 15, 2014, 830 patent applications were withdrawn from the USPTO. In the first year alone, "*Alice* was cited in 198 PTAB [Patent Trial and Appeal Board] decisions, 63 district court decisions, and 11 Federal Circuit opinions, in a total of 272 court cases, to invalidate patents under § 101." During the first year, the PTAB had an invalidation rate of 90.8%, the district courts had an invalidation rate of 69.7%, and the Federal Circuit had an invalidation of 94.1%.).

[169] *See* Jasper L. Tran, *Two Years After Alice v. CLS Bank*, 98 J. PAT. & TRADEMARK OFF. SOC'Y 354, 355, 358-59 (2016) (As of June 19, 2016, courts had reviewed 568 challenged patents under §101 motions citing *Alice*. The result was 190 valid patents and 378 invalidated patents with an average invalidation rate of 66.5% overall. The Federal Circuit upheld 3 patents out of 37 resulting in an average invalidation rate of 91.9%. The USPTO had rejected over 36,000 published patent applications. Regarding § 101 motions, the courts had decided a total of 500 motions citing *Alice* with an average invalidation rate of 78.2%. The Federal Circuit decided 26 motions with an average invalidation rate of 92.3%. The district courts decided 251 motions with an average invalidation rate of 66.5%. The PTAB decided 209 motions with an average invalidation rate of 89.7%.).

of Civil Procedure[170], some were based on Rule 12(b)(6)[171] for failure to state a claim upon which relief could be granted, and some were based on a dismissal on the pleadings under Rule 12 (c).[172] Dismissals under Rule 56 are not as controversial or problematic as dismissal under either Rule 12 (b)(6) or Rule 12 (c); however, I will discuss each rule separately.

1. Dismissals under Rule 56: Motions for Summary Judgment

[53] Rule 56 governs the standard for summary judgment. Under this rule, if a movant can show that there is no genuine issue of material fact, then the movant is entitled to judgment as a matter of law.[173] Summary judgment is available in patent cases just as it is in any other civil case. The Federal Circuit has previously stated that "[s]ummary judgment procedure is properly regarded not as a disfavored procedural shortcut, but rather as an integral part of the Federal Rules as a whole, which are designed 'to secure the just, speedy and inexpensive determination of every action.'"[174]

[54] When making a motion for summary judgment, the moving party has the initial burden of proving the lack of a genuine issue of material fact.[175] If the movant meets their burden, the burden then shifts and the responding party must show that there is a genuine issue of material fact such that dismissal would be inappropriate.[176] It must be clear what the truth

[170] *See* FED. R. CIV. P. 56(b).

[171] *See* FED. R. CIV. P. 12(b)(6).

[172] *See* FED. R. CIV. P. 12(c); *see also* KESAN & HAYES, *supra* note 146, at 247.

[173] *See* FED. R. CIV. P. 56(a).

[174] Celotex Corp. v. Catrett, 477 U.S. 317, 327 (1986).

[175] *See id*. at 330.

[176] *See id*.

is, and any doubts will be resolved against the moving party.[177] Since the burden is on the moving party, the evidence and any favorable inferences are construed in favor of the opposing party.[178] With patents, if the grounds for summary judgment involve invalidity or enforceability issues, the court must consider the burden of proof as to the patent's validity faced by the challenger.[179] If a defendant asserts invalidity in their reply, they must show it by clear and convincing evidence.[180] If the motion for summary judgment involves infringement, the burden of proof for the plaintiff is preponderance

[177] *See* 10A CHARLES ALAN WRIGHT ET AL., FEDERAL PRACTICE AND PROCEDURE: CIV § 2727 (4th ed. 2017) [hereinafter *Grounds for Summary Judgment*].

[178] *See id*.

[179] *See* Nat'l Presto Indus. v. W. Bend Co., 76 F.3d 1185, 1189 (Fed. Cir. 1996).

[180] *See* Checkpoint Sys. Inc. v. U.S. Int'l Trade Comm'n, 54 F.3d 756, 761 (Fed. Cir. 1995).

of the evidence.[181] However, the standard for a defendant asserting the lack of subject matter eligibility may not entirely be clear.[182]

[55] Dismissals using motions for summary judgment on § 101 grounds are not as controversial or problematic as dismissal under either Rule

[181] *See* ZMI Corp. v. Cardiac Resuscitator Corp., 844 F.2d 1576, 1582 (Fed. Cir. 1988).

[182] The Supreme Court has held that challengers to the presumption of validity under § 282 of the Patent Act must overcome it by *clear and convincing* evidence. Justice Breyer, joined by Justices Scalia and Alito, issued a concurring opinion stating that this "evidentiary standard of proof applies to questions of fact and not to questions of law." On one hand, § 101 eligibility inquiries involve a question of law. On the other hand, the presumption of validity is a question of fact. In *Ultramercial, Inc. v. Hulu, LLC*, a pre-*Alice* case, the Federal Circuit held that the clear and convincing evidence standard did apply to subject matter eligibility challenges; however, this case was reversed and remanded by the Supreme Court in view of *Alice*. On remand, this issue was not addressed but Justice Mayer still believed that it did not apply to § 101 subject matter eligibility issues. *See* Microsoft Corp. v. i4i Ltd. P'ship, 564 U.S. 91, 95, 114 (2011) (stating that challengers of § 282 must overcome the presumption by clear and convincing evidence) (Breyer, J., concurring); *In re* Comiskey, 554 F.3d 967, 975 (stating "whether the asserted claims…are invalid for failure to claim statutory subject matter under 35 U.S.C. § 101, is a question of law which we review without deference."); Ultramercial, Inc. v. Hulu, LLC, 722 F.3d 1335, 1342 (Fed. Cir. 2013) (establishing the clear and convincing evidence standard for subject matter eligibility challenges), *vacated sub nom*, WildTangent, Inc. v. Ultramercial, LLC, 134 S. Ct. 2870 (2014); Ultramercial, Inc. v. Hulu, LLC, 772 F.3d 709, 720 (Fed. Cir. 2014) (Mayer, J., concurring) (stating that "applying a presumption of eligibility is particularly unwarranted given that the expansionist approach to section 101 is predicated upon a misapprehension of the legislative history of the 1952 Patent Act"); KESAN & HAYES, *supra* note 146, at 250–51 (discussing two different supporting reasons why the clear and convincing evidence standard does not apply to § 101 subject matter eligibility inquiries: 1.) as Justice Breyer stated, § 101 analysis is a question of law and not a question of fact, and 2.) policy reasons support the presumption established by Justice Breyer); *see generally* 35 U.S.C. § 282 (2018) (stating presumption of patent validity and potential defenses in validity or infringement of patent actions).

12(b)(6) or Rule 12(c).[183] As previously stated, this is mainly due to the timing of a Rule 56 dismissal. Rule 56 dismissals are generally made after the court has obtained most of the evidence, and there is a well-developed record.[184] Accordingly, the district judge can make a well-informed ruling on the motion.

2. Dismissals Under Rule 12(b)(6) & Rule 12(c)

[56] Section 101 is considered a question of law that can be addressed at the pleading stage.[185] Addressing subject matter eligibility early in the trial can save judicial resources, time, and money.[186] Although an issued patent is entitled to a presumption of validity and a challenger must overcome this presumption by clear and convincing evidence, a party making a challenge

[183] *See generally* Ultramercial, Inc. v. Hulu, LLC, 722 F.3d 1335, 1339 (2013) (explaining that Rule 12(b)(6) dismissal for lack of subject matter will generally be the exception and not the rule).

[184] *See generally* 11–56 JEFFREY W. STEMPEL & STEPHEN S. GENSLER, MOORE'S FEDERAL PRACTICE: CIV § 56.04(2)(d) (3d. ed.) (discussing summary judgment "paper" record that includes "pleadings, results of disclosures, discovery, other forms of pretrial investigation, and affidavits or declarations").

[185] *See, e.g.*, Content Extraction & Transmission L.L.C. v. Wells Fargo Bank, Nat'l Ass'n, 776 F.3d 1343, 1349 (Fed. Cir. 2014) (affirming the district court's dismissal for failure to state a claim because the claims of the patent involved were directed towards unpatentable subject matter).

[186] *See* Ultramercial, Inc. v. Hulu, L.L.C., 772 F.3d 709, 718–19 (2014) (Mayer, J., concurring).

under § 101 eligibility may not need to overcome such a high burden.[187] Nonetheless, dismissals based on ineligible subject matter have been routinely made under Rule 12(b)(6) and Rule 12(c).[188]

[57] Dismissal of patent cases using Rules 12(b)(6) or 12(c) can be controversial and challenging. This is mainly due to the timing at which these motions are made and the lack of an adequately developed record. Rule 12 motions to challenge subject matter eligibility became common after *Bilski*.[189] This was mainly because Rule 12 motions have the potential of drastically reducing the length of a patent trial; yet, they also increase the risk that a court may decide subject matter eligibility without adequate information.[190]

[58] The standards for both Rule 12(b)(6) and Rule 12(c) are the same.[191] The differences lie in the procedural timing for of these motions. "[A] Rule 12(b)(6) motion is made in lieu of an answer, while the Rule 12(c) motion

[187] *See id*. at 720 (writing in his concurring opinion, Judge Mayer stated that "no presumption of eligibility should attach when assessing whether claims meet the demands of section 101" "[b]ecause the PTO has for many years applied an insufficiently rigorous subject matter eligibility standard" that was premised on a misunderstanding of the legislative history of the Patent Act. The Federal Circuit has not expressly endorsed Judge Mayer's position.).

[188] *See* Stephanie E. O'Byrne & Jeffrey T. Castellano, *On Trend: Rule 12 Dismissals Based on Patent Eligibility Under § 101*, 23 FED. CIR. B.J. 405, 406 (2014) [hereinafter O'Byrne, *Rule 12 Dismissals*] (discussing the rising trend in using Rule 12 to dismiss cases. This article was published prior to the Supreme Court's holding in *Alice Corp. Pty. v. CLS Bank Int'l*, 134 S. Ct. 2347 (2014)).

[189] *See id.* at 405–06.

[190] *See* KESAN & HAYES, *supra* note 146, at 249.

[191] *See* Bayer Schering Pharma AG v. Lupin, Ltd., 676 F.3d 1316, 1327 (2d Cir. 2012) (Newman, J., dissenting).

may be made after the pleadings are closed, so long as trial is not delayed."[192] I will briefly discuss both rules separately to establish an understanding of when and how they work.

[59] Any defendant in a civil case may move to dismiss under Rule 12(b)(6) for "failure to state a claim upon which relief can be granted."[193] The moving party has the burden of showing that a claim has not been made, and the opposing party has the choice to respond.[194] A court cannot grant a Rule 12(b)(6) motion to dismiss merely because the opposing party failed to file an opposition to the motion; however, some local rules will treat the failure to respond as a concession.[195] An opposing party "may stand on the pleadings, and the court must examine the complaint and determine whether it states a claim as a matter of law."[196] A Rule 12(b)(6) motion may be granted for a failure to state a claim upon which relief can be granted for the following reasons: 1) a lack of a cognizable legal theory or 2) insufficient facts under a cognizable legal theory.[197] The motion should be granted if it does not proffer enough facts to state a claim for relief that is plausible.[198]

[60] "At any time after the pleadings close and before the trial commences, a party may move for a judgment on the pleadings under Rule

[192] O'Byrne, *Rule 12 Dismissals*, *supra* note 188, at 410.

[193] FED. R. CIV. P. 12(b)(6).

[194] *See* 2-12 MILTON I. SHADUR, MOORE'S FEDERAL PRACTICE – CIV. § 12.34 (2018).

[195] *See id.*

[196] *Id*.

[197] *See* Bell Atl. Corp. v. Twombly, 550 U.S. 544, 555–56 (2007).

[198] *See id.* at 556.

12(c).”[199] In making a ruling, “the court may consider any of the pleadings including the complaint, the answer, and any written instruments attached to them.”[200] Rule 12(c) is also related to Rule 12(b)(6) in that, “[i]f the motion is filed before the answer, the court may treat” the Rule 12(c) motion as a Rule 12(b)(6) motion.[201] Just as with Rule 12(b)(6), the court must view the facts in favor of the nonmoving party.[202] A complaint will survive a motion on the pleadings if there is sufficient factual matter, which if accepted as true, states a claim for which relief is “plausible on its face.”[203] Furthermore, since a “judgment on the pleadings is governed by the same standards as a dismissal for failure to state a claim, … a plaintiff [does] not [need to] plead the prima facie elements of [the] claim to state a plausible claim for relief [to] survive [the] motion to dismiss.”[204]

[61] Computer-based method claims are the most vulnerable to § 101 challenges if the plaintiff cannot assert a plausible non-abstract construction of the claims.[205] Successful defendants have focused the court on the “broadest and most abstract claim, analogiz[ed] the abstract concept [in the claims] to other abstract or well-known ideas, and present[ed] carefully

[199] 2-12 MILTON I. SHADUR, MOORE'S FEDERAL PRACTICE - CIVIL § 12.38 (2018).

[200] *Id.*

[201] *Id.*

[202] *See id*.; *see also* GATX Leasing Corp. v. Nat’l Union Fire Ins. Co., 64 F.3d 1112, 1114 (7th Cir. 1995) (explaining that the facts *should* be viewed in light most favorable to nonmoving party).

[203] *See* 2-12 MILTON I. SHADUR, MOORE'S FEDERAL PRACTICE - CIVIL § 12.38 (2018).

[204] *Id.*

[205] *See* O’Byrne, *Rule 12 Dismissals*, *supra* note 188, at 410.

chosen and limited references to the specification . . . ."[206] Accordingly, it comes as no surprise that software patents struggle. Even some of the recent Federal Circuit cases that are helping to define § 101 jurisprudence initially failed on one of these motions. In *BASCOM Global Internet Services., Inc. v. AT&T Mobility L.L.C.*, the district court found that the claims were directed towards an abstract idea, and the district court granted the Rule 12(b)(6) motion.[207] In *McRO, Inc. v. Sony Computer Entertainment America, L.L.C.*, the district court granted a Rule 12(c) motion for judgment on the pleadings holding that the patents at issue were unpatentable under § 101.[208] Both of these cases were eventually overturned by the Federal Circuit.[209]

[62] The Federal Circuit has acknowledged that it is possible and proper to determine patent eligibility on a Rule 12(b)(6) motion.[210] They have also

[206] *Id.*

[207] *See* BASCOM Glob. Internet Servs., Inc. v. AT&T Mobility L.L.C., 107 F. Supp. 3d 639, 647 (N.D. Tex. 2015) ("The Court finds that the claims of the '606 Patent are directed toward the abstract idea of filtering Internet content."). *But see* BASCOM Glob. Internet Servs., Inc. v. AT&T Mobility L.L.C., 827 F.3d 1341, 1352 (Fed. Cir. 2016) ("We find nothing on this record that refutes those allegations as a matter of law or justifies dismissal under Rule 12(b)(6). We therefore vacate the district court's order granting AT&T's motion to dismiss under FRCP 12(b)(6) and remand so that the case may proceed.").

[208] *See* McRO, Inc. v. Sony Comput. Entm't Am., L.L.C., 55 F. Supp. 3d 1214, 1230 (C.D. Cal. 2014), *rev'd and remanded sub nom*. McRO, Inc. v. Bandai Namco Games Am. Inc., 837 F.3d 1299 (Fed. Cir. 2016).

[209] *See McRO, Inc.*, 837 F.3d at 1302–03; *BASCOM*, 827 F.3d at 1343.

[210] *See* Genetic Techs. Ltd. v. Merial L.L.C., 818 F.3d 1369, 1373 (Fed. Cir. 2016); *see, e.g.*, OIP Techs., Inc. v. Amazon.com, Inc., 788 F.3d 1359, 1362 (Fed. Cir. 2015); Content Extraction & Transmission L.L.C. v. Wells Fargo Bank, Nat'l Ass'n, 776 F.3d 1343, 1351 (Fed. Cir. 2014); buySAFE, Inc. v. Google, Inc., 765 F.3d 1350, 1355 (Fed Cir. 2014).

stated that evaluation of a claim's subject matter eligibility can be done prior to formal claim construction.[211] This is because "claim construction is not an inviolable prerequisite to a validity determination under § 101."[212] However, this is potentially problematic as the record may not be adequately developed. Some courts have taken measures to protect against early § 101 dismissals.[213] At one time, Judge Rodney Gilstrap of the Eastern District of Texas required that if defendants wished to file a § 101 motion to dismiss, they must do so "only upon a grant of leave from the Court after a showing of good cause, which shall be presented through the letter briefing process."[214] This requirement was later replaced with a certification requirement which requires "a certification signed by the lead counsel for the movant indicating that the parties either agree or disagree whether claim

[211] *See, e.g.*, *Genetic Techs.*, 818 F.3d at 1374.

[212] Bancorp Servs., L.L.C. v. Sun Life Assurance Co. of Can., 687 F.3d 1266, 1273 (Fed. Cir. 2012); *Content Extraction*, 776 F.3d at 1349.

[213] *See* Joe Mullin, *East Texas Judge's Invention: A Method for Hampering Patent Defendants*, ARS TECHNICA (June 11, 2015, 4:57 PM), https://arstechnica.com/tech-policy/2015/06/east-texas-judges-invention-a-method-for-hampering-patent-defendants/, https://perma.cc/7MP5-BWRV (last visited April 3, 2018).

[214] *Id.*

construction is not needed to inform the Court's analysis as to patentability under § 101."[215]

[63] These rules' early motions created problems for software patents after the *Alice* holding. Section 101 challengers could quickly get rid of cases using subject matter eligibility challenges. However, in the years since *Alice*, the Federal Circuit has brought some clarity to § 101 jurisprudence.

IV. SOFTWARE PATENTS ELIGIBILITY REINVIGORATED

[64] As noted in the previous sections, software patents have had a difficult time in the post-*Alice* world. The main reason has been the constant plague of the "abstract idea" doctrine. Yet, no one has been willing to define what constitutes an "abstract idea." Instead, a case-by-case basis approach has been used by both district courts and the Federal Circuit. This has resulted in a confusing § 101 landscape regarding software patents.

[215] Scott E. Yackey, *Judge Gilstrap's New Standing Order Eliminates Requirement to Seek Leave Prior to Filing Alice Motions, Introduces New Certification Requirement*, MONDAQ (Dec. 8, 2015), http://www.mondaq.com/unitedstates/x/449868/Patent/Judge+Gilstraps+New+Standing+Order+Eliminates+Requirement+to+Seek+Leave+Prior+to+Filing+Alice+Motions+Introduces+New+Certification+Requirement, https://perma.cc/R3U9-LJZA (last visited Mar. 23, 2018); *see also* Standing Order Regarding Mots. Under 35 U.S.C. § 101 And Accompanying Certifications In Cases Assigned To United States District Judge Rodney Gilstrap, E.D. Tex. (Nov. 5, 2015), http://www.txed.uscourts.gov/sites/default/files/judgeFiles/Standing_Order_Regarding_Motions_Under_35_USC_101.pdf, https://perma.cc/37L9-8P9T (last visited Mar. 23, 2018).

[65] The Federal Circuit has attempted to clarify some of the confusion involving software patent eligibility since *Alice*.[216] To do so, they have issued four main holdings that involved software patent claims – *DDR Holdings*, *Enfish*, *BASCOM*, and *McRO*.[217] This section will look at these series of cases where software patents have been found to be eligible under § 101. They will be discussed in chronological order from the date of issuance.

A. DDR Holdings: Rooted in Computer Technology - The First Victory

[66] "Amidst all the angst and uncertainty following the Supreme Court's decision in *Alice Corp. v. CLS Bank* (2014), patent owners and inventors in the Information Technology world should [celebrate] the

[216] *See generally* DDR Holdings, L.L.C. v. Hotels.com, L.P., 773 F.3d 1245, 1256–57, 1258–59, (Fed. Cir. 2014) (noting that mathematical algorithms and economic business practices are abstract ideas, but that the claim at issue in this case is more than a "routine or conventional use of the Internet"); Enfish, L.L.C. v. Microsoft Corp., 822 F.3d 1327, 1334–37 (Fed. Cir. 2016) (noting that the court must compare a claim to those claims from previous cases that were "already found to be directed to an abstract idea[,]" and that not "all improvements in computer-related technology are inherently abstract"); BASCOM Glob. Internet Servs., Inc. v. AT&T Mobility L.L.C., 827 F.3d 1341, 1347–52, 1355 (Fed. Cir. 2016) (noting that the court has "found software-related patents eligible under both steps of the test *Alice* sets out"); McRO, Inc. v. Bandai Namco Games Am. Inc., 837 F.3d 1299, 1311–12 (Fed. Cir. 2016) (noting that courts must consider claims in their entirety).

[217] *See DDR Holdings*, 773 F.3d at 1248; *Enfish, L.L.C.*, 822 F.3d at 1330; *BASCOM*, 827 F.3d at 1343; *McRo, Inc.*, 837 F.3d at 1302–03.

decision … in *DDR Holdings v. Hotels.com* from the Federal Circuit."[218] This was a bold statement at a time when patentees were uncertain about the status of software patents. The *DDR Holdings* case gave software patents hope moving forward that *Alice* was not the death for software patents.[219] In this section, I will discuss relevant § 101 portions of the case, as well as the resulting impact.

[67] The patents at issue in *DDR Holdings* involved an e-commerce outsourcing system for "generating a composite web page that combines certain visual elements of a 'host' website with content of a third-party merchant."[220] The court described them as follows:

> The patents-in-suit disclose a system that provides a solution to this problem (for the host) by creating a new web page that permits a website visitor, in a sense, to be in two places at the same time. On activation of a hyperlink on a host website—such as an advertisement for a third-party merchant—instead of taking the visitor to the merchant's website, the system generates and directs the visitor to a composite web page that displays product information from the third-party merchant, but retains the host website's "look and feel." Thus, the host website can display a third-party merchant's products, but retain its visitor traffic by displaying this product information from within a generated

[218] Bart Eppenauer, *DDR Holdings – Federal Circuit Forges a Sensible Path on Software Patents*, PATENTLY-O (Dec. 14, 2014), https://patentlyo.com/patent/2014/12/holdings-sensible-software.html, https://perma.cc//JGW3-MRDC (last visited April 3, 2018).

[219] *See id.*

[220] *DDR Holdings*, 773 F.3d at 1248.

> web page that "gives the viewer of the page the impression that she is viewing pages served by the host" website. [221]

[68] The court uses an analogy of a "store within a store" to describe what these claims intended to represent.[222] In one sense, the Internet webpage is a giant department store with a specific layout (i.e. look and feel) filled with stands that represent the webpages of other merchants.[223] A customer could simply walk into this warehouse (i.e. visit the webpage), find a stand (i.e. a merchant's link), interact with the stand (i.e. activate the link), and be instantly at the merchant's main store (i.e. the merchant's website). Despite skepticism amongst the judges,[224] the majority found that although this concept is well-known and not new, it does solve something new.[225] The website setup allows for "near-instantaneous" travel to a merchant's webpage after activating the link; something the dissent's analogy lacks.[226]

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[221] *Id.* at 1248–49 (internal citations omitted).

[222] *See id.* at 1258.

[223] *See id.* at 1257–58.

[224] *See DDR Holdings*, 773 F.3d at 1264–65 (Mayer, J., dissenting) (disagreeing with the majority, Judge Mayer believes that the claims at issue did represent a subject matter ineligible abstract idea. He discusses the "store within a store" analogy by using BJ's Wholesale Club with kiosks setup within the club. Customers could purchase travel tickets without ever leaving the wholesale club.).

[225] *See id.* at 1258; *see also infra* Part III (A)(3) - Categories of Abstract Ideas (discussing Categories Three and Four of the inventions that are "abstract." The "store within a store" concept is something that has been around long before computers (i.e. department store malls)).

[226] *See id.*

[69] The court stated these claims were "different enough" from those that had been found to lack subject matter eligibility.[227] These claims stood apart because they did not "merely recite the performance of some business practice known from the pre-Internet world along with the requirement to perform it on the Internet."[228] Instead, they were much more involved. The claimed solution was "necessarily rooted in computer technology" to overcome a problem specific to the computer networks.[229] The solution solved something new: it retained website visitors.

[70] After *DDR Holdings*, patentees were left with hope and an example of software claims that met the threshold of § 101. These claims did more than just use the Internet or a generic computer, they specified how interactions with the Internet were manipulated in a way to achieve a desired result beyond the typical clicking on a hyperlink.[230] A specific result was achieved with this hybrid website that maintained the "look and feel" of the host website while presenting information from the third-party.[231] It is possible to argue that had *DDR Holdings* been analyzed under the same

[227] *See id.* (noting that the claims were "different enough in substance from those in *Ultramercial*"). In *Ultramercial v. Hulu*, the patentee argued that the claims were "directed to a specific method of advertising and content distribution that was previously unknown and never employed on the Internet before;" however, this alone did not qualify under § 101. The court found that the claims simply recited the abstract idea of "offering media content in exchange for viewing an advertisement," along with "routine additional steps such as updating an activity log, requiring a request from the consumer to view the ad, restrictions on public access, and use of the Internet." This was not enough to transform it to patent eligible subject matter. Ultramercial, Inc. v. Hulu, L.L.C., 772 F.3d 709, 714–16 (Fed. Cir. 2014).

[228] *Id.* at 1257.

[229] *Id.*

[230] *See generally id.* at 1257–58 (detailing a system that uses an "outsource provider" to construct a new hybrid web page combining content associated with the third-party products with the host website).

[231] *See id.* at 1258–59.

standards as *Ultramercial*, the outcome would have been different.[232] However, this was not the case and patentees were left with hope and an example of software claims eligible under the *Alice* Two Step analysis.

B. Enfish: Software Can Make Non-Abstract Improvements

[71] It would be approximately one and a half years after the *DDR Holdings* case before the Federal Circuit would grant software patents another significant win. *Enfish* was "an overnight sensation" in the patent world, as it established important § 101 jurisprudence regarding software eligibility.[233] In this subsection, I will discuss the *Enfish* case and the resulting § 101 dichotomy.

1. Understanding the Case

[72] The patents at issue in *Enfish* "related to a 'self-referential' database."[234] Particularly, the patents were directed to a "logical model for a computer database."[235] A logical model is essentially a road map of data

[232] *See* Magnus Gan, *Before* Mayo *& After* Alice*: The Changing Concept of Abstract Ideas*, 22 MICH. TELECOMM. & TECH. L. REV. 287, 306 (2016); *see generally id.* at 305–12 (discussing the holdings of *DDR Holdings* and *Ultramercial*, the author analyzes *DDR Holdings* using the *Ultramercial* rubric and vice-versa to determine what the outcomes would have been).

[233] *See* Jason Rantanen, *Judge Hughes and the New § 101 Dichotomy*, PATENTLY-O (May 23, 2016) [hereinafter Rantanen, *Dichotomy*], http://patentlyo.com/patent/2016/05/hughes-§-dichotomy.html, https://perma.cc/PD9U-GZLX (last visited Apr. 13, 2017) (commenting on the impact that *Enfish* and *In re TLI Communications Patent Litigation* had on § 101 jurisprudence).

[234] Enfish, L.L.C. v. Microsoft Corp., 822 F.3d 1327, 1330 (Fed. Cir. 2016).

[235] *Id.*

for a computer database explaining how information is related to each other.[236] Conventional logical models generally result in the creation of data tables, but they do not describe how the information of those tables are arranged in physical memory.[237] The *Enfish* logical data models were different from these conventional data models because they use a single table to hold all the data entities with column definitions provided by the rows in the table.[238]

[73] The Federal Circuit noted that the saving-grace of the claims was that their focus was "on an improvement to computer functionality itself, not on economic or other tasks for which a computer is used in its ordinary capacity."[239] Hence, the claims were not abstract under the *Alice* Two Step. This was not a case of having a "general-purpose computer [where] components are added post-hoc to a fundamental economic practice or mathematical equation."[240] Rather, the claims improved the computer itself through the usage of the new self-referential database.[241]

[74] The court went further than just focusing on the *Enfish* claims. They stated that *Alice* is not to be read so broadly as to hold any "improvements in computer-related technology are inherently abstract . . . ."[242] This is because "[s]oftware can make non-abstract improvements to computer

[236] *See id.*

[237] *See id.*

[238] *See id.*

[239] *See Enfish, L.L.C.*, 822 F.3d at 1336 (emphasis in original).

[240] *Id*. at 1339.

[241] *See id.* at 1336.

[242] *Id.* at 133.

technology just as hardware improvements can . . . ."[243] Under this belief, there is "no reason to conclude that all claims directed to improvements in computer-related technology, including those directed to software, are abstract and necessarily analyzed at the second step of *Alice* . . ., " and *Alice* does not direct a court to do so.[244] Therefore, the *Alice* Step Two may not always need be considered by a court in determining subject matter eligibility for software claims. The heart of the analysis lies in determining if "the claims are directed to an improvement [of] computer functionality versus being directed [towards] an abstract idea . . . ."[245] This can be done, even at *Alice* Step One.[246]

2. The USPTO & The New § 101 Dichotomy

[75] A short time after issuing the *Enfish* decision, the Federal Circuit issued their decision in *In re TLI Communications L.L.C. Patent Litigation*.[247] Both of these cases were authored by Judge Hughes, but they reached opposite conclusions. The Federal Circuit found that the specification in *In re TLI Communication's L.L.C. Patent Litigation* made "clear the recited physical components" provided merely a generic

[243] *Id.*

[244] *Enfish, L.L.C.*, 822 F.3d at 1335.

[245] *Id.*

[246] *See id.*

[247] *See In re* TLI Commc'ns. L.L.C. Patent Litig., 823 F.3d 607, 612 (Fed. Cir. 2016) (noting that the *Enfish* decision was five days prior).

environment and was not directed towards patent-eligible subject matter.[248] Not long after both cases were decided, the USPTO issued a new set of guidelines to guide examiners in determining subject matter eligibility.

[76] The update focuses on the several important points the Federal Circuit made regarding *Alice* Step One.[249] The USPTO highlighted the following: (1) when determining if an idea is abstract, it is appropriate for examiners to compare the claims currently under examination to claims that have previously been found to be abstract; (2) the "directed to" inquiry acts as a filter when determining if the claims are directed to ineligible subject matter when viewed in light of the specification; (3) one must use caution when "describing [the] claim[s] at a high level of abstraction;" and (4) a claim is not automatically doomed simply because it has the ability to run on a general purpose computer.[250]

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[248] *See id.* at 611–14 (stating that the patent at issue taught a method for manually or automatically assigning data to an image, such as a date or timestamp, and sending those images to a server. The server would then extract the data and store the images while taking into consideration any classification information stored within the image. At *Alice* Step One, the court concluded that the claims were "directed to the abstract idea of classifying and storing digital images in an organized manner[,]" therefore, they proceeded to *Alice* Step Two. Under the second step of the *Alice* analysis, they concluded that the claims failed to recite elements which transformed them to patent eligible subject matter. In contrast to *Enfish*, the court found that these claims failed to improve the computer functionality. Instead, the recited claim elements were merely generic computing components, which, as held in previous cases, do not transform a claim into patent eligible subject matter).

[249] *See* U.S. PAT. & TRADEMARK OFF., MEMORANDUM RECENT SUBJECT MATTER ELIGIBILITY DECISIONS (*ENFISH, LLC V. MICROSOFT CORP. AND TLI COMMUNICATIONS LLC V. A. V. AUTOMOTIVE, LLC*) (May 19, 2016) [hereinafter USPTO ENFISH MEMO], https://www.uspto.gov/sites/default/files/documents/ieg-may-2016_enfish_memo.pdf, https://perma.cc/ZZ8V-LTAE.

[250] *Id.*

[77] Certain claims directed to computer-related technology, including software claims, "are not necessarily abstract."[251] "Therefore, an examiner may determine that a [computer-related] claim . . ." is not abstract under *Alice* Step One without the need to go to the second part of the test.[252] In summary, the USPTO directed examiners that when determining if the claims are directed towards an abstract idea, they should compare it to concepts previously found as abstract but to use caution in applying the *Alice* Two Step at an overly broad level.[253] Furthermore, if the claims are "directed [towards] an improvement in computer-related technology," this fact alone "can demonstrate that the claim does not recite concept[s] . . ." that have been previously found as abstract.[254]

C. The Supporting Jurisprudence: § 101 Becomes a Little Clearer

[78] Section 101 eligibility has long been a confusing area in patent law. Until the holdings in *DDR Holdings*[255] and *Enfish*,[256] software patents had little hope of surviving the *Alice* Two Step Test. However, the Federal Circuit issued two more important software cases regarding subject matter eligibility. I will discuss both these cases in order from the date of issuance.

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[251] *Id.*

[252] *Id.* at 2.

[253] *See id.* at 1–2.

[254] *See* USPTO ENFISH MEMO at 2.

[255] *See* discussion *supra* Part IV, Section A (discussing the *DDR Holding* case and its impact on § 101).

[256] *See* discussion *supra* Part IV, Section B (discussing the *Enfish* case and its impact on § 101).

1. BASCOM Global: The Ordered Combination of Limitations Matters

[79] *BASCOM Global Internet Services., Inc. v. AT&T Mobility L.L.C.* marked the third software patent case, since *Alice*, that the Federal Circuit found the software claims to be directed towards patent-eligible subject matter.[257] The patent at issue was directed towards an improved system for filtering Internet content.[258] Other systems for filtering Internet content suffered from disadvantages, such as being thwarted by users or lacking flexibility, and required lots of service.[259] The claimed invention described itself as combining the advantages of the other systems while avoiding their disadvantages.[260]

[80] Under *Alice* Step One, the court found that the claims were directed towards the abstract idea of filtering content on the Internet.[261] Unlike *Enfish*, the court proceeded to step two of the analysis to search for "something more" that transformed the claims.[262] The district court had concluded that the limitations, individually and collectively, failed to transform the claims into patent-eligible subject matter.[263] The Federal

[257] *See* BASCOM Glob. Internet Servs., Inc. v. AT&T Mobility L.L.C., 827 F.3d 1341, 1343 (Fed. Cir. 2016).

[258] *See id.* at 1345.

[259] *See id.* at 1344 (describing disadvantages of other Internet filtering systems).

[260] *See id.*

[261] *See id.* at 1348.

[262] *See BASCOM Glob.*, 827 F.3d at 1349.

[263] *See id.* at 1347.

Circuit agreed with the district court that when the claims were taken individually they simply recited "generic computer, network and Internet components, none of which is inventive by itself."[264] However, the Federal Circuit "disagree[d] with the district court's analysis [regarding] the ordered combination of the limitations."[265] The court stated that "[t]he inventive concept described and claimed … [was] the installation of a filtering tool at a specific location, remote from the end-users, with customizable filtering features specific to each end user."[266] The resulting design allowed the filtering system "the benefits of a filter on a local computer" and that of one on a server.[267] Hence, the ordered combination of limitations can be sufficient to transform an abstract idea into patent-eligible subject matter.[268]

[81] The holding in *BASCOM Global*, highlighted an important fact – the order combination of limitations matters when it comes to the *Alice* Two Step and can be sufficient, on its own, to satisfy the "something more" requirement.[269] The Federal Circuit would go on to decide another important software case, *McRO, Inc. v. Bandai Namco Games America Inc*.[270]

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[264] *Id.* at 1349.

[265] *See id.* at 1349–50.

[266] *Id.* at 1350.

[267] *BASCOM Glob.*, 827 F.3d at 1350.

[268] *See id.* at 1349–50; *see also* Alice Corp. Pty. v. CLS Bank Int'l, 134 S. Ct. 2347, 2350 (2014) (stating that after determining that the invention is directed towards a judicial exception, "the Court then asks whether the claim's elements, considered both individually and 'as an ordered combination,' 'transform the nature of the claim' into a patent-eligible application.").

[269] *See BASCOM Glob.*, 827 F.3d at 1349–50.

[270] *See* McRO, Inc. v. Bandai Namco Games Am., Inc., 837 F.3d 1299 (Fed. Cir. 2016).

2. McRO, Inc.: Enfish Reaffirmed: The Order Matters

[82] *McRO, Inc. v. Bandai Namco Games America Inc*, would mark the third § 101 case regarding software patents in 2016, and the fourth overall since *Alice*, where the claims were found to involve patent-eligible subject matter.[271] The patents at issue related to "automatically … producing … lip synchronization and facial expressions in animated characters."[272] The patents aimed to automate a task previously done by 3D animators.[273] Specifically, they direct both when and how to set keyframes appropriately to have accurate synchronization of lip and facial expressions.[274]

[83] The district court found 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."[275] Conversely, the Federal Circuit disagreed.[276] Relying on their precedent in *Enfish*, the court stated that regardless of which *Alice* step, when "determining the patentability of a method, a court must look to the claims as an ordered combination, without ignoring the requirements of the individual steps."[277] In their analysis, the court cautioned against looking at the claims "generally and

[271] *See id.* at 1314 (citing two previous cases from 2016, along with *Alice*).

[272] *Id.* at 1307 (internal quotations omitted).

[273] *See id.*

[274] *See id.*

[275] *McRO, Inc.*, 837 F.3d at 1313 (alteration in original) (internal quotations omitted).

[276] *See id.*

[277] *Id.*

failing to account for specific requirements . . . ."[278] Here, the claims were directed towards a specific order of rules that resulted in the improvement in computer animation.[279] Therefore, the claims were directed towards patent-eligible subject matter.

[84] These Federal Circuit cases have brought some clarity to the § 101 landscape. Patentees have an expanded set of examples which they can use when drafting new patents; yet, the question remains if this new law will be enough for current software patent holders to survive pretrial motions based on § 101 eligibility issues. This topic will be discussed in Part V of this paper.

V. SURVIVING PRETRIAL DISMISSAL

[85] Prior to *Alice*, district courts rarely granted pretrial dispositive motions on § 101 primarily because of the "clear and convincing" hurdle that challengers faced and the limited amount of available information.[280] However, as discussed above, § 101 pretrial motions to dismiss have become a common tool for defendants.[281] Since *Alice*, courts have had a tool to dismiss patent suits early on saving both time and money. In fact, the

[278] *Id.*

[279] *See id.*

[280] *See* Ultramercial, Inc. v. Hulu, L.L.C., 722 F.3d 1335, 1338–39 (Fed. Cir. 2013); *See, e.g.*, CLS Bank Int'l v. Alice Corp. Pty., 717 F.3d 1269, 1284, 1304–05 (Fed. Cir. 2013) (Chief Judge Rader, and Judges Linn, Moore, and O'Malley, concluding that "any attack on an issued patent based on a challenge to the eligibility of the subject matter must be proven by clear and convincing evidence," and Judges Lourie, Dyk, Prost, Reyna, and Wallach, concluding that a statutory presumption of validity applies when § 101 is raised as a basis for invalidity in district court proceedings.).

[281] *See supra* Part III, Section C.

first year after *Alice*, invalidity rates rose drastically.[282] Hence, it is easy to conclude that § 101 challenges will continue to be an effective tool for defendants.

[86] While *Alice* has been an effective tool for patent challengers, recent § 101 jurisprudence may provide enough ammunition to survive pretrial dismissals.[283] In this section, I will discuss how I believe that the current § 101 jurisprudence creates categories of successful claims and how they should be argued to help a patentee survive pretrial motions. Next, I will discuss why I believe it is best for courts to postpone decisions on § 101 eligibility until, at the very least, post-*Markman* hearings. Finally, I will look at the current outlook for software patents.

A. Finding Hope in the New § 101 Jurisprudence

[87] Clarifying the § 101 landscape has not been an easy task. Instead of establishing a firm definition of what constitutes an "abstract idea," the Federal Circuit has decided cases on a claim-by-claim basis.[284] The biggest downside of this method is that it is unpredictable. Instead of having a firm legal standard, litigants must wait to see how the Federal Circuit will rule on their patents, assuming the court take their case.

[88] In the four software-related § 101 cases that were not abstract under *Alice*, we are left with, what I believe to be, three types of claims that are

[282] *Compare* Tran, *One-Year Review*, *supra* note 88, at 539–41 (discussing statistics in the first year after the *Alice* decision), *with* Tran, *Two Years After Alice*, *supra* note 169, at 358–359 (discussing statistics in the second year after the *Alice* decision).

[283] *See supra* Part IV (discussing the four major software eases from the Federal Circuit since the Supreme Court decided *Alice*).

[284] *See* Amdocs (Isr.) Ltd. v. Openet Telecomm. Inc., 841 F.3d 1288, 1293–94 (Fed. Cir. 2016).

patent-eligible: (1) claims that are "rooted in computer technology" – they solve something new;[285] (2) claims that focus on an improvement of the computer technology; [286] (3) and claims that have a specific order to the limitations.[287] I will address each type in order; however, it should be noted that each category can overlap with each other. Arguing more than one position will likely increase a patentee's odds of surviving pretrial dismissal.

1. Category One: Rooted in Technology

[89] Regarding category one, claims that are "rooted in technology," a litigant should focus on what the claims are solving.[288] Focus on what the software is doing that was not previously done before, even if it is on a generic computer. Do not attempt to make overly broad claims or establish overly broad interpretations of the claims.[289] Instead, focus on the specific technological problem that the claims are solving. You should argue with particularity to bring the court's attention to this specific problem.

[90] Rule 12(b)(6) motions will be denied if the opposing party can show a cognizable legal theory or sufficient facts under a cognizable legal

[285] DDR Holdings, L.L.C. v. Hotels.com, L.P., 773 F.3d 1245, 1257 (Fed. Cir. 2014).

[286] *See* Enfish, L.L.C. v. Microsoft Corp., 822 F.3d 1327, 1336 (Fed. Cir. 2016).

[287] *See* BASCOM Glob. Internet Servs., Inc. v. AT&T Mobility L.L.C., 827 F.3d 1341, 1349 (Fed. Cir. 2016); *see also* McRO, Inc. v. Bandai Namco Games Am. Inc., 837 F.3d 1299, 1315 (Fed. Cir. 2016).

[288] *See DDR Holdings, L.L.C.*, 773 F.3d at 1259.

[289] *See id.* at 1258 (stating claims did "not broadly and generically claim 'use of the Internet' to perform an abstract business practice . . . .").

theory.[290] Thus, if a party is arguing that their claims solve a specific technological problem, they should focus on the problem that the claims solve in a manner fact sufficient such that the complaint is able to state a claim. Regarding Rule 12(c), a party should do the same and argue based on their interpretation of the claim. The goal is not to win the case, but to get to claim construction. Additionally, the patentee could create a genuine issue of material fact such that they survive motions for summary judgment at least up until the post-*Markman* proceeding.

[91] In *Smartflash L.L.C. v. Apple, Inc.*, the patents were directed towards a data access terminal that was designed to take in data from a supplier, provide the data to a carrier, and prevent piracy of the data.[291] Despite finding the claims were directed towards an abstract idea, the court concluded that there was "something more" that transformed them into patent-eligible subject matter.[292] The court noted that the claims were directed towards solving the relevant and wide-spread technological problem with digital rights management and piracy.[293] The solution was rooted in technology because they attempted to solve this specific and special widespread problem. In *Treehouse Avatar L.L.C. v. Valve Corp.,* the patentee was able to successfully avoid a Rule 12(b)(6) dismissal by

[290] *See* Garcia v. Clovis Unified Sch. Dist., 627 F. Supp. 2d 1187, 1194 (E.D. Cal. 2009).

[291] *See* Smartflash L.L.C. v. Apple, Inc., No. 6:13-CV-447-JRG-KNM, 2015 U.S. Dist. LEXIS 18419, at *19–20, *44 (E.D. Tex. Jan. 21, 2015.); *id.* at *16 (stating the asserted claims "relate[d] generally to data storage and access systems for paying and downloading digital . . ." media files.); Smartflash L.L.C. v. Apple, Inc., No. 6:13cv447-JRG-KNM, 2015 U.S. Dist. LEXIS 17754, *6, *7 (E.D. Tex. Feb. 13, 2015) (stating the report and recommendation of the magistrate judge were adopted).

[292] *See Smartflash L.L.C.,* No. 6:13-CV-447-JRG-KNM, 2015 U.S. Dist. LEXIS 18419, at *22 (E.D. Tex. Jan. 2015).

[293] *See id.* at *43–44.

characterizing the claims at issue like those in *DDR Holdings*.[294] The claims involved were directed towards having users select and modify customizable characters in real-time on character-enabled network sites, and storing and retrieving the characters within an information network.[295] The court found that the claims were similar to those in *DDR Holdings*, such that, they were rooted in the computer technology.[296] Under *Alice* Step Two, the court concluded that the claims were directed towards solving the problem of "network site loyalty," and were therefore, innovative enough to transform the claims into patent-eligible subject matter.[297]

2. Category Two: Improvements in Computer Technology

[92] Category two claims relate to improvements in existing computer technology.[298] As noted above, one of the most important facts from the *Enfish* holding was the Federal Circuit acknowledging that software can make non-abstract improvements to existing computer technology.[299] When using this to defend claims, a patentee should point to the specific improvements that the software claims are making. Just because software claims may not involve physical components, they may still be subject matter eligible.

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[294] *See* Treehouse Avatar L.L.C. v. Valve Corp., 170 F. Supp. 3d 706, 721 (D. Del. 2016). (discussing that the asserted software patent was for collecting data on network users of a computer game in order to customize items available to users in in-game shops).

[295] *See id.*

[296] *See id.*

[297] *See id.*

[298] *See* DDR Holdings, L.L.C. v. Hotels.com, L.P., 773 F.3d 1245, 1257 (Fed. Cir. 2014).

[299] *See* Enfish, L.L.C. v. Microsoft Corp., 822 F.3d 1327, 1335 (Fed. Cir. 2016).

[93] Again, the patentee should focus their construction of the claims to identify the improvement the claims make. In doing so, they should proffer enough facts such that it would be improper for a court to grant a Rule 12(b)(6) or 12(c) motion.[300] Furthermore, by attempting to identify a particular improvement, the patentee may create an issue of material fact such that it would be improper for the judge to determine what the technological improvement is without proper claim construction.

[94] In *InfoGation Corp. v. ZTE Corp.*, there was a technological problem with the local storage of information for navigational systems and real-time data.[301] The patentee was able to successfully survive a Rule 12(c) dismissal because they argued the claims were directed towards a specific improvement that "advance[d] over the prior art."[302] The district court rejected the defendant's argument that the claim was directed towards the abstract idea of simply providing directions.[303] Instead, the court found that the claim was directed towards "improving an existing technological process, specifically how an online server communicates in real-time with a local mapping database within a mobile navigation system," therefore, solving a specific technological problem.[304] In *Finjan, Inc. v. Sophos, Inc.*, one patent at issue related to protecting computers from malicious

[300] *See* FED. R. CIV. P. 12(b)(6); *see also* FED. R. CIV. P. 12(c).

[301] *See* InfoGation Corp. v. ZTE Corp., No. 16-cv-01901-H-JLB, 2017 U.S. Dist. LEXIS 44873, at *4–5 (S.D. Cal. Mar. 27, 2017) (discussing that the patent related to a distributed navigation system, which wirelessly connected to a server for calculating optimal routes using real-time data).

[302] *Id.* at *17.

[303] *See id.* at *17–18.

[304] *Id.* at *15–16.

downloads.[305] Sophos argued that the patent was directed towards the abstract idea of "receiving data, extracting information from that received data, and linking that information to the received data."[306] The court found that the patent was specific enough to transform the abstract idea into patent-eligible subject matter.[307] The patentee successfully argued that the patent had provided a "specific technical solution to assist in protecting computer networks from hostile Downloadables . . .," which security systems could not previously do.[308]

3. Category Three: Ordered Combination of Limitations

[95] When using category three of the previously allowed claims, you should focus on a specific ordered combination of limitations found in your claims.[309] Look at the claims both individually and in combination. The focus of your argument to the court should be to identify the limitations that cause the claims to have an inventive concept.

[96] A specific order to the combination of limitations found in the claims may be sufficient to transform the claims into patent-eligible subject matter depending on the patent. In identifying a specific combination of limitations, the patentee should focus on the steps and limitations found in the claims. They should develop a claim construction that supports this argument such that it survives Rule 12 motions. Additionally, creating a

[305] *See* Finjan, Inc. v. Sophos, Inc., No. 14-cv-01197-WHO, 2015 U.S. Dist. LEXIS 112594, at *12 (N.D. Cal. Aug. 24, 2015).

[306] Finjan, Inc. v. Sophos, Inc., 244 F. Supp. 3d 1016, 1062 (N.D. Cal. 2017).

[307] *See id.* at 1065.

[308] *Id.*

[309] *See* BASCOM Glob. Internet Servs. v. AT&T Mobility L.L.C., 827 F.3d 1341, 1352 (Fed. Cir. 2016).

factual inquiry would make deciding the case on summary judgment inappropriate.[310]

[97] In *Fitbit, Inc. v. AliphCom*, the court did not decide whether the claims were directed towards an abstract idea.[311] Instead, they proceeded to *Alice* Step Two in search for "something more."[312] The defendant argued that there was nothing "non-conventional or non-generic" to save the claims and that the claims merely recited items generic in the art.[313] However, the court agreed with the plaintiff that the claims, taken as a whole, recite a "specific, detailed, non-conventional sequence of steps, which far from preempt the entire field."[314] Thus, the defendant did not meet their burden when moving for a judgment on the pleadings.[315] In *X One, Inc. v. Uber Technologies., Inc.*, the defendant filed a motion to dismiss under Rule 12(b)(6) claiming that the claims lacked patent-eligibility.[316] In conducting the § 101 analysis, the court found that the asserted claims were directed towards an abstract idea under *Alice* Step One.[317] However, under *Alice* Step

[310] *See* Zoltek Corp. v. United States, 95 Fed. Cl. 681, 692 (2010).

[311] *See* Fitbit, Inc. v. AliphCom, 233 F. Supp. 3d 799, 801, 811 (N.D. Cal. 2017) (involving claims dealing with a specific way to pair a wireless device to client and/or a server).

[312] *See id.*

[313] *Id.* (internal quotations omitted).

[314] *Id.* at 812.

[315] *See id.* at 814.

[316] *See* X One, Inc. v. Uber Techs., Inc., 239 F. Supp. 3d 1174, 1177, 1183 (N.D. Cal. 2017) (involving patents related to a system for exchanging GPS or other position data between wireless devices).

[317] *See id.* at 1193.

Two, the court found that, when comparing it to previous cases, the order of the claims presented a specific implementation of the abstract idea to transform it into patent-eligible subject matter.[318] In response to the motion to dismiss, the court noted that this case presented a "close call," and in viewing the pleadings most favorable to the nonmoving party, it was denied.[319]

B. Postponing § 101 Eligibility Decisions Until After Claim Construction

[98] "Where the court has a 'full understanding of the basic character of the claimed subject matter,' the question of patent eligibility may properly be resolved on the pleadings."[320] Although the Federal Circuit has stated that claim construction is not a prerequisite to determining § 101 eligibility, they have warned that it is often necessary to construe the claims prior to a § 101 analysis.[321] When determining whether claim construction is necessary, it is possible the factors the court considers making this

[318] *See id.* at 1198.

[319] *Id.* at 1199.

[320] Papst Licensing GMBH & Co. v. Xilinx Inc., 193 F. Supp. 3d 1069, 1078 (N.D. Cal. 2016), (quoting Content Extraction & Transmission L.L.C. v. Wells Fargo Bank, Nat'l Ass'n, 776 F.3d 1343, 1349 (Fed. Cir. 2014)).

[321] *See* Bancorp Servs., L.L.C. v. Sun Life Assurance Co. of Can., 687 F.3d at 1273–74.

determination can help clarify the § 101 analysis.[322] By avoiding early motions to dismiss, the patentee has the opportunity to obtain the claim construction they desire and attempt to construe their software patent to claim patentable subject matter.

[99] In *OpenTV, Inc. v. Netflix Inc.*, the district court agreed with Netflix that the § 101 validity analysis may be carried out prior to claim construction, but it was inappropriate to do so in this instance.[323] The court noted that this appeared to be a case where, despite being broad on its face, it was not clear whether the patent was specific enough to survive the § 101 analysis and the motion for summary judgment was denied.[324] In *Tatcha, L.L.C. v. Landmark Technology L.L.C.*, the court also concluded that a § 101 analysis would benefit from "claim construction and a fuller factual record" and denied the Rule 12(c) motion.[325] The court reasoned that the developed record and claim construction would help in resolving the dispute as to whether the invention was "unique and unconventional, whether the claimed invention relies on this arrangement, and whether the purportedly unique arrangement is claimed, among other issues."[326] Developing a better

[322] *See* Boar's Head Corp. v. DirectApps, Inc., No. 2:14-cv-01927-KJM-KJN, 2015 U.S. Dist. LEXIS 98502, at *19 (E.D. Cal. July 28, 2015) (discussing factors to consider in determining whether claim construction is necessary: (1) "whether there are genuine disputes of fact and if so, whether they are numerous or may be resolved through simply assuming the construction most favorable to the [patent holder;]" (2) "the extent to which extrinsic facts may be helpful or relevant in construing the claims, and the substance of the parties' arguments[;]" and (3) "[w]hether the parties' arguments rely largely on facts already in the record.").

[323] *See* OpenTV, Inc. v. Netflix Inc., 76 F. Supp. 3d 886, 891 (N.D. Cal. 2014).

[324] *See id.* at 891–92.

[325] Tatcha, L.L.C. v. Landmark Tech. L.L.C., No. 16-cv-04831-WHO, 2017 U.S. Dist. LEXIS 34838, at *17–18 (N.D. Cal. Mar. 10, 2017).

[326] *Id.* at *17.

record and going through claim construction helps courts make a more accurate determination in their § 101 analysis.[327]

[100] Some courts are starting to wait until the record is more developed and the claims have been construed prior to making a § 101 determination. As noted in Part III (C), motions to dismiss can save time, money, and resources; however, conducting the § 101 analysis too early may result in an inaccurate subject matter eligibility analysis.[328] Creating a question as to the specificity of the claims can, at the very least, allow a patentee to survive an early pretrial motion to dismiss based on subject matter eligibility.

C. Software Patents Moving Forward

[101] In January 2017, the Federal Circuit reviewed yet another software patent subject matter eligibility case, *Trading Technologies International, Inc. v. CQG, Inc*.[329] Although this case did not represent a major § 101 holding, it does signal to patentees that recent eligibility jurisprudence is beginning to clear up a once complicated area of patent law. However, the question remains: what is the fate of software patents? The best answer is that we will have to wait and see. The decisions in *DDR Holdings*, *Enfish*, *BASCOM*, and *McRo* will not be the only § 101 software patent cases that

[327] *See* Cave Consulting Grp., Inc. v. Truven Health Analytics Inc., No. 15-cv-02177-SI, 2016 U.S. Dist. LEXIS 8395, at *3, *6 (N.D. Cal. Jan. 25, 2016) (denying a Rule 12(c) motion without prejudice because the defendant did not meet the burden); Palomar Techs., Inc. v. MRSI Sys., L.L.C., No. 15-CV-1484 JLS (KSC), 2016 U.S. Dist. LEXIS 185964, at *12–13 (S.D. Cal. Mar. 11, 2016) (denying the Rule 12(b)(6) motion and stating that claim construction would assist the court in an accurate § 101 determination).

[328] *See supra* Part III, Section C.

[329] Trading Techs. Int'l., Inc. v. CQG, Inc., 675 F. App'x 1001, 1002, 1004–05 (Fed. Cir. 2017) (stating that the claims at issue were directed towards a method and "system for the electronic trading of stocks, bonds, futures, options, and similar products." The court held that despite the patents being directed to the concept of displaying information on graphical user interface, they recited an inventive concept sufficient to transform the claims into patent-eligible subject matter.).

the Federal Circuit decides. Although neither one them created major clarity regarding software patent-eligibility, taken together, they create a road map. They establish precedence that patentees can use moving forward.

[102] As discussed in Part V (A) above, I believe that each case created a category of claims to which litigants can analogize.[330] It seems highly unlikely that either the Supreme Court or the Federal Circuit will give a firm definition on what constitutes an "abstract idea." Instead, we will be left with the "I know it when I see it" approach, and each litigant will have their opportunity to defend their patent. The important part, is that the current § 101 trend at the district court level appears to be that § 101 analysis should be conducted after claim construction and a developed factual record.[331] This helps to ensure that the court is making a well-informed decision based on a well-developed record.

[103] The interaction of preemption and the "abstract idea" doctrine will also play a major role in future § 101 jurisprudence.[332] Preemption will continue to arise in those cases where the claims attempt to improperly monopolize "the basic tools of scientific and technological work."[333] To combat this, the "abstract idea" doctrine has been applied to claims where it does not matter by what process or machine the results are accomplished.[334] Using this, the courts will likely continue to find that

[330] *See supra* Part V, Section A.

[331] *See supra* Part V, Sections A–B.

[332] *See* McRO, Inc. v. Bandai Namco Games Am., Inc., 837 F.3d 1299, 1314 (Fed. Cir. 2016) ("It is self-evident that genus claims create a greater risk of preemption, thus implicating the primary concern driving § 101 jurisprudence, but this does not mean they are unpatentable.").

[333] Alice Corp. Pty. v. CLS Bank Int'l, 134 S. Ct. 2347, 2354 (2014).

[334] *See* O'Reilly v. Morse, 56 U.S. 62, 113 (1854); *See also* Mayo Collaborative Servs. v. Prometheus Labs., Inc., 566 U.S. 66, 85–87 (2012).

software patent claims involve an abstract idea. Although the Federal Circuit has stated that software is not inherently abstract,[335] litigants will need to continue to analogize to successful § 101 claims as best as possible, with focus on what amounts to "something more" in their claims. The best way to win a trial is to write better claims.

VI. CONCLUSION

[104] Patent litigation is an extremely expensive and time-consuming endeavor. Parties can spend years and millions of dollars in court costs and attorney fees.[336] Therefore, many defendants will attempt to dismiss cases as early as possible using pretrial motions regarding subject matter eligibility. This has been a very successful tactic as nearly all software patents are found ineligible under § 101.

[105] Section 101 will remain a confusing area of patent law for the foreseeable future. The problem is not with software itself, but rather, with the current way of handling software patent eligibility. The *Alice* Two Step Test created a test for § 101 eligibility but the problem lies in the lack of defined terms within the test.[337] *Alice* Step One involves the determination of whether there is a judicial exception involved: are the software claims directed towards an abstract idea.[338] The "abstract idea" doctrine has been

[335] *See* Enfish, L.L.C. v. Microsoft Corp., 822 F.3d 1327, 1335 (Fed. Cir. 2016).

[336] *See* Chris Neumeyer, *Managing Costs of Patent Litigation*, IP WATCHDOG (Feb. 5, 2013) http://www.ipwatchdog.com/2013/02/05/managing-costs-of-patent-litigation/id=34808/, https://perma.cc/F6LM-LYXY (last visited Apr. 3, 2018).

[337] *See supra* Part II.

[338] *See* Alice Corp. Pty. v. CLS Bank Int'l, 134 S. Ct. 2347, 2355 (2014).

around since, at the very least, *Benson*.[339] Flash forward 45 years and we are still left without a firm definition of what constitutes an "abstract idea." Instead, we are left with categories that courts use to evaluate software patents. In *Alice* Step Two, courts must look for "something more" that transforms once ineligible subject matter into something patentable.[340] Again, the courts have dodged the question on what is enough to constitute "something more."

[106] We have been left with a comparison approach where current claims must be compared to past claims to determine eligibility. In the almost four years since *Alice*, the Federal Circuit has decided four precedential cases that "carve out" patentable claims for software patents.[341] Consequently, the sample size for successful claims is extremely small in comparison to non-eligible claims.[342] All hope is not lost.

[107] Recent § 101 jurisprudence is beginning to clarify a once murky picture. We now know that the Federal Circuit believes software patents are

[339] *See* Gottschalk v. Benson, 409 U.S. 63, 67–68 (1972).

[340] *See Alice Corp. Pty.*, 134 S. Ct. at 2354.

[341] *See supra* Part III (discussing the precedent cases: *DDR Holdings, L.L.C.*; *Enfish, L.L.C.*; *BASCOM*; and *McRO)*.

[342] *See* buySAFE, Inc. v. Google, Inc., 765 F.3d 1350, 1352, 1355 (Fed. Cir. 2014) (explaining that using computers to send and receive information over a network simply implemented the abstract idea of "transaction performance guaranty"); Accenture Glob. Servs, GMBH & Accenture L.L.P. v. Guidewire Software, Inc., 728 F.3d 1336, 1345 (Fed. Cir. 2013) (finding that claims that merely recited generalized computer software components that were arranged to generate insurance policy-related tasks based on rules and the completion of an event amounted to nothing more than an abstract idea). *See generally* Ultramerical, Inc. v. Hulu, L.L.C., 772 F.3d 709, 715 (Fed. Cir. 2014) (noting that an example of claims regarding non-eligible subject matter include claims that merely recited using advertising as a currency as applied to the particular technological environment, which recited nothing more than an abstract idea).

not inherently abstract;[343] software that solves problems rooted in the technology itself may be patent-eligible;[344] and finally, the ordered limitations of the claims can make a difference.[345] Using these successful cases, patentees can win § 101 challenges without stepping into a court house: by drafting their claims to be like those that have survived challenges. If patentees are already in litigation, they have examples to use for analogy. While the goal is to get to the jury, defeating pretrial motions to dismiss on § 101 grounds should be a priority for litigants. At the very least, one should aim to reach claim construction so that a judge can make a well-informed decision that will be less likely to be reversed on appeal. With some district courts preferring this route, perhaps the pendulum has begun to swing back in favor of software patentees.

VII. AFTERWARD: A BRIEF § 101 UPDATE

[108] Since the original writing of this paper, there have been several Federal Circuit cases involving software patents and § 101 eligibility. The following cases provide both clarity and important procedural victories for software patentees.[346]

A. The Enfish § 101 Road Map

[343] *See* Enfish, L.L.C. v. Microsoft Corp., 822 F.3d 1327, 1335 (Fed. Cir. 2016).

[344] *See* DDR Holdings, L.L.C. v. Hotels.com, L.P., 773 F.3d 1245, 1257 (Fed. Cir. 2014).

[345] *See* BASCOM Glob. Servs. V. AT&T Mobility, L.L.C., 827 F.3d 1341, 1349–1350 (Fed. Cir. 2016); *see also* McRO, Inc. v. Bandai Namco Games Am., Inc., 837 F.3d 1299, 1315 (Fed. Cir. 2016).

[346] As with the previous discussion in this paper, I selected only software patents cases for this update regarding the current state of software patent eligibility.

[109] The holdings in *Enfish* and *Thales Visionix Inc. v. United States*[347] provided a § 101 roadmap for the decision in *Visual Memory L.L.C. v. NVIDIA Corp.* [348] In this case, the patent was directed towards an improved memory system that could be tailored for use with multiple different processors without the reduction in performance that plagued previous systems.[349] In conducting the § 101 analysis, the Federal Circuit relied on the *Enfish* and *Thales Visionix Inc.* roadmap concluding that, despite involving the abstract idea of data storage, the improved memory system was a sufficiently specific technological improvement[350] that rendered the subject matter eligible under § 101.[351] Of particular importance were the similarities between the *Enfish*, *Thales Visionix Inc.*, and *Visual Memory* patents: their specification highlighted the specific technological advantages that rendered them subject matter eligible.[352]

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[347] The *Thales Visionix Inc.* was also an important § 101 decision; however, the patent at issue was not purely software related. Rather, it was directed towards a unique configuration of internal sensors and the use of mathematical equitation for determining the location and orientation of an object relative to a moving reference frame. The *Thales Visionix Inc.* Court concluded that the "systems and methods that use[d] inertial sensors in a non-conventional manner to reduce errors in measuring the relative position and orientation of a moving object on a moving reference frame" and were therefore patent eligible under *Alice* Step One. Thales Visionix Inc. v. United States, 850 F.3d 1343, 1344, 1348–49 (Fed. Cir. 2017).

[348] *See* Visual Memory L.L.C. v. NVIDIA Corp.*,* 867 F.3d 1253, 1258–59 (Fed. Cir. 2017).

[349] *See id.* at 1255.

[350] Court notes the claims were directed towards a specific technological improvement: "an enhanced computer memory system … [with focus on] the use of programmable operational characteristics that are configurable based on the type of processor." *Id.* at 1259–60.

[351] *See id.* at 1255.

[352] This is indicative of the importance of focusing on these types of improvements during both patent prosecution and litigation. *See id.* at 1258–60 (noting the similarities in the *Enfish*, *Thales Visionix Inc.*, and *Visual Memory* patents)

[110] In *Finjan, Inc. v. Blue Coat Systems, Inc.*,[353] the Federal Circuit again cites to *Enfish* for guidance. The *Finjan, Inc.* patent was directed towards an improved virus screening method.[354] Although on its own, virus screening constitutes an abstract idea, [355] the software made "non-abstract improvements" sufficient to be patent-eligible at *Alice* Step One. [356] Particularly, the software allowed for tailoring to different users and ensuring that threats would be identified before they reached the user's computers.[357] The security approach "enable[d] a computer security system to do things it could not do before."[358] The specificity of the claims provided the saving grace for passing the § 101 test.[359]

B. Procedural Wins for Software Patentees

[111] In the last year, software patent holders also experienced significant procedural wins in the Federal Circuit.[360] In *Berkheimer v. HP Inc.*, the

[353] *See* Finjan, Inc. v. Blue Coat Sys., 879 F.3d 1299, 1303 (Fed. Cir. 2018) (noting the inquiry for software patents).

[354] *See id.*

[355] *See* Intellectual Ventures I L.L.C. v. Symantec Corp., 838 F.3d 1307, 1319 (Fed. Cir. 2016) ("By itself, virus screening is well-known and constitutes an abstract idea.").

[356] *See Finjan, Inc.*, 879 F.3d at 1304 (citing Enfish, L.L.C. v. Microsoft Corp., 822 F.3d 1327, 1335–36 (Fed. Cir. 2016)).

[357] *See id.* at 1305.

[358] *Id.*

[359] *See id.* at 1305–06 (The specific steps were "generating a security profile that identifies suspicious code and linking it to a downloadable" which "accomplish[ed] the desired result.").

[360] *See supra* Part III (C).

Federal Circuit found that factual disputes may affect the § 101 analysis making summary judgment or dismissals inappropriate in certain instances.[361] Here, the Federal Circuit affirmed the district court finding that the asserted claims were directed towards an abstract idea under *Alice* Step One.[362]

[112] However, the Court found that the district court erred in granting summary judgment on certain claims under the *Alice* Step Two analysis.[363] Particularly, the Court noted the following:

> While patent eligibility is ultimately a question of law, the district court erred in concluding there are no underlying factual questions to the § 101 inquiry. Whether something is well-understood, routine, and conventional to a skilled artisan at the time of the patent is a factual determination. Whether a particular technology is well-understood, routine, and conventional goes beyond what was simply known in the prior art. The mere fact that something is disclosed in a piece of prior art, for example, does not mean it was well-understood, routine, and conventional.[364]

[361] *See* Berkheimer v. HP Inc., 881 F.3d 1360, 1368 (Fed. Cir. 2018).

[362] *See id.* at 1366 (holding "that claims 1–3 and 9 are directed to the abstract idea of parsing and comparing data; claim 4 is directed to the abstract idea of parsing, comparing, and storing data; and claims 5–7 are directed to the abstract idea of parsing, comparing, storing, and editing data.").

[363] *See id.* at 1369.

[364] *Id.* (internal citations omitted).

Although motions to dismiss or motions for summary judgment are still appropriate venues to address the eligibility issues,[365] creating factual disputes can help software patentees reach claim construction.[366]

[113] In *Aatrix Software, Inc. v. Green Shades Software, Inc.*, the Federal Circuit found that the district court erred in not allowing the software patentee[367] to amend their complaint to survive the Rule 12(b)(6) motion to dismiss on § 101 eligibility.[368] Although patent eligibility can be determined at the Rule 12(b)(6) stage, it is not always appropriate.[369] The *Aatrix Software, Inc.* Court held that the "refusal to permit an amended complaint

[365] *See id.* at 1368 (stating that "Patent eligibility has in many cases been resolved on motions to dismiss or summary judgment. Nothing in this decision should be viewed as casting doubt on the propriety of those cases. When there is no genuine issue of material fact regarding whether the claim element or claimed combination is well-understood, routine, conventional to a skilled artisan in the relevant field, this issue can be decided on summary judgment as a matter of law.").

[366] *See Berkheimer*, 881 F.3d at 1369 (finding that "[t]he specification describes an inventive feature that stores parsed data in a purportedly unconventional manner. This eliminates redundancies, improves system efficiency, reduces storage requirements, and enables a single edit to a stored object to propagate throughout all documents linked to that object. The improvements in the specification, to the extent they are captured in the claims, create a factual dispute regarding whether the invention describes well-understood, routine, and conventional activities . . .").

[367] *See* Aatrix Software, Inc. v. Green Shades Software, Inc., 882 F.3d 1121, 1123 (Fed. Cir. 2018) (stating that the software patents involved were "directed to systems and methods for designing, creating, and importing data into a viewable form on a computer so that a user can manipulate the form data and create viewable forms and reports.")*.*

[368] *See id.* at 1125.

[369] Patent eligibility can be determined at the Rule 12(b)(6) stage. *See*, *e.g.*, Genetic Techs. Ltd. v. Merial L.L.C., 818 F.3d 1369, 1373 (Fed. Cir. 2016); Content Extraction & Transmission L.L.C. v. Wells Fargo Bank, Nat'l Ass'n., 776 F.3d 1343, 1351 (Fed. Cir. 2014).

was erroneous because at that stage there certainly were allegations of fact that, if Aatrix's position was accepted, would preclude the dismissal."[370] Ultimately, this provides a significant victory for software patentees and a return to basic civil procedure, because when deciding a motion to dismiss: all factual allegations made by the plaintiff in the complaint should be taken as true.[371] Therefore, a carefully written complaint could be the difference maker in a § 101 dismissal.

VIII. NEW LAW – BRIGHT FUTURE

[114] Patent eligibility remains a complex and concerning issue for software patentees. The decisions in *Visual Memory L.L.C.* and *Finjan, Inc*. demonstrate that the decision in *Enfish* is possibly developing into a more useful precedential case for software patentees than originally believed. The holdings in *Berkheimer* and *Aatrix Software, Inc.* provide procedural victories for software patent holders to survive early § 101 attacks proving that eligibility determinations should not be rushed and decided prematurely. Ultimately, § 101 challenges will continue to prove challenging for software patentees. As with the district courts, perhaps the Federal Circuit is slowly swinging the pendulum back in favor of software patentees.

[370] *Aatrix Software, Inc.*, 882 F.3d at 1126.

[371] *See* Tellabs, Inc. v. Makor Issues & Rights, Ltd., 551 U.S. 308, 322 (2007).