No. 13-

IN THE
Supreme Court of the United States

ALICE CORPORATION PTY. LTD.,
Petitioner,

v.

CLS BANK INTERNATIONAL AND CLS SERVICES LTD.,
Respondent.

On Petition for a Writ of Certiorari to the United States Court of Appeals for the Federal Circuit

PETITION FOR A WRIT OF CERTIORARI

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QUESTION PRESENTED

Whether claims to computer-implemented inventions—including claims to systems and machines, processes, and items of manufacture—are directed to patent-eligible subject matter within the meaning of 35 U.S.C. § 101 as interpreted by this Court?

PARTIES TO THE PROCEEDING

All parties to the proceeding are identified in the caption.

RULE 29.6 STATEMENT

The sole parent corporation or publicly held company that owns 10 percent or more of the stock of Petitioner Alice Corporation Pty. Ltd. is National Australia Bank Limited.

TABLE OF CONTENTS

TABLE OF CONTENTS—continued

TABLE OF AUTHORITIES

CASES Page

TABLE OF AUTHORITIES—continued

STATUTES

SCHOLARLY AUTHORITIES

TABLE OF AUTHORITIES—continued

OTHER AUTHORITIES Page

PETITION FOR A WRIT OF CERTIORARI

Alice Corporation Pty. Ltd. ("Alice") respectfully petitions for a writ of certiorari to review the judgment of the en banc Federal Circuit in this case.

OPINIONS BELOW

The opinion of the United States District Court for the District of Columbia is reproduced in the appendix to this petition (Pet. App.) at 172a-238a, and reported at 768 F. Supp. 2d 221. The Federal Circuit panel decision is reproduced at Pet. App. 132a-71a, and reported at 685 F.3d 1341. The order of the court of appeals granting rehearing en banc is reproduced at Pet. App. 239a-41a, and is available at 484 F. App'x 559. The numerous opinions of the Judges of the Federal Circuit sitting en banc are reproduced at Pet. App. 1a-131a, and reported at 717 F.3d 1269.

JURISDICTION

A panel of the court of appeals entered judgment on July 9, 2012. Pet. App. 132a. A timely petition for rehearing en banc was granted on October 9, 2012. Pet. App. 239a. The en banc court entered judgment on May 10, 2013. Pet. App. 1a. On July 22, 2013, the Chief Justice granted Alice an extension of time to and including September 6, 2013, within which to file a petition for a writ of certiorari. This Court has jurisdiction pursuant to 28 U.S.C. § 1254(1).

STATUTORY PROVISIONS INVOLVED

Section 101 of the Patent Act provides: "Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain

a patent therefor, subject to the conditions and requirements of this title." 35 U.S.C. § 101.

INTRODUCTION

The Federal Circuit granted rehearing en banc in this case to address two fundamental and important questions relating to the patent eligibility of inventions that involve the use of computers: (1) "What test should the court adopt to determine whether a computer-implemented invention is a patent ineligible 'abstract idea'; and when, if ever, does the presence of a computer in a claim lend patent eligibility to an otherwise ineligible abstract idea?" and (2) "In assessing patent eligibility under 35 U.S.C. § 101 of a computer-implemented invention, should it matter whether the invention is claimed as a method, system, or storage medium ...?" Pet. App. 240a. Technology companies, practitioners, commentators, and district courts all anticipated that the en banc court would use this case to set forth clearer guidance for determining whether, and if so, under what circumstances computer-implemented inventions qualify as patent-eligible subject matter under section 101.

Unfortunately, far from providing clearer guidance, the Federal Circuit issued six separate opinions spanning more than 125 pages, none of which reflected an approach endorsed by a majority. The court split 5-5 with respect to Alice's claims to computer system inventions, leaving in place the district court's original summary judgment ruling holding them non-patentable. Alice's remaining claims were held non-patentable, although for different, and inconsistent, reasons. As a result, the legal standards that govern whether computer-implemented inventions are eligible for patent

protection under section 101 remain entirely unclear and utterly panel dependent. As Judge Newman put it in her separate opinion, the court below

> propounded at least three incompatible standards, devoid of consensus, serving simply to add to the unreliability and cost of the system of patents as an incentive for innovation.…
>
> … Today's irresolution concerning section 101 affects not only this court and the trial courts, but also the PTO examiners and agency tribunals, and all who invent and invest in new technology.

Pet. App. 100a.

The Federal Circuit has left no doubt that it is irreconcilably fractured. The uncertainty that now plagues—and will, absent this Court's intervention, continue to plague—the patent system will cause severe harm and waste for innovators and litigants, as well as lower courts and the Patent and Trademark Office. Moreover, neither the judgment nor the analysis offered in the plurality opinion can be reconciled with this Court's precedents. What makes the current state of legal disarray completely intolerable is that patented inventions are the engine of much of the nation's and the world's economic growth, which will be needlessly stifled unless the standards for patentability are much clearer than they are today. The Court should grant certiorari in order to bring much-needed clarity to the application of section 101 to computer-implemented inventions.

STATEMENT OF THE CASE

I. STATUTORY BACKGROUND

The Patent Act confers on those who obtain a patent the right to exclude others from making, selling, or using the patented invention for a specified period of time. 35 U.S.C. § 154(a). A patent includes both a written description, or "specification," that describes the invention, and specific "claims" that "particularly point[] out and distinctly claim[] the subject matter which the inventor or a joint inventor regards as the invention." *Id.* § 112(a)-(b). The claims define the patented invention and set the boundaries of the patent right. *Markman* v. *Westview Instruments, Inc.*, 517 U.S. 370, 373 (1996). Patents commonly contain more than one claim, and the claims themselves commonly contain multiple elements or limitations.

The patent statute specifies what general subject matter is eligible for a patent—namely "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof." 35 U.S.C. § 101. "The general purpose of the statutory classes of subject matter is to limit patent protection to the field of applied technology, what the United States constitution calls 'the useful arts.'" 1 Donald S. Chisum, *Chisum on Patents* § 1.01 (2013) (quoting U.S. Const. art. I, § 8, cl. 8). In a series of decisions, including three recent ones, this Court has identified three exceptions to the statutory categories of patentable subject matter. See *Ass'n for Molecular Pathology* v. *Myriad Genetics, Inc.*, 133 S. Ct. 2107 (2013); *Mayo Collaborative Servs.* v. *Prometheus Labs., Inc.*, 132 S. Ct. 1289 (2012); *Bilski* v. *Kappos*,

130 S. Ct. 3218 (2010).[1] In particular, the Court has declared that "'laws of nature, natural phenomena, and abstract ideas'" lie outside the realm of patent-eligible subject matter. *E.g.*, *Myriad Genetics*, 133 S. Ct. at 2116.

Significantly, subject matter that fits within the scope of section 101 is merely *eligible* for a patent—not necessarily entitled to patent protection. Instead, a patent claim will not be granted, and if granted will be held "invalid," unless it satisfies specific requirements set forth in other provisions of the Patent Act. If, for instance, a claim covers what already has been done or disclosed, it is "anticipated," *i.e.,* invalid for lack of novelty. See 35 U.S.C. § 102. If a claim merely covers obvious modifications to what previously has been done or disclosed, it is invalid for "obviousness." *Id.* § 103; see *KSR Int'l Co.* v. *Teleflex, Inc.*, 550 U.S. 398, 417-18 (2007). If the patent specification does not provide a description that would permit one of ordinary skill in the art to implement the full scope of what is claimed without undue experimentation, the claim is invalid for lack of enablement. 35 U.S.C. § 112(a). While these and other statutory requirements must be satisfied before a patent claim can be validly enforced to prevent infringement, they do not limit what subject matter is patent-*eligible*. *E.g.*, *Parker* v. *Flook*, 437 U.S. 584, 588 (1978). That is solely the province of section 101.

The various categories of patent-eligible subject matter give rise to different types of patent claims, which fall into two general categories: claims that cover products and claims that cover methods. See 1

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[1] *See also Diamond* v. *Diehr*, 450 U.S. 175 (1981); *Parker* v. *Flook*, 437 U.S. 584 (1978); *Gottschalk* v. *Benson*, 409 U.S. 63 (1972).

Chisum on Patents § 1.02. Product claims relate to tangible items—*i.e.*, in the terms of section 101, "machine[s], manufacture[s], or composition[s] of matter." *Id.* In patent terms, claims to machines are often called "system" or "apparatus" claims. Also in the category of product claims are claims to computer programs embodied in tangible computer-readable media (such as a CD-ROM). *Id.* § 1.02[4]. Unlike product claims, "method" claims (also known, in the terms of section 101, as "process" claims) do not claim tangible matter, but instead recite a series of steps that lead to a useful result. See *id.* § 1.03.

II. PROCEEDINGS BELOW

A. The Invention.

Alice, which is half-owned by National Australia Bank Limited, was founded in the 1990s by Ian Shepherd, the inventor of the patents-in-suit. In the early 1990s, Mr. Shepherd, previously Managing Partner of the Melbourne, Australia, office of McKinsey & Company Inc., conceived of and later built a computerized system for creating and exchanging financial instruments such as derivatives.[2] Alice applied for and obtained patents, four of which are at issue in this case,[3] Pet. App. 2a,

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[2] In general terms, a derivative is a financial instrument whose value is based on the value of an underlying asset, index, or security. *See*, *e.g.*, *Analytical Surveys, Inc.* v. *Tonga Partners, L.P.*, 684 F.3d 36, 48 (2d Cir. 2012), *cert. denied*, 133 S. Ct. 1805 (2013). Commodity futures contracts, options, and swaps are examples of derivatives. *See* Timothy E. Lynch, *Derivatives: A Twenty-First Century Understanding*, 43 Loy. U. Chi. L.J. 1, 20-21 (2011).

[3] U.S. Patent Nos. 5,970,479 ("the '479 patent"), 6,912,510 ("the '510 patent"), 7,149,720 ("the '720 patent"), and 7,725,375 ("the '375 patent").

covering aspects of Mr. Shepherd's invention, known in the patents as the INVENTCO system. One aspect of the INVENTCO system, which is recited in the asserted claims,[4] relates to a specific computer system and computerized process for the execution of a previously agreed-upon exchange, known as "settlement." *Id*. at 42a-43a.

Typically, when parties agree to exchange particular financial assets or instruments—such as, for example, currencies—their agreement to make the exchange occurs prior to, and separate from, the actual exchange itself. Thus, for example, while parties may agree on Monday to trade a certain number of dollars for a certain number of euros, the actual exchange will not occur until sometime later, typically several days. This later execution of the parties' previously agreed-upon trade is referred to as settlement. A major risk in this sort of transaction is that one party will perform and send its portion of the exchange at the time for settlement, but the other party will not. Pet. App. 42a-43a.

Mr. Shepherd's invention addresses this problem by using a specially programmed computer to perform settlements in a particular way that mitigates or eliminates the risk that one party to an exchange will perform without the other doing so. In the invention, a computer system electronically maintains accounts for each party (described in the claims as "first" and "third" accounts). These accounts correspond to, but are independent from, "real-world" exchange accounts (described as "second" and "fourth" accounts in the claims) at an exchange institution or institutions (such as a central bank, in the case of currency trades). Pet. App. 71a-72a ('375 patent, claim 26).

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[4] JA365-67, 528-30, 688-89, 849-51.

Upon receiving a transaction from the user, and after ensuring that there is adequate value in each party's account, the computer (in real time) adjusts the accounts it maintains so as to effect the exchange in those accounts. *Id.* at 72a. If either party's account lacks adequate value, the computer will not effect the exchange. Finally, sometime thereafter (for example, at the end of the day), the computer automatically generates an instruction to the exchange institution or institutions to carry out the transaction in their "real-world" accounts. *Id.* For example, in the case of currency settlements, the system might generate and send instructions to the U.S. Federal Reserve Bank and the European Central Bank to move dollars and euros to the parties' accounts maintained with those central banks.

The asserted claims include system, computer-readable media, and method claims. Claim 26 of the '375 patent is typical of Alice's system claims. Pet. App. 71a-72a. That claim recites:

> A data processing system to enable the exchange of an obligation between parties, the system comprising:
>
> a communications controller,
>
> a first party device, coupled to said communications controller,
>
> a data storage unit having stored therein
>
> (a) information about a first account for a first party, independent from a second account maintained by a first exchange institution, and
>
> (b) information about a third account for a second party, independent from a fourth

> account maintained by a second exchange institution; and
>
> a computer, coupled to said data storage unit and said communications controller, that is configured to
>
> (a) receive a transaction from said first party device via said communications controller;
>
> (b) electronically adjust said first account and said third account in order to effect an exchange obligation arising from said transaction between said first party and said second party after ensuring that said first party and/or said second party have adequate value in said first account and/or said third account, respectively; and
>
> (c) generate an instruction to said first exchange institution and/or said second exchange institution to adjust said second account and/or said fourth account in accordance with the adjustment of said first account and/or said third account, wherein said instruction being an irrevocable, time invariant obligation placed on said first exchange institution and/or said second exchange institution.

Id. at 71a-72a (emphases omitted). In other words, the claim recites a computer and other hardware, as well as the structural configuration of that hardware, specifically programmed to solve, in a particular way, the complex problem of settlement risk to which the invention is directed. *Id.* Thus, the computer in claim 26 is configured to receive transactions from the parties to an exchange, to adjust electronically the accounts maintained by the computer, and to generate instructions to the exchange institutions to

implement the exchange in the separate accounts maintained by those institutions. *Id.* The common specification that underlies all of the patents, including the '375 patent, contains flowcharts that provide algorithm support for the specific programming to implement functions recited in the claims. *Id.* at 74a-75a (reproducing an example flowchart, Fig. 16 from the '375 patent).

Claim 33 of the '479 patent is typical of the method claims that cover the computerized process Mr. Shepherd invented. Pet. App. 26a-27a. That claim recites a method for mitigating settlement risk, as the claimed computer system does, through the use of electronic "shadow credit record[s]" and "shadow debit record[s]" held by a "supervisory institution." *Id.* The electronic shadow records reflect the balances in the transacting parties' real-world accounts held at "exchange institutions," and are updated in real time by the supervisory institution as transactions are entered, permitting only those transactions for which the parties' updated shadow records indicate sufficient resources to satisfy their mutual obligations. *Id.* at 27a. At the end of the day, the supervisory institution instructs the exchange institutions to irrevocably exchange credits and debits in the parties' real-world accounts to effect the agreed-upon and permitted transactions. *Id.*[5] It is undisputed that all of the recited method claims require implementation by a computer. *Id.* at 28a.

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[5] Claim 39 of the '375 patent, a representative computer-readable medium claim, recites "a computer readable storage medium having computer readable program code embodied in the medium for use by a party to exchange an obligation between a first party and a second party" in a manner similar to the method recited in claim 33 of the '479 patent. Pet. App. 32a (emphasis omitted).

B. Lower Court Proceedings.

In May 2007, CLS Bank International and CLS Services Ltd. (collectively, "CLS Bank") sued Alice in federal court, pursuant to 28 U.S.C. §§ 1331 and 1338(a), for a declaratory judgment that the asserted claims are invalid, unenforceable, or otherwise not infringed. Alice counterclaimed, alleging that CLS Bank infringed various claims. The parties filed cross-motions for summary judgment on whether the asserted claims define patent-eligible subject matter under section 101. The court granted CLS Bank's motion and denied Alice's, holding that none of the asserted claims defines patent-eligible subject matter. Pet. App. 172a-238a.

A divided panel of the Federal Circuit reversed. The panel majority (Judges Linn and O'Malley) held that the asserted claims "cover the practical application of a business concept in a specific way, which requires computer implemented steps." Pet. App. 159a. Although the asserted claims "fall within different statutory categories"—*i.e.*, system, process, and manufacture claims—the majority reached the same conclusion regarding all of the claims. *Id.* at 154a. Judge Prost dissented.

The Federal Circuit granted CLS Bank's petition for en banc rehearing. Pet. App. 240a. The court instructed the parties to submit additional briefs addressing the following questions:

> a. What test should the court adopt to determine whether a computer-implemented invention is a patent ineligible "abstract idea"; and when, if ever, does the presence of a computer in a claim lend patent eligibility to an otherwise patent-ineligible idea?

> b. In assessing patent eligibility under 35 U.S.C. § 101 of a computer-implemented invention, should it matter whether the invention is claimed as a method, system, or storage medium; and should such claims at times be considered equivalent for § 101 purposes?

Id. The court invited amicus participation, *id.* at 241a, and 25 briefs were submitted on behalf of 47 amici.

C. En Banc Decision.

The en banc court produced a one-paragraph per curiam opinion, five concurring and dissenting opinions, and "additional reflections" by Chief Judge Rader. Pet. App. 1a-131a. Seven of the ten participating judges voted to affirm the district court's decision that the asserted method and computer-readable media claims were not directed to eligible subject matter, but there was no majority as to the proper reasoning to apply. As for the system claims, there was no majority as to reasoning or result, and the judgment was affirmed by an equally divided court.

1. Writing for himself and Judges Dyk, Prost, Reyna, and Wallach, Judge Lourie concurred in the decision to affirm, taking the position that none of the asserted claims was directed to eligible subject matter. Acknowledging that "the patent-eligibility test has proven quite difficult to apply," Judge Lourie sought to propose an "analysis [that] should apply in determining whether a computer-implemented claim recites patent-eligible subject matter." Pet. App. 10a, 19a.

The first question, Judge Lourie wrote, is whether the invention fits within one of section 101's four classes of eligible subject matter. If so, the court must

assess whether "the claim pose[s] any risk of preempting an abstract idea[.]" Pet. App. 20a. If there is such a risk, it is then "important … to identify and define whatever fundamental concept appears wrapped up in the claim." *Id.* Indeed, Judge Lourie reiterated, "one cannot meaningfully evaluate whether a claim preempts an abstract idea until the idea supposedly at risk of preemption has been unambiguously identified." *Id.* The next step is to examine "the balance of the claim." Pet. App. 20a-21a. According to Judge Lourie, the question in reviewing "'the balance of the claim'" is whether it reflects an "inventive concept"[6]—*i.e.*, "human contribution [that] represent[s] more than a trivial appendix to the underlying abstract idea." *Id.* at 22a.

Judge Lourie next applied his analytical framework to Alice's asserted claims, beginning with the method claims. First, he stated that "[t]he methods claimed here draw on the abstract idea of reducing settlement risk by effecting trades through a third-party intermediary (here, the supervisory institution) empowered to verify that both parties can fulfill their obligations before allowing the exchange—*i.e.*, a form of escrow." Pet. App. 28a. He then reviewed the remaining claim limitations one by one, concluding that "none of [them] adds anything of substance to the claim." *Id.* at 29a. In particular, as to the requirement for computer implementation, he stated that "simply appending generic computer functionality to lend speed or efficiency to the performance of an otherwise abstract concept does not meaningfully

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[6] Judge Lourie recognized that, despite his use of the term "inventive," questions of novelty are "'of no relevance in determining whether the subject matter of a claim falls within the § 101 categories.'" Pet. App. 21a-22a (quoting *Diehr*, 450 U.S. at 188-89).

limit claim scope for purposes of patent eligibility." *Id.* More broadly, he explained, "[a]t its most basic, a computer is just a calculator capable of performing mental steps faster than a human could. Unless the claims require a computer to perform operations that are not merely accelerated calculations, a computer does not itself confer patent eligibility." *Id.* at 30a. The computer-readable medium claim was subject to essentially the same analysis because it was drawn "'to the underlying method'" set forth in the process claims. *Id.* at 33a-34a.

Judge Lourie next concluded that the computer system claims were also indistinguishable from the method claims. Although the system claims recited "physical objects," namely computer hardware, Judge Lourie opined that those objects were described "in generic, functional terms," as equipment capable of "carry[ing] out the otherwise abstract methods recited" in the method claims. Pet. App. 36a-39a. Although Judge Lourie recognized that "a computer *per se*" is "surely [a] patent-eligible machin[e]," in his view that was not true of Alice's claimed computer system. *Id.* at 41a. Instead, Judge Lourie stated, the claimed system was better described as "abstract methods coupled with computers adapted to perform those methods." *Id.*

2. Chief Judge Rader wrote an opinion dissenting in part and concurring in part, which was joined by Judges Linn, Moore, and O'Malley.[7] Chief Judge Rader "beg[a]n with the text of the statute." Pet. App. 45a. He noted the breadth of section 101, and that it "both uses expansive categories and modifies them with the word 'any.'" *Id.* at 46a. He also noted that

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[7] As explained below, Part VI of Chief Judge Rader's opinion was joined only by Judge Moore. Pet. App. 41a.

when the statute was amended in 1952, it was made even more sweeping—by, among other things, expanding the definition of "invention" in section 100(a) to mean "invention or discovery"—so that patent eligibility would extend to "'anything that is under the sun that is made by man.'" *Id.* at 48a. Moreover, the 1952 amendment also moved "any need for an 'invention' or 'inventiveness' measure" out of the test for patent-eligibility, replacing it with the "objective test for 'obviousness' in Section 103." *Id.* at 50a.

Chief Judge Rader next observed that the exceptions to patent-eligibility that this Court has identified focus on whether "the asserted claim *as a whole*" covers "merely an abstract idea." Pet. App. 53a-54a. Reviewing the claim "*as a whole*" is essential, because "[a]ny claim can be stripped down, simplified, generalized, or paraphrased to remove all of its concrete limitations, until at its core, something that could be characterized as an abstract idea is revealed." *Id.* at 54a. In determining whether a claim, as a whole, covers merely an abstract idea, the relevant inquiry is whether the claim "includes *meaningful* limitations restricting it to an application." *Id.* at 57a. A claim that "covers all practical applications of an abstract idea," or that "contains only insignificant or token pre- or post-solution activity" "is not meaningfully limited." *Id.* at 58a-60a. As applied to a computer-implemented claim, the meaningful-limitation inquiry asks "whether the claims tie the otherwise abstract idea to a *specific way* of doing something with a computer, or a *specific computer* for doing something; if so, they likely will be patent eligible, unlike claims directed to *nothing more than the idea* of doing something on a computer." *Id.* at 62a. Finally, Chief Judge Rader

observed that like all "judge-made exceptions to properly enacted statutes," the exception for abstract ideas should be "narrowly construed" in order to avoid "improper narrowing" of the scope of section 101. *Id.* at 66a.

Applying his analytical framework to the asserted claims, beginning with the system claims, Chief Judge Rader stated at the outset that "[c]omputers are 'machines.'" Pet. App. 69a. Citing this Court's observation in *Bilski* that a method claim's reliance on a machine is a "useful and important clue" to patent-eligibility, 130 S. Ct. at 3227, Chief Judge Rader observed that "[i]f tying a method to a machine can be an important indication of patent-eligibility, it would seem that a claim embodying the *machine itself*, with all its structural and functional limitations, would rarely, if ever, be an abstract idea." Pet. App. 70a. Looking to claim 26 of the '375 patent, one of the representative computer system claims, Chief Judge Rader observed that the claim "covers the use of a computer and other hardware specifically programmed to solve a complex problem." *Id.* at 73a. In addition to the hardware recited in the claim, the specification "discloses at least thirty-two figures which provide detailed algorithms for the software with which this hardware is to be programmed," and "explains implementation of the recited special purpose computer system[s]." *Id.* Moreover, the claimed system is not coextensive with the "abstract concept" of escrow generally: "[t]he recited steps are not inherent in the process of using an escrow," and "someone can use an escrow arrangement in many other applications, without computer systems, and even with computers but in other ways without infringing the claims." *Id.* at 77a-78a.

In a part of his opinion joined only by Judge Moore, Chief Judge Rader concluded that the method and computer-readable medium claims are not directed to eligible subject matter. He opined that the method claims "describe[] the general and theoretical concept of using a neutral intermediary in exchange transactions to reduce risk that one party will not honor the deal," and concluded that each of the steps in the claimed method was "an inherent part" of such an escrow arrangement. Pet. App. 82a. The claims' reference to computer implementation was "not, by itself, enough." *Id.* at 84a. Thus, Chief Judge Rader stated, "like Judge Lourie, we [Chief Judge Rader and Judge Moore] would hold the method claims in this case are not eligible under Section 101, but would do so for different reasons than he articulates." *Id.*

3. Judge Moore filed an additional opinion dissenting in part, which was joined by Chief Judge Rader and Judges Linn and O'Malley. Judge Moore underscored both the importance of the issue before the court and the flaws in Judge Lourie's analysis. As to the first point, Judge Moore observed that "lumping together the asserted method, media, and system claims" and "[h]olding that all of these claims are directed to no more than an abstract idea gives staggering breadth to what is meant to be a narrow judicial exception." Pet. App. 85a. In fact, Judge Moore wrote, "if all of these claims, including the system claims, are not patent-eligible, this case is the death of hundreds of thousands of patents, including all business method, financial system, and software patents as well as many computer implemented and telecommunications patents." *Id.* at 86a. Adopting Judge Lourie's reasoning "would decimate the electronics and software industries." *Id.* at 86a n.1.

As to the second point, Judge Lourie erred, Judge Moore explained, by misreading this Court's precedents. Judge Lourie failed to recognize the indication in *Bilski* that "a method claim's recitation of machine limitations is a 'useful and important clue' that the claim is patent-eligible." Pet. App. 88a. Echoing Chief Judge Rader, Judge Moore explained that "if meaningfully tying a method to a machine can be an important indication of patent-eligibility, how can a claim to the *machine itself*, with all its structural and functional limitations, *not* be patent-eligible?" *Id.* Judge Lourie also misapplied the "inventive concept" language that this Court used in *Mayo* to "imbue[] the § 101 inquiry with a time-dependency that is more appropriately the province of §§ 102 and 103.… [Section] 101 is not a moving target—claims should not become abstract simply through the passage of time." *Id.* at 90a.

4. Judge Newman wrote a separate opinion concurring in part and dissenting in part. She agreed that the claims must stand or fall together, but opined that all were directed to eligible subject matter. Pet. App. 113a. She emphasized that the Federal Circuit's inability to provide definite guidance as to the meaning of section 101 will "simply … add to the unreliability and cost of the system of patents as an incentive for innovation." *Id.* at 100a. The result of the Federal Circuit's impasse "is that any successful innovation is likely to be challenged in opportunistic litigation, whose result will depend on the random selection of the panel." *Id.*

5. Judge Linn, joined by Judge O'Malley, wrote an opinion concluding, as they had when they made up the panel majority, that all of Alice's claims are patent-eligible, because all are "grounded by the same meaningful limitations." Pet. App. 113a-14a.

Judge Lourie's analysis was flawed, Judge Linn explained, because it "strip[ped] the claims of their detail and limitations" in direct contravention of this Court's instruction in *Diehr* that section 101 be applied to the claims as a whole, an error that resulted in a "paraphrased abstraction of the claims" that "preordained[ed]" Judge Lourie's conclusion that they were not patent-eligible. *Id.* at 121a. Chief Judge Rader, in contrast, had properly analyzed the computer system claims, but erred as to the method and computer-readable medium claims because he failed to recognize, as the record made clear and CLS Bank had stipulated, that *all* of the claims require electronic implementation on a computer. *Id.* at 118a-19a. Once the method and medium claims are properly understood to require all of the computer-implemented limitations of the system claims, they neither are abstract, nor do they preempt all commercial uses or applications of the supposed abstract idea of using an intermediary to facilitate financial transactions. *Id.* at 124a.

6. Finally, Chief Judge Rader offered further views in a statement denominated "Additional Reflections." He bemoaned the departure in section 101 jurisprudence from the text of the statute, and the lack of clarity that the departure has caused. Pet. App. 127a-30a. In particular,

> to inject the patentability test of "inventiveness" into the separate statutory concept of subject matter eligibility makes this doctrine again "the plaything of the judges who, as they became initiated into its mysteries, delighted to devise and expound their own ideas of what it meant; some very lovely prose resulting."

Id. at 130a (quoting Giles S. Rich, *Principles of Patentability*, 28 Geo. Wash. L. Rev. 393, 404 (1960)).

REASONS FOR GRANTING THE PETITION

I. NO CLEAR STANDARD EXISTS, AND THE FEDERAL CIRCUIT IS ADMITTEDLY AND HOPELESSLY FRACTURED.

Although this Court has examined section 101 on several occasions in recent years, it has not addressed the application of section 101 to a computer-implemented invention in more than three decades. And it has never examined the application of section 101 in the context of computer-based systems or software. In the time since *Diehr*, *Benson*, and *Flook*, both dramatic changes in information technology and evolution in this Court's reading of section 101—particularly in *Bilski* and *Mayo*—have given rise to tremendous uncertainty as to the application of section 101 to computer-implemented inventions.[8] Given the importance of computers and software to our nation's economy, the time is ripe for the Court to address these issues.

The Court need look no further than the Federal Circuit's inability to make a decision concerning the computer system claims, and the hundreds of pages of opinions proposing approaches on which a majority of the court could not agree, to recognize the

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[8] This Court's opinion in *Myriad* was issued after the decision below and was not considered by the en banc Federal Circuit. However, *Myriad* addressed a different judicial exception to patent-eligibility (natural phenomena) applied to an entirely different industry (gene sequencing). *See* 133 S. Ct. at 2111-13. Accordingly, *Myriad* would not likely have changed the outcome or reasoning offered here. Indeed, as described at p. 23-24, *infra*, precisely the same dispute that prevented consensus in this case similarly fractured the Federal Circuit's decision in *Ultramercial, Inc.* v. *Hulu, Inc.*, 2013 WL 3111303 (Fed. Cir. June 21, 2013), *petition for cert. filed*, No. 13-255 (Aug. 23, 2013), issued *after Myriad* was handed down.

enormous confusion that exists. The opinions are replete with observations that the application of section 101 to computer-implemented inventions remains plagued with uncertainties that have caused and will continue to cause confusion in the courts and before the Patent and Trademark Office, as well as harm to innovation in the information technology field and beyond. Pet. App. 10a ("the patent-eligibility test has proven quite difficult to apply") (Lourie, J.); *id.* at 85a ("the current interpretation of § 101, and in particular the abstract idea exception, is causing a free fall in the patent system") (Moore, J.); *id.* at 87a ("Our court is irreconcilably fractured ….") (Moore, J.); *id.* at 100a ("we have propounded at least three incompatible standards, devoid of consensus, serving simply to add to the unreliability and cost of the system of patents as an incentive for innovation") (Newman, J.); *id.* at 129a ("The intervening commotion [since *Diehr* and other decisions] leaves us with little, if any, agreement amongst us even though the statute has not changed a syllable.") (Rader, C.J.).

The decision here is no isolated incident. Since this Court's decision in *Bilski*, the Federal Circuit has repeatedly employed different, and inconsistent, tests to evaluate computer-implemented inventions. Compare*, e.g.*, *Research Corp. Techs., Inc.* v. *Microsoft Corp.*, 627 F.3d 859, 868 (Fed. Cir. 2010) (computer-implemented invention is ineligible subject matter only where abstractness "exhibit[s] itself so manifestly as to override the broad statutory categories of eligible subject matter and the statutory context that directs primary attention on the patentability criteria of the rest of the Patent Act"), and *Ultramercial, LLC* v. *Hulu, LLC*, 657 F.3d 1323, 1330 (Fed. Cir. 2011) ("as a practical application of the general concept of advertising as currency and an improvement to prior

art technology, the claimed invention is not 'so manifestly abstract as to override the statutory language of section 101.'"), *vacated*, 132 S. Ct. 2431 (2012), with *Bancorp Servs., LLC* v. *Sun Life Assurance Co. of Can. (U.S.)*, 687 F.3d 1266, 1278 (Fed. Cir. 2012) ("To salvage an otherwise patent-ineligible process, a computer must be *integral* to the claimed invention, facilitating the process in a way that a person making calculations or computations could not.") (emphasis added), and *Cybersource Corp.* v. *Retail Decisions, Inc.*, 654 F.3d 1366, 1375 (Fed. Cir. 2011) (asking whether computer-focused limitation "impose[d] a sufficiently meaningful limit on the claim's scope" and whether the computer "'play[ed] a significant part in permitting the claimed method to be performed.'"). As the Federal Circuit observed in 2012, "[o]ur opinions spend page after page revisiting our cases and those of the Supreme Court, and still we continue to disagree vigorously over what is or is not patentable subject matter." *MySpace, Inc.* v. *GraphOn Corp.*, 672 F.3d 1250, 1259 (Fed. Cir. 2012) (citing *Dealertrack, Inc.* v. *Huber,* 674 F.3d 1315 (Fed. Cir. 2012) (Plager, J., dissenting-in-part); *Classen Immunotherapies, Inc.* v. *Biogen IDEC,* 659 F.3d 1057 (Fed. Cir. 2011) (Moore, J.; dissenting); *Ass'n for Molecular Pathology* v. *U.S. Patent & Trademark Office,* 653 F.3d 1329 (Fed. Cir. 2011) (concurring opinion by Moore, J., dissenting opinion by Bryson, J.); *In re Ferguson,* 558 F.3d 1359 (Fed. Cir. 2009) (Newman, J., concurring)).

The Judges of the Federal Circuit have found the application of section 101 to be so uncertain that some have recommended that courts strive to steer clear of section 101's "murky morass" altogether, *MySpace*, 672 F.3d at 1260, notwithstanding section 101's status as a "threshold test," *Bilski*, 130 S. Ct. at

3225. In *MySpace*, Judge Plager writing for the majority suggested that "courts could avoid the swamp of verbiage that is § 101 by exercising their inherent power to control the processes of litigation, and insist that litigants initially address patent invalidity issues in terms of the conditions of patentability defenses as the statute provides, specifically §§ 102, 103, and 112." 672 F.3d at 1260 (citation omitted). If courts were to do so, "it would be unnecessary to enter the murky morass that is § 101 jurisprudence." *Id.*; see also Dennis Crouch & Robert P. Merges, *Operating Efficiently Post-Bilski by Ordering Patent Doctrine Decision-Marking*, 25 Berkeley Tech. L.J. 1673, 1674, 1678 (2010) (suggesting, in light of the "bedeviling lack of guidance over what patent applicants and patentees can expect when § 101 is applied to a specific patent claim," that patent-eligibility "be considered only when doing so is absolutely necessary").

Of course, no competent lawyer would advise an alleged infringer not to raise a section 101 defense, and district courts presumably will follow this Court's admonition that section 101 is a "threshold" test and at least some will apply section 101 formulations adopted by particular Federal Circuit panels that will potentially sweep protracted and complicated patent litigation off their dockets. It is fanciful to think that a district court will find wading into the "morass" of section 101 more daunting than the analysis of complicated technology that is often required by sections 102, 103, and 112.

And the conflict over the meaning of section 101 has continued, even in the short time since the decision below. One month after the en banc ruling—and eight days after this Court's decision in *Myriad*—the same debate played out again in *Ultramercial,*

LLC v. *Hulu, LLC*, 2013 WL 3111303 (Fed. Cir. June 21, 2013). There, Chief Judge Rader, writing for the panel majority, offered much the same analysis of section 101 as that recounted in his opinion in this case. Compare Pet. App. 45a-52a, with *Ultramercial*, 2013 WL 3111303, at *4-13. For his part, Judge Lourie submitted an opinion concurring in the judgment in which he reiterated the same views offered in *his* opinion below. *Ultramercial*, 2013 WL 3111303, at *17-18 ("I write separately because I believe that we should concisely and faithfully follow the Supreme Court's most recent guidance regarding patent eligibility in *Mayo* …, and should track the plurality opinion of five judges from this court in *CLS Bank International* v. *Alice Corp.*") (citations omitted). Indeed, even the *Ultramercial* panel's discussion of the *procedural* aspects of that case was affected by the lack of a governing standard for the application of section 101. *See id.* at *3. The losing party in *Ultramercial* recently filed its own petition (No. 13-255) seeking review of the conflict stemming from the en banc decision in this case.

There is no prospect that this dispute or uncertainty will be resolved by the Federal Circuit. The court of appeals reheard this case en banc for the specific purpose of establishing a standard for assessing the patent-eligibility of computer-implemented inventions. See Pet. App. 240a. After hearing from the parties and from amici representing the full spectrum of the patent bar; the information technology, e-commerce, financial services, and other industries; and the United States, the court utterly failed to provide any meaningful guidance. See, *e.g.*, *id.* at 99a-100a ("The court, now rehearing this case en banc, hoped to ameliorate this uncertainty by providing objective standards for section 101 patent-

eligibility. Instead we have propounded at least three incompatible standards, devoid of consensus, serving simply to add to the unreliability and cost of the system of patents as an incentive for innovation.") (Newman, J.). Indeed, Judge Moore's opinion, joined by three other judges, all but begs this Court to intervene:

> Our court is irreconcilably fractured over these system claims and there are many similar cases pending before our court and the district courts. It has been a very long time indeed since the Supreme Court has taken a case which contains patent eligible claims. This case presents the opportunity for the Supreme Court to distinguish between claims that *are* and *are not* directed to patentable subject matter.

Id. at 87a. The Court should respond to Judge Moore's plea by reviewing this case.

II. THE JUDGMENT BELOW CONFLICTS WITH THIS COURT'S PRECEDENTS.

The Court also should grant review to establish that the judgment below—and particularly the approach set forth in Judge Lourie's plurality opinion, which the Federal Circuit has elsewhere applied in precedential decisions[9]—conflicts with this Court's precedents. Indeed, the plurality's approach cannot be reconciled with this Court's opinion in *Diehr*, which was reaffirmed in both *Bilski*, 130 S. Ct. at 3229-30, and *Mayo*, 132 S. Ct. at 1298-99.

The first step in the plurality's approach to section 101 is to "unambiguously identif[y]" the abstract idea that is supposedly preempted by a patent claim. Pet. App. 20a. Next, "the balance of the

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[9] *E.g.*, *Bancorp*, 687 F.3d 1266.

claim" is evaluated to determine whether any specific limitations are sufficiently "'inventive'"—*i.e.*, representative of a "human contribution" that is not "merely tangential, routine, well-understood, or conventional." *Id.* at 20a-23a. But this Court expressly rejected such an approach in *Diehr*.

In *Diehr,* this Court considered the patent-eligibility of a process for curing synthetic rubber, which included in several of its steps the use of a mathematical algorithm and a programmed computer. 450 U.S. 175, 177-78 (1981). The Court explained that it is fundamentally inappropriate to separate out the supposed abstract idea—in that case, the algorithm—from the "balance of the claim." *Id*. at 188-89. Instead, "claims must be considered as a whole. *It is inappropriate to dissect the claims into old and new elements and then to ignore the presence of the old elements in the analysis.*" *Id.* at 188 (emphasis added). Indeed, the petitioner in *Diehr* advocated an approach remarkably similar to the plurality's, arguing that "if everything other than the algorithm is determined to be old in the art, then the claim cannot recite statutory subject matter." *Id.* at 189 n.12. But this Court explicitly rejected that position, explaining that the analysis the petitioner proposed "would, if carried to its extreme, make all inventions unpatentable because all inventions can be reduced to underlying principles of nature which, once known, make their implementation obvious." *Id.* The same is true of the approach taken by the plurality here. See Pet. App. 48a-49a (Rader, C.J.) (criticizing the plurality's approach on this ground).

The Court in *Diehr* also made clear that the section 101 analysis should not turn on the novelty of any individual claim limitations—or even the claim as a whole. As the Court explained, "[t]he 'novelty' of

any element or steps in a process, or even of the process itself, is *of no relevance* in determining whether the subject matter of a claim falls within the § 101 categories of possibly patentable subject matter." *Diehr*, 450 U.S. at 188-89 (emphasis added). The plurality's analysis, however, departs from this fundamental principle as well. Here, the plurality examined the limitations in the claimed methods to determine whether each was sufficiently "inventive" and not overly "well-understood" or "conventional." Pet. App. 21a-24a, 29a-31a.

Finally, the plurality, along with most of the other judges on the en banc court, concluded that all of the asserted claims—system, media, and method—should be treated alike on the ground that "the asserted method and system claims require performance of the same basic process." Pet. App. 39a. This conclusion, too, violates this Court's instruction that each claim must be considered *as a whole*, not by stripping away all of its limitations to look solely at the "gist" of the invention. *Diehr*, 450 U.S. at 188-89 & n.12; *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 365 U.S. 336, 345 (1961) ("[T]here is no legally recognizable or protected 'essential' element, 'gist' or 'heart' of the invention …."). Moreover, as Chief Judge Rader and Judge Moore explained, this approach disregards the instruction of this Court in *Bilski* that connecting a method to a machine, as the asserted claims expressly and concretely do, is indicative of patent-eligibility, 130 S. Ct. at 3227: "[I]f meaningfully tying a method to a machine can be an important indication of patent-eligibility, how can a claim to the *machine itself*, with all its structural and functional limitations, *not* be patent-eligible?" Pet. App. 88a; *id.* at 70a.

The Court should take this opportunity to confirm that the approach to section 101 outlined in *Diehr* and reaffirmed in *Bilski* and other cases, which requires considering patent claims as a whole, is the proper way to analyze patent-eligibility under section 101, and that the approach reflected in the decision below is erroneous. As the panel majority recognized, under the proper analysis, Alice's asserted claims are directed to patent-eligible subject matter.

III. PROMPT INTERVENTION BY THIS COURT IS NEEDED TO AVOID CONFUSION IN THE LAW AND HARM TO INNOVATION.

Clear standards are essential in patent law. See, *e.g.*, *Bilski*, 130 S. Ct. at 3231 (Stevens, J., concurring in the judgment) ("In the area of patents, it is especially important that the law remain stable and clear."); *Festo Corp.* v. *Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 730-31 (2002). The absence of clear standards—particularly clear standards as to the definitional question of what constitutes patent-eligible subject matter—has dramatic implications for innovators, industry, and the broader economy.

The state of confusion that now exists concerning the patent-eligibility of computer-implemented inventions is no exception. As Judge Moore, writing for herself, Chief Judge Rader, and Judges Linn and O'Malley, put it: "the current interpretation of § 101, and in particular the abstract idea exception, is causing a free fall in the patent system." Pet. App. 85a. The fractured decision below creates the stark prospect that a host of inventions will now be declared unpatentable: "[I]f all of these claims, including the system claims, are not patent-eligible, this case is the death of hundreds of thousands of

patents, including all business method, financial system, and software patents as well as many computer implemented and telecommunications patents." *Id.* at 85a-86a. Indeed, as Judge Moore explained, "[i]f the reasoning of Judge Lourie's opinion were adopted, it would decimate the electronics and software industries. There are of course, software, financial system, business method and telecom patents in other technology classes which would also be at risk." *Id.* at 86a n.1.

The uncertainty itself imposes real costs on courts, litigants, innovators, and the broader economy. With uncertainty comes increased litigation, and "[t]he ascendance of section 101 as an independent source of litigation, separate from the merits of patentability, is a new uncertainty for inventors." Pet. App. 99a (Newman, J.). The "deadlock" in the decision below means that "any successful innovation is likely to be challenged in opportunistic litigation, whose result will depend on the random selection of the panel." *Id.* at 100a. As Judge Newman summarized:

> Reliable application of legal principles underlies the economic incentive purpose of patent law, in turn implementing the benefits to the public of technology-based advances, and the benefits to the nation of industrial activity, employment, and economic growth. Today's irresolution concerning section 101 affects not only this court and the trial courts, but also the PTO examiners and agency tribunals, and all who invent and invest in new technology. The uncertainty of administrative and judicial outcome and the high cost of resolution are a disincentive to both innovators and competitors.

Id. Clearer guidance on standards in this area of critical importance to the economy is essential, but

does not exist and cannot exist without this Court's intervention.

Even before the decision below, commentators heavily criticized the absence of clear standards for the application of section 101. See, *e.g.*, Jonathan Masur, *Patent Inflation*, 121 Yale L.J. 470, 529 (2011) (explaining that when "[f]aced with uncertain law" as to the patent-eligibility of computer-implemented inventions, "[t]he PTO found itself pushing the legal frontier without a clear signal from the Federal Circuit"); Donald S. Chisum, *Weeds and Seeds in the Supreme Court's Business Method Patent Decision: New Directions for Regulating Patent Scope*, 15 Lewis & Clark L. Rev. 11, 14 (2011) ("[T]he Section 101 abstract idea preemption inquiry can lead to subjectively-derived, arbitrary and unpredictable results."); Mark A. Lemley et al., *Life After Bilski*, 63 Stan. L. Rev. 1315, 1325 (2011). Indeed, one district court delayed its ruling on a section 101 issue while the en banc decision here was pending, based on the hope—which proved futile—that "help [was] on the way" in the form of a definitive statement from the Federal Circuit. *Zillow v. Trulia*, 2013 WL 594300, at *2 (W.D. Wash. Feb. 15, 2013). In the months since the decision, commentators have, in huge numbers,[10] decried the continued confused state of the law. See, *e.g.*, Gene Quinn, *Federal Circuit Nightmare in CLS Bank v. Alice Corp.,* IPWatchdog (May 10, 2013), http://www.ipwatchdog.com/2013/05/10/federal-circuit-nightmare-in-cls-bank-v-alice-corp/id=40230/ ("How is the Patent Office supposed to process this decision? How are patent examiners supposed to apply this monstrosity? How are patent practitioners

[10] A Google search for the term "CLS Bank v. Alice" produces nearly 800,000 results.

supposed to write patent applications covering these important innovations."); Edward Van Gieson, *A Strategy for Dealing with the CLS Bank Decision,* Law360 (May 30, 2013), www.law360.com/articles/446251/a-strategy-for-dealing-with-the-cls-bank-decision ("It may be some years before any clear and consistent framework is articulated.").[11]

Industry participants have demonstrated the importance of prompt resolution of this issue, with 25 briefs filed in the Federal Circuit on behalf of 47 amici, including Google, Dell, Facebook, IBM, and Philips. Numerous amici specifically addressed the effect that unpredictability in this area of patent law has on the information technology industry and the broader economy. See, *e.g.*, Brief of Amicus Curiae International Business Machines Corporation, at 3-4 ("Clarity and predictability in the patent law are imperative.… Certainty is especially critical in the information technology sector where computer-implemented inventions are commonplace."); Brief of Amicus Curiae Intellectual Property Owners Association at 3 ("The issue of patent eligibility of computer-implemented inventions is crucially important to … the broader U.S. economy."); Brief of Amicus Curiae New York Intellectual Property Law

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[11] *See also* Robert A. Sachs, *CLS v. Alice: The Federal Circuit at a Jurisprudential Deadlock*, Bilski Blog (May 14, 2013), http://www.bilskiblog.com/blog/2013/05/cls-v-alice-the-federal-circuit-at-a-jurisprudential-deadlock.html; John Kong, *The Alice in Wonderland En Banc Decision by the Federal Circuit in CLS Bank v. Alice Corp*, IPWatchdog (May 14, 2013), http://www.ipwatchdog.com/2013/05/14/the-alice-in-wonderland-en-banc-decision-by-the-federal-circuit-in-cls-bank-v-alice-corp/id=40344/; Nelson R. Capes, *CLS Bank v. Alice Corp.: a new hermeneutic of suspicion*, Lexology (June 12, 2013), http://www.lexology.com/library/detail.aspx?g=be43dee6-08cf-4b1e-b56c-6d1b5f7f8f35.

Association at 2 ("Recently, the jurisprudence on patent-eligibility has placed a cloud over many patents, particularly computer-implemented inventions.").

Granting certiorari in this case will allow this Court in a timely way to resolve the uncertainty that is currently plaguing the district courts, the PTO, innovators, and industry. Indeed, this case presents the Court with a unique opportunity to examine whether claims to a variety of computer-implemented inventions—including method claims, computer-readable medium claims, and system claims—are directed to patent-eligible subject matter. While at some level of generality, claims that are directed to different statutory categories may cover similar inventions, claims that fall within different categories are not necessarily the same in scope. See, *e.g.*, *In re Kollar*, 286 F.3d 1326, 1332 (Fed. Cir. 2002). Claims that are drawn to different statutory categories are directed to different inventions and ordinarily have different limitations. By granting review in this case, this Court will have the ability to advise the lower courts, the PTO, and innovators on how the assessment of a system claim, which recites specifically configured computer hardware, may differ from that of a method claim, which recites use of a computer to perform a specific operation. Because the patent claims at issue here cover the full range of computer-related inventions—computer systems, computer-implemented methods, and computer-readable media—this case will allow the Court to craft a comprehensive, rather than piecemeal, approach to computer-related inventions.

CONCLUSION

For the foregoing reasons, the petition for a writ for certiorari should be granted.

Respectfully submitted,

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September 4, 2013

APPENDIX

APPENDIX A

UNITED STATES COURT OF APPEALS
FEDERAL CIRCUIT

No. 2011-1301

CLS BANK INTERNATIONAL,
Plaintiff-Appellee,

and

CLS SERVICES LTD.,
Counterclaim Defendant-Appellee,

v.

ALICE CORPORATION PTY. LTD.,
Defendant-Appellant.

May 10, 2013

OPINION

Opinion for the court filed PER CURIAM.

Concurring opinion filed by LOURIE, Circuit Judge, in which DYK, PROST, REYNA, and WALLACH, Circuit Judges, join.

PER CURIAM.

Upon consideration en banc, a majority of the court affirms the district court's holding that the asserted

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* Circuit Judge Taranto did not participate in this decision.

method and computer-readable media claims are not directed to eligible subject matter under 35 U.S.C. § 101. An equally divided court affirms the district court's holding that the asserted system claims are not directed to eligible subject matter under that statute.

AFFIRMED

LOURIE, Circuit Judge, concurring, with whom Circuit Judges DYK, PROST, REYNA, and WALLACH join.

Alice Corporation ("Alice") appeals from the grant of summary judgment in favor of declaratory judgment plaintiffs CLS Bank International and CLS Services, Ltd. (collectively, "CLS") by the United States District Court for the District of Columbia holding that certain claims of Alice's U.S. Patents 5,970,479 (the "'479 patent"), 6,912,510 (the "'510 patent"), 7,149,720 (the "'720 patent"), and 7,725,375 (the "'375 patent") are invalid under 35 U.S.C. § 101. *CLS Bank Int'l v. Alice Corp.*, 768 F.Supp.2d 221 (D.D.C.2011). On July 9, 2012, a panel of this court reversed, holding that the claims at issue, including claims drawn to methods, computer-readable media, and systems, were all patent eligible under § 101. *CLS Bank Int'l v. Alice Corp.*, 685 F.3d 1341 (Fed.Cir.2012), *vacated*, 484 Fed.Appx. 559 (Fed.Cir.2012). CLS filed a petition for rehearing en banc, which was granted on October 9, 2012. *CLS Bank Int'l v. Alice Corp.*, 484 Fed.Appx. 559 (Fed.Cir.2012).

As described more fully below, we would affirm the district court's judgment in its entirety and hold that the method, computer-readable medium, and

corresponding system claims before us recite patent-ineligible subject matter under 35 U.S.C. § 101.[1]

BACKGROUND

I. Alice's Patents

Alice, an Australian company, owns the '479, '510, '720, and '375 patents by assignment. The patents, which all derive from the same family and share substantially the same specification, concern "the management of risk relating to specified, yet unknown, future events." '479 patent col. 1, ll. 8-10. In particular, the patents relate to a computerized trading platform used for conducting financial transactions in which a third party settles obligations between a first and a second party so as to eliminate "counterparty" or "settlement" risk. *CLS Bank*, 768 F.Supp.2d at 224. Settlement risk refers to the risk to each party in an exchange that only one of the two parties will actually pay its obligation, leaving the paying party without its principal or the benefit of the counterparty's performance. Alice's patents address that risk by relying on a trusted third party to ensure the exchange of either both parties' obligations or neither obligation. *Id*.

For example, when two parties agree to perform a trade, in certain contexts there may be a delay between the time that the parties enter a contractual

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[1] While Chief Judge Rader is correct to note that no single opinion issued today commands a majority, seven of the ten members, a majority, of this en banc court have agreed that the method and computer-readable medium claims before us fail to recite patent-eligible subject matter. In addition, eight judges, a majority, have concluded that the particular method, medium, and system claims at issue in this case should rise or fall together in the § 101 analysis.

agreement obligating themselves to the trade and the time of settlement when the agreed trade is actually executed. Ordinarily, the parties would consummate the trade by paying or exchanging their mutual obligations after the intervening period, but in some cases one party might become unable to pay during that time and fail to notify the other before settlement. *Id*. As disclosed in Alice's patents, a trusted third party can be used to verify each party's ability to perform before actually exchanging either of the parties' agreed-upon obligations. *Id*.; *see also* '479 patent col. 5 ll. 61-63 ("The invention also encompasses apparatus and method dealing with the handling of contracts at maturity, and specifically the transfer of entitlement.").

The claims currently before the court include claims 33 and 34 of the '479 patent and all claims of the '510, '720, and '375 patents. The relevant claims of the '479 and '510 patents recite methods of exchanging obligations between parties, the claims of the '720 patent are drawn to data processing systems, and the claims of the '375 patents claim data processing systems as well as computer-readable media containing a program code for directing an exchange of obligations.

II. District Court Proceedings

On May 24, 2007, CLS filed suit against Alice seeking a declaratory judgment of noninfringement, invalidity, and unenforceability as to the '479, '510, and '720 patents. Alice answered and counterclaimed, alleging infringement. By the agreement of the parties, the district court allowed limited initial discovery, addressing only the questions of (i) the operations of CLS, and (ii) CLS's relationship with the accused CLS system. *CLS Bank Int'l v. Alice Corp*.,

No. 07-cv-00974 (D.D.C. Feb. 21, 2008), ECF No. 24 (Scheduling Order).

In March 2009, following limited discovery, CLS moved for summary judgment on the bases that any possible infringement could not be said to have occurred in the United States and that Alice's asserted claims were drawn to ineligible subject matter and therefore invalid under 35 U.S.C. § 101. Alice filed cross-motions on both issues. The district court denied CLS's motion as to extraterritoriality on October 13, 2009, finding that CLS's alleged infringing acts fell within the reach of domestic patent law. *CLS Bank Int'l v. Alice Corp.*, 667 F.Supp.2d 29, 33-38 (D.D.C.2009). Regarding subject-matter eligibility under § 101, the district court summarily denied the parties' motions on June 16, 2009, without prejudice to refiling, after the Supreme Court granted certiorari to review our decision in *In re Bilski*, 545 F.3d 943 (Fed.Cir.2008) (en banc), *cert. granted sub. nom. Bilski v. Doll*, — U.S. —, 129 S.Ct. 2735, 174 L.Ed.2d 246 (2009).

In the meantime, the '375 patent issued, and Alice filed amended counterclaims additionally asserting that CLS infringed each claim of the '375 patent. After the Supreme Court issued its decision in *Bilski v. Kappos*, — U.S. —, 130 S.Ct. 3218, 177 L.Ed.2d 792 (2010), the parties renewed their crossmotions for summary judgment on the question of validity under § 101, with CLS adding invalidity contentions drawn to the newly issued '375 patent. Along with the parties' briefing, the district court also had before it (i) the asserted patents themselves, (ii) excerpts from the patents' prosecution histories, (iii) various guidelines issued by the United States Patent and Trademark Office ("PTO") regarding the application of § 101

during patent examination, and (iv) a declaration submitted by Alice's expert Paul Ginsberg. In particular, Mr. Ginsberg explained the operation of Alice's systems and methods, *see generally CLS Bank*, 768 F.Supp.2d at 224, and opined that a person of skill in the art reading the asserted patents would conclude that the claimed inventions must be implemented electronically using "some type of computing processor and memory." Ginsberg Decl., ECF No. 95-3, Ex. 1 ¶ 41.

The district court did not conduct claim construction before reaching the merits of the § 101 issue, but the parties agreed for purposes of deciding their summary judgment motions that Alice's claims should all be interpreted to require a computer including at least "a processor and memory." *CLS Bank*, 768 F.Supp.2d at 236; *see id*. at 235-36 ("The Court has yet to construe the terms of these claims. . . . [F]or purposes of these motions, CLS has agreed to assume a construction of terms favorable to Alice."). With the parties' assent, the district court assumed that all of the asserted claims required electronic implementation, noting consistent disclosures in the patents' specifications as well as the statements of Alice's expert, Mr. Ginsberg. *Id*. at 236.

With that understanding of the claims, the district court granted summary judgment in favor of CLS, holding each of the asserted claims of Alice's patents invalid under § 101. The district court concluded that Alice's method claims "are directed to an abstract idea of employing an intermediary to facilitate simultaneous exchange of obligations in order to minimize risk." *Id*. at 243. Further, the district court held the asserted system claims similarly ineligible, as those claims "would preempt the use of the abstract

concept of employing a neutral intermediary to facilitate simultaneous exchange of obligations in order to minimize risk on any computer, which is, as a practical matter, how these processes are likely to be applied." *Id*. at 252. The asserted media claims failed on the same ground as "directed to the same abstract concept despite the fact they nominally recite a different category of invention." *Id*. at 255.

Accordingly, the district court entered final judgment in favor of CLS, and Alice timely appealed. We have jurisdiction under 28 U.S.C. § 1295(a)(1).

DISCUSSION

I. Standard of Review

We review the grant or denial of summary judgment applying the law of the relevant regional circuit. *Teva Pharm. Indus. v. AstraZeneca Pharm. LP*, 661 F.3d 1378, 1381 (Fed.Cir.2011). The D.C. Circuit considers a district court's grant of summary judgment without deference. *Theodore Roosevelt Conservation P'ship v. Salazar*, 661 F.3d 66, 72 (D.C.Cir.2011). We apply our own law, however, with respect to issues of substantive patent law. *Aero Prods. Int'l, Inc. v. Intex Recreation Corp*., 466 F.3d 1000, 1016 (Fed.Cir.2006). Patent eligibility under § 101 presents an issue of law that we review *de novo*. *Bancorp Servs., LLC v. Sun Life Assurance Co. of Can*., 687 F.3d 1266, 1273 (Fed.Cir.2012).

II. Section 101

A. Statutory Subject Matter and Common Law Exceptions

"Whoever invents or discovers any new and useful process, machine, manufacture, or composition of

matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title." 35 U.S.C. § 101 (2006). Short and unadorned, § 101 appears deceptively simple on its face, yet its proper application to computer-implemented inventions and in various other fields of technology has long vexed this and other courts.

The statute sets forth four broadly stated categories of patent-eligible subject matter: processes, machines, manufactures, and compositions of matter. As the Supreme Court has explained, Congress intended that the statutory categories would be broad and inclusive to best serve the patent system's constitutional objective of encouraging innovation. *See Diamond v. Chakrabarty*, 447 U.S. 303, 308-09, 100 S.Ct. 2204, 65 L.Ed.2d 144 (1980) ("In choosing such expansive terms as 'manufacture' and 'composition of matter,' modified by the comprehensive 'any,' Congress plainly contemplated that the patent laws would be given wide scope."); *Bilski*, 130 S.Ct. at 3225 ("Congress took this permissive approach to patent eligibility to ensure that 'ingenuity should receive a liberal encouragement.'" (quoting *Chakrabarty*, 447 U.S. at 308, 100 S.Ct. 2204)).

It is also important to recognize that § 101, while far-reaching, only addresses patent *eligibility*, not overall *patentability*. The statute directs that an invention that falls within one of its four enumerated categories "may" qualify for a patent; thus, inventions that are patent eligible are not necessarily patentable. As § 101 itself explains, the ultimate question of patentability turns on whether, in addition to presenting a patent-eligible invention, the inventor also satisfies "the conditions and requirements of this title," namely, the novelty, nonobviousness, and

disclosure requirements of 35 U.S.C. §§ 102, 103, and 112, among others. *See* 35 U.S.C. § 101. Congress's broad approach to subject-matter eligibility ensures that the patent office doors remain open to most inventions, but even so, those that gain entry still must surmount various substantive and procedural hurdles that stand between patent eligibility and a valid patent. *See Diamond v. Diehr*, 450 U.S. 175, 191, 101 S.Ct. 1048, 67 L.Ed.2d 155 (1981).

While the categories of patent-eligible subject matter recited in § 101 are broad, their scope is limited by three important judicially created exceptions. "[L]aws of nature, natural phenomena, and abstract ideas" are excluded from patent eligibility, *id*. at 185, 101 S.Ct. 1048, because such fundamental discoveries represent "the basic tools of scientific and technological work," *Gottschalk v. Benson*, 409 U.S. 63, 67, 93 S.Ct. 253, 34 L.Ed.2d 273 (1972). Thus, even inventions that fit within one or more of the statutory categories are not patent eligible if drawn to a law of nature, a natural phenomenon, or an abstract idea. The underlying concern is that patents covering such elemental concepts would reach too far and claim too much, on balance obstructing rather than catalyzing innovation. But danger also lies in applying the judicial exceptions too aggressively because "all inventions at some level embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas." *Mayo Collaborative Servs. v. Prometheus Labs., Inc*., — U.S. —, 132 S.Ct. 1289, 1293, 182 L.Ed.2d 321 (2012). Taken too far, the exceptions could swallow patent law entirely.

Accordingly, the basic steps in a patent-eligibility analysis can be summarized as follows. We must first ask whether the claimed invention is a process,

machine, manufacture, or composition of matter. If not, the claim is ineligible under § 101. If the invention falls within one of the statutory categories, we must then determine whether any of the three judicial exceptions nonetheless bars such a claim—is the claim drawn to a patent-ineligible law of nature, natural phenomenon, or abstract idea? If so, the claim is not patent eligible. Only claims that pass both inquiries satisfy § 101.

While simple enough to state, the patent-eligibility test has proven quite difficult to apply. The difficulty lies in consistently and predictably differentiating between, on the one hand, claims that would tie up laws of nature, natural phenomena, or abstract ideas, and, on the other, claims that merely "embody, use, reflect, rest upon, or apply" those fundamental tools. *Mayo*, 132 S.Ct. at 1293. For example, deciding whether or not a particular claim is abstract can feel subjective and unsystematic, and the debate often trends toward the metaphysical, littered with unhelpful analogies and generalizations. What is needed is a consistent, cohesive, and accessible approach to the § 101 analysis—a framework that will provide guidance and predictability for patent applicants and examiners, litigants, and the courts. As set forth below, the Supreme Court's foundational § 101 jurisprudence offers the guideposts to such a system, one that turns primarily on the practical likelihood of a claim preempting a fundamental concept. We would adopt this approach to address the abstractness of the specific computer-implemented inventions presented in this case, but it might also inform patent-eligibility inquiries arising in other contexts.

B. Foundational Section 101 Precedents

1. *Gottschalk v. Benson*

In *Benson*, the Supreme Court considered claims to computer-implemented methods "for converting binary-coded decimal (BCD) numerals into pure binary numerals." 409 U.S. at 64, 93 S.Ct. 253. The claims each recited a series of data manipulation steps for effecting the indicated numerical conversion and "purported to cover any use of the claimed method in a general-purpose digital computer of any type." *Id*.

Analyzing the claimed processes in view of its historical precedents, the Supreme Court concluded that the abstract ideas exception to patent eligibility applied. The Court identified the particular abstraction at issue as the freestanding "algorithm" or "generalized formulation" for performing BCD to pure binary conversion. *Id*. at 65, 93 S.Ct. 253. Next, the Court measured the scope of the claims against the scope of that overarching abstract idea. In practice, the claims were "so abstract and sweeping as to cover both known and unknown uses of the BCD to pure binary conversion" and would thus reach every application of the basic conversion algorithm, in contrast to earlier cases concerning patent-eligible process claims that had been cabined to discrete applications "sufficiently definite to confine the patent monopoly within rather definite bounds." *Id*. at 68-69, 93 S.Ct. 253. Furthermore, even though the claims required a computer,[2] the Court did not view that as a

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[2] Claim 8 required a computer on its face, but the literal terms of claim 13 were not so limited. *See Benson*, 409 U.S. at 73-74, 93 S.Ct. 253. The CCPA, however, had interpreted both claims as requiring a computer and had upheld them on that basis, *see In*

meaningful limitation: "The 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." *Id*. at 71-72, 93 S.Ct. 253. Accordingly, the claims were held ineligible for patenting under § 101.

2. *Parker v. Flook*

Six years later, in *Parker v. Flook*, 437 U.S. 584, 98 S.Ct. 2522, 57 L.Ed.2d 451 (1978), the Supreme Court again considered the patent eligibility of a computerized process—in particular, a method for updating alarm limits for continuously monitored industrial process variables (*e.g*., temperature or pressure) according to a disclosed mathematical formula. *See id*. at 585-86, 98 S.Ct. 2522. The claim required three steps: measuring the present value of a process variable, using the mathematical formula to calculate a new alarm limit in view of the present value, and adjusting the previous alarm limit to the newly calculated limit. *Id*.; *see also id*. at 596-97, 98 S.Ct. 2522 (claim 1). A further preamble limitation restricted the claim to processes "comprising the catalytic chemical conversion of hydrocarbons," *id*. at 596, 98 S.Ct. 2522, so the claim did not cover "every conceivable application of the formula," *id*. at 586, 98 S.Ct. 2522.

Although the claim would not "wholly preempt" the mathematical formula, *id*. at 589, 98 S.Ct. 2522, the

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re Benson, 58 CCPA 1134, 441 F.2d 682, 687-88 (1971), and the Supreme Court appeared to adopt that assumption.

Court nonetheless held that the claimed process fell under the abstract ideas exception to patent eligibility. In its analysis, the Court viewed the formula as an abstract principle and stated that the case must "be considered as if the principle or mathematical formula were well known." *Id*. at 592, 98 S.Ct. 2522. The Court then asked whether, to confer patent eligibility, the claim contained sufficient substance beyond the abstract mathematical formula itself—that is, "some other inventive concept in its application." *Id*. at 594, 98 S.Ct. 2522; *see also id*. at 590, 98 S.Ct. 2522 ("A competent draftsman could attach some form of post-solution activity to almost any mathematical formula. . . ."). Concluding that the field-of-use, monitoring, adjusting, and computer limitations were trivial or "well known" under such an analysis, the Court held that the claims were not patent eligible: "[I]f a claim is directed essentially to a method of calculating, using a mathematical formula, even if the solution is for a specific purpose, the claimed method is nonstatutory." *Id*. at 594-95, 98 S.Ct. 2522 (quoting In re Richman, 563 F.2d 1026, 1030 (CCPA 1977)).

3. *Diamond v. Diehr*

The claims at issue in *Diehr* were drawn to processes for curing synthetic rubber that included "the use of a mathematical formula and a programmed digital computer." 450 U.S. at 177, 101 S.Ct. 1048. The claimed methods included steps for operating a rubber molding press that included constantly determining the temperature inside the mold, repetitively calculating the necessary cure time using a mathematical formula known as the Arrhenius equation, and opening the press whenever the elapsed cure time equaled the calculated necessary cure time. *See id*. at 179 n. 5, 101 S.Ct. 1048.

The Supreme Court held the claims to be patent eligible, a conclusion that was "not altered by the fact that in several steps of the process a mathematical equation and a programmed digital computer are used." *Id*. at 185, 101 S.Ct. 1048. In contrast to *Benson* and *Flook*, the claims in *Diehr* employed a mathematical concept but did "not seek to preempt the use of that equation. Rather, they [sought] only to foreclose from others the use of that equation in conjunction with all of the other steps in their claimed process." *Id*. at 187, 101 S.Ct. 1048. In particular, the Court distinguished *Flook* on the basis that the claim there provided no substantive details regarding the method's actual performance—rather, "'[a]ll that it provides is a formula for computing an updated alarm limit.'" *See id*. at 186-87, 101 S.Ct. 1048 (quoting *Flook*, 437 U.S. at 586, 98 S.Ct. 2522). In contrast, in *Diehr*, the claimed process incorporating the Arrhenius equation also called for steps including "constantly measuring the actual temperature inside the mold," a step that was said to be new in the art. *See id*. at 178-79, 101 S.Ct. 1048.

The Court also explained that a claim "does not become nonstatutory simply because it uses a mathematical formula, computer program, or digital computer" because "an *application* of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection." *Id*. at 187, 101 S.Ct. 1048. Because the applicant claimed a specific application, rather than an abstract idea in isolation, the claims satisfied § 101.

4. *Bilski v. Kappos*

Bilski concerned claims to processes for participants in energy commodities markets to hedge against the risk of price changes in those commodities. The claims

recited the hedging strategy as a series of steps involving transactions between a commodity provider and commodity consumers and between the commodity provider and other market participants "having a counter-risk position" to the consumers in order to balance risk; other claims articulated the hedging strategy as "a simple mathematical formula." 130 S.Ct. at 3223-24. The claims did not require a computer.

Applying *Benson*, *Flook*, and *Diehr*, the Supreme Court held that the claims failed to recite a patent-eligible process because they covered the abstract idea of hedging against risk. "Allowing [the claims] would pre-empt use of this approach in all fields, and would effectively grant a monopoly over an abstract idea." *Id*. at 3231. In addition, the Court reiterated *Flook*'s admonition that such claims cannot be made patent eligible by "limiting an abstract idea to one field of use or adding token postsolution components." *Id*. The Court therefore affirmed the rejection of the claims at issue under § 101.

5. *Mayo v. Prometheus*

The Supreme Court's most recent guidance regarding patent eligibility drew heavily on the foregoing precedents in applying the "laws of nature" exception to claims covering medical diagnostic methods. The claims in *Mayo* recited methods for optimizing thiopurine administration in a patient based on a natural correlation between the therapeutic efficacy of a particular dose of a thiopurine and the resulting concentration of thiopurine metabolites in the patient's blood. Too little metabolite and the dose was insufficient; too much suggested that the dose should be reduced to avoid toxicity. *Mayo*, 132 S.Ct. at 1294-95. Accordingly, the claims recited the specific steps of

administering the thiopurine drug and determining the resulting metabolite concentration in the patient's blood, wherein a concentration above or below predefined thresholds indicated a need to adjust the drug dose. *See id*. at 1295 (claim 1).

The Supreme Court held that those claims failed the § 101 test for subject-matter eligibility. The Court began its analysis by noting that the claims "set forth laws of nature—namely, relationships between concentrations of certain metabolites in the blood and the likelihood that a dosage of a thiopurine drug will prove ineffective or cause harm." *Id*. at 1296. Therefore, the question was "whether the claims do significantly more than simply describe these natural relations"; did they "add *enough*" to the natural law to render the claimed processes patent eligible? *Id*. at 1297. Examining the other limitations, the Court concluded that the "administering" and "determining" steps were insufficiently limiting or inventive to confer patent eligibility: "Anyone who wants to make use of these [natural] laws must first administer a thiopurine drug and measure the resulting metabolite concentrations, and so the combination amounts to nothing significantly more than an instruction to doctors to apply the applicable laws when treating their patients." *Id*. at 1298. Because these additional steps were mere "routine, conventional activity previously engaged in by scientists who work in the field," the Court concluded that they did not transform the law of nature into a patent-eligible application of that law. *Id*.

C. An Integrated Approach to § 101

Several common themes that run through the Supreme Court's decisions should frame our analysis in this and other § 101 cases.

First and foremost is an abiding concern that patents should not be allowed to preempt the fundamental tools of discovery—those must remain "free to all . . . and reserved exclusively to none." *Funk Bros. Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127, 130, 68 S.Ct. 440, 92 L.Ed. 588 (1948). Preemption features prominently in the Supreme Court's recent § 101 decisions, *see Mayo*, 132 S.Ct. at 1301 ("The Court has repeatedly emphasized . . . a concern that patent law not inhibit further discovery by improperly tying up the future use of laws of nature."); *Bilski*, 130 S.Ct. at 3231 (concluding that the disputed claims "would preempt [risk hedging] in all fields, and would effectively grant a monopoly over an abstract idea"); *Diehr*, 450 U.S. at 187, 101 S.Ct. 1048 ("Their process admittedly employs a well-known mathematical equation, but they do not seek to pre-empt the use of that equation."); *Benson*, 409 U.S. at 72, 93 S.Ct. 253 ("[I]f 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."), and traces back to the earliest judicial decisions addressing subject-matter eligibility, *see, e.g., O'Reilly v. Morse*, 56 U.S. 62, 113, 15 How. 62, 14 L.Ed. 601 (1853) (rejecting a claim that would have broadly conferred "a monopoly" in the use of electromagnetism, "however developed, for the purpose of printing at a distance"). Guarding against the wholesale preemption of fundamental principles should be our primary aim in applying the common law exceptions to § 101.

To be clear, the proper focus is not preemption *per se*, for some measure of preemption is intrinsic in the statutory right granted with every patent to exclude competitors, for a limited time, from practicing the claimed invention. *See* 35 U.S.C. § 154. Rather, the animating concern is that claims should not be

coextensive with a natural law, natural phenomenon, or abstract idea; a patent-eligible claim must include one or more substantive limitations that, in the words of the Supreme Court, add "significantly more" to the basic principle, with the result that the claim covers significantly *less*. *See Mayo* 132 S.Ct. at 1294. Thus, broad claims do not necessarily raise § 101 preemption concerns, and seemingly narrower claims are not necessarily exempt. What matters is whether a claim threatens to subsume the full scope of a fundamental concept, and when those concerns arise, we must look for meaningful limitations that prevent the claim as a whole from covering the concept's every practical application. *See id*. at 1302 ("The laws of nature at issue here are narrow laws that may have limited applications, but the patent claims that embody them nonetheless implicate this concern.").

Next, the cases repeatedly caution against overly formalistic approaches to subject-matter eligibility that invite manipulation by patent applicants. Allowing the determination of patent eligibility to "depend simply on the draftsman's art . . . would ill serve the principles underlying the prohibition against patents for 'ideas' or phenomena of nature." *Flook*, 437 U.S. at 593, 98 S.Ct. 2522. Thus, claim drafting strategies that attempt to circumvent the basic exceptions to § 101 using, for example, highly stylized language, hollow field-of-use limitations, or the recitation of token post-solution activity should not be credited. *See Bilski*, 130 S.Ct. at 3230 ("[T]he prohibition against patenting abstract ideas 'cannot be circumvented by attempting to limit the use of the formula to a particular technological environment' or adding 'insignificant postsolution activity.'" (quoting *Diehr*, 450 U.S. at 191-92, 101 S.Ct. 1048)); *Flook*, 437 U.S. at 590, 98 S.Ct. 2522 (rejecting such an approach as

"exalt[ing] form over substance"). The Supreme Court's precedents require that we look past such devices when analyzing a claim to consider its true practical effect with respect to the purpose of § 101—preserving the "basic tools" of scientific discovery for common use.

Finally, the cases urge a flexible, claim-by-claim approach to subject-matter eligibility that avoids rigid line drawing. Bright-line rules may be simple to apply, but they are often impractical and counter-productive when applied to § 101. Such rules risk becoming outdated in the face of continual advances in technology—they risk "freez[ing] process patents to old technologies, leaving no room for the revelations of the new, onrushing technology." *Benson*, 409 U.S. at 71, 93 S.Ct. 253. Stringent eligibility formulas may also lead to misplaced focus, requiring courts to "pose questions of such intricacy and refinement that they risk obscuring the larger object of securing patents for valuable inventions without transgressing the public domain." *Bilski*, 130 S.Ct. at 3227. Accordingly, the Supreme Court has rejected calls for a categorical exclusion of so-called business method claims and has held that the formulaic "machine-or-transformation" test cannot be the exclusive means for determining the patent eligibility of process claims. *Id*. at 3227-29. What is needed is a flexible, pragmatic approach that can adapt and account for unanticipated technological advances while remaining true to the core principles underlying the fundamental exceptions to § 101.

With these basic principles in mind, the following analysis should apply in determining whether a computer-implemented claim recites patent-eligible subject matter under § 101 or falls into the common law exception for abstract ideas.

The first question is whether the claimed invention fits within one of the four statutory classes set out in § 101. Assuming that condition is met, the analysis turns to the judicial exceptions to subject-matter eligibility. A preliminary question in applying the exceptions to such claims is whether the claim raises § 101 abstractness concerns at all. Does the claim pose any risk of preempting an abstract idea? In most cases, the answer plainly will be no. *Cf. Honeywell Inc. v. Sperry Rand Corp*., No. 4-67-cv-138, 180 USPQ 673, 1973 WL 903 (D.Minn. Oct. 19, 1973) (early computer hardware patents).

Where bona fide § 101 concerns arise, however, it is important at the outset to identify and define whatever fundamental concept appears wrapped up in the claim so that the subsequent analytical steps can proceed on a consistent footing. Section 101 is concerned as much with preserving narrow "basic tools" as it is with abstract concepts that have far-reaching implications—for example, risk hedging or transmitting information at a distance using electricity—and the breadth of acceptable exclusion may vary accordingly. *See Mayo*, 132 S.Ct. at 1302-03. In short, one cannot meaningfully evaluate whether a claim preempts an abstract idea until the idea supposedly at risk of preemption has been unambiguously identified. Although not required, conducting a claim construction analysis before addressing § 101 may be especially helpful in this regard by facilitating a full understanding of what each claim entails. *See Bancorp*, 687 F.3d at 1273-74.

The § 101 inquiry next proceeds to the requisite preemption analysis. With the pertinent abstract idea identified, the balance of the claim can be evaluated to determine whether it contains additional substantive

limitations that narrow, confine, or otherwise tie down the claim so that, in practical terms, it does not cover the full abstract idea itself. *See Mayo*, 132 S.Ct. at 1300 (discussing a patent-eligible process claim that involved a law of nature but included additional steps "that confined the claims to a particular, useful application of the principle"); *Bilski*, 130 S.Ct. at 3231 (rejecting claims that "add [too little] to the underlying abstract principle"); *Diehr*, 450 U.S. at 187, 101 S.Ct. 1048 ("[T]hey do not seek to pre-empt the use of that equation. Rather, they seek only to foreclose from others the use of that equation in conjunction with all of the other steps in their claimed process.").

The requirement for substantive claim limitations beyond the mere recitation of a disembodied fundamental concept has "sometimes" been referred to as an "inventive concept." *See Mayo*, 132 S.Ct. at 1294 (citing *Flook*, 437 U.S. at 594, 98 S.Ct. 2522). We do not read the Court's occasional use of that language in the § 101 context as imposing a requirement that such limitations must necessarily exhibit "inventiveness" in the same sense as that term more commonly applies to two of the statutory requirements for patentability, *i.e.*, novelty and nonobviousness. *See* 35 U.S.C. §§ 102, 103. The phrase "inventive concept" originated with *Flook*, yet the Court began its discussion of § 101 in that case by stating that the question of patent-eligible subject matter "does not involve the familiar issues of novelty and obviousness that routinely arise under §§ 102 and 103." 437 U.S. at 588, 98 S.Ct. 2522. The Court has since reiterated that those separate inquiries do not bear on the question of subject-matter eligibility under § 101. *Diehr*, 450 U.S. at 188-89, 101 S.Ct. 1048 ("The 'novelty' of any element or steps in a process, or even of the process itself, is of no relevance in determining whether the subject matter of a claim

falls within the § 101 categories of possibly patentable subject matter."); *id*. at 191, 101 S.Ct. 1048 ("A rejection on either of these [anticipation or obviousness] grounds does not affect the determination that respondents' claims recited subject matter which was eligible for patent protection under § 101."); *see also Mayo*, 132 S.Ct. at 1298-1300, 1302 (holding was consistent with *Diehr* and *Flook* and did not "depart from case law precedent").

An "inventive concept" in the § 101 context refers to a genuine human contribution to the claimed subject matter. "The underlying notion is that a scientific principle . . . reveals a relationship that has always existed." *Flook*, 437 U.S. at 593 n. 15, 98 S.Ct. 2522. From that perspective, a person cannot truly "invent" an abstract idea or scientific truth. He or she can discover it, but not invent it. Accordingly, an "inventive concept" under § 101—in contrast to whatever fundamental concept is also represented in the claim—must be "a product of human ingenuity." *See Chakrabarty*, 447 U.S. at 309, 100 S.Ct. 2204.

In addition, that human contribution must represent more than a trivial appendix to the underlying abstract idea. The § 101 preemption analysis centers on the practical, real-world effects of the claim. *See, e.g*., *Mayo*, 132 S.Ct. at 1294 ("[A] process that focuses upon the use of a natural law [must] also contain other elements . . . sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the natural law itself."); *Bilski*, 130 S.Ct. at 3231 (rejecting claims that would "effectively grant a monopoly over an abstract idea"); *Benson*, 409 U.S. at 71-72, 93 S.Ct. 253 ("[T]he patent . . . in practical effect would be a patent on the algorithm itself."). Limitations that represent a human contribution but

are merely tangential, routine, well-understood, or conventional, or in practice fail to narrow the claim relative to the fundamental principle therein, cannot confer patent eligibility.

For example, the "administering" and "determining" steps in *Mayo* might have appeared to be concrete limitations representing true human contributions to the claimed methods; it is difficult to see how giving a particular man-made drug to a patient or drawing and testing blood could be considered purely abstract or preordained. Yet the Court held that those steps failed to render the claims patent eligible because, as a practical matter, they were necessary to every practical use of what it found to be a natural law and therefore were not truly limiting. *Mayo*, 132 S.Ct. at 1298 ("Anyone who wants to make use of these laws must first administer a thiopurine drug and measure the resulting metabolite concentrations. . . ."); *see also Benson*, 409 U.S. at 71, 93 S.Ct. 253 (noting that the "mathematical formula involved here has no substantial practical application except in connection with a digital computer"). Also in *Mayo*, the Court instructed that the added steps, apart from the natural law itself, must amount to more than "well-understood, routine, conventional activity previously engaged in by researchers in the field." 132 S.Ct. at 1294. Similarly, token or trivial limitations, *see Diehr*, 450 U.S. at 191-92, 101 S.Ct. 1048 (stating that "insignificant post-solution activity will not transform an unpatentable principle into a patentable process"), or vague limitations cast in "highly general language," *Mayo*, 132 S.Ct. at 1302, have failed to satisfy § 101. Finally, bare field-of-use limitations cannot rescue a claim from patent ineligibility where the claim as written still effectively preempts all uses of a fundamental concept within the stated field. *Bilski*, 130

S.Ct. at 3230 (discussing *Flook* and *Diehr*). Whether a particular claim satisfies the § 101 standard will vary based on the balance of factors at play in each case, and the fact that there is no easy bright-line test simply emphasizes the need for the PTO and the courts to apply the flexible analysis above to the facts at hand.

Thus, the Supreme Court used the language "routine" and "conventional" in *Mayo* to indicate what qualities added to a natural law do not create patent-eligible subject matter. *See Mayo*, 132 S.Ct. at 1298. We do not therefore understand that language to be confused with novelty or nonobviousness analyses, which consider whether particular steps or physical components together constitute a new or nonobvious invention. Analyzing patent eligibility, in contrast, considers whether steps combined with a natural law or abstract idea are so insignificant, conventional, or routine as to yield a claim that effectively covers the natural law or abstract idea itself.

Two other considerations are worth noting with respect to the § 101 analysis. First, some have argued that because § 101 is a "threshold test," *Bilski*, 130 S.Ct. at 3225, district courts must always consider subject-matter eligibility first among all possible bases for finding invalidity. That is not correct. District courts are rightly entrusted with great discretion to control their dockets and the conduct of proceedings before them, including the order of issues presented during litigation. *See, e.g.*, *Amado v. Microsoft Corp.*, 517 F.3d 1353, 1358 (Fed.Cir.2008) ("District courts . . . are afforded broad discretion to control and manage their dockets, including the authority to decide the order in which they hear and decide issues pending before them."). In addition, district courts may

exercise their discretion to begin elsewhere when they perceive that another section of the Patent Act might provide a clearer and more expeditious path to resolving a dispute. *See MySpace, Inc. v. GraphOn Corp*., 672 F.3d 1250, 1258-62 (Fed.Cir.2012); Dennis Crouch & Robert P. Merges, *Operating Efficiently Post-*Bilski *by Ordering Patent Doctrine Decision-Making*, 25 Berkeley Tech. L.J. 1673 (2010).

Second, it bears remembering that all issued patent claims receive a statutory presumption of validity. 35 U.S.C. § 282; *Microsoft Corp. v. i4i Ltd. P'ship*, — U.S. —, 131 S.Ct. 2238, 180 L.Ed.2d 131 (2011). And, as with obviousness and enablement, that presumption applies when § 101 is raised as a basis for invalidity in district court proceedings. *See* OSRAM *Sylvania, Inc. v. Am. Induction Techs., Inc*., 701 F.3d 698, 706 (Fed.Cir.2012) (obviousness); *Nat'l Recovery Techs., Inc. v. Magnetic Separation Sys., Inc*., 166 F.3d 1190, 1195 (Fed.Cir.1999) (enablement).

Applying the above considerations to assess the patent eligibility of the specific computer-implemented claims at issue in this appeal, we conclude that the district court correctly held that the asserted claims drawn to methods, computer-readable media, and systems are not patent eligible and are hence invalid under § 101.

III. The Patents in Suit

In this case, Alice has asserted four patents against CLS. As described, the asserted patents share substantially the same specification and disclose and claim computerized methods, computer-readable media, and systems that are useful for conducting financial transactions using a third party to settle obligations between a first and second party so as to

mitigate "settlement risk." Briefly, the asserted claims are as follows: claims 33 and 34 of the '479 patent recite methods; all claims of the '510 patent also recite methods; all claims of the '720 patent recite data processing systems; and the claims of the '375 patent recite either data processing systems (claims 1-38 and 42-47) or computer-readable storage media having a computer program stored therein (claims 39-41). CLS contends that the asserted claims fall into the abstract ideas exception to § 101 and are therefore invalid as directed to patent-ineligible subject matter.

A. Method Claims

Claim 33 of the '479 patent is representative of the asserted method claims:

> 33. A method of exchanging obligations as between parties, each party holding a credit record and a debit record with an exchange institution, the credit records and debit records for exchange of predetermined obligations, the method comprising the steps of:
>
> (a) creating a shadow credit record and a shadow debit record for each stakeholder party to be held independently by a supervisory institution from the exchange institutions;
>
> (b) obtaining from each exchange institution a start-of-day balance for each shadow credit record and shadow debit record;
>
> (c) for every transaction resulting in an exchange obligation, the supervisory institution adjusting each respective party's shadow credit record or shadow debit record, allowing only these transactions that do not result in the value of the shadow debit record being less than

> the value of the shadow credit record at any time, each said adjustment taking place in chronological order; and
>
> (d) at the end-of-day, the supervisory institution instructing ones of the exchange institutions to exchange credits or debits to the credit record and debit record of the respective parties in accordance with the adjustments of the said permitted transactions, the credits and debits being irrevocable, time invariant obligations placed on the exchange institutions.

'479 patent col. 65 ll. 23-50. The claim thus recites a method for facilitating a previously arranged exchange between two parties requiring the use of "shadow" records maintained by a third-party "supervisory institution." Briefly, the claimed process requires the supervisory institution to create shadow records for each party that mirror the parties' real-world accounts held at their respective "exchange institutions." At the start of each day, the supervisory institution updates its shadow records to reflect the value of the parties' respective accounts. Transactions are then referred to the supervisory institution for settlement throughout the day, and the supervisory institution responds to each in sequence by adjusting the shadow records and permitting only those transactions for which the parties' updated shadow records indicate sufficient resources to satisfy their mutual obligations. At the end of each day, the supervisory institution irrevocably instructs the exchange institutions to carry out the permitted transactions. Although claim 33 does not expressly

recite any computer-based steps,[3] the parties have agreed that the recited shadow records and transactions require computer implementation. *CLS Bank*, 768 F.Supp.2d at 236.

Claim 33 plainly recites a process. The issue presented then becomes whether that process amounts to no more than a patent-ineligible abstract idea. As described, the first step in that analysis requires identifying the abstract idea represented in the claim. The methods claimed here draw on the abstract idea of reducing settlement risk by effecting trades through a third-party intermediary (here, the supervisory institution) empowered to verify that both parties can fulfill their obligations before allowing the exchange—*i.e.*, a form of escrow. CLS describes that concept as "fundamental and ancient," but the latter is not determinative of the question of abstractness. Even venerable concepts, such as risk hedging in commodity transactions, *see Bilski*, 130 S.Ct. at 3231, were once unfamiliar, just like the concepts inventors are unlocking at the leading edges of technology today. But whether long in use or just recognized, abstract ideas remain abstract. The concept of reducing settlement risk by facilitating a trade through third-party intermediation is an abstract idea because it is a "disembodied" concept, *In re Alappat*, 33 F.3d 1526, 1544 (Fed.Cir.1994) (en banc), a basic building block of human ingenuity, untethered from any real-world application. Standing alone, that abstract idea is not patent-eligible subject matter.

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[3] The method claims of the '510 patent state that the supervisory institution "electronically adjust[s]" the shadow records. *E.g.*, '510 patent col. 64 ll. 11-12.

The analysis therefore turns to whether the balance of the claim adds "significantly more." Apart from the idea of third-party intermediation, the claim's substantive limitations require creating shadow records, using a computer to adjust and maintain those shadow records, and reconciling shadow records and corresponding exchange institution accounts through end-of-day transactions. None of those limitations adds anything of substance to the claim.

First, the requirement for computer implementation could scarcely be introduced with less specificity; the claim lacks *any* express language to define the computer's participation. In a claimed method comprising an abstract idea, generic computer automation of one or more steps evinces little human contribution. There is no specific or limiting recitation of essential, *see SiRF Tech., Inc. v. Int'l Trade Comm'n*, 601 F.3d 1319, 1332-33 (Fed.Cir.2010), or improved computer technology, *see Research Corp. Techs., Inc. v. Microsoft Corp.*, 627 F.3d 859, 865, 868-69 (Fed.Cir.2010), and no reason to view the computer limitation as anything but "insignificant postsolution activity" relative to the abstract idea, *see Fort Props.*, *Inc. v. Am. Master Lease LLC*, 671 F.3d 1317, 1323-24 (Fed.Cir.2012). Furthermore, simply appending generic computer functionality to lend speed or efficiency to the performance of an otherwise abstract concept does not meaningfully limit claim scope for purposes of patent eligibility. *Bancorp*, 687 F.3d at 1278; *Dealertrack, Inc. v. Huber*, 674 F.3d 1315, 1333 (Fed.Cir.2012); *Fort Props.*, 671 F.3d at 1323-24. That is particularly apparent in this case. Because of the efficiency and ubiquity of computers, essentially all practical, real-world applications of the abstract idea implicated here would rely, at some level, on basic computer functions—for example, to quickly and reliably

calculate balances or exchange data among financial institutions. At its most basic, a computer is just a calculator capable of performing mental steps faster than a human could. Unless the claims require a computer to perform operations that are not merely accelerated calculations, a computer does not itself confer patent eligibility. In short, the requirement for computer participation in these claims fails to supply an "inventive concept" that represents a nontrivial, nonconventional human contribution or materially narrows the claims relative to the abstract idea they embrace.

Nor does requiring the supervisory institution to create and adjust a "shadow credit record" and a "shadow debit record" narrow the claims from the realm of abstraction. With the term "shadow record," the claim uses extravagant language to recite a basic function required of any financial intermediary in an escrow arrangement—tracking each party's obligations and performance. Viewed properly as reciting no more than the necessary tracking activities of a supervisory institution, the steps relating to creating a "shadow record" and then obtaining and adjusting its balance are insignificant "'[pre]-solution activity,'" *Mayo*, 132 S.Ct. at 1298 (alteration in original) (quoting *Flook*, 437 U.S. at 590, 98 S.Ct. 2522), and ancillary "data-gathering steps," *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1370 (Fed.Cir.2011), and therefore add nothing of practical significance to the underlying idea of reducing settlement risk through intermediation.

Finally, providing end-of-day instructions to the exchange institutions to reconcile the parties' real-world accounts with the day's accumulated adjustments to their shadow records is a similarly trivial

limitation that does not distinguish the claimed method. According to the claim, each permitted transaction during the day prompts corresponding shadow record adjustments, which the exchange institutions must honor as "irrevocable" payment obligations. *E.g.*, '479 patent col. 65 ll. 36-50. Whether the instructions are issued in real time, every two hours, or at the end of every day, there is no indication in the record that the precise moment chosen to execute those payments makes any significant difference in the ultimate application of the abstract idea.

In sum, there is nothing in the asserted method claims that represents "significantly more" than the underlying abstract idea for purposes of § 101. But for the implied requirement for computer implementation, the broad, non-technical method claims presented here closely resemble those in *Bilski*, which also explained a "basic concept of . . . protecting against risk." 130 S.Ct. at 3231. And, as described, adding generic computer functions to facilitate performance provides no substantial limitation and therefore is not "enough" to satisfy § 101. As in *Bilski*, upholding Alice's claims to methods of financial intermediation "would pre-empt use of this approach in all fields, and would effectively grant a monopoly over an abstract idea." *Id*. Consequently, the method claims are drawn to patent-ineligible subject matter and invalid under § 101.

We note that, while other opinions of judges in this case use different language and reasoning, two other judges, in addition to those joining this opinion, join in the result of patent ineligibility as to Alice's asserted method claims.

B. Computer-Readable Medium Claims

Claims 39-41 of the '375 patent are so-called "*Beauregard* claims," named for *In re Beauregard*, 53 F.3d 1583 (Fed.Cir.1995). Claims in *Beauregard* format formally recite a tangible article of manufacture—a computer-readable medium, such as a computer disk or other data storage device—but such claims also require the device to contain a computer program for directing a computer to carry out a specified process. Claim 39 of the '375 patent reads:

> 39. A computer program product comprising *a computer readable storage medium having computer readable program code embodied in the medium* for use by a party to exchange an obligation between a first party and a second party, the computer program product comprising:
>
> program code for causing a computer to send a transaction from said first party relating to an exchange obligation arising from a currency exchange transaction between said first party and said second party; and
>
> program code for causing a computer to allow viewing of information relating to processing, by a supervisory institution, of said exchange obligation, wherein said processing includes (1) maintaining information about a first account for the first party, independent from a second account maintained by a first exchange institution, and information about a third account for the second party, independent from a fourth account maintained by a second exchange institution; (2) electronically adjusting said first account and said third account, in order to effect an exchange obligation arising

> from said transaction between said first party and said second party, after ensuring that said first party and/or said second party have adequate value in said first account and/or said third account, respectively; and (3) generating an instruction to said first exchange institution and/or said second exchange institution to adjust said second account and/or said fourth account in accordance with the adjustment of said first account and/or said third account, wherein said instruction being an irrevocable, time invariant obligation placed on said first exchange institution and/or said second exchange institution.

'375 patent col. 68 ll. 5-35 (emphasis added).

Claim 39 thus nominally recites as its subject matter a physical device—a "computer readable storage medium" that would fall into a § 101 category separate from the methods discussed above and would at first blush seem less susceptible to abstractness concerns. But under § 101 we must look past drafting formalities and let the true substance of the claim guide our analysis. Here, although the claim's preamble appears to invoke a physical object, the claim term "computer readable storage medium" is stated in broad and functional terms—incidental to the claim—and every substantive limitation presented in the body of the claim (as well as in dependent claims 40 and 41) pertains to the method steps of the program code "embodied in the medium." Therefore, claim 39 is not "truly drawn to a specific computer readable medium, rather than to the underlying method" of reducing settlement risk using a third-party intermediary. *CyberSource*, 654 F.3d at 1374-75 (internal quotation marks omitted). Despite their *Beauregard*

format, Alice's "computer readable medium claims" are thus equivalent to the methods they recite for § 101 purposes. In other words, they are merely method claims in the guise of a device and thus do not overcome the Supreme Court's warning to avoid permitting a "competent draftsman" to endow abstract claims with patent-eligible status.

Of course, all claims are normally to be considered separately, but discrete claims reciting subject matter only nominally from different statutory classes may warrant similar substantive treatment under § 101 when, in practical effect, they cover the same invention. That may be particularly apparent where, as here, a claim presents a physical recitation of an abstract method, and parallel claims from the same patent family claim that same abstract method in the same or similar terms. So considered, claims 39-41 of the '375 patent fail the patent-eligibility test for the same reasons as the cognate method claims discussed above. The "program code" of claim 39 "caus[es] a computer" to perform a method of escrow that is indistinguishable from that recited in claim 33 of the '479 patent, and no less abstract. Accordingly, claims 39-41 of the '375 patent are invalid under § 101. As with the method claims, two other judges of this court, in addition to those joining this opinion, similarly conclude that the computer-readable medium claims are not patent eligible.

C. System Claims

The remaining claims in this appeal recite "data processing systems" configured to enable the exchange of mutual obligations through an intermediary—in these claims, the computer system itself. Before addressing these claims in particular, we again note that our colleagues on the court, other than those

joining this opinion, have agreed that, at least in this case, the method, medium, and system claims should be considered together for purposes of § 101. Three other judges on this court—for a total of eight—have so concluded.

Claim 1 of the '720 patent is representative of the contested system claims:

> 1. A data processing system to enable the exchange of an obligation between parties, the system comprising:
>
> *a data storage unit* having stored therein information about a shadow credit record and shadow debit record for a party, independent from a credit record and debit record maintained by an exchange institution; and
>
> *a computer*, coupled to said data storage unit, that is configured to (a) receive a transaction; (b) electronically adjust said shadow credit record and/or said shadow debit record in order to effect an exchange obligation arising from said transaction, allowing only those transactions that do not result in a value of said shadow debit record being less than a value of said shadow credit record; and (c) generate an instruction to said exchange institution at the end of a period of time to adjust said credit record and/or said debit record in accordance with the adjustment of said shadow credit record and/or said shadow debit record, wherein said instruction being an irrevocable, time invariant obligation placed on said exchange institution.

'720 patent col. 65 ll. 42-61 (emphases added). As is apparent, the claim recites a computerized system

configured to carry out a series of steps that mirror Alice's method claims—maintaining shadow records, allowing only those transactions supported by adequate value in the shadow records, adjusting the shadow records pursuant to such transactions, and later instructing exchange institutions to execute the allowed transactions. Indeed, Alice's method and system claims use similar and often identical language to describe those actions. *Compare id*. col. 65 ll. 44-61, *with* '479 patent col. 65 ll. 28-50. The system claims are different, however, in that they also recite tangible devices as system components, including at least "a computer" and "a data storage unit." Other claims specify additional components, such as a "first party device" and a "communications controller." *See, e.g*., '375 patent col. 66 ll. 65-66. Similar to the computer readable medium claims, the system claims are formally drawn to physical objects and therefore raise a question whether they deserve to be evaluated differently under the abstract ideas exception from the accompanying method claims discussed above. Careful analysis shows that they do not.

For some system claims, the abstract ideas exception may indeed be plainly inapplicable, and such claims will face little difficulty passing through the § 101 filter. But applying a presumptively different approach to system claims generally would reward precisely the type of clever claim drafting that the Supreme Court has repeatedly instructed us to ignore. As illustrated by the obvious parallels between the method and system claims now before us, it is often a straightforward exercise to translate a method claim into system form, and vice versa. That much has long been recognized. *See In re Johnston*, 502 F.2d 765, 773 (CCPA 1974) (Rich, J., dissenting) (noting that "[e]very competent draftsman" knows how to cast

method claims "in machine system form"). Thus, when § 101 issues arise, the same analysis should apply regardless of claim format: Does the claim, in practical effect, place an abstract idea at risk of preemption? And, if so, do the limitations of the claim, including any computer-based limitations, add "enough" beyond the abstract idea itself to limit the claim to a narrower, patent-eligible application of that idea? Or, is it merely a Trojan horse designed to enable abstract claims to slide through the screen of patent eligibility?

The computer-based limitations recited in the system claims here cannot support any meaningful distinction from the computer-based limitations that failed to supply an "inventive concept" to the related method claims. The shadow record and transaction limitations in Alice's method claims require "a computer," *CLS Bank*, 768 F.Supp.2d at 236, evidently capable of calculation, storage, and data exchange. The system claims are little different. They set forth the same steps for performing third-party intermediation and provide for computer implementation at an incrementally reduced, though still striking level of generality. Instead of wholly implied computer limitations, the system claims recite a handful of computer components in generic, functional terms that would encompass any device capable of performing the same ubiquitous calculation, storage, and connectivity functions required by the method claims.

For example, method claim 33 of the '479 patent requires "creating a shadow credit record and a shadow debit record for each stakeholder party to be held independently by a supervisory institution from the exchange institutions." '479 patent col. 65 ll. 28-31. In system claim 26 of the '375 patent, which is among the system claims that recite the most computer

hardware, "a data storage unit" performs the analogous function. That claim recites "a data storage unit having stored therein (a) information about a first account for a first party, independent from a second account maintained by a first exchange institution, and (b) information about a third account for a second party, independent from a fourth account maintained by a second exchange institution." '375 patent col. 67 ll. 1-7.

Likewise, other steps of method claim 33 include (i) "for every transaction . . . adjusting each respective party's shadow credit record or shadow debit record, allowing only these transactions that do not result in the value of the shadow debit record being less than the value of the shadow credit record at any time," and (ii) "instructing ones of the exchange institutions to exchange credits or debits . . . in accordance with the adjustments of the said permitted transactions." '479 patent col. 65 ll. 36-48. Similarly, system claim 26 recites:

> [A] computer, coupled to said data storage unit and said communications controller, that is configured to (a) receive a transaction from said first party device via said communications controller; (b) electronically adjust said first account and said third account . . . after ensuring that said first party and/or said second party have adequate value in said first account and/or said third account, respectively; and (c) generate an instruction to said first exchange institution and/or said second exchange institution to adjust said second account and/or said fourth account in accordance with the adjustment of said first account and/or said third account. . . .

'375 patent col. 67 ll. 8-23.

Despite minor differences in terminology, *e.g.*, first and third "independent" accounts instead of "shadow" records, the asserted method and system claims require performance of the same basic process. Although the system claims associate certain computer components with some of the method steps, none of the recited hardware offers a meaningful limitation beyond generally linking "the use of the [method] to a particular technological environment," that is, implementation via computers. *Bilski*, 130 S.Ct. at 3230 (quoting *Diehr*, 450 U.S. at 191, 101 S.Ct. 1048) (internal quotation marks omitted); *see Mayo*, 132 S.Ct. at 1301 ("[The Court in *Benson*] held that simply implementing a mathematical principle on a physical machine, namely a computer, was not a patentable application of that principle."). For all practical purposes, *every* general-purpose computer will include "a computer," "a data storage unit," and "a communications controller" that would be capable of performing the same generalized functions required of the claimed systems to carry out the otherwise abstract methods recited therein.

Therefore, as with the asserted method claims,[4] such limitations are not actually limiting in the sense required under § 101; they provide no significant "inventive concept." The system claims are instead akin to stating the abstract idea of third-party

[4] To be clear, the fact that one or more related method claims has failed under § 101, as here, does not dictate that all associated system claims or even all associated method claims must suffer the same fate. For example, a system claim that builds on the same abstract idea as a patent-ineligible method may well incorporate sufficient additional limitations, computer-based or otherwise, to transform that idea into a patent-eligible application. But that is not the case here.

intermediation and adding the words: "apply it" on a computer. *See Mayo*, 132 S.Ct. at 1294. That is not sufficient for patent eligibility, and the system claims before us fail to define patent-eligible subject matter under § 101, just as do the method and computer-readable medium claims.

One of the separate opinions in this case, concurring in part in the judgment, takes aim at this opinion, asserting that the system claims here are simply claims to a patent-eligible machine, a tangible item one can put on one's desk. Machines are unquestionably eligible for patenting, states the opinion, although the system claims here clearly track the method claims that the separate opinion concedes are not patent eligible.

That conclusion is surely correct as an abstract proposition. A particular computer system, composed of wires, plastic, and silicon, is no doubt a tangible machine. But that is not the question. The question we must consider is whether a *patent claim* that ostensibly describes such a system on its face represents something more than an abstract idea in legal substance. Claims to computers were, and still are, eligible for patent. No question should have arisen concerning the eligibility of claims to basic computer hardware under § 101 when such devices were first invented. But we are living and judging now (or at least as of the patents' priority dates), and have before us not the patent eligibility of specific types of computers or computer components, but computers that have routinely been adapted by software consisting of abstract ideas, and claimed as such, to do all sorts of tasks that formerly were performed by humans. And the Supreme Court has told us that, while avoiding confusion between § 101 and §§ 102 and

103, merely adding existing computer technology to abstract ideas—mental steps—does not as a matter of substance convert an abstract idea into a machine.

That is what we face when we have a series of claims to abstract methods and computers fitted to carry out those methods. We are not here faced with a computer *per se*. Such are surely patent-eligible machines. We are faced with abstract methods coupled with computers adapted to perform those methods. And that is the fallacy of relying on *Alappat*, as the concurrence in part does. Not only has the world of technology changed, but the legal world has changed. The Supreme Court has spoken since *Alappat* on the question of patent eligibility, and we must take note of that change. Abstract methods do not become patent-eligible machines by being clothed in computer language.

CONCLUSION

As described, we agree with the district court and conclude that the asserted method, computer-readable medium, and system claims of Alice's '479, '510, '720, and '375 patents are invalid under § 101 for failure to recite patent-eligible subject matter.

Concurring-in-part and dissenting-in-part opinion filed by RADER, Chief Judge, LINN, MOORE, and O'MALLEY, Circuit Judges, as to all but part VI of that opinion. RADER, Chief Judge, and MOORE, Circuit Judge, as to part VI of that opinion.

RADER, Chief Judge, LINN, MOORE, and O'MALLEY, Circuit Judges, as to all but part VI, concurring-in-part and dissenting-in-part. RADER,

Chief Judge, and MOORE, Circuit Judge, as to part VI.[1]

This court again addresses questions regarding patent eligible subject matter. After consideration of the Patent Act and case law precedents, we would reverse the district court's holding that the asserted system claims are not patent eligible. Chief Judge Rader and Judge Moore would, however, affirm the district court's conclusion that the asserted method and media claims are not eligible for patenting. Judges Linn and O'Malley write separately as to these latter claims. Accordingly, we would remand for additional proceedings consistent with this opinion.

I

Alice Corporation (Alice) owns U.S. Patent Nos. 5,970,479 (the '479 Patent), 6,912,510 (the '510 Patent), 7,149,720 (the '720 Patent), and 7,725,375 (the '375 Patent). Generally, these patents relate to methods and a computerized system for exchanging obligations in which a trusted third party settles obligations between a first and second party in order to eliminate "settlement risk." Settlement risk is the risk that only one party will meet its payment obligation. In simple terms, the invention eliminates

[1] No portion of any opinion issued today other than our Per Curiam Judgment garners a majority. The court is evenly split on the patent eligibility of the system claims. Although a majority of the judges on the court agree that the method claims do not recite patent eligible subject matter, no majority of those judges agrees as to the legal rationale for that conclusion. Accordingly, though much is published today discussing the proper approach to the patent eligibility inquiry, nothing said today beyond our judgment has the weight of precedent.

this risk with a trusted third party that exchanges either both or neither party's obligation.

Alice's expert testified by declaration that "[w]hen obligations arise from a trade made between two parties, *e.g.*, a trade of stock or a trade of foreign currency, typically, there is a gap in time between when the obligation arises and when the trade is 'settled.'" Alice Corp. Pty. Ltd.'s Renewed Cross-Motion for Partial Summary Judgment as to Subject Matter Eligibility, Declaration of Stanley E. Fisher, Exhibit 1, Declaration of Paul Ginsberg at ¶ 21, *CLS Bank Int'l v. Alice Corp.*, 768 F.Supp.2d 221 (D.D.C.2011) (No. 1:07-cv-974), ECF No. 95-3 (Ginsberg Decl.) "In a number of financial contexts, the process of exchanging obligations, or settlement, is separate from the process of entering into a contract to perform a trade." *Id*. For example, if two banks want to exchange currency, they would agree to make a transaction but would postpone the actual exchange until confirmation of the price—typically two days later. After that, both banks would "settle" the trade by paying their predetermined amounts to each other. But the time delay presents a risk that one bank would, at settlement time, no longer have sufficient funds to satisfy its obligations.

The asserted patent claims—claims 33 and 34 of the '479 Patent, and all claims of the '510, '720, and '375 Patents—seek to minimize this risk. The relevant claims of the '479 and '510 Patents are method claims. The claims of the '720 and '375 Patents are system and product (media) claims.

In May 2007, CLS Bank International and CLS Services Ltd. (collectively, CLS Bank) sued Alice, seeking a declaration that the asserted claims are invalid, unenforceable, or otherwise not infringed. In

August 2007, Alice counterclaimed, alleging that CLS Bank infringed claims 33 and 34 of the '479 Patent, and all claims of the '510 and '720 Patents. The U.S. filing dates of the patents range from 1993 to 2005, with claims to priority going back even earlier.

The parties filed cross-motions for summary judgment on whether the asserted claims were eligible subject matter under Section 101. In May 2010, the '375 Patent issued to Alice, and Alice soon filed amended counterclaims asserting that CLS Bank also infringed all of its claims. After the Supreme Court decided *Bilski v. Kappos*, — U.S. —, 130 S.Ct. 3218, 177 L.Ed.2d 792 (2010) (*Bilski*), the parties renewed their cross-motions for summary judgment, with CLS Bank asserting that the newly-added '375 Patent also did not claim eligible subject matter under Section 101.

The district court granted CLS Bank's motion for summary judgment and denied Alice's cross-motion. The district court held that no asserted claim contained patent eligible subject matter. *CLS Bank Int'l v. Alice Corp.*, 768 F.Supp.2d 221 (D.D.C.2011), *vacated*, 484 Fed.Appx. 559 (Fed.Cir.2012). Alice timely appealed, and this court has jurisdiction under 28 U.S.C. § 1295(a)(1). A panel of this court reversed. *CLS Bank Int'l v. Alice Corp.*, 685 F.3d 1341 (Fed.Cir.2012). CLS Bank filed a petition for rehearing en banc. In its order granting en banc reconsideration, this court invited the parties and others to address two questions:

> a. What test should the court adopt to determine whether a computer-implemented invention is a patent ineligible "abstract idea"; and when, if ever, does the presence of a computer in a claim

> lend patent eligibility to an otherwise patent-ineligible idea?
>
> b. In assessing patent eligibility under 35 U.S.C. § 101 of a computer-implemented invention, should it matter whether the invention is claimed as a method, system, or storage medium; and should such claims at times be considered equivalent for § 101 purposes?

CLS Bank Int'l v. Alice Corp., 484 Fed.Appx. 559 (Fed.Cir.2012).

II

We begin with the text of the statute. *See Diamond v. Diehr*, 450 U.S. 175, 182, 101 S.Ct. 1048, 67 L.Ed.2d 155 (1981); *see also Bilski*, 130 S.Ct. at 3225; *In re Alappat*, 33 F.3d 1526, 1542 (Fed.Cir.1994) (en banc). Section 101 provides:

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

Section 100(b) further provides that the "term 'process' means process, art or method, and includes a new use of a known process, machine, manufacture, composition of matter, or material."

To understand these provisions in context, the Supreme Court has advised that the "new" requirement in Section 101 is now governed by Section 102. *Diehr*, 450 U.S. at 189, 101 S.Ct. 1048; *see* S.Rep. No. 82-1979, at 6 (1952) ("Section 102 . . . includes, in effect, an amplification and definition of 'new' in section 101.") (S.Rep.82-1979). Similarly, as shown below, whether a new process, machine, and so on is

"inventive" is not an issue under Section 101; the condition for "more" than novelty is contained only in Section 103. Thus, so long as the "conditions and requirements" of patentability are met, a person who invents or discovers a useful process, or an improvement to one, may obtain a patent—and may do so even if the process includes only a new use of an old machine. *See Bilski*, 130 S.Ct. at 3225; *Alappat*, 33 F.3d at 1542.

Underscoring its breadth, Section 101 both uses expansive categories and modifies them with the word "any." In "choosing such expansive terms . . . modified by the comprehensive 'any,' Congress plainly contemplated that the patent laws would be given wide scope." *Bilski*, 130 S.Ct. at 3225 (quoting *Diamond v. Chakrabarty*, 447 U.S. 303, 308, 100 S.Ct. 2204, 65 L.Ed.2d 144 (1980) (some internal quotation marks omitted)).

Defining one of those expansive categories, Section 100(b) confirms the statute's intended breadth. At first examination, the Act's definition of "process" to include a new use of a known machine seems superfluous. After all, if "any" process may be patented under Section 101, Section 100(b) seems wholly unnecessary. An examination of the context for adding Section 100(b) informs the analysis of Section 101. Specifically, the 1952 amendments added Section 100(b) to ensure that doubts about the scope of a "process" under the pre-1952 version of the patent statute would not be read into the new Act. P.J. Federico,[2] *Commentary on the New Patent Act*,

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[2] P.J. Federico, one of the 1952 Patent Act's "principal authors," was also a chief patent examiner. *Hodosh v. Block Drug Co.*, 833 F.2d 1575, 1578 (Fed.Cir.1987). *Federico's Commentary* constitutes "an invaluable insight into the intentions of the

reprinted in 75 J. Pat. & Trademark Off. Soc'y 161, 177 (1993) (*Federico's Commentary*) ("Remarks have appeared in a few decisions and elsewhere that new uses are not patentable. . . . [I]f such remarks are interpreted to mean that a new use or application of an old machine, manufacture or composition cannot result in anything patentable then such statements are not and have never been an accurate statement of the law."); Hearing Before Sub-comm. No. 3 of the Comm. on the Judiciary, at 37 (1951) (1951 Hearings) (Federico testifying that the "definition of 'process' has been added . . . to clarify the present law as to certain types of methods as to which some doubts have been expressed. . . ."). The 1952 Act shows that the "primary significance" of adding Section 100(b) was to make clear that a method was not "vulnerable to attack, on the ground of not being within the field of patentable subject matter, merely because it may recite steps conventional from a procedural standpoint and the novelty resides in the recitation of a particular substance, which is old as such, used in the process." *Federico's Commentary* at 177; *see* S.Rep. No. 82-1979, at 17 ("The . . . definition clarifies the status of processes or methods which involve merely the new use of a known process, machine, manufacture, composition of matter, or material; they are processes or methods under the statute and may be patented provided the conditions of patentability are satisfied.").

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drafters of the Act." *Symbol Techs., Inc. v. Lemelson Med.*, 277 F.3d 1361, 1366 (Fed.Cir.2002); *see also* George M. Sirilla & Hon. Giles S. Rich, *35 U.S.C. . . . 103: From Hotchkiss to Hand to Rich, the Obvious Patent Law Hall-of-Famers*, 32 J. Marshall L.Rev. 437, 509 (1999) (discussing Federico's and Judge Rich's role as the drafters of the 1952 Act).

In addition, in testimony requested by the Committee, P.J. Federico, a chief patent examiner at the United States Patent & Trademark Office (Patent Office), explained that under the proposed amendment a machine or manufacture may include "anything that is under the sun that is made by man." 1951 Hearings at 37; *see* S.Rep. No. 82-1979, at 5 (stating the same principle: so long as the conditions of patentability are met, anything made by man is patentable). The Supreme Court summarized the intent and meaning of these changes when it quoted and approved this famous statement. *See Diehr*, 450 U.S. at 182, 101 S.Ct. 1048.

Indeed, to achieve these ends, the 1952 Act did not merely rely on the breadth of Section 101 and the expanded definition of "process" in Section 100(b), but also added the words "or discovered" to the definition of "invention" in Section 100(a). By definition, Congress made it irrelevant whether a new process, machine, and so on was "discovered" rather than "invented." Both inventions and discoveries are eligible for patenting. This addition confirmed the principle articulated again in Section 103 that an invention "shall not be negated by the manner in which [it] . . . was made." 35 U.S.C. § 103. The language of the Act shows that the authors of the 1952 Act wanted that principle incorporated into the eligibility section of the Act as well as the patentability sections.

One final point confirming the breadth of Section 101 is the 1952 Act's deliberate decision to place the substantive requirement for "invention" in Section 103. Before 1952, the courts had used phrases including "creative work," "inventive faculty," and "flash of creative genius" which compared the existing

invention to some subjective notion of sufficient "inventiveness" as the test for patentability—by definition a hindsight analysis. *See* Giles S. Rich, *Principles of Patentability*, 28 Geo. Wash. L.Rev. 393, 404 (1960). These standardless terms and tests created wildly disparate approaches to determine sufficiency for "invention." *Id*. at 403-04. Judge Rich observed that with "invention" as the test, "judges did whatever they felt like doing according to whatever it was that gave the judge his feelings—out of the evidence coupled with his past mental conditioning—and then selected those precedents which supported his conclusions." Sirilla, 32 J. Marshall L.Rev. at 501 (internal quotation marks omitted).

The 1952 Act focused its central purpose on correcting this systemic problem. "One of the great technical weaknesses of the patent system" prior to 1952 was "the lack of a definitive yardstick as to what is invention." Victor L. Edwards, Cong. Research Serv., Efforts to Establish a Statutory Standard for Invention, at 2 (1958) (Study on Standard for Invention). As Judge Rich testified at the beginning of this legislative effort in 1948, "the matter of defining invention" was "what we are trying to get away from." *Id*. at 4. As Federico put it, "invention" was "an unmeasurable quantity having different meanings for different persons." Federico's Commentary at 183 (making the statements in the context of explaining why Congress added Section 103); *Principles of Patentability*, 28 Geo. Wash. L.Rev. at 407 ("The drafters of the present statute did their best to take out of the law the undefinable concept of 'invention.' Whether lawyers will now take advantage of the terminology . . . and stop talking nonsense is up to them.").

After deliberate effort, the 1952 Act replaced any need for an "invention" or "inventiveness" measure with an objective test for "obviousness" in Section 103. *See Dann v. Johnston*, 425 U.S. 219, 225-26, 96 S.Ct. 1393, 47 L.Ed.2d 692 (1976) (explaining that although "an exercise of the inventive faculty" had been used as a judicial test, "it was only in 1952 that Congress, in the interest of uniformity and definiteness, articulated the requirement in a statute, framing it as a requirement of 'nonobviousness.'" (internal quotation marks and footnote omitted)). The official "Revision Notes" explain that Section 103 became an "explicit statement" of the "holding of patents invalid by the courts[ ] on the ground of lack of invention." S.Rep. No. 82-1979, at 18; *see Federico's Commentary* at 180 (explaining that one of the two major changes made by the 1952 amendments was "incorporating a requirement for invention in section 103." (internal quotation marks omitted)); Study for Statutory Standard of Invention (extensively reviewing Congressional efforts to redefine "invention," which culminated in adoption of Section 103). Thus, the central thrust of the 1952 Act removed "unmeasurable" inquiries into "inventiveness" and instead supplied the nonobviousness requirement of Section 103.

After enactment of the 1952 Act, both of its principal architects recognized the significance of the elimination of a subjective test for "invention." Judge Rich, a House Committee architect of the 1952 Act and later an esteemed jurist, applauded the fact that the Patent Act of 1952 makes no "reference to 'invention' as a legal requirement." *Principles of Patentability*, 28 Geo. Wash. L.Rev. at 405 (emphasis omitted). Judge Rich emphasized that using "the past tense in referring to" what "*used* to be called the requirement of 'invention'" could not be overemphasized. *Id*. (emphasis in

original). Federico expressed the same sentiments. *See Federico's Commentary* at 182-83 (explaining that while perhaps the word "invented" in the prior patent act may have been the source of judicial demand for more than just novelty, Section 103 replaced any requirement for "invention").

Contemporaneous commentators also recognized that any need for "invention" had been rejected in favor of nonobviousness. *See generally*, Karl B. Lutz, *The New 1952 Patent Statute*, 35 J. Pat. Off. Soc'y 155, 157-58 (1953) (explaining that courts had long ago decided that novelty was not enough and had disagreed on how to determine how much more was necessary, but that that issue was now addressed solely by Section 103); Dean O.S. Colclough, *A New Patent Act—But the Same Basic Problem*, 35 J. Pat. Off. Soc'y 501, 510 (1953) (explaining that the "condition of inventiveness has been expressed in a variety of ways by the courts," but the "new provision on inventiveness" in Section 103 was intended to replace and codify prior law). And indeed the courts, including this court, implemented the new statute carefully and religiously. *See Graham v. John Deere Co.*, 383 U.S. 1, 14, 86 S.Ct. 684, 15 L.Ed.2d 545 (1966) ("Section 103, for the first time in our statute, provides a condition which exists in the law and has existed for more than 100 years, but only by reason of decisions of the courts." (internal quotation marks omitted)); *W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1548 (Fed.Cir.1983) (Markey, C.J.) (recognizing the district court improperly relied upon one step of a multi-step process to determine nonobviousness); *Gardner v. TEC Sys., Inc.*, 725 F.2d 1338, 1349-50 (Fed.Cir.1984) (recognizing that Section 103 sets forth the standard, and so "synergism" of a known combination is not required). Thus, any requirement for

"inventiveness" beyond sections 102 and 103 is inconsistent with the language and intent of the Patent Act.

With an eye to the statutory language and its background, the Supreme Court recognized Section 101 as "a 'dynamic provision designed to encompass new and unforeseen inventions.'" *Bilski*, 130 S.Ct. at 3227 (quoting *J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred Int'l, Inc*., 534 U.S. 124, 135, 122 S.Ct. 593, 151 L.Ed.2d 508 (2001)). Indeed, the broad interpretation of Section 101 has constitutional underpinnings. "The subject-matter provisions of the patent law have been cast in broad terms to fulfill the constitutional and statutory goal of promoting 'the Progress of . . . the useful Arts. . . .'" *Chakrabarty*, 447 U.S. at 315, 100 S.Ct. 2204.

In sum, any analysis of subject matter eligibility for patenting must begin by acknowledging that any new and useful process, machine, composition of matter, or manufacture, or an improvement thereof, is eligible for patent protection. While a claim may not later meet the rigorous conditions for patentability, Section 101 makes these broad categories of claimed subject matter eligible for that consideration.

III

We turn now to the limited exceptions to the broad statutory grant in Section 101 which the Supreme Court has identified: "'[l]aws of nature, natural phenomena, and abstract ideas'" are not patent eligible. *Mayo Collaborative Servs. v. Prometheus Labs., Inc*., — U.S. —, 132 S.Ct. 1289, 1293, 182 L.Ed.2d 321 (2012) (quoting *Diehr*, 450 U.S. at 185, 101 S.Ct. 1048); *see also Bilski*, 130 S.Ct. at 3225. The motivation for the exceptions to eligibility is to prevent the

"monopolization" of the "basic tools of scientific and technological work," which "might tend to impede innovation more than it would tend to promote it." *Prometheus*, 132 S.Ct. at 1293 (internal quotation marks omitted).

A. Scope of the Exception

1. Generally

As the Supreme Court has explained, the relevant inquiry under the exceptions is whether the claim covers merely an abstract idea, law of nature, or natural phenomenon; or whether the claim covers a particular application of an abstract idea, law of nature, or natural phenomenon. *See Prometheus*, 132 S.Ct. at 1294 ("[T]o transform an unpatentable law of nature into a patent-eligible *application* of such a law, one must do more than simply state the law of nature while adding the words 'apply it.'" (emphasis in original)); *Bilski*, 130 S.Ct. at 3230 ("[W]hile an abstract idea, law of nature, or mathematical formula could not be patented, an *application* of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection." (emphasis in original) (internal quotation marks omitted)); *Diehr*, 450 U.S. at 187, 101 S.Ct. 1048 ("It is now commonplace that an *application* of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection." (emphasis in original)); *Gottschalk v. Benson*, 409 U.S. 63, 67, 93 S.Ct. 253, 34 L.Ed.2d 273 (1972) ("He who discovers a hitherto unknown phenomenon of nature has no claim to a monopoly of it which the law recognizes. If there is to be invention from such a discovery, it must come from the *application* of the law of nature to a new and useful end." (emphasis added) (internal quotation marks omitted)).

The claims are key to this patent eligibility inquiry. A court must consider the asserted claim *as a whole* when assessing eligibility:

> In determining the eligibility of respondents' claimed process for patent protection under § 101, their claims must be considered *as a whole*. It is inappropriate to dissect the claims into old and new elements and then to ignore the presence of the old elements in the analysis. This is particularly true in a process claim because a new combination of steps in a process may be patentable even though all the constituents of the combination were well known and in common use before the combination was made.

Diehr, 450 U.S. at 188, 101 S.Ct. 1048 (emphasis added). And, a court must consider the *actual* language of each claim. The majority in *Diehr* rejected the minority's approach ignoring portions of the claims: "[i]n order for the dissent to reach its conclusion it is necessary for it to read out of respondents' patent application all the steps in the claimed process which it determined were not novel or 'inventive.' That is not the purpose of the § 101 inquiry. . . ." *Id*. at 193 n. 15, 101 S.Ct. 1048 (citations omitted).

Any claim can be stripped down, simplified, generalized, or paraphrased to remove all of its concrete limitations, until at its core, something that could be characterized as an abstract idea is revealed. Such an approach would "if carried to its extreme, make all inventions unpatentable because all inventions can be reduced to underlying principles of nature which, once known, make their implementation obvious." *Id*. at 189 n. 12, 101 S.Ct. 1048; *see also Prometheus*, 132 S.Ct. at 1293. A court cannot go hunting for abstractions by ignoring the concrete,

palpable, tangible limitations of the invention the patentee actually claims.

Different claims will have different limitations; each must be considered as actually written. The inquiry is a practical one to determine whether the claim, as a whole with all of its limitations, in effect covers a patent ineligible abstract idea or a patent eligible application of that idea. Thus, while the analysis will be different for each claim based on its particular limitations, the form of the analysis remains the same.

The claims in *O'Reilly v. Morse*, 56 U.S. (15 How.) 62, 14 L.Ed. 601 (1854), and a case described therein, illustrate the distinction between a patent ineligible abstract idea and a practical application of an idea. The "difficulty" in *Morse* arose with the claim in which *Morse*

> d[id] not propose to limit [him]self to the specific machinery or parts of machinery described in the . . . specification and claims; the essence of [his] invention being the use of the motive power of the electric or galvanic current . . . however developed for marking or printing intelligible characters, signs, or letters, at any distances. . . .

Id. at 112 (internal quotation marks omitted). In considering Morse's claim, the Supreme Court referred to an earlier English case that distinguished ineligible claims to a "principle" from claims "applying" that principle:

> [I]t seems that the court at first doubted, whether it was a patent for any thing more than the discovery that hot air would promote the ignition of fuel better than cold. And if this had been the construction, the court, it appears, would have held his patent to be void; because the discovery

> of a principle in natural philosophy or physical science, is not patentable.
>
> But after much consideration, it was finally decided that this principle must be regarded as well known, and that the plaintiff had invented a mechanical mode of applying it to furnaces; and that his invention consisted in interposing a heated receptacle, between the blower and the furnace, and by this means heating the air after it left the blower, and before it was thrown into the fire. Whoever, therefore, used this method of throwing hot air into the furnace, used the process he had invented, and thereby infringed his patent, although the form of the receptacle or the mechanical arrangements for heating it, might be different from those described by the patentee.

Id. at 116. The claim in Morse itself was impermissible because it covered "'an effect produced by the use of electro-magnetism, distinct from the process or machinery necessary to produce it.'" *The Telephone Cases*, 126 U.S. 1, 534, 8 S.Ct. 778, 31 L.Ed. 863 (1888) (quoting *Morse*, 56 U.S. (15 How.) at 120). This was in contrast to a sustained claim that was limited to:

> making use of the motive power of magnetism, when developed by the action of such current or currents, substantially as set forth in the . . . description, . . . as means of operating or giving motion to machinery, which may be used to imprint signals upon paper or other suitable material, or to produce sounds in any desired manner, for the purpose of telegraphic communication at any distances.

Id. (first ellipsis added, second ellipsis in original) (quoting *Morse*, 56 U.S. (15 How.) at 85). "'The effect

of [*Morse*] was, therefore, that the use of magnetism as a motive power, without regard to the particular process with which it was connected in the patent, could not be claimed, but that its use in that connection could.'" *Benson*, 409 U.S. at 68, 93 S.Ct. 253 (quoting *The Telephone Cases*, 126 U.S. at 534, 8 S.Ct. 778).

These examples illustrate that the inquiry under the abstract ideas exception deals not merely with breadth, because the "hot air" claims were broad and covered many "mechanical arrangements" but yet found patent eligible. The concern, which has become clearer through the Supreme Court's more recent precedents, is whether the claim seeks to patent an idea itself, rather than an application of that idea.

2. Meaningful limitations

The relevant inquiry must be whether a claim includes *meaningful* limitations restricting it to an application, rather than merely an abstract idea. *See Prometheus*, 132 S.Ct. at 1297 ("[D]o the patent claims add *enough* to their statements of the correlations to allow the processes they describe to qualify as patent-eligible processes that *apply* natural laws?" (emphasis in original)); *see also Fort Props., Inc. v. Am. Master Lease LLC*, 671 F.3d 1317, 1323 (Fed.Cir.2012) ("[T]o impart patent-eligibility to an otherwise unpatentable process under the theory that the process is linked to a machine, the use of the machine must impose meaningful limits on the claim's scope." (internal quotation marks omitted)). An abstract idea is one that has no reference to material objects or specific examples—*i.e.*, it is not concrete. *See* Merriam-Webster's Collegiate Dictionary 5 (11th ed.2003) (defining abstract as "disassociated from any specific instance . . . expressing a quality apart from an object

<the word *poem* is concrete, poetry is [abstract]>"). A claim may be premised on an abstract idea—the question for patent eligibility is whether the claim contains limitations that meaningfully tie that idea to a concrete reality or actual application of that idea.

Indeed, the Supreme Court repeatedly has stated that a claim touching upon a natural phenomenon, abstract idea, or law of nature is not, for that reason alone, ineligible for patenting. The Supreme Court clarified the "commonplace" principle "that an *application* of a law of nature or mathematical formula to a known structure . . . may well be deserving of patent protection." *Diehr*, 450 U.S. at 187, 101 S.Ct. 1048 (emphasis in original). For these reasons, a claim does not become ineligible simply because it applies a basic tool. *Id*.; *see Prometheus*, 132 S.Ct. at 1294 (explaining that the fact that a claim uses a basic tool does not mean it is not eligible for patenting). The struggle is in drawing the line between claims that are and are not meaningfully limited; fortunately, the Supreme Court's own cases provide the guideposts for doing so.

First, we know a claim is not meaningfully limited if it merely describes an abstract idea or simply adds "apply it." *See Prometheus*, 132 S.Ct. at 1294, 1297. The broad claim in *Morse* provides a striking example of this. We also know that, if a claim covers all practical applications of an abstract idea, it is not meaningfully limited. *See id*. at 1301-02. For example, "[a]llowing petitioners to patent risk hedging would pre-empt use of this approach in *all fields*, and would effectively grant a monopoly over an abstract idea." *Bilski*, 130 S.Ct. at 3231 (emphasis added). While this concept is frequently referred to as "pre-emption," it is important to remember that all patents "pre-empt"

some future innovation in the sense that they preclude others from commercializing the invention without the patentee's permission. Pre-emption is only a subject matter eligibility problem when a claim preempts all practical uses of an abstract idea. For example, the claims in *Benson* "purported to cover *any* use of the claimed method in a general-purpose digital computer of any type." 409 U.S. at 64, 93 S.Ct. 253 (emphasis added). The claims were not allowed precisely because they pre-empted essentially all uses of the idea:

> It is conceded that one may not patent an idea. But in practical effect that would be the result if the formula for converting [binary-coded decimal] numerals to pure binary numerals were patented in this case. The mathematical formula involved here has no substantial practical application except in connection with a digital computer, which means that . . . the patent would *wholly* pre-empt the mathematical formula and in practical effect would be a patent on the algorithm itself.

Id. at 71-72, 93 S.Ct. 253 (emphasis added). When the steps of the claim "must be taken in order to apply the [abstract idea] in question," the claim is essentially no different from saying apply the abstract idea. *Prometheus*, 132 S.Ct. at 1299-1300. It is not the breadth or narrowness of the abstract idea that is relevant, but whether the claim covers every practical application of that abstract idea.[3]

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[3] The pre-emption analysis must also recognize that the Patent Act does not halt or impede academic research, without commercial ends, to test, confirm, or improve a patented invention. *See Sawin v. Guild*, 21 F. Cas. 554, 555 (C.C.D.Mass.1813) (No. 12,391) (Story, J.) (infringement does not occur when the invention is used "for the mere purpose of philosophical

And, we know that, even if a claim does not wholly pre-empt an abstract idea, it still will not be limited meaningfully if it contains only insignificant or token pre- or post-solution activity—such as identifying a relevant audience, a category of use, field of use, or technological environment. *See Prometheus*, 132 S.Ct. at 1297-98, 1300-01; *Bilski*, 130 S.Ct. at 3230-31; *Diehr*, 450 U.S. at 191-92 & n. 14, 101 S.Ct. 1048; *Parker v. Flook*, 437 U.S. 584, 595 n. 18, 98 S.Ct. 2522, 57 L.Ed.2d 451 (1978).

Finally, the Supreme Court has told us that a claim is not meaningfully limited if its purported limitations provide no real direction, cover all possible ways to achieve the provided result, or are overly-generalized. *See Prometheus*, 132 S.Ct. at 1300 ("[S]imply appending conventional steps, specified at a high level of generality, to laws of nature, natural phenomena, and abstract ideas cannot make those laws, phenomena, and ideas patentable."); *Fort Props.*, 671 F.3d at 1323 ("Such a broad and general limitation does not impose meaningful limits on the claim's scope." (internal quotation marks omitted)). For example, in *Prometheus*, "the 'determining' step tells the doctor to determine the level of the relevant metabolites in the blood, through whatever process the doctor or the laboratory wishes to use." 132 S.Ct. at 1297. *Diehr* explained that the application in *Flook* "did not purport to explain how these other variables were to be determined, nor did it purport to contain any disclosure relating to the chemical processes at work, the monitoring of process variables, or the means of setting off an alarm or adjusting an alarm system," and that "[a]ll that it provides is a formula for computing an updated alarm

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experiment, or to ascertain the verity and exactness of the specification").

limit." *Diehr*, 450 U.S. at 186-87, 101 S.Ct. 1048 (footnote omitted) (internal quotation marks omitted).

Just as the Supreme Court has told us when a claim likely should not be deemed meaningfully limited, it has also given us examples of meaningful limitations which likely remove claims from the scope of the Court's judicially created exceptions to Section 101. Thus, a claim is meaningfully limited if it requires a particular machine implementing a process or a particular transformation of matter. *See Bilski*, 130 S.Ct. at 3227 ("This Court's precedents establish that the machine-or-transformation test is a useful and important clue . . . for determining whether some claimed inventions are processes under § 101."); *see also Prometheus*, 132 S.Ct. at 1302-03; *Diehr*, 450 U.S. at 184, 192, 101 S.Ct. 1048. A claim also will be limited meaningfully when, in addition to the abstract idea, the claim recites added limitations which are essential to the invention. In those instances, the added limitations do more than recite pre- or post-solution activity, they are central to the solution itself. And, in such circumstances, the abstract idea is not wholly pre-empted; it is only preempted when practiced in conjunction with the other necessary elements of the claimed invention. *See Diehr*, 450 U.S. at 187, 101 S.Ct. 1048 ("[T]he respondents here do not seek to patent a mathematical formula. Instead, they seek patent protection for a process of curing synthetic rubber. Their process admittedly employs a well-known mathematical equation, but they do not seek to pre-empt the use of that equation. Rather, they seek only to foreclose from others the use of that equation in conjunction with all of the other steps in their claimed process."); *see also Prometheus*, 132 S.Ct. at

1298-99 (discussing *Diehr*, 450 U.S. 175, 101 S.Ct. 1048).[4]

3. Computer-specific limitations

When assessing computer implemented claims, while the mere reference to a general purpose computer will not save a method claim from being deemed too abstract to be patent eligible, the fact that a claim is limited by a tie to a computer is an important indication of patent eligibility. *See Bilski*, 130 S.Ct. at 3227. This is true both because its tie to a machine moves it farther away from a claim to no more than an idea and because that same tie makes it less likely that the claims will pre-empt all practical applications of the idea.

The key to this inquiry is whether the claims tie the otherwise abstract idea to a *specific way* of doing something with a computer, or a *specific computer* for doing something; if so, they likely will be patent eligible, unlike claims directed to *nothing more than the idea* of doing that thing on a computer. While no particular type of limitation is necessary, meaningful limitations may include the computer being part of the solution, being integral to the performance of the method, or containing an improvement in computer technology. *See SiRF Tech., Inc. v. Int'l Trade Comm'n*, 601 F.3d 1319, 1332-33 (Fed.Cir.2010) (noting that "a

[4] Judge Lourie's opinion concludes that the system claims are not patent eligible in part because it is *now* routine for computers to perform the functions described—because the world has changed, as the opinion puts it. Lourie Op. at 1291-92. Using what has *become* routine in 2013 to determine what *was* inherent in a concept in the early 1990s injects hindsight into the eligibility analysis and fails to recognize that patent eligibility, like all statutory patentability questions, is to be measured as of the filing date. *See, e.g.*, 35 U.S.C. §§ 102, 103.

machine," a GPS receiver, was "integral to each of the claims at issue" and "place[d] a meaningful limit on the scope of the claims"). A special purpose computer, *i.e.*, a new machine, specially designed to implement a process may be sufficient. *See Alappat*, 33 F.3d at 1544 ("Although many, or arguably even all, of the means elements recited in claim 15 represent circuitry elements that perform mathematical calculations, which is essentially true of all digital electrical circuits, the claimed invention as a whole is directed to a combination of interrelated elements which combine to form a machine for converting discrete waveform data samples into anti-aliased pixel illumination intensity data to be displayed on a display means. This is not a disembodied mathematical concept which may be characterized as an 'abstract idea,' but rather a specific machine to produce a useful, concrete, and tangible result." (footnotes omitted)); *see also id.* at 1545 ("We have held that such programming creates a new machine, because a general purpose computer in effect becomes a special purpose computer once it is programmed to perform particular functions pursuant to instructions from program software.").

At bottom, where the claim is tied to a computer in such a way that the computer plays a meaningful role in the performance of the claimed invention, and the claim does not pre-empt virtually all uses of an underlying abstract idea, the claim is patent eligible.

B. What the Exception Is Not About

In specifying what the scope of the abstract idea exception to patent eligibility is, it is also important to specify what the analysis is *not*. *Flook* suggested that an abstract idea is to be "treated as though it were a familiar part of the prior art." 437 U.S. at 592,

98 S.Ct. 2522. *Prometheus* used the language of "inventive concept" to describe the "other elements or a combination of elements . . . sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the natural law itself" and described purported limitations as "routine" or "conventional." 132 S.Ct. at 1294, 1298-99. Such language should not be read to conflate principles of patent eligibility with those of validity, however. Nor should it be read to instill an "inventiveness" or "ingenuity" component into the inquiry.

The eligibility inquiry is not an inquiry into obviousness, novelty, enablement, or any other patent law concept. Each section plays a different role and no one section is more important than any other. Section 112 of Title 35 protects the public by ensuring that patents fully disclose, enable, and particularly claim the invention. Sections 102 and 103 ensure that the public is free to use what was previously known and the obvious variants thereof. The Section 101 eligibility inquiry determines whether a claim is limited meaningfully to permissible subject matter, as distinct from the validity requirements of the other sections.

The Supreme Court repeatedly has cautioned against conflating the analysis of the conditions of patentability in the Patent Act with inquiries into patent eligibility. *See Diehr*, 450 U.S. at 190, 101 S.Ct. 1048 ("The question therefore of whether a particular invention is novel is wholly apart from whether the invention falls into a category of statutory subject matter." (internal quotation marks omitted)); *see also Prometheus*, 132 S.Ct. at 1304 (recognizing that "to shift the patent-eligibility inquiry entirely to [§§ 102, 103, and 112] risks creating significantly greater legal

uncertainty, while assuming that those sections can do work that they are not equipped to do"). Because a new combination of old steps is patentable, as is a new process using an old machine or composition, subject matter eligibility must exist even if it was obvious to use the old steps with the new machine or composition. Otherwise the eligibility analysis ignores the text of sections 101 and 100(b), and reads Section 103 out of the Patent Act.

The Supreme Court's reference to "inventiveness" in *Prometheus* must be read as shorthand for its inquiry into whether implementing the abstract idea in the context of the claimed invention inherently requires the recited steps. Thus, in *Prometheus*, the Supreme Court recognized that the additional steps were those that *anyone* wanting to use the natural law would *necessarily* use. *See Prometheus*, 132 S.Ct. at 1298. If, to implement the abstract concept, one *must* perform the additional step, then the step merely separately restates an element of the abstract idea, and thus does not further limit the abstract concept to a practical application.[5]

[5] Judge Lourie's opinion takes the reference to an "inventive concept" in *Prometheus* and imbues it with a life that is neither consistent with the Patent Act's description of Section 101 nor with the totality of Supreme Court precedent regarding the narrow exceptions thereto. He concludes that "inventive concept" must refer to a "genuine human contribution to the claimed subject matter." Lourie Op. at 1283. He, thus, injects an "ingenuity" requirement into the abstract exception inquiry. It is inconceivable to us that the Supreme Court would choose to undo so much of what Congress tried to accomplish in the 1952 Patent Act, and to do so by the use of one phrase in one opinion.

C. Nature of Our Inquiry

Because we are assessing judicially created exceptions to a broad statutory grant, one of the principles that must guide our inquiry is that judge-made exceptions to properly enacted statutes are to be narrowly construed. Indeed, the Supreme Court has cautioned that, to avoid improper narrowing by courts of congressional enactments, resort to judge-made exceptions to statutory grants must be rare. *See, e.g.*, *W. Union Tel. Co. v. Lenroot*, 323 U.S. 490, 514, 65 S.Ct. 335, 89 L.Ed. 414 (1945) ("[T]he judicial function does not allow us to disregard that which Congress has plainly and constitutionally decreed and to formulate exceptions which we think, for practical reasons, Congress might have made had it thought more about the problem."); *United States v. Rutherford*, 442 U.S. 544, 559, 99 S.Ct. 2470, 61 L.Ed.2d 68 (1979) ("Whether, as a policy matter, an exemption should be created is a question for legislative judgment, not judicial inference.").

Congress drafted Section 101 broadly and clearly, and anything beyond a narrow exception would be impermissibly in tension with the statute's plain language and design. *See Chakrabarty*, 447 U.S. at 308, 100 S.Ct. 2204 ("In choosing such expansive terms as 'manufacture' and 'composition of matter,' modified by the comprehensive 'any,' Congress plainly contemplated that the patent laws would be given wide scope."); *id*. at 315, 100 S.Ct. 2204 ("Broad general language is not necessarily ambiguous when congressional objectives require broad terms."); *cf. Bilski*, 130 S.Ct. at 3226 ("This Court has not indicated that the existence of these well-established exceptions gives the Judiciary *carte blanche* to impose other limitations that are inconsistent with the text and the

statute's purpose and design."). As the Supreme Court has made clear, too broad an interpretation of these exclusions from the statutory grant of Section 101 "could eviscerate patent law." *Prometheus*, 132 S.Ct. at 1293. It is particularly important that Section 101 not be read restrictively to exclude "unanticipated inventions" because the most beneficial inventions are "often unforeseeable." *See Chakrabarty*, 447 U.S. at 316, 100 S.Ct. 2204; *see also J.E.M. Ag Supply*, 534 U.S. at 135, 122 S.Ct. 593 (describing Section 101 as "a dynamic provision designed to encompass new and unforeseen inventions."). Broad inclusivity is the Congressional goal of Section 101, not a flaw. Judicially created exceptions must not be permitted to thwart that goal.

Mindful of these admonitions, we turn to CLS Bank's contention that the presumption of validity should not apply to patent eligibility challenges. CLS Bank contends that the presumption of validity only applies to *statutory* bases for invalidating a patent—35 U.S.C. Sections 102, 103, 112, and 251. Thus, although the Supreme Court invalidated the patent before it in *Prometheus* because it fell within one of the exceptions to patent eligibility—the law of nature exception—CLS Bank contends that the Section 101 inquiry does not involve the presumption of validity in the same way the statutory bases for invalidity do. We disagree.[6]

Before issuing a patent, the Patent Office rejects claims if they are drawn to ineligible subject matter,

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[6] In its reply brief, CLS Bank intimates that the presumption of validity does not apply because a challenge to patent eligibility is not a listed defense to infringement under 35 U.S.C. § 282(b). This issue, however, was not fully briefed by the parties and, accordingly, we do not address it.

just as it rejects claims if not compliant with Sections 102, 103, or 112. Thus, when a patent issues, it does so after the Patent Office assesses and endorses its eligibility under Section 101, just as it assesses and endorses its patentability under the other provisions of Title 35. *See Microsoft Corp. v. i4i Ltd. P'ship*, — U.S. —, 131 S.Ct. 2238, 2242, 180 L.Ed.2d 131 (2011) ("Congress has set forth the prerequisites for issuance of a patent, which the PTO must evaluate in the examination process. To receive patent protection a claimed invention must, among other things, fall within one of the express categories of patentable subject matter, § 101, and be novel, § 102, and nonobvious, § 103."). We see no reason not to apply the same presumption of validity to that determination as we do to the Patent Office's other patentability determinations.

Because we believe the presumption of validity applies to all challenges to patentability, including those under Section 101 and the exceptions thereto, we find 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. *Cf. Microsoft*, 131 S.Ct. at 2242 ("We consider whether § 282 requires an invalidity defense to be proved by clear and convincing evidence. We hold that it does."). We believe, moreover, that application of this presumption and its attendant evidentiary burden is consistent with the Supreme Court's admonition to cabin the judicially created exceptions to Section 101 discussed above.

With these principles in mind, we turn to the specific claims here. We start with the system claims, which all four of us agree are patent-eligible.

IV

At the outset, a computer-implemented invention is eligible for patenting under Section 101. Computers are "machines." Machines are expressly eligible subject matter under Section 101. Having said that, however, were it not for software, programmable computers would be useless. A computer without software collects dust, not data. The operation of the software changes the computer, altering its ability to perform one function or another as the software indicates. This court long ago recognized that a computer programmed to perform a specific function is a new machine with individualized circuitry created and used by the operation of the software. *See Alappat*, 33 F.3d at 1545. The combination of machine and software "creates a new machine, because a general purpose computer in effect becomes a special purpose computer once it is programmed to perform particular functions pursuant to instructions from program software." *Id.*; *see Morse*, 56 U.S. (15 How.) at 113 ("[H]e says he does not confine his claim to the machinery or parts of machinery, which he specifies. . . ."); *cf. Bilski*, 130 S.Ct. at 3227 (an important clue that a claim embracing an abstract idea is patent eligible is if its use is tied to a machine).

The combination of new software and a computer machine accomplishes wonders by reducing difficult processes—like determining where someone is on the earth, instantly translating Chinese to English, or performing hundreds of functions in a hand-held device called a "smart phone"—into a series of simple steps. For example, the Supreme Court upheld precisely this kind of combination for the computer-implemented parameters to run a rubber press—breaking the known steps into tiny mathematical

calculations that advanced a known function beyond prior capabilities. *See Diehr*, 450 U.S. at 179, 101 S.Ct. 1048. Indeed, much of the innovative energy and investment of the past few decades have focused on software improvements that have produced revolutions in modern life, including the "smart phone."

Nonetheless we must examine whether, despite falling within the plain language of Section 101, clear and convincing evidence shows that a claim to a computer-implemented invention is barred from patent eligibility by reason of the narrow judicial prohibition against claiming an abstract idea. In *Bilski*, the Court analyzed whether, and under what circumstances, a method claim's tie to a machine could make it a practical application of the underlying idea, and thus patent-eligible. The Court explained that a machine tie, though not required, is a "useful and important clue" that a method claim is patent-eligible. *Bilski*, 130 S.Ct. at 3227. If tying a method to a machine can be an important indication of patent-eligibility, it would seem that a claim embodying the *machine itself*, with all its structural and functional limitations, would rarely, if ever, be an abstract idea. *Cf. Diehr*, 450 U.S. at 187, 101 S.Ct. 1048.

Indeed, in theory, an inventor could claim a machine combination with circuitry, transistors, capacitors, and other tangible electronic components precisely arrayed to accomplish the function of translating Chinese to English. These complex interrelated machine components would squarely fit within the terms of Section 101 and involve nothing theoretical, highly generalized, or otherwise abstract. The fact that innovation has allowed these machines to move from vacuum-tube-filled specialized mechanical behemoths, to generalized machines changed by punch

cards, to electronically programmable machines that can fit in the palm of your hand, does not render them abstract.[7]

Analyzing each asserted system claim as a whole, as we are required to do, demonstrates that each does not claim anything abstract in its machine embodiments. Especially in light of the fact that this appeal involves summary judgment of invalidity, and so requires clear and convincing evidence of invalidity, for the following reasons we would reverse the district court.

V

Claim 26 of the '375 Patent is typical of Alice's system claims and recites:

> A *data processing system* to enable the exchange of an obligation between parties, the system comprising:
>
> *a communications controller*,

[7] We must disagree with Judge Lourie that a computer must do something other than what a computer does before it may be considered a patent-eligible invention. *See* Lourie Op. at 1286 ("At its most basic, a computer is just a calculator capable of performing mental steps faster than a human could. Unless the claims require a computer to perform operations that are not merely accelerated calculations, a computer does not itself confer patent eligibility."). Everything done by a computer can be done by a human. Requiring a computer to do something that a human could not would mean that computer implementation could never produce patent eligibility. If a computer can do what a human can in a better, specifically limited way, it could be patent eligible. Indeed, even an increase in speed alone may be sufficient to result in a meaningful limitation; if a computer can perform a process that would take a human an entire lifetime, a claim covering that solution should be sufficiently limited to be patent eligible.

a first party device, coupled to said communications controller,

a data storage unit having stored therein

(a) information about a first account for a first party, independent from a second account maintained by a first exchange institution, and

(b) information about a third account for a second party, independent from a fourth account maintained by a second exchange institution; and

a computer, coupled to said data storage unit and said communications controller, that is configured to

(a) *receive a transaction from said first party device via said communications controller*;

(b) *electronically adjust* said first account and said third account in order to effect an exchange obligation arising from said transaction between said first party and said second party after ensuring that said first party and/or said second party have adequate value in said first account and/or said third account, respectively; and

(c) *generate an instruction* to said first exchange institution and/or said second exchange institution to adjust said second account and/or said fourth account in accordance with the adjustment of said first account and/or said third account, wherein said instruction being an irrevocable, time invariant obligation placed on said first exchange institution and/or said second exchange institution.

'375 Patent claim 26 (emphases added).

Even viewed generally, the claim covers the use of a computer and other hardware specifically programed to solve a complex problem. Specifically, the claimed data processing system is limited to an implementation of the invention that includes at least four separate structural components: a *computer*, a first party *device*, a data storage *unit*, and a communications *controller* coupled via machine components to the computer and the first party device. The claim further limits the system by requiring a structural configuration that "receive[s]," "electronically adjust[s]," and "generate[s]" according to the specific requirements of the system. These are traditional hardware claims and the '375 Patent discloses at least thirty-two figures which provide detailed algorithms for the software with which this hardware is to be programmed.

Lest it be said that these structural and functional limitations are mere conventional post-solution activity that is not integral to the performance of the claimed system, the specification explains implementation of the recited special purpose computer system. It states, for example, that the "core of the system hardware is a collection of data processing units." '375 Patent col. 7 ll. 22-23. Each processing unit "is operably connected with . . . one or more mass data storage units . . . to store all data received from stakeholders, and other data relating to all other software operations generating or retrieving stored information." *Id*. col. 7 ll. 39-43. The specification also explains that the communications controllers "effect communications between the processing units . . . and the various external hardware devices used by the stakeholders to communicate data or instructions to or from the processing units." *Id*. col. 7 ll. 46-52. The computer can connect to the communications

controller by means of another machine, a modem. *Id*. col. 7 ll. 57-60.

The specification also includes numerous flowcharts that provide algorithm support for the functions recited in the claims. Each processor in the claimed system runs applications software that is written to implement the algorithms in Figures 8 to 16 and 18 to 40. *See id*. col. 7 ll. 26-31. As just one example, the system performs the algorithm depicted in Figure 16 (shown below) to confirm that parties are able to exchange obligations ("matched order confirmation"). *See, e.g*., *id*. col. 20 l.54-col. 21 l.18.

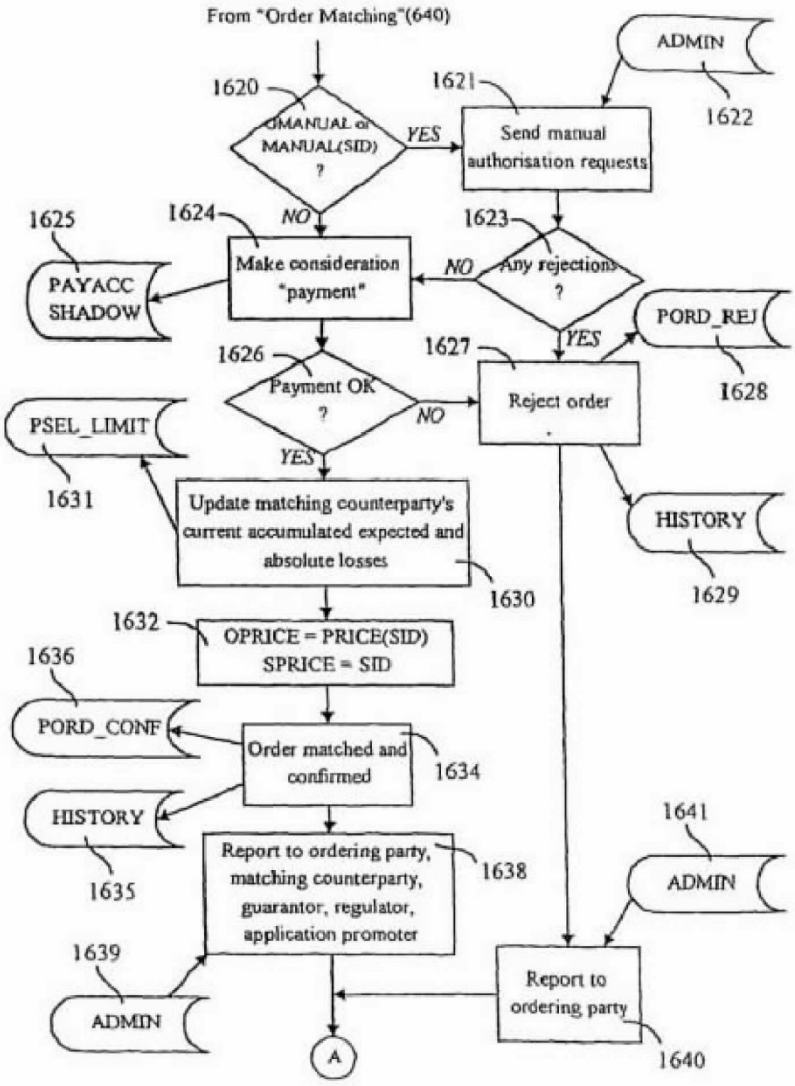

Fig. 16

The specification states that the confirmation algorithm includes the step of "creating transactions in the payment shadow file." *Id*. col. 20 ll. 62-64. This step corresponds to blocks 1624 and 1625 in Figure 16. After creating these transactions, the system "checks

that 'consideration payment' was effected successfully" (block 1626 in Figure 16), which requires determining whether the required consideration amount is available in the payment shadow file. *Id*. col. 20 l.64-col. 21 l.1. If there is insufficient consideration, the matched order is rejected (block 1627). *Id*. col. 21 ll. 1-4. This portion of the specification thus provides algorithm support for the "electronically adjust" element of claim 26, in which the system adjusts accounts "after ensuring that said first party and/or said second party have adequate value in" their accounts. *Id*. claim 26.

Labeling this system claim an "abstract concept" wrenches all meaning from those words, and turns a narrow exception into one which may swallow the expansive rule (and with it much of the investment and innovation in software). Nor is claim 26 even the narrowest, most detailed claim on appeal. The patents at issue contain dependent claims which include additional structural and functional limitations that render the system even more concrete. Claim 36, for example, further comprises "means for allowing said first party to acquire an item from said second party, wherein the exchange obligation relates to said item." This means-plus-function element is limited to the specific algorithms that the specification teaches as performing the recited function. Dependent claim 37 limits the data processing system to one that "further compris[es] a second party device, wherein said computer is further configured to receive a transaction from said second party device via said communications controller." This adds a fifth structure, the second party device, to the required system.

The '720 Patent's claims recite similar structure and programming. The claims recite a data processing

system comprising a data storage unit coupled to a computer. *See, e.g*., '720 Patent claim 1. The computer is configured (programmed) to perform the "receive," "electronically adjust," and "generate" functions. *Id*. Certain dependent claims add additional structural and functional limitations that show even more clearly that the claims are directed to a concrete and practical application of any underlying idea. Claims 27, 59, 67, 79, and 84, for example, limit the system to one with "means for allowing said first party to acquire an item from said second party." The specific structure and functions recited in these claims, which are integral to performing the invention, show that the '720 Patent's claims are directed to practical applications of the underlying idea and thus are patent-eligible.

The claims do not claim only an abstract concept without limitations that tie it to a practical application. Confirming this, someone can use an escrow arrangement in many other applications, without computer systems, and even with computers but in other ways without infringing the claims. *See* Appellant's En Banc Resp. Br. 40. Nor is this simply a case where a claim has been limited to a particular field. *Cf. Bilski*, 130 S.Ct. at 3231. Indeed, because they require a machine, the claims cannot be infringed even in this field, and even if a human performs the claimed steps through a combination of physical or mental steps. It would be improper for the court to ignore these limitations and instead attempt to identify some "gist" or "heart" of the invention. *See Diehr*, 450 U.S. at 188, 101 S.Ct. 1048 (it is improper to dissect the claims; they must be considered as a whole); *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 365 U.S. 336, 345, 81 S.Ct. 599, 5 L.Ed.2d 592 (1961) ("[T]here is no legally recognizable or protected 'essential' element, 'gist' or 'heart' of the invention.").

We next test the additional elements in addition to any abstract idea of an escrow present in the claim. The recited steps are not inherent in the process of using an escrow. One can conduct an escrow without a data processing system that includes a data storage unit coupled to a computer which has been modified by software to receive transactions, adjust records, and generate electronic instructions according to specific structural limitations in both software and hardware formats. These structural elements are additional steps to an escrow, not inherent in it.

Further, we detect no clear and convincing evidence in this record that as of the critical time the steps recited were used commonly in computer implemented prior art practicing the abstract concept implicated here. As explained above, whether the additional steps were routine in some other context is not the inquiry: a combination of old processes is patent eligible subject matter. 35 U.S.C. § 100(b). As discussed above, nonobviousness is not an issue under Section 101; neither is "invention." Instead, the question is whether these steps are inherent in an escrow. This record contains no clear and convincing evidence to that effect. Instead, much of the information relied upon by CLS Bank is not even "prior art," especially given that some claims may have priority to the early 1990's. *See* Respondent's Br. at 28. A use of a computer is not inherent in an escrow, and the record gives no reason to conclude that use of machines in the specific claimed system would "involve well-understood, routine, conventional activity previously engaged in by researchers in the field." *Prometheus*, 132 S.Ct. at 1294. Rapid changes in computer and telecommunication technology occurred in the early 1990's. While apparently routine at the present time to use computers to perform instantaneous international

financial transactions, this court will not engage in the hindsight error of speculating about the state of that technology over twenty years ago.

Finally, these limitations are not stated at a high level of generality. These system limitations do not recite only using the steps of an escrow as applied to a particular field of commerce. Because of the number and specificity of the structural limitations, these claims have narrow, if any, relevant pre-emptive effect. Under Section 101, even a process made up of old processes is patent eligible; so too must be a new machine made to perform even old processes.

The claims here are analogous to those found patent eligible in *Diehr*. The claims related to a method that used a machine, an abstract idea, and other steps to cure rubber. *See Diehr*, 450 U.S. at 179 n. 5, 101 S.Ct. 1048. The examiner rejected the claims because he deemed the additional steps were "conventional and necessary to the process." *Id*. at 180-81, 101 S.Ct. 1048 (internal quotation marks omitted). Those steps included steps that sound utterly old and routine: "heating said mold," "comparing" data, "constantly determining the temperature of the mold," "repetitively calculating," and "opening the press." *Id*. at 179 n. 5, 101 S.Ct. 1048. Indeed, even the Arrhenius equation was well-known in the art, but in combination was eligible.

The Supreme Court acknowledged these fact findings about the known status of various elements of the claim in *Diehr*, but it nonetheless reversed. It stated that the claims were patent eligible because they were "drawn to an industrial process for the molding of rubber products." *Id*. at 192-93, 101 S.Ct. 1048. In doing so, the Court explained that the claims "describe[d] a process of curing rubber beginning with

the loading of the mold and ending with the opening of the press and the production of a synthetic rubber product." *Id*. at 193 n. 15, 101 S.Ct. 1048. Indeed, the computer system supplied the speed, accuracy, reliability, and automaticity that enhanced and applied the known rubber molding process and formulae. Moreover, as the Supreme Court also explained in *Bilski*, a method linked to a machine exhibits a "useful and important clue" that even the process alone (let alone a system claim that expressly recites complex machine combinations) is patent-eligible. *Bilski*, 130 S.Ct. at 3227.

Here, the claim recites a machine and other steps to enable transactions. The claim begins with the machine acquiring data and ends with the machine exchanging financial instructions with other machines. The "abstract idea" present here is not disembodied at all, but is instead integrated into a system utilizing machines. In sum, the system claims are indistinguishable from those in *Diehr*. For these reasons, the system claims are not directed to patent ineligible subject matter. We would therefore reverse the summary judgment of invalidity for ineligibility of the system claims and remand them for further consideration.

VI

Claim 33 of the '479 Patent is representative of the method claims and recites:

> A method of exchanging obligations as between parties, each party holding a credit record and a debit record with an exchange institution, the credit records and debit records for exchange of predetermined obligations, the method comprising the steps of:

> (a) creating a shadow credit record and a shadow debit record for each stakeholder party to be held independently by a supervisory institution from the exchange institutions;
>
> (b) obtaining from each exchange institution a start-of-day balance for each shadow credit record and shadow debit record;
>
> (c) for every transaction resulting in an exchange obligation, the supervisory institution adjusting each respective party's shadow credit record or shadow debit record, allowing only these [sic] transactions that do not result in the value of the shadow debit record being less than the value of the shadow credit record at any time, each said adjustment taking place in chronological order; and
>
> (d) at the end-of-day, the supervisory institution instructing one of the exchange institutions to exchange credits or debits to the credit record and debit record of the respective parties in accordance with the adjustments of the said permitted transactions, the credits and debits being irrevocable, time invariant obligations placed on the exchange institutions.

'479 Patent col. 65 ll. 23-50. Alice concedes that claims 39 to 41 of the '375 Patent rise or fall with the method claims, and so we will not separately analyze them. Petitioner's Br. 50 n. 3.

At the outset, the invention claims a "process." By definition, a process is statutory subject matter under Section 101—whether or not the recited elements are "old." 35 U.S.C. § 100(b). Thus, the inquiry shifts to seek clear and convincing evidence that the claim, nonetheless, is ineligible for patenting because it falls

within one of the judicial exceptions. Here, the question asks whether the claim is abstract.

The claim describes the general and theoretical concept of using a neutral intermediary in exchange transactions to reduce risk that one party will not honor the deal, *i.e.*, an escrow arrangement. The record in this case shows that this area of art has used the fundamental concept of an intermediary in this context for centuries, if not longer. *See* Petitioners' Br. 36. Thus, this claim embodies elements of abstractness which propel this court into a further examination of its eligibility. Obviously, the claim does not simply state "use an escrow." Consequently, we must determine whether the recited steps are inherent in an escrow and claimed at a high level of generality, such that in fact the claim is not to a practical application of the concept of an escrow, but in effect claims the abstract concept of an escrow. If this claim exhibits those infirmities, it is likely to also exhibit a broad pre-emptive effect. Thus, we turn to the additional limitations.

The first claimed step involves creating shadow credit and debit records for the parties to the transaction. This highly generalized step is nothing but a recitation of a step inherent in the concept of an escrow. Further, the record again shows that book-keepers have long kept track of accounts in this fashion as a basic form of bookkeeping. Appellant's Br. 39 (citing Richard A. Brown, *A History of Accounting and Accountants* 93 (1905)). The step is not just predominant in the prior art, but an inherent part of any escrow arrangement.

The second claimed step involves obtaining the values for the previously created accounts to allow for their later manipulation. This generalized step is also

inherent in the concept of an escrow. To determine the credit to one party and the debit to the other requires a starting place for the adjustments. *Cf. Bilski*, 130 S.Ct. at 3231 (holding claim not directed to patent-eligible subject matter because establishing "inputs" for the equation required done according to well-known techniques). This step only recites another inherent feature of an escrow. Similarly, the third step involves adjusting the account balances to reflect the parties' trading activity. The fourth step likewise adds nothing beyond the well-known procedures used in the concept of an escrow: an instruction to pay or deduct funds is made. Again, the record shows that an intermediary cannot perform an escrow arrangement without either paying or ordering someone to pay the proper amounts.

Thus, each step individually recites merely a general step inherent within the concept of an escrow, using a third party intermediary in this fashion. While the claim certainly limits use of an escrow to the context of this particular field, that attempted limitation is not enough. *Cf. Bilski*, 130 S.Ct. at 3231 (stating that "limiting an abstract idea to one field of use or adding token post-solution components did not make the concept patentable"); *see Flook*, 437 U.S. at 586, 98 S.Ct. 2522 (explaining that other steps in the process did not limit the claim to a particular application, even though they applied generally to hydrocarbon conversion processes).

Finally, we note that the method claims do not mention a computer. *CLS Bank*, 768 F.Supp.2d at 236. Even so, the district court assumed "the single fact" that the "method claims are implemented by computer. . . ." *Id*. Putting to the side whether this construction was correct, *see Phillips v. AWH Corp*.,

415 F.3d 1303, 1323 (Fed.Cir.2005) (en banc) (courts generally should not read limitations from the specification into a claim), even assuming the method claims require use of a computer in some unspecified way, this implicit reference to computer "implementtation" is not, by itself, enough.

To sum up, the claim as a whole embraces using an escrow to avoid risk of one party's inability to pay—an abstract concept. Viewed as a whole, the claim is indistinguishable from the claim in *Bilski*, 130 S.Ct. at 3231. Viewed individually, the recited elements only recite the steps inherent in that concept (stated at a high level of generality) and implement those steps according to methods long used in escrows according to the record in this case. As explained, the attempt to limit the escrow concept to a particular field is not sufficient. *See id*. Thus, like Judge Lourie, we would hold the method claims in this case are not eligible under Section 101, but would do so for different reasons than he articulates.

VII

For the reasons stated above, Chief Judge Rader and Judges Linn, Moore, and O'Malley would reverse the district court's determination that the system claims address subject matter that is not patent eligible. Chief Judge Rader and Judge Moore, however, would affirm the district court's conclusion that the method and media claims are patent ineligible. Chief Judge Rader and Judge Moore, thus, dissent in part and concur in part in the judgment the court enters today.

Judges Linn and O'Malley believe that, if the method claims could be interpreted as in part VI, they would be patent ineligible. But, for the reasons stated

in their separate opinion, they believe that, as properly construed on this record and in this procedural posture, the method claims are patent eligible. Accordingly, they dissent from all aspects of the judgment the court enters today.

With these results in mind, all four of us would remand for further consideration of the conditions and requirements of the Patent Act and further proceedings, as appropriate.

Dissenting-in-part opinion filed by MOORE, Circuit Judge, in which RADER, Chief Judge, and LINN and O'MALLEY, Circuit Judges, join.

Dissenting-in-part opinion filed by MOORE, Circuit Judge, in which RADER, Chief Judge, and LINN and O'MALLEY, Circuit Judges, join.

I am concerned that the current interpretation of § 101, and in particular the abstract idea exception, is causing a free fall in the patent system. The Supreme Court has taken a number of our recent decisions and, in each instance, concluded that the claims at issue were not patent-eligible. *See Bilski*, *Prometheus*, *Myriad* (under consideration). Today, several of my colleagues would take that precedent significantly further, lumping together the asserted method, media, and system claims, and holding that they are all patent-ineligible under § 101. Holding that all of these claims are directed to no more than an abstract idea gives staggering breadth to what is meant to be a narrow judicial exception. And let's be clear: if all of these claims, including the system claims, are not patent-eligible, this case is the death of hundreds of thousands of patents, including all business method, financial system, and software patents as well as

many computer implemented and telecommunications patents.[1] My colleagues believe that the trajectory the Supreme Court has set for § 101 requires us to conclude that *all* of the claims at issue here are directed to unpatentable subject matter. Respectfully, my colleagues are wrong.

To get to their conclusion, my colleagues trample upon a mountain of precedent that requires us to evaluate each claim as a whole when analyzing validity. As the Supreme Court recognized in *Bilski*, whether a claim is tied to a machine is "an important and useful tool" for assessing that it is directed to patent eligible subject matter. *Bilski v. Kappos*, — U.S. —, 130 S.Ct. 3218, 3227, 177 L.Ed.2d 792 (2010). The claimed data processing system at issue here does not incorporate a machine into the claim in a manner that would constitute insignificant pre- or post-solution activity. These claims are to a system of tangible machine components with limited specialized functions programmed consistent with detailed

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[1] If all of the claims of these four patents are ineligible, so too are the 320,799 patents which were granted from 1998-2011 in the technology area "Electrical Computers, Digital Processing Systems, Information Security, Error/Fault Handling." *See* U.S. Patent & Trademark Office, Selected Technology Report, *available at* http://www.uspto.gov/web/offices/ac/ido/oeip/taf/ec_dps_is_efh.htm. Every patent in this technology category covers inventions directed to computer software or to hardware that implements software. In 2011 alone, 42,235 patents were granted in this area. *Id*. This would render ineligible nearly 20% of all the patents that actually issued in 2011. If the reasoning of Judge Lourie's opinion were adopted, it would decimate the electronics and software industries. There are, of course, software, financial system, business method and telecom patents in other technology classes which would also be at risk. So this is quite frankly a low estimate. There has never been a case which could do more damage to the patent system than this one.

algorithms disclosed in the patent. How can this system, with its first party device, data storage unit, second party device, computer, and communications controller, be an "abstract idea"? Although these claims could certainly be challenged under § 102 or § 103 or even § 112, no contortion of the term "abstract idea" can morph this physical system into an abstract idea.

Our court is irreconcilably fractured over these system claims and there are many similar cases pending before our court and the district courts. It has been a very long time indeed since the Supreme Court has taken a case which contains patent eligible claims. This case presents the opportunity for the Supreme Court to distinguish between claims that *are* and *are not* directed to patentable subject matter. For the reasons explained herein, I write separately to explain why the system claims at issue are directed to patent eligible subject matter.

I.

Although the Supreme Court's recent decisions in *Prometheus* and *Bilski* do not address system claims, they certainly provide guidance on the abstract idea exception. In *Bilski*, the Court held that claims directed to a method of hedging risk in the energy market were not patent-eligible because they covered no more than an abstract idea. 130 S.Ct. at 3231. The Court held that while the machine-or-transformation test is not the "sole test" for deciding whether an invention is patent eligible, it "is a useful and important clue." *Id*. at 3227. *Bilski* makes clear the Court's view that a method claim may be patent-eligible under § 101 *even if* it is not tied in any way to a machine. *Id*. The Court reasoned that requiring a machine tie would risk stifling innovation by

"creat[ing] uncertainty as to the patentability of software, advanced diagnostic medicine techniques, and inventions based on linear programming, data compression, and the manipulation of digital signals." *Id*.

Although the Court held that a machine tie is not *necessary*, it explained that a method claim's recitation of machine limitations is a "useful and important clue" that the claim is patent-eligible. *Id*. This is because incorporating machine elements, such as computer hardware, helps to limit the claim to a practical application of any underlying idea. It is true that, if the machine is mere insignificant post-solution activity or data gathering antecedent to performance of a claimed method, then its incorporation into a claim to an otherwise patent-ineligible abstract idea would not be sufficient to avoid the abstract idea exception to patent-eligibility. *See Mayo Collaborative Servs. v. Prometheus Labs., Inc*., — U.S. —, 132 S.Ct. 1289, 1301, 182 L.Ed.2d 321 (2012); *Bilski*, 130 S.Ct. at 3231. But if meaningfully tying a method to a machine can be an important indication of patent-eligibility, how can a claim to the *machine itself*, with all its structural and functional limitations, *not* be patent-eligible?

In *Prometheus*, the Court held that claims directed to a method of optimizing therapeutic efficacy of a drug were not patent-eligible. *Prometheus*, 132 S.Ct. at 1305. The Court, however, also cautioned that "too broad an interpretation" of the abstract idea exception to § 101 "could eviscerate patent law" because "all inventions at some level embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas." *Id*. at 1293. The Court thus reiterated the rule from *Diehr* that, although an abstract idea

itself is not patent-eligible, "an application of a law of nature or mathematical formula to a *known structure* or process may well be deserving of patent protection." *Id*. at 1293-94. This distinction between an abstract idea and its application reflects a delicate balance between promoting innovation through patents and preventing monopolization of the basic tools of scientific and technological work. *Id*. at 1293, 1301-02. The key question is thus whether a claim recites a sufficiently concrete and practical application of an abstract idea to qualify as patent-eligible.

Prometheus instructs us to answer this question by determining whether a process involving a natural law or abstract idea also contains an "inventive concept," which it defined as "other elements or a combination of elements . . . sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the natural law itself." *Id*. at 1294. The Court reiterated that the "inventive concept" must be something more than limiting the invention to a particular technological environment or adding data-gathering steps or other insignificant post-solution activity. *Id*. at 1294, 1299. In other words, "one must do more than simply state the law of nature while adding the words 'apply it.'" *Id*. at 1294. This language is a reminder of the long-understood principle that adding insignificant pre- or post-solution activity to an abstract idea does not make the claim any less abstract. *See, e.g*., *Diehr*, 450 U.S. at 191-92, 101 S.Ct. 1048 ("[I]nsignificant post-solution activity will not transform an unpatentable principle into a patentable process."); *Parker v. Flook*, 437 U.S. 584, 590, 98 S.Ct. 2522, 57 L.Ed.2d 451 (1978) ("The notion that post-solution activity, no matter how conventional or obvious in itself, can transform an unpatentable

principle into a patentable process exalts form over substance.").

My colleagues erroneously apply *Prometheus*'s "inventive concept" language by stripping away all known elements from the asserted system claims and analyzing only whether what remains, as opposed to the claim as a whole, is an abstract idea. *See* Lourie Op. at 1290-91. From this flawed analysis, they conclude that "the system claims are little different" from the asserted method claims. Lourie Op. at 1290. This approach is inconsistent with the 1952 Patent Act, and years of Supreme Court, CCPA, and Federal Circuit precedent that abolished the "heart of the invention" analysis for patentability.

Moreover, my colleagues' analysis imbues the § 101 inquiry with a time-dependency that is more appropriately the province of §§ 102 and 103. It is true that the analyses of patent-eligibility under § 101 and novelty under § 102 may sometimes overlap. *See Prometheus*, 132 S.Ct. at 1304. But § 101 is not a moving target—claims should not become abstract simply through the passage of time. Under my colleagues' approach, however, a system claim that passes § 101 when the patent issues could later magically transform into an abstract idea simply because certain computer hardware elements no longer seem inventive.

Bilski and *Prometheus* follow on a long line of Supreme Court cases that distinguish between machine claims and method claims on the basis that a machine covers an *application* of any underlying idea rather than the idea itself. For example, although a claim's statutory class is not dispositive of the § 101 inquiry, the Supreme Court explained in *Burr v. Duryee* that a machine is a concrete thing, not an idea:

> *A machine is a concrete thing, consisting of parts*, or of certain devices and combinations of devices. The principle of a machine is properly defined to be 'its mode of operations,' or that peculiar combination of devices which distinguish it from other machines. *A machine is not a principle or an idea*.

68 U.S. (1 Wall.) 531, 570, 17 L.Ed. 650 (1863) (emphases added). The Court explained that, "[b]ecause the law requires a patentee to explain the mode of operation of his peculiar machine, which distinguishes it from others, it does not authorize a patent for a 'mode of operations as exhibited in a machine.'" *Id*. In other words, the requirement of specifying the particular limitations and structure of a claimed machine meaningfully limits the claim, such that it amounts to more than the principle or idea that it embodies. The Court later reiterated this distinction, stating that "[a] machine is a thing. A process is an act, or a mode of acting. The one is visible to the eye,—an object of perpetual observation. The other is a conception of the mind, seen only by its effects when being executed or performed." *Expanded Metal Co. v. Bradford*, 214 U.S. 366, 384, 29 S.Ct. 652, 53 L.Ed. 1034 (1909) (quoting *Tilghman v. Proctor*, 102 U.S. 707, 728, 26 L.Ed. 279 (1880)).

Our court, sitting en banc, applied these principles to hold patent-eligible a claim that would read on a general purpose computer programmed to carry out the operations recited in the claim. *In re Alappat*, 33 F.3d 1526, 1545 (Fed.Cir.1994) (en banc). We stated that, although many of the means-plus-function elements recited in the only asserted independent claim represent circuitry elements that perform mathematical calculations, "the claimed invention as

a whole is directed to a combination of interrelated elements which combine to form a machine" for performing the invention's anti-aliasing technique. *Id*. at 1544. We explained that "[t]his is not a disembodied mathematical concept which may be characterized as an 'abstract idea,' but rather a specific machine." *Id*. The patent applicant admitted that its claim "would read on a general purpose computer programmed to carry out the claimed invention." *Id*. at 1545. We nonetheless held that the claim was patent-eligible under § 101, explaining that "such programming *creates a new machine*, because a general purpose computer in effect becomes a special purpose computer once it is programmed to perform particular functions pursuant to instructions from program software." *Id*. (emphasis added). Judge Lourie's opinion completely repudiates Judge Rich's approach in *Alappat*. The two are not reconcilable.

The Supreme Court has never cast doubt on the patentability of claims such as those at issue in *In re Alappat* or the system claims at issue in this case. Indeed, *Alappat*'s reasoning is completely consistent with *Bilski*, *Prometheus*, and the Supreme Court's other § 101 cases. Unlike a claim reciting a method and simply saying "apply it" on a general purpose computer, a system claim's structural limitations restrict the claimed machine by requiring certain physical components. These concrete elements are precisely the sort of "inventive concept" that meaningfully limits the claim, preventing it from "tying up" the underlying abstract idea itself. Although the individual components themselves may not be new or innovative, the particular *combination* of components recited in the claim results in a brand new machine—a special purpose computer. *Id*.

Some simple examples illustrate these principles. Even though the concept of addition is an abstract idea, the first calculator that could perform addition was a patent-eligible machine under § 101. If someone subsequently discovered that, by rewiring the calculator, it could perform addition *and* subtraction (both abstract mathematical concepts), the improved calculator would similarly be patent-eligible. The act of modifying the circuitry of a known device such that it is configured to apply an abstract idea does not transform it *into* an abstract idea. If the subsequent inventor were able to reprogram the calculator to perform subtraction (rather than rewire it), it would still be directed to patent-eligible subject matter. That is what software does—it effectively rewires a computer, making it a special purpose device capable of performing operations it was not previously able to perform. Both the software and the computer running the software are patentable subject matter and should pass through the § 101 gate.

The parties in this case agree that if someone sought to patent a general purpose computer, it would satisfy § 101 (although it may fail § 102 or § 103). Why, then, would claiming the same computer with specific programming (thus creating a special purpose computer), transform a patent-eligible machine into a patent-ineligible abstract idea? A claim to a computer running particular software is no less a claim to a computer.

None of this is to suggest that system claims may never be abstract, or that merely adding a computer to a method step can transform a patent-ineligible claim into one that satisfies § 101. But a claim to a structurally defined machine is more than a method claim rewritten in system form. It is a practical

application of the underlying idea, limited to the specific hardware recited and the algorithms disclosed to perform the recited functions.

III.

The only way to determine if Alice's asserted system claims are merely directed to an abstract idea is to analyze each claim as a whole, looking at the language of the claims. Claim 1 of the '375 patent, for example, recites:

> *A data processing system* to enable the exchange of an obligation between parties, the system comprising:
>
> *a first party device*,
>
> *a data storage unit* having stored therein
>
> (a) information about a first account for a first party, independent from a second account maintained by a first exchange institution, and
>
> (b) information about a third account for a second party, independent from a fourth account maintained by a second exchange institution;
>
> and *a computer*, coupled to said data storage unit, that is configured to
>
> (a) *receive a transaction from said first party device*;
>
> (b) *electronically adjust* said first account and said third account in order to effect an exchange obligation arising from said transaction between said first party and said second party after ensuring that said first party and/or said second party have adequate value in said first

> account and/or said third account, respectively; and
>
> (c) *generate an instruction* to said first exchange institution and/or said second exchange institution to adjust said second account and/or said fourth account in accordance with the adjustment of said first account and/or said third account, wherein said instruction being an irrevocable, time invariant obligation placed on said first exchange institution and/or said second exchange institution.

'375 patent claim 1 (emphases added).

The claimed data processing system recites three structural components: a computer, a first party device, and a data storage device. The specification describes the invention: the "core of the system hardware is a collection of data processing units." '375 patent col.7 ll.22-23. Each processing unit is operably connected to one or more mass data storage units. *Id*. col.7 ll.39-43.

The claimed data processing system is further limited to one that is configured to perform certain functions in a particular fashion: "receive a transaction from said first party device," "electronically adjust" the parties' accounts, and "generate an instruction." The specification discloses numerous flow diagrams in Figures 8-16 and 18-40 that provide algorithm support for the software that performs these functions. '375 patent col.7 ll.29-33. The "flow charts in FIGS. 8 to 16 depict the processing flow of the matching system for primary product orders submitted by ordering party stakeholders. . . ." *Id*. col.16 ll.42-44. More specifically, Figures 11-15 provide an

explanation of the process through which counterparties are matched ("order matching"). *Id*. col.17 ll.55-56. Figure 15 depicts the process of identifying a potential counterparty from a short list, and is a useful example of the level of detail that the specification provides regarding the claimed functions:

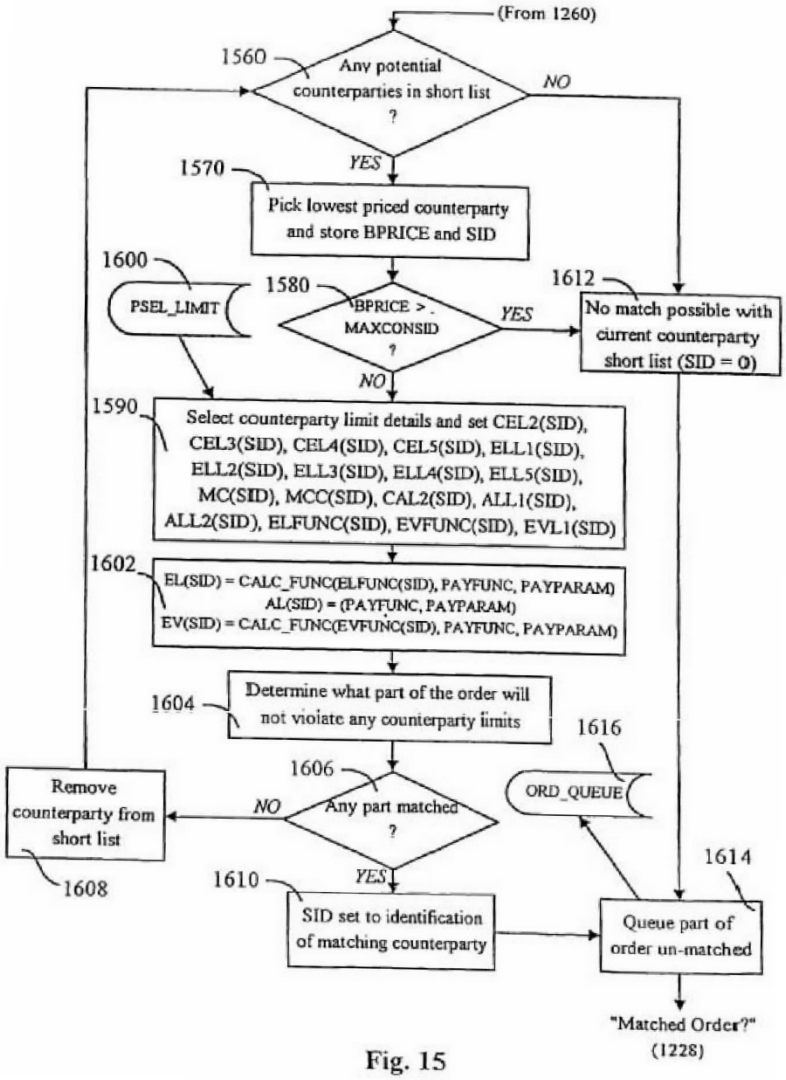

Fig. 15

The specification explains that this algorithm includes the steps of checking to make sure the counterparty short list is not empty and, if it is not, identifying the lowest priced counterparty on the short list. '375 patent col.19 ll.55-63. This corresponds to blocks 1560 and 1570 in Figure 15. The system does this based on the counterparty's bid price (PRICE (SID)). *Id*. col.19 l.63-col.20 l.2. The system rejects matches in which the counterparty's bid price is greater than the ordering party's maximum price (block 1612). *Id*. col.20 ll.8-11. The system then checks the order against all of the applicable limits and calculates the portion of the order which will not violate the counterparty limits (blocks 1590, 1602, 1604, and 1606). *Id*. col.20 ll.18-37. If some portion of the order is matched, the system notes the identification of the matching counterparty and confirms the matched order using the process detailed in Figure 16 (the "matched order confirmation" process). *Id*. col.20 ll.41-49. The process depicted in Figure 15 and described in the specification is just one of the processes included in the claim element "receive a transaction from said first party device."

Looking at these hardware and software elements, it is impossible to conclude that this claim is merely an abstract idea. It is a pure system claim, directed to a specific machine configured to perform certain functions. Indeed, the computer covered by this claim is a tangible item that you could pick up and put on your desk. It is *not* a method claim simply disguised as a machine claim, nor does it incorporate the computer elements in an insignificant way. The asserted data processing systems claimed in the '720 and '375 patents recite additional structural limitations (including a second party device and a communications controller). And the dependent claims (which are

also asserted and must be analyzed individually) limit the computer system even further. Some recite a "means for allowing said first party to acquire an item from said second party, wherein the exchange obligation relates to said item." *See, e.g.*, '375 patent claims 11, 24, and 36; *see also* '720 patent claims 27, 59, 67, 79, and 84. These claims expressly cover only the algorithm disclosed as a means for performing the acquisition, or equivalents thereof. *See, e.g.*, *Aristocrat Techs. Austl. Pty Ltd. v. Int'l Game Tech.*, 521 F.3d 1328, 1333 (Fed.Cir.2008). Judge Lourie's opinion does not individually analyze any of these claims. If these claims do not clear the § 101 hurdle, then the abstract idea exception will be an insurmountable bar for innovators of software, financial systems and business methods, as well as for those in the telecommunications field. Every software patent makes a computer perform different functions—that is the purpose of software. Each software program creates a special purpose machine, a machine which did not previously exist (assuming the software is novel). The machine ceases to be a general purpose computer when it is running the software. It does not, however, by virtue of the software it is running, become an abstract idea.

It bears repeating that the computer limitations in these claims are not insignificant pre- or post-solution activity. Nor does this conclusion "exalt form over substance" or allow the "draftsman's art" to dictate patent-eligibility. *Prometheus*, 132 S.Ct. at 1294. These are not just method claims masquerading as system claims—they are detailed, specific claims to a system of particular hardware programmed to perform particular functions. The computer in the system claims is the entire detailed "solution," without which it would be impossible to achieve the invention's purpose. The *Bilski* court explained that substantial

machine limitations would be a "useful and important clue" that method claims are patent-eligible. *See Bilski*, 130 S.Ct. at 3227. These claims are far more limited. They cover the machine *itself*; the machine *is* the invention.

It is important to remember that, regardless of whether we hold these claims to be *patent-eligible*, they may well fail to meet the other requirements for patent protection. Taking a known or abstract idea and simply putting it on a computer is likely not entitled to patent protection. Section 102's novelty or § 103's nonobviousness requirements are the means to challenge a system claim that does no more than take a familiar, well known concept and put it on a computer. Or, if the claim is to a machine whose precise structure or method of operation is not sufficiently detailed (think perpetual motion machine), then § 112 would prevent patentability. When you walk up to the § 101 gate holding a computer in your arms (or software for that matter), you should not be rejected because your computer is an abstract idea.

For the reasons given above, I believe that Alice's asserted system claims are patent-eligible under § 101. I would thus reverse the district court's judgment with respect to those claims.

Concurring-in-part and dissenting-in-part opinion filed by NEWMAN, Circuit Judge.

NEWMAN, Circuit Judge, concurring in part, dissenting in part.

The ascendance of section 101 as an independent source of litigation, separate from the merits of patentability, is a new uncertainty for inventors. The court, now rehearing this case en banc, hoped to

ameliorate this uncertainty by providing objective standards for section 101 patent-eligibility. Instead we have propounded at least three incompatible standards, devoid of consensus, serving simply to add to the unreliability and cost of the system of patents as an incentive for innovation. With today's judicial deadlock, the only assurance is that any successful innovation is likely to be challenged in opportunistic litigation, whose result will depend on the random selection of the panel.

Reliable application of legal principles underlies the economic incentive purpose of patent law, in turn implementing the benefits to the public of technology-based advances, and the benefits to the nation of industrial activity, employment, and economic growth. Today's irresolution concerning section 101 affects not only this court and the trial courts, but also the PTO examiners and agency tribunals, and all who invent and invest in new technology. The uncertainty of administrative and judicial outcome and the high cost of resolution are a disincentive to both innovators and competitors.

I

TODAY'S IMPASSE

In deciding to rehear the patent dispute between CLS Bank and Alice Corporation, the en banc court undertook to remedy distortions flowing from inconsistent precedent on section 101. This remedial effort has failed. This failure undoubtedly reflects the difficulty of the question; I suggest that it also demonstrates that an all-purpose bright-line rule for the threshold portal of section 101 is as unavailable as it is unnecessary. Experience over two centuries of United States patent law supports this conclusion.

Section 101 is not the appropriate vehicle for determining whether a particular technical advance is patentable; that determination is made in accordance with the rigorous legal criteria of patentability. Contrary to the diverse protocols offered by my colleagues, it is not necessary, or appropriate, to decide whether subject matter is patentable in order to decide whether it is eligible to be considered for patentability.

This section 101 issue appears to have its foundation in a misunderstanding of patent policy, for the debate about patent eligibility under section 101 swirls about concern for the public's right to study the scientific and technologic knowledge contained in patents. The premise of the debate is incorrect, for patented information is not barred from further study and experimentation in order to understand and build upon the knowledge disclosed in the patent.

Judicial clarification is urgently needed to restore the understanding that patented knowledge is not barred from investigation and research. The debate involving section 101 would fade away, on clarification of the right to study and experiment with the knowledge disclosed in patents.

These issues have arisen in connection with today's newest fields of science and technology; that is, computer-based and related advances, and advances in the biological sciences. These fields have spawned today's dominant industries, and produced spectacular benefits. I have seen no competent analysis of how these technologies and industries would be affected by a fundamental reduction in patent-eligibility. Dramatic innovations, and public and economic benefits, have been achieved under the patent law as it has existed.

Thus I write separately to propose that the court resolve the present impasse by returning to the time-tested principles of patent law. I propose that the court reaffirm three basic principles relating to section 101, as follows:

> *1. The court should hold that section 101 is an inclusive statement of patent-eligible subject matter*— I propose that the court reaffirm that patent-eligible subject matter is as stated in the patent statute. The court should acknowledge the statutory purpose of section 101, to provide an inclusive listing of the "useful arts." Then, upon crossing this threshold into the patent system, examination of the particular subject matter on the substantive criteria of patentability will eliminate claims that are "abstract" or "pre-emptive," on application of the laws of novelty, utility, prior art, obviousness, description, enablement, and specificity. There is no need for an all-purpose definition of "abstractness" or "preemption," as heroically attempted today.
>
> *2. The court should hold that the form of the claim does not determine section 101 eligibility*— I propose that the court make clear that patent eligibility does not depend on the form of the claim, whether computer-implemented innovations are claimed as a method or a system or a storage medium, whether implemented in hardware or software. Patent eligibility does not turn on the ingenuity of the draftsman. The differences among my colleagues' views of this aspect simply add to the instability and uncertainty of patenting and enforcement.
>
> *3. The court should confirm that experimental use of patented information is not barred*—

> Misunderstanding of this principle appears to be the impetus for the current debate, for the popular press, and others who know better, have stated that patented subject matter cannot be further studied. This theory is presented to support section 101 ineligibility, on the reasoning that important discoveries should be ineligible for patenting so that they can be further studied. I propose that the court reaffirm the long-standing rule that study and experimentation are not infringement, whether the experimentation is for basic or applied purposes.

On adoption of these principles the law of section 101 will be stabilized, and patentability can continue to be determined in accordance with statute and precedent.

II

EXPERIMENTAL USE OF PATENTED INFORMATION

I start with this issue, for the misperception that study of patented subject matter is precluded, has placed a misdirected spin on section 101.

The idea that experimentation with patented information is restricted is the basis of the view that patenting inhibits scientific advance. For example, the Court stated in *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, — U.S. —, 132 S.Ct. 1289, 1301, 182 L.Ed.2d 321 (2012) that "there is a danger that the grant of patents that tie up their use will inhibit future innovation premised upon them, a danger that becomes acute when a patented process amounts to no more than an instruction to 'apply the natural law,' or otherwise forecloses more future

invention than the underlying discovery could reasonably justify."

However, the Court has recognized that "[t]he federal patent system thus embodies a carefully crafted bargain for encouraging the creation and disclosure of new, useful, and unobvious advances in technology and design in return for the exclusive right to practice the invention for a period of years." *Bonito Boats, Inc. v. Thunder Craft Boats, Inc*., 489 U.S. 141, 150-51, 109 S.Ct. 971, 103 L.Ed.2d 118 (1989). *See J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred Int'l, Inc*., 534 U.S. 124, 142, 122 S.Ct. 593, 151 L.Ed.2d 508 (2001) ("The disclosure required by the Patent Act is 'the quid pro quo of the right to exclude.'"); *Kewanee Oil Co. v. Bicron Corp*., 416 U.S. 470, 484, 94 S.Ct. 1879, 40 L.Ed.2d 315 (1974) (same).

This disclosure is available to produce further advance, on further study and experimentation. The Court long ago recognized that the scientific and technological information in patents may be studied, evaluated, tested, improved upon, compared, etc., as explained by Justice Story in *Whittemore v. Cutter*:

> It could never have been the intention of the legislature to punish a man, who constructed such a machine merely for philosophical[1] experiments, or for the purpose of ascertaining the sufficiency of the machine to produce its described effects.

29 F. Cas. 1120, 1121 (C.C.D.Mass.1813). The Court reiterated this principle in *Graham v. John Deere Co*.,

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[1] "Philosophical" means "scientific" in the language of that era. *Integra Lifesciences I, Ltd. v. Merck KGaA*, 331 F.3d 860, 874-75 n. 8 (Fed.Cir.2003) (Newman, J., dissenting).

referring to the "inherent requisites in a patent system":

> Innovation, advancement, and things which add to the sum of useful knowledge are inherent requisites in a patent system which by constitutional command must "Promote the Progress of . . . useful Arts." This is the standard expressed in the Constitution and it may not be ignored.

383 U.S. 1, 6, 86 S.Ct. 684, 15 L.Ed.2d 545 (1966) (ellipses in original). The reference to "useful knowledge" cannot mean that the knowledge disclosed in patents is untouchable for seventeen years.

The Federal Circuit has reaffirmed that "patenting does not deprive the public of the right to experiment with and improve upon the patented subject matter." *In re Rosuvastatin Calcium Patent Litig.*, 703 F.3d 511, 527 (Fed.Cir.2012). However, in *Embrex, Inc. v. Service Engineering Corp.*, 216 F.3d 1343, 1349 (Fed.Cir.2000), the court stated that the experimental use defense was "very narrow" and unavailable when "the inquiry has definite, cognizable, and not insubstantial commercial purpose," the concurrence adding that "neither the statute nor any past Supreme Court precedent gives any reason to excuse infringement because it was committed with a particular purpose or intent, such as for scientific experimentation," *id.* at 1353. Precedent does not support this theory.

The right to study and experiment, to evaluate and improve upon the information in patents was discussed by our predecessor Court of Claims in *Ordnance Engineering Corp. v. United States*, 84 Ct.Cl. 1 (1936) and in *Chesterfield v. United States*,

159 F.Supp. 371 (Ct.Cl.1958), the court explaining that experimentation does not infringe the patent. Factual distinctions may arise, as in *Pitcairn v. United States*, 212 Ct.Cl. 168, 547 F.2d 1106 (1976), where the Court of Claims held that of 2200 infringing helicopters, the use of 93 helicopters for testing or demonstration was not an "experimental use," as compared with the truly "experimental helicopters" that the patentee did not accuse of infringement.

Scholars have explained this essential policy of patent systems, whereby patented information adds to the body of knowledge, and the right to exclude does not prohibit further study of patented technology. *See* Rebecca S. Eisenberg, *Patents and the Progress of Science: Exclusive Rights and Experimental Use*, 56 U. Chi. L.Rev. 1017, 1022 (1989):

> If the public had absolutely no right to use the disclosure without the patent holder's consent until after the patent expired, it would make little sense to require that the disclosure be made freely available to the public at the outset of the patent term. The fact that the patent statute so plainly facilitates unauthorized uses of the invention while the patent is in effect suggests that some such uses are to be permitted.

See Janice M. Mueller, *The Evanescent Experimental Use Exemption from United States Patent Infringement Liability: Implications for University and Nonprofit Research and Development*, 56 Baylor L.Rev. 917, 921 (2004):

> The publication of information about a new invention in the form of an issued patent is of little use to society if that information is effectively kept 'on ice' for seventeen-eighteen years by means of a

> patent owner's unchecked right to exclude others from use for any purpose.

See also Katherine J. Strandburg, *What Does the Public Get? Experimental Use and the Patent Bargain*, 2004 Wis. L.Rev. 81 (2004) (distinguishing between infringing and non-infringing uses of information disclosed in patents, by differentiating between permissible "experimenting on" patented inventions, and impermissible "experimenting with" things that are patented); Andrew S. Baluch, *Relating the Two Experimental Uses in Patent Law: Inventor's Negation and Infringer's Defense*, 87 B.U. L.Rev. 213 (2007) (proposing that the right of experimental use by others balances the experimental use exception to § 102(b)).

Patents do not prevent experimentation with patented subject matter, whether the purpose is scientific knowledge or commercial potential. To hold otherwise would be to deny a foundation of the system of patents. However, the popular press has accepted the theory that experimentation is barred for patented subject matter,[2] as have my colleagues, who cite that position as grounds for restricting eligibility under section 101.[3]

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[2] *See, e.g.*, Adam Liptak, *Supreme Court to Look at a Gene Issue*, N.Y. Times, Nov. 30, 2012 ("Myriad and other gene patent holders have gained the right to exclude the rest of the scientific community from examining the naturally occurring genes of every person in the United States"); Michael Specter, *Can We Patent Life?*, The New Yorker, April 2, 2013 ("Any scientist who wants to conduct research on such a gene—even on a small sequence of its DNA—has to pay license fees.").

[3] *See* Lourie Op. at 1281 ("Guarding against the wholesale pre-emption of fundamental principles should be our primary aim in applying the common law exceptions to § 101."); Rader Op. at

The patent statute requires that the patented information is made known ("patent" is derived from the latin "patere," which means "to lie open"), and that the patentee provide details of how to make and use the patented subject matter. In return, the patentee receives a term of exclusivity that has traditionally been applied only against commercial practice. On this simple bargain the industrial age blossomed, built on improvements and advances in patented subject matter.

Judicial precedent is sparse on the issue of experimental use, for until recently the principle was not in question. Technical publications often describe research in patent-heavy fields, apparently without fear of lawsuits. At a recent conference reported in the Patent, Trademark, & Copyright Journal, a spokesman stated that "research has been spurred rather than inhibited as a result of the [Myriad] patents, citing 18,000 researchers who have published over 10,000 articles. . . ." 85 PTCJ 759 (2013).

In summary, experimental use of patented information can take various forms, including:

> a. *experiments to improve or build upon patented subject matter*— Such studies are encouraged by the patent system; it has never been the law that such experimentation is infringement.
>
> b. *experiments to compare patented subject matter with alternatives to determine relative performance and properties*— Improvements would be inhibited if new developments could not be

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1300 n. 3 (permissible experimentation is limited to "academic research" "without commercial ends").

compared with the old. Such a position has never been the law.

c. *experimental study of patented subject matter to understand its mechanism*— Such scientific study is an important attribute of patent systems. Scientific understanding may or may not lead to new commercial embodiments, which are not excused from infringement if covered by valid claims; but study of patented subject matter is not infringement.

d. *experimental study of patented subject matter to find new applications or modifications*— Such new directions are a benefit of the patent system; the experimentation is not infringement.

The courts, the press, and the public, have been led down a path that is contrary to patent principles. Let us remove the doubts we have sown. With clarification of the right to experiment with the information disclosed in patents, it will no longer be necessary to resort to the gambit of treating such information as an "abstraction" in order to liberate the subject matter for experimentation, whether for scientific or commercial purposes. I respectfully dissent from the contrary majority position.

III

"ABSTRACTION" IN COMPUTER-BASED PATENTS

I turn briefly to the concept of "abstraction" in connection with section 101 eligibility of computer-implemented subject matter. In the case before us, the diverse theories of the role of section 101, presented by the parties and the many *amici curiae*, show not only the complexity but also the importance of the issue.

However, it is not necessary to rewrite the law of patent eligibility.

All scientific and technologic advance starts with fundamental principles, described by my colleagues as "abstract ideas," although the Court has recognized that "all inventions at some level embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas." *Mayo*, 132 S.Ct. at 1293. Scientific principles are "a creation of the human mind, with its freely invented ideas and concepts,"[4] while the adaptation of such principles to public benefit is the milieu of patents. The Court explained in *Mackay Radio & Telegraph Co. v. Radio Corp. of America*, 306 U.S. 86, 94, 59 S.Ct. 427, 83 L.Ed. 506 (1939) that "While a scientific truth, or the mathematical expression of it, is not a patentable invention, a novel and useful structure created with the aid of knowledge of scientific truth may be."

My colleagues today attempt to devise universal criteria of eligibility under section 101. Some colleagues rely on "abstraction;" while others invoke "preemption;" others look for "meaningful" limitations. I quite agree that it is not easy to define "abstraction" or "preemption" or "meaningful limitation," yet my colleagues propose that these terms bar the gateway to the patent system. Such definition is as elusive for Alice Corporation's escrow banking system as for the most complex of phenomena:

> The intrinsic uncertainty of the meaning of words was of course recognized very early and has brought about the need for definitions, or—as the word "definition" says—for the setting of

[4] Albert Einstein & Leopold Infeld, *The Evolution of Physics* 310 (1938).

> boundaries that determine where the word is to be used and where not to. But definitions can be given only with the help of other concepts, and so one will finally have to rely on some concepts that are taken as they are, unanalyzed and undefined.

Werner Heisenberg, *Physics and Philos*ophy 168 (1958).

I propose that the court return to the statute, and hold that when the subject matter is within the statutory classes in section 101, eligibility is established. This conforms with legislative intent. *See Diamond v. Chakrabarty*, 447 U.S. 303, 308, 100 S.Ct. 2204, 65 L.Ed.2d 144 (1980) ("In choosing such expansive terms as 'manufacture' and 'composition of matter,' modified by the comprehensive 'any,' Congress plainly contemplated that the patent laws would be given wide scope."). The Court in *Diamond v. Diehr*, 450 U.S. 175, 182, 101 S.Ct. 1048, 67 L.Ed.2d 155 (1981), reiterated that the system of patents embraces "anything under the sun that is made by man"; it cannot be that computer-implemented developments may or may not be eligible under section 101 depending on how broadly they are sought to be claimed. Breadth of claiming, and undue breadth, are determined under sections 102, 103, and 112, not section 101.

The Court in *J.E.M. v. Pioneer* recognized that section 101 is a general and "dynamic provision designed to encompass new and unforeseen inventions." 534 U.S. at 135, 122 S.Ct. 593. In its study of "A Patent System for the 21st Century" (2004) the National Research Council focused on the emerging technologies in a "Knowledge-Based Economy," and observed that the patent system is "a unitary system with few *a priori* exclusions." *Id*. at 57. It is beyond

cavil that the patent system is intended to be receptive to the advances of science and technology.

This court referred to section 101 as a "coarse filter," *see Research Corporation Technologies, Inc. v. Microsoft Corp.*, 627 F.3d 859, 869 (Fed.Cir.2010). On traversing the coarse filter, the subject matter is subjected to the statutory rigors of novelty, unobviousness, enablement, specificity, etc. This approach places inventions in the statutory framework of patentability, not merely eligibility to be considered for participation in the patent incentive system.

No substitute has been devised for the incentive of profit opportunity through market exclusivity.[5] The court should return to these basic principles, and abandon its failed section 101 ventures into abstraction, preemption, and meaningfulness.

I repeat my concern for the court's preservation of legal uncertainty through our inconclusive treatment of the law of section 101. The escrow banking mechanism of the patents in suit is claimed in the Alice Corporation patents as a method or a system or

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[5] Illustration is seen in the Orphan Drug Act, 21 U.S.C. § 360aa-360ee (1997), which provides patent-like exclusivity and is reported to have provided treatment for many previously untreated diseases. Food & Drug Admin., *Developing Products for Rare Diseases & Conditions*, http://www.fda.gov/ForIndustry/DevelopingProducts forRareDiseasesConditi/default.htm ("The [Orphan Drug] program has successfully enabled the development and marketing of more than 400 drugs and biologic products for rare diseases since 1983. In contrast, fewer than 10 such products supported by industry came to market between 1973 and 1983."). And the experience of the Bayh-Dole Act is that patent exclusivity has moved much university research into public benefit. *See* Wendy H. Schacht, Cong. Research Serv., RL 32076, *The Bayh-Dole Act: Selected Issues in Patent Policy and the Commercialization of Technology* 7 (2005).

a media device. The form of the claim does not determine section 101 patent eligibility. Nor does the scope of the claim. In claim drafting, it is customary to start with broad claims and then draft claims of progressively narrower scope; this does not determine "abstraction" under section 101. As in *O'Reilly v. Morse*, 56 U.S. 62, 15 How. 62, 14 L.Ed. 601 (1853), Samuel Morse's broadest claim was rejected for undue breadth because it was directed to "the use of the motive power of the electric or galvanic current . . . for making or printing intelligible characters, letters or signs, at any distances," *id*. at 86; the Court did not discuss "eligibility," but simply held that this claim was not limited to the "specific machinery" described in the specification, and was unduly broad.

I share the majority view that all of the claims stand or fall together. I would hold that the system, the method, and the media claims are eligible under section 101, and would remand to the district court for determination of patentability under the substantive provisions of the statute.

Dissenting opinion filed by LINN and O'MALLEY, Circuit Judges.

LINN and O'MALLEY, Circuit Judges, dissenting from the Court's judgment.

The method, media, and system claims we review today must rise and fall together; either they are all patent eligible or they are not. This is so, not because, as Judge Lourie's opinion concludes, they are all tainted by reference to the same abstract concept, but because the record we are presented makes clear that they are grounded by the same meaningful limitations that render them patent eligible. Thus, we believe the

analysis of the method claims conducted by Chief Judge Rader and Judge Moore in Part VI of our collective opinion[1] and Parts III.A and III.B of Judge Lourie's opinion suffer from the same flaw: they are divorced from the record to which we are bound. We write to address that flaw.

I

We begin with a careful assessment of the record and procedural posture presented in this case. This appeal arises from a grant of summary judgment in favor of Plaintiff-Appellee CLS Bank International ("CLS"), dismissing the action with prejudice on grounds that none of the asserted claims of U.S. Patent Nos. 5,970,479 ("the '479 patent"), 6,912,510 ("the '510 patent"), 7,149,720 ("the '720 patent"), and 7,725,375 ("the '375 patent") recite patentable subject matter. The summary judgment process occurred prior to construction of the asserted claims and their attendant limitations. Indeed, the court considered and granted CLS's summary judgment motion before ever conducting a hearing pursuant to *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996), and even before briefing on claim construction. As such, no determination has ever been made regarding how one of skill in the art would understand the claims as of the date of issuance. And, no careful assessment of the intrinsic record or prosecution history has ever occurred; much of this was never even made a part of the trial record.

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[1] We cite to Parts I-V and VII of our collective opinion as the "Rader/Linn/Moore/O'Malley Op.;" we refer to Part VI of that opinion, which is authored by Chief Judge Rader and Judge Moore only, as the "Rader/Moore Op."

As the trial court recognized, the only way to avoid these predicate steps before granting summary judgment was for the court to construe the claims as defendant-appellant Alice Corporation ("Alice") would have it do. The trial court was, thus, required to read into the claims whatever limitations Alice asserted a skilled artisan would assume they possessed. Similarly recognizing the procedural posture in which it asked the trial court to rule, "CLS agreed to assume a construction of claims favorable to Alice." *CLS Bank Int'l v. Alice Corp*., 768 F.Supp.2d 221, 236 n. 6 (D.D.C.2011). The trial court did so; it concluded that, "because the relevant terms of claims 33 and 34 of the '479 Patent have yet to be construed, because CLS has agreed to a broad construction[2] of terms favorable to Alice, and because the specification reveals a computer-based invention, the Court can reasonably assume for present purposes that the terms 'shadow' credit and/or debit record and 'transaction' in the '479 Patent recite electronic implementation and a computer or an analogous electronic device." *Id*. at 236 (footnote added).

We must look then to the construction posited by Alice at the summary judgment stage to understand the claims before us. It is undisputed that Alice claimed that "the entirety of Alice's method [as recited in the '479 and '510 patents]—including the 'adjusting' step that effectuates the claimed exchange of obligations—must be performed electronically using a

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[2] The trial court misspoke here; CLS conceded to a *narrower* construction—not a broader one. That is, although, on their face, the claims arguably cover all applications of the claimed method, not just electronic applications, i.e., they are broad, CLS agreed to limit those claims to electronic implementations of all aspects of the claimed methods.

computer and memory." Memorandum in Support of Alice Corp. Pty. Ltd.'s Renewed Cross-Motion for Summary Judgment as to Patent Eligibility & in Opposition to CLS's Motion for Summary Judgment at 41, *CLS Bank Int'l v. Alice Corp*., 768 F.Supp.2d 221 (D.D.C.2011) (No. 1:07-cv-974), ECF No. 95 [hereinafter "Alice's Summ. J. Br."]. Specifically, Alice argued that a skilled artisan would appreciate that the method claims necessarily require electronic implementation of each of their steps and that this electronic implementation would occur through a computer. In support of this position, Alice offered an expert declaration by Mr. Paul Ginsberg. *See* Alice Corp. Pty. Ltd.'s Renewed Cross-Motion for Partial Summary Judgment as to Subject Matter Eligibility, Declaration of Stanley E. Fisher, Exhibit 1, Declaration of Paul Ginsberg, *CLS Bank Int'l v. Alice Corp*., 768 F.Supp.2d 221 (D.D.C.2011) (No. 1:07-cv-974), ECF No. 95-3 [hereinafter "Ginsberg Decl."]. In that declaration, Mr. Ginsberg explained how a person of skill in the art would interpret the method claims upon "reviewing the claims in view of the patent specification (including the description of the subject matter in ¶¶ 25-26 above) and the prosecution history." *Id*. ¶ 29. Based on this record, both CLS and the trial court accepted the fact that the method claims of the '510 and '479 patents recite "an electronic method for performing the settlement, and the 'maintaining,' 'receiving,' 'adjusting,' and 'generating' steps are central to that process." Alice's Summ. J. Br. at 42.

CLS has stood by these stipulations and assumptions on appeal. Indeed, it emphatically has done so. In all of its briefing and in its arguments on appeal, CLS has acknowledged that the shadow credit and debit records and the transactions and adjustments between them must be implemented electronically.

Appellee's Principal En Banc Br. 3, 34; Appellee's Reply En Banc Br. 20; Oral Arg. at 11:29, *CLS Bank Int'l v. Alice Corp*., No. 2011-1301, *available at* http://www.cafc.uscourts.gov/oral-argument-recordings/2011-1301/2013-02-08/all [hereinafter "Oral Arg."]. At oral argument in this en banc proceeding, counsel for CLS confirmed its view that every limitation and electronic process that appears in the system claims must be read into the method claims. Oral Arg. at 11:29-11:55.[3] Thus, counsel for CLS agreed that, given the state of the record we face on appeal, the claims cannot be parsed—they either all are drawn to patentable subject matter, as Alice claims, or none are drawn to patentable subject matter, as CLS claims. Appellee's Principal En Banc Br. 11, 51 ("Here, the Section 101 analysis is equivalent for all of Alice's claims.").

II

Our colleagues ignore the record of the lower court proceedings and the stipulations by which CLS agrees it must be bound. Chief Judge Rader and Judge Moore construe the method claims as far broader than the

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[3] The following exchange took place during oral argument:

> Judge O'Malley: [Y]ou conceded that . . . the term shadow credit and debit record and transaction all recite electronic implementation ... on a computer or some other electronic device.
>
> And then she [the district judge] later pointed out that even at the *Markman* stage you said that "let's assume that . . . we have to have all of these activities—
>
> Mr. Perry: Correct Your Honor
>
> Judge O'Malley:—implemented through a system on a computer."
>
> Mr. Perry: That's correct Your Honor.

Oral Arg. 11:29-11:55.

system claims and assume they are sufficiently different from those system claims to merit different treatment under the Supreme Court's case law governing exceptions to 35 U.S.C. § 101. *See* Rader/Moore Op. at 1312 (construing "each step" of the method claims as "individually recit[ing] merely a general step inherent within the concept of an escrow, using a third party intermediary in this fashion"). Judge Lourie also construes the method claims broadly, but, unlike the Chief Judge and Judge Moore, imports the breadth he reads into the method claims into the system and media claims as well. *See* Lourie Op. at 1286-87, 1288-92. None of those judges explains how the record supports the claim constructions in which they engage, however.

Notably, when analyzing the method claims, the Chief Judge and Judge Moore cite to no portion of the written descriptions of the '510 or '479 patents, or to CLS's stipulations regarding claim construction, all the while claiming to rely on "the record." *See* Rader/Moore Op. at 1311 ("The record in this case shows. . . ."); *id*. at 1312 ("Further, the record again shows. . . ."). And, they summarily reject the trial court's assumption that the method claims require the same computer implementation as the system claims. *Id*. at 1312 ("[T]he district court assumed the single fact that the method claims are implemented by computer. Putting to the side whether this construction was correct, even assuming the method claims require use of a computer in some unspecified way, this implicit reference to computer implementation is not, by itself, enough." (citations omitted) (internal quotation marks and ellipsis omitted)). As explained above, however, the actual record establishes that the method claims require more than the use of a

computer in some *unspecified* way. CLS has conceded as much and the trial court found as much.

Alice's expert testified that "[s]pecific terms in the claims 33 and 34 [of the '479 patent]," "includ[ing], for example, 'shadow credit record,' 'shadow debit record,' and 'transaction,'" "would be understood by the person of ordinary skill in the art to require that the methods recited in those claims are electronically implemented by a computer coupled to a data storage unit." Ginsberg Decl. ¶ 32. That is, "the particular methods claimed in these patents only work, as intended, when carried out using a computer." *Id*. ¶ 41. Once the trial court chose to proceed on the assumption that computer implementation is required for the method claims, it is the written description—the same written description that informs the system claims—which tells us just what the nature of that computer implementation is.

For this reason, we believe that Chief Judge Rader and Judge Moore's analysis in Part VI of the collective opinion is internally inconsistent with the analysis the four of us employ in Part V of that opinion. Specifically, when analyzing the system claims, we note that "[t]he specification also includes numerous flowcharts that provide algorithm support for the functions recited in the claims." Rader/Linn/Moore/O'Malley Op. at 1307. We also note that "the '375 Patent discloses at least thirty-two figures which provide detailed algorithms for the software with which this hardware is to be programmed." *Id*. at 1307. Relying on the details disclosed in Fig. 16 of the '375 patent, we assert that "[l]abeling this system claim an 'abstract concept' wrenches all meaning from those words, and turns a narrow exception into one which may swallow the expansive rule (and with it

much of the investment and innovation in software)." *Id*. at 1309. We do not see how Chief Judge Rader and Judge Moore, when analyzing the method claims, can ignore the fact that the specific functionality described in the figures applies just as much to them as to the system claims. Chief Judge Rader and Judge Moore, in Part V of the collective opinion, acknowledge that the flow charts in the '375 patent depict the algorithms which the software runs—i.e., the subject matter of the method claims. And the same Figure 16 is present in the '479 and '510 patents. In this regard, barring an actual construction of the claims, we must assume the method claims are just as specific as the system claims, and merit the same treatment we afford those latter claims.

Judge Lourie not only divorces his analysis from the record, he turns it on its head. Although Judge Lourie mentions the agreement between the parties and trial court regarding claim construction, *see* Lourie Op. at 1285-86, he ignores the substance of the stipulations and assumptions upon which the proceedings below were predicated—i.e., that the method claims are narrowed by incorporation of all electronic aspects of the system claims, *see id*. at 1286 ("First, the requirement for computer implementation could scarcely be introduced with less specificity; the claim lacks *any* express language to define the computer's participation."). He then takes it upon himself to construe the claims, giving the method claims their broadest possible interpretation in the process. *See id*. at 1286 (construing the method claims such that "[t]here is no specific or limiting recitation of essential or improved computer technology, and no reason to view the computer limitation as anything but insignificant postsolution activity relative to the abstract idea" (citations omitted) (internal quotation marks

omitted)); *id*. at 1287 (construing "shadow record" as "reciting no more than the necessary tracking activities of a supervisory institution"). Indeed, Judge Lourie begins, not with the record, or even a proper exercise in claim construction, but with identification of what he finds to be the fundamental concept "wrapped up in the claim." *Id*. at 1282. From there, he searches the words in the claims for "substantive limitations that narrow, confine, or otherwise tie down the claim." *Id*. at 1282. By starting with a paraphrased abstraction of the claims and excluding the record evidence regarding the meaning of the claims, Judge Lourie preordains the method claims ineligible. Judge Lourie then reads into the system claims the same abstraction he felt damned the method claims.

Thus, Judge Lourie explicitly finds that "[t]he computer-based limitations recited in the system claims here cannot support any meaningful distinction from the computer-based limitations that failed to supply an 'inventive concept' to the related method claims." *Id*. at 1290. The "abstraction" he ferrets from his own reading of the method claims, thus, works much like a computer virus to infect his analysis of all of the claims, regardless of their limitations. Indeed, he actually strips the claims of their detail and limitations—in direct contravention of the Supreme Court's admonitions in *Diamond v. Diehr*, 450 U.S. 175, 188, 101 S.Ct. 1048, 67 L.Ed.2d 155 (1981)—calling it mere "extravagant language." Lourie Op. at 1286-87.

We do not believe a patent eligibility inquiry can be disembodied from the actual claims at issue, with their attendant limitations. The analytical process in which Judge Lourie engages is at odds with the most basic concepts that govern our patent system. *See* Giles S.

Rich, *Extent of Protection and Interpretation of Claims—American Perspectives*, 21 Int'l Rev. of Indus. Prop. & Copyright L. 497, 499 (1990) ("[T]he name of the game is the claim."); *see also Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed.Cir.2005) (en banc) ("It is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude." (internal quotation marks omitted)). His methodology just cannot be right.

While it may be possible to construe the method claims in such a way that they would read like those in *Bilski v. Kappos*, — U.S. —, 130 S.Ct. 3218, 177 L.Ed.2d 792 (2010), and, thus, be patent ineligible, we see no intellectually sound way to distinguish the method claims *as construed by the district court* from the system claims.

III

We assume our colleagues feel free to ignore the record—or, more appropriately, the lack thereof—in this case because claim construction is a question of law which this court reviews de novo. *See Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1456 (Fed.Cir.1998) (en banc). Whether review is de novo or not, however, it still must be a "review"—it must be premised on a record below in which all relevant claim construction issues were vetted and in which the parties had an opportunity to proffer intrinsic and extrinsic evidence which would inform the claim construction process. None of that occurred in this case. Instead, Alice's evidence and arguments were proffered and accepted by all as established fact. We are not persons of skill in the art and cannot open the record for proceedings that did not occur below. We are a reviewing court whose review must be predicated upon the record presented.

For these reasons, we agree with CLS, and with virtually every amicus to consider these claims, that all asserted claims must rise or fall together, because they all contain the same computer-based limitations.

IV

We turn to our view of the claims at issue here. This section of our opinion need not detain long. Along with Chief Judge Rader and Judge Moore, we have already explained why the system claims in this case are patent eligible and are not swallowed up by the exception from patent eligibility for claims that do no more than recite abstract ideas. *See* Rader/Linn/Moore/O'Malley Op. Part V. As we note, the claimed data processing system "includes at least four separate structural components" that perform very specific functions, *id*. at 1307, *see also* Moore Op. at 1320 ("[Claim 1 of the '375 patent] is a pure system claim, directed to a specific machine configured to perform certain functions."), and to describe the system as an abstraction ignores what is claimed, *see* Rader/Linn/Moore/O'Malley Op. at 1309 ("Labeling this system claim an 'abstract concept' wrenches all meaning from those words, and turns a narrow exception into one which may swallow the expansive rule (and with it much of the investment and innovation in software)."), *see also* Moore Op. at 1320 ("[I]t is impossible to conclude that this claim is merely an abstract idea.").[4]

For the reasons we describe herein, moreover, we would employ the same rationale we employed for the system claims to find the method and media claims patent eligible as well. The trial court construed these

[4] We agree with Judge Moore's similar analysis of the system claims in her separate opinion, which we join in full.

claims to require all the computer-implemented limitations of the system claims. Indeed, in doing so, the trial court conceded that there was meaningful support in the written description of the '479 and '510 patents for that construction. We have no record upon which to disagree with that construction of these claims, one which both parties continue to urge upon us. And, it is a careful assessment of the claims—with all their limitations—which must guide our inquiry.

As we said in the panel opinion in this case, moreover, assuming the presence of all the computer-based limitations in the written description, none of these claims are unduly pre-emptive. While the abstract idea at their heart may be the use of an intermediary to facilitate financial transactions, the claims here are directed to very specific ways of doing that—using "shadow credit record[s]" and "shadow debit record[s]" that are adjusted only if the "transactions . . . do not result in the value of the shadow debit record being less than the value of the shadow credit record at any time," making the permitted transactions "in chronological order," and exchanging "credits" and "debits" "in accordance with the adjustments of the said permitted transactions." '479 patent col. 65 ll. 23-50. While it is possible these claims may have been obvious over the prior art—which, of course, would include the abstract idea itself—they do not preempt all commercial uses or applications of that idea.

V

We finally note that certain Amici express concern regarding the proliferation and aggressive enforcement of low quality software patents. *See* Br. of Amici Curiae Google Inc., Dell Inc., Facebook, Inc., Homeaway, Inc., Intuit Inc., Rackspace Hosting, Inc.,

Red Hat, Inc., and Zynga Inc. in Supp. of Pet'rs at 23-25 [hereinafter "Google Br."]; Amici Curiae Internet Retailers' Corrected Br. in Supp. of Neither Party at 14-22 [hereinafter "Internet Retailers Br."]. They seem to believe that patents on early generation technology inhibit technological advances. *See* Google Br. 23-25; Internet Retailers Br. 14-22. Based on these concerns, these Amici ask us to find all the claims at issue in the patents before us ineligible under the abstract ideas exception to § 101.

We do not discount Amici's concerns, we just disagree with what they ask us to do to quell them. Congress can, and perhaps should, develop special rules for software patents. It could, for instance, limit their life by limiting the term of such patents. *See* Peter S. Menell, *A Method for Reforming the Patent System*, 13 Mich. Telecomm. & Tech. L.Rev. 487, 501 (2007) (arguing patent reform should include "identifying and evaluating categorical reform options (such as excluding business method patents or altering the duration of software patents)."). Or, Congress could limit the scope of software patents by requiring functional claiming. *Cf.* Mark A. Lemley, *Software Patents and the Return of Functional Claiming*, 2013, at 42, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2117302, Stanford Pub.L. Working Paper No. 2117302, (arguing that the problems with software patents can be remedied through strict enforcement of the 35 U.S.C. § 112(f) limitations on functional claiming, not by "retroactively invalidat[ing] tens of thousands of software patents"). Or, it could do both, or devise some other rule. But broadening what is a narrow exception to the statutory definition of patent eligibility should not be the vehicle to address these concerns. While Congress may, this court may not change the law to address one

technological field or the concerns of a single industry. *See United States v. Rutherford*, 442 U.S. 544, 555, 99 S.Ct. 2470, 61 L.Ed.2d 68 (1979) ("Under our constitutional framework, federal courts do not sit as councils of revision, empowered to rewrite legislation in accord with their own conceptions of prudent public policy."); *see also Anderson v. Wilson*, 289 U.S. 20, 27, 53 S.Ct. 417, 77 L.Ed. 1004 (1933) ("We do not pause to consider whether a statute differently conceived and framed would yield results more consonant with fairness and reason. We take the statute as we find it.").

Thus, whatever the merits of such concerns, the answer is not to rewrite the law by broadening the abstract ideas exception to § 101, especially if the only way to do so is to ignore the limitations in the claims actually before us.

VI

Appropriately treating the abstract ideas exception to patent eligibility under 35 U.S.C. § 101 as a narrow judge-made exception to a broad statutory grant, and being true to the record and claim constructions we are presented, we would find all claims at issue in this case patent eligible and would vacate the judgment of the lower court and remand for further proceedings. We dissent from this court's judgment which has the effect of doing otherwise.

Additional reflections filed by RADER, Chief Judge.

RADER, Chief Judge.

In the twenty-fifth year of my judicial service, I am wont to reflect on my early judicial experience in search of the confidence in the correctness of my judicial views that I then enjoyed. In this instance, my

reflection carries me back to one of the first cases I helped decide as a new Circuit Judge on this court.

The case, *Arrhythmia Research Tech. v. Corazonix Corp.*, 958 F.2d 1053 (Fed.Cir.1992), involved a patent on a software invention that allowed for swift computer analysis of electrocardiogram images to detect heart attack risks. Of course, I encountered the case flushed with confidence and a commitment to the law as written by our legislative branch, the branch to which I had dedicated my entire early career. In the face of this marvelous way to protect human life more efficiently and reliably, I found myself certain that this invention would "promote the Progress of the useful Arts." Moreover, the investment in research to develop that new method cried out for protection. Without protection, I reasoned, investors would quickly opt to put their resources into new cosmetics or weight control improvements—safer propositions. In sum, I thought this case was easy.

Therefore, I could only describe my emotion as surprise that my senior colleagues on the panel, Judges Newman and Lourie, struggled mightily. The author for the court performed impressive feats of intellectual acrobatics trying to gain some handhold to show that the mathematic equations in the method had some physical connection and no preemptive effect, whatever those concepts mean (and I still do not know if they have any meaning, let alone what that meaning might be). The court succeeded in converting "applying," "determining," and "comparing" into "physical process steps that transform one physical, electrical signal into another." *Id.* at 1059.

With some trepidation, I ventured to express my view that the statute settled the question without the need for laborious analysis. At the close of my opinion,

I expressed a little frustration: "When all else fails . . . consult the statute." For me, *Parker v. Flook*, 437 U.S. 584, 98 S.Ct. 2522, 57 L.Ed.2d 451 (1978), *Gottschalk v. Benson*, 409 U.S. 63, 93 S.Ct. 253, 34 L.Ed.2d 273 (1972), *In re Abele*, 684 F.2d 902 (CCPA 1982), *In re Walter*, 618 F.2d 758 (CCPA 1980), and *In re Freeman*, 573 F.2d 1237 (CCPA 1978), vindicated the proposition that "all else had failed." And for me, the magisterial statute with its sweeping inclusion of "any" process and even "improvements thereon" without any of the written exceptions for "software per se" or other legislative exceptions featured in failed European and Asian statutes settled the question. Indeed, as the law expressed and the Supreme Court recognized, an invention could extend to "anything under the sun that is made by man." *Diamond v. Diehr*, 450 U.S. 175, 182, 101 S.Ct. 1048, 67 L.Ed.2d 155 (1981) (quoting 182 S.Rep. No.1979, 82d Cong., 2d Sess., 5 (1952) and H.R.Rep. No.1923, 82d Cong., 2d Sess., 6 (1952)).

As I noted at the outset, a quarter century has passed. After *In re Alappat*, 33 F.3d 1526 (Fed.Cir.1994) (en banc), and a few other opinions, the law of patent eligibility enjoyed a halcyon decade of reliance on the statute. Inventions rose and fell, but based on the merits of their contributions to the progress of the useful arts, not on the basis of undefined and unproven judicial abstractions like "abstractness" or "preemption." Prior art governed the patentability of claims. The separate concept of patent eligibility of subject matter (not a claim-driven concept at all) was not subject to judicial preference for a broad or narrow view of formless substance.

Although *Diehr* and *Diamond v. Chakrabarty*, 447 U.S. 303, 100 S.Ct. 2204, 65 L.Ed.2d 144 (1980),

betokened decades of enforcing the patent law as written, these giants too have bowed to new judicial influences. Twenty years ago, Judges Newman, Lourie, and I still unanimously agreed on the outcome of *Arrythmia*. The intervening commotion leaves us with little, if any, agreement amongst us even though the statute has not changed a syllable.

Thus, I find myself writing again as I did in 1992. And I find myself resorting to exactly the same phrase:

When all else fails, consult the statute!

And for evidence that all else has failed, I need only recite *Bilski v. Kappos*, — U.S. —, 130 S.Ct. 3218, 177 L.Ed.2d 792 (2010), *Mayo Collaborative Servs. Inc. v. Prometheus Labs., Inc.*, — U.S. —, 132 S.Ct. 1289, 182 L.Ed.2d 321 (2012), *Ass'n for Molecular Pathology v. U.S. Patent & Trademark Off.*, 689 F.3d 1303 (Fed.Cir.2012), cert granted in part, — U.S. —, 133 S.Ct. 694, 184 L.Ed.2d 496 (2012), *MySpace, Inc. v. GraphOn Corp.*, 672 F.3d 1250 (Fed.Cir.2012), *Dealertrack, Inc. v. Huber*, 674 F.3d 1315 (Fed.Cir.2012), and *Classen Immunotherapies, Inc. v. Biogen IDEC*, 659 F.3d 1057 (Fed.Cir.2011), and this list can and will go on and grow.

And the remedy is the same: consult the statute! The statute offers a patent to both inventions and discoveries, including simply an improvement on a known process or product. The statute further directs that even the mere new use of an old machine is eligible for patenting, with, of course, a high obstacle of meeting the conditions of patentability set forth in Sections 102 and 103 of the Patent Act ahead. *See* S.Rep. No. 82-1979 at 17 (explaining that the new use of a known machine or composition of matter is eligible for patenting "provided the conditions of patentability

are satisfied.") In that regard, the Supreme Court long ago held that Section 101 is not a "condition of patentability." *Diehr*, 450 U.S. at 189-90, 101 S.Ct. 1048 (citing *In re Bergy*, 596 F.2d 952, 963 (CCPA 1979) (Section 101 "was never intended to be a 'standard of patentability,' the standards, or conditions as the statute calls them, are in 102 and 103")). Finally, the statute does not list Section 101 among invalidity defenses to infringement. *See* 35 U.S.C. § 282 (while invalidity for failing to meet a "condition of patentability" is among the authorized defenses, Section 101 is not a "condition of patentability").

And what about "exceptions" like natural laws and natural phenomena? Of course, these are universal constants created, if at all, only by God, Vishnu, or Allah. But, for perspective, even gravity is not a natural law in Einsteinian theory, but a symptom of a curved universe. Einstein posited the speed of light as the only true natural constant. Thus, in context, equating the personalized medicinal effect of a human-created pharmaceutical in patients of different metabolic rates and genetic makeups with the speed of light (or even gravity) is only possible in a netherworld of undefined judicial insights. Moreover, to inject the patentability test of "inventiveness" into the separate statutory concept of subject matter eligibility makes this doctrine again "the plaything of the judges who, as they became initiated into its mysteries, delighted to devise and expound their own ideas of what it meant; some very lovely prose resulting." Giles S. Rich, *Principles of Patentability*, 28 Geo. Wash. L.Rev. 393, 404 (1960).

I enjoy good writing and a good mystery, but I doubt that innovation is promoted when subjective and empty words like "contribution" or "inventiveness" are

offered up by the courts to determine investment, resource allocation, and business decisions. Again, it is almost . . . well, "obvious" . . . to note that when all else fails, it makes sense to consult the simplicity, clarity, and directness of the statute.

As I start my next quarter century of judicial experience, I am sure that one day I will reflect on this moment as well. I can only hope it is a brighter reflection than I encounter today.

APPENDIX B

UNITED STATES COURT OF APPEALS
FEDERAL CIRCUIT

No. 2011-1301

CLS BANK INTERNATIONAL,
Plaintiff-Appellee,

and

CLS SERVICES LTD.,
Counterclaim-Defendant Appellee,

v.

ALICE CORPORATION PTY. LTD.,
Defendant-Appellant.

July 9, 2012

Before LINN, PROST, and O'MALLEY, Circuit Judges.

OPINION

Opinion for the court filed by Circuit Judge LINN. Dissenting opinion filed by Circuit Judge PROST.

LINN, Circuit Judge.

This case presents, once again, the question of patent eligibility under 35 U.S.C. § 101 of an invention implemented by computers. For the reasons explained below, this court concludes that the system, method, and media claims at issue are not drawn to mere

"abstract ideas" but rather are directed to practical applications of invention falling within the categories of patent eligible subject matter defined by 35 U.S.C. § 101. The decision of the district court to the contrary is reversed.

I. BACKGROUND

A. The Patents in Suit

Alice Corporation ("Alice") is the owner of U.S. Patent Nos. 5,970,479 ("the '479 Patent"), 6,912,510 ("the '510 Patent"), 7,149,720 ("the '720 Patent"), and 7,725,375 ("the '375 Patent"). These patents cover a computerized trading platform for exchanging obligations in which a trusted third party settles obligations between a first and second party so as to eliminate "settlement risk." Settlement risk is the risk that only one party's obligation will be paid, leaving the other party without its principal. The trusted third party eliminates this risk by either (a) exchanging both parties' obligations or (b) exchanging neither obligation.

As Alice's expert explained in a declaration attached to Alice's cross-motion for summary judgment and opposition to CLS Bank International and CLS Services Ltd.'s (collectively "CLS Bank") motion for summary judgment, "[w]hen obligations arise from a trade made between two parties, *e.g.*, a trade of stock or a trade of foreign currency, typically, there is a gap in time between when the obligation arises and when the trade is 'settled.'" Ginsberg Decl., ECF No. 95-3, Ex. 1 ¶ 21. "In a number of financial contexts, the process of exchanging obligations, or settlement, is separate from the process of entering into a contract to perform a trade." *Id*. For example, if two banks wish to exchange large sums of currency, they would enter into a binding agreement to make a particular

exchange but would postpone the actual exchange until after the price is set and the agreement confirmed, typically two days. After those two days, both banks would "settle" the trade by paying their predetermined amounts to each other. But there is a risk that, at settlement time, one bank will no longer have enough money to satisfy its obligation to the other. The asserted patent claims—claims 33 and 34 of the '479 Patent, and all claims of the '510, '720, and '375 Patents—seek to minimize this risk. The relevant claims of the '479 and '510 Patents are method claims, whereas the claims of the '720 and '375 Patents are system and product (media) claims.

Claim 33 of the '479 Patent, representative of the method claims, recites:

> 33. A method of exchanging obligations as between parties, each party holding a credit record and a debit record with an exchange institution, the credit records and debit records for exchange of predetermined obligations, the method comprising the steps of:
>
> (a) creating a shadow credit record and a shadow debit record for each stakeholder party to be held independently by a supervisory institution from the exchange institutions;
>
> (b) obtaining from each exchange institution a start-of-day balance for each shadow credit record and shadow debit record;
>
> (c) for every transaction resulting in an exchange obligation, the supervisory institution adjusting each respective party's shadow credit record or shadow debit record, allowing only these [sic] transactions that do not result in the value of the shadow debit record being less than

> the value of the shadow credit record at any time, each said adjustment taking place in chronological order; and
>
> (d) at the end-of-day, the supervisory institution instructing one of the exchange institutions to exchange credits or debits to the credit record and debit record of the respective parties in accordance with the adjustments of the said permitted transactions, the credits and debits being irrevocable, time invariant obligations placed on the exchange institutions.

'479 Patent col.65 ll.23-50.

Claim 1 of the '720 Patent, representative of the system claims, recites:

> 1. A data processing system to enable the exchange of an obligation between parties, the system comprising:
>
> a data storage unit having stored therein information about a shadow credit record and shadow debit record for a party, independent from a credit record and debit record maintained by an exchange institution; and
>
> a computer, coupled to said data storage unit, that is configured to (a) receive a transaction; (b) electronically adjust said shadow credit record and/or said shadow debit record in order to effect an exchange obligation arising from said transaction, allowing only those transactions that do not result in a value of said shadow debit record being less than a value of said shadow credit record; and (c) generate an instruction to said exchange institution at the end of a period of time to adjust said credit

> record and/or said debit record in accordance with the adjustment of said shadow credit record and/or said shadow debit record, wherein said instruction being an irrevocable, time invariant obligation placed on said exchange institution.

'720 Patent col.65 ll.42-61.

Claim 39 of the '375 Patent, representative of the product (media) claims, recites:

> 39. A computer program product comprising a computer readable storage medium having computer readable program code embodied in the medium for use by a party to exchange an obligation between a first party and a second party, the computer program product comprising:
>
> program code for causing a computer to send a transaction from said first party relating to an exchange obligation arising from a currency exchange transaction between said first party and said second party; and
>
> program code for causing a computer to allow viewing of information relating to processing, by a supervisory institution, of said exchange obligation, wherein said processing includes
>
> (1) maintaining information about a first account for the first party, independent from a second account maintained by a first exchange institution, and information about a third account for the second party, independent from a fourth account maintained by a second exchange institution;
>
> (2) electronically adjusting said first account and said third account, in order to effect an

> exchange obligation arising from said transaction between said first party and said second party, after ensuring that said first party and/or said second party have adequate value in said first account and/or said third account, respectively; and
>
> (3) generating an instruction to said first exchange institution and/or said second exchange institution to adjust said second account and/or said fourth account in accordance with the adjustment of said first account and/or said third account, wherein said instruction being an irrevocable, time invariant obligation placed on said first exchange institution and/or said second exchange institution.

'375 Patent col.68 ll.5-35.

B. District Court Proceedings

In May 2007, CLS Bank filed suit against Alice seeking a declaratory judgment that the '479, '510, and '720 Patents are invalid, unenforceable, or otherwise not infringed. In August 2007, Alice filed a counterclaim alleging that CLS Bank infringes claims 33 and 34 of the '479 Patent, and all claims of the '510 and '720 Patents.

In March 2009, CLS Bank moved for summary judgment contending that the asserted claims of the '479, '510, and '720 Patents are invalid under 35 U.S.C. § 101. Alice opposed and cross-moved for summary judgment. Following the Supreme Court's grant of certiorari in *In re Bilski*, 545 F.3d 943 (Fed.Cir.2008) (en banc) ("*Bilski I*"), *cert. granted sub. nom. Bilski v. Doll*, — U.S. —, 129 S.Ct. 2735, 174 L.Ed.2d 246 (2009), the district court denied the parties' cross motions for summary judgment as to

subject matter eligibility without prejudice to re-filing following the Supreme Court's decision on certiorari.

In May 2010, the '375 Patent issued to Alice. In August 2010, Alice filed amended counterclaims additionally asserting that CLS Bank infringes all claims of the '375 Patent. After the Supreme Court decided *Bilski v. Kappos*, — U.S. —, 130 S.Ct. 3218, 177 L.Ed.2d 792 (2010) ("*Bilski II*"), *affirming Bilski I*, 545 F.3d 943, the parties renewed their cross-motions for summary judgment, CLS Bank additionally asserting that the '375 Patent is invalid under 35 U.S.C. § 101. The district court granted CLS Bank's motion for summary judgment and denied Alice's cross-motion, holding that each asserted claim of Alice's four patents is invalid for failure to claim patent eligible subject matter. *CLS Bank Int'l v. Alice Corp.*, 768 F.Supp.2d 221 (D.D.C.2011). Alice timely appealed. This court has jurisdiction pursuant to 28 U.S.C. § 1295(a)(1).

II. DISCUSSION

A. Standard of Review

This court reviews the grant or denial of summary judgment under the law of the regional circuit. *MicroStrategy, Inc. v. Bus. Objects, S.A.*, 429 F.3d 1344, 1349 (Fed.Cir.2005). The D.C. Circuit reviews de novo a district court's grant of summary judgment. *Theodore Roosevelt Conservation P'ship v. Salazar*, 661 F.3d 66, 72 (D.C.Cir.2011). "We apply our own law with respect to issues of substantive patent law." *Aero Prods. Intern., Inc. v. Intex Recreation Corp.*, 466 F.3d 1000, 1016 (Fed.Cir.2006). "Whether a claim is drawn to patent eligible subject matter under § 101 is an issue of law that we review de novo." *Bilski I*, 545 F.3d at 951.

B. District Court's Analysis

In deciding CLS Bank's summary judgment motion, the district court first analyzed the method claims under the machine-or-transformation test. CLS Bank, for the purposes of advancing its § 101 motion, agreed to assume a claim construction favorable to Alice. *CLS Bank*, 768 F.Supp.2d at 236. Thus, the district court interpreted the shadow credit and debit records to require electronic implementation and a computer. *Id*. However, after a careful examination of the specification and the claims, the district court concluded that the "nominal recitation of a general-purpose computer in a method claim does not tie the claim to a particular machine or apparatus or save the claim from being found unpatentable under § 101." *Id*. at 237.

The district court also analyzed the method claims under the abstract idea exception. *Id*. at 242-43; *see Bilski II*, 130 S.Ct. at 3226 (holding that the machine-or-transformation test is an important and useful clue but that it should not be the sole test). Under this analysis, the district court found the methods to be invalid under § 101 as directed to the "fundamental idea of employing a neutral intermediary to ensure that parties to an exchange can honor a proposed transaction, to consummate the exchange simultaneously to minimize the risk that one party does not gain the fruits of the exchange, and then irrevocably to direct the parties, or their value holders, to adjust their accounts or records to reflect the concluded transaction." *CLS Bank*, 768 F.Supp.2d at 243-44.

The district court then analyzed the computer system and media claims. The district court assumed that these claims were directed to machines or manufactures, and thus analyzed these claims only to see whether they nonetheless represented nothing more

than an abstract idea. *Id*. at 250. After noting its earlier conclusion that the method claims were directed to an abstract concept, the court concluded that "[t]he system claims . . . represent merely the incarnation of this abstract idea on a computer, without any further exposition or meaningful limitation." *Id*. at 252. Similarly, with respect to the product claims, the court concluded that they "are also directed to the same abstract concept, despite the fact they nominally recite a different category of invention under § 101 than the other claims." *Id*. at 255.

C. The Parties' Arguments on Appeal

With respect to its method claims, Alice argues that they are patent eligible because, unlike the claims at issue in *Bilski*, its method claims are: (1) "tied to a particular machine or apparatus—*i.e*., they are to be performed on a computer," Appellant Br. 42; and (2) not directed to an abstract idea, but rather "are limited to a particular practical and technological implementation," which requires a particular series of concrete steps performed by an intermediary, *id*. 48-50; *see Research Corp. v. Microsoft Corp*., 627 F.3d 859, 868-69 (Fed.Cir.2010). With respect to its computer system and media claims, Alice argues that "computer systems are concrete machines, not abstract ideas," Appellant Br. 23, and "[n]either this [c]ourt nor the Supreme Court has ever invalidated a claim to a computer system under 35 U.S.C. § 101," *id*. 2. According to Alice, the district court erred by: (1) identifying and considering only the "heart" of Alice's invention—which it found to be an abstract concept—instead of the claims "as a whole, with all of [their] limitations given effect," *id*. 26; (2) determining that "computers that are programmable with software—so-called 'gen-

eral purpose' computers—should be analyzed differently from other machines under section 101," *id*. 31; *In re Alappat*, 33 F.3d 1526, 1545 (Fed.Cir.1994); and (3) focusing on the "preemptive force" of the claims as an independent test for eligibility when "[n]either the Supreme Court nor this [c]ourt has ever suggested that 'preemption' of a method or idea that is not a fundamental principle renders a patent claim invalid under section 101, nor that preemption is a separate step of the section 101 analysis if a claim has been determined not to be abstract," *id*. 35-36.

CLS Bank responds that "[a]ll of Alice's claims are directed to the unpatentable concept of 'exchanging an obligation' between parties (*i.e*., effectuating a legal obligation) after an intermediary ensures that there is 'adequate value' in independent accounts maintained for the parties to allow the exchange to go forward—in effect, a two-sided escrow arrangement." Appellee Br. 7-8. With respect to Alice's method claims, CLS Bank contends that: (1) they fail the machine or transformation test because, "even assuming a broad claim construction . . . requiring computer implementation, such implementation does not impose a 'meaningful limitation' on the scope of the claims, because the computer does not play a 'significant part in permitting the claimed method to be performed,' but rather 'function[s] solely as an obvious mechanism for permitting a solution to be achieved more quickly,'" *id*. 11, 37-38 (citing *SiRF Tech., Inc. v. Int'l Trade Comm'n*, 601 F.3d 1319, 1333 (Fed.Cir.2010)); (2) like "the claims in *Bilski*, [*Gottschalk v.*] *Benson* [409 U.S. 63, 93 S.Ct. 253, 34 L.Ed.2d 273 (1972)], and [*Parker v.*] *Flook* [437 U.S. 584, 98 S.Ct. 2522, 57 L.Ed.2d 451 (1978)], Alice's method claims would effectively preempt the use of the abstract business concept for exchanging an obligation which is recited in all of the claims," *id*. 30; and

(3) "[l]ike the claims at issue in *Benson* and *Flook*, Alice's method claims . . . [are] effectively drawn to a formula or algorithm . . . with data collection preceding use of the algorithm, and account adjustments and instructions that are 'post-solution activity,'" *id*. 38. With respect to Alice's computer-implemented system and product claims, CLS Bank contends that they are also directed to abstract ideas because, under *Benson*, a mere "redrafting of method claims" to recite a "computer" and "data storage unit" that are "'configured' to carry out the abstract method" does not save the claims from abstractness. *Id*. 41-42.

For the reasons discussed below, this Court agrees with Alice that its asserted method, system, and product claims are all directed to patent eligible subject matter under 35 U.S.C. § 101.

D. Analysis

i. Patent Eligibility

The Patent Act defines patent eligible subject matter broadly: "Whoever invents or discovers *any* new and useful process, machine, manufacture, or composition of matter, or *any* new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title." 35 U.S.C. § 101 (emphasis added). Section 101 is a "dynamic provision designed to encompass new and unforeseen inventions." *J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred Int'l, Inc.*, 534 U.S. 124, 135, 122 S.Ct. 593, 151 L.Ed.2d 508 (2001). As the Supreme Court has recognized, "Congress intended statutory subject matter to 'include anything under the sun that is made by man,'" *Diamond v. Chakrabarty*, 447 U.S. 303, 309, 100 S.Ct. 2204, 65 L.Ed.2d 144 (1980) (citing S.Rep. No. 82-

1979, at 5 (1952), 1952 U.S.C.C.A.N. 2394, 2399 and H.R.Rep. No. 82-1923, at 6 (1952)).

It is true, however, that not *everything* can be patented. The Supreme Court has explained that "laws of nature, physical phenomena, and abstract ideas" fall outside the scope of § 101, and are reserved to the public domain. *Bilski II*, 130 S.Ct. at 3225. In *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, the Supreme Court explained that these exceptions to statutory subject matter are "implicit" in the statute. — U.S. —, 132 S.Ct. 1289, 1293, 182 L.Ed.2d 321 (2012). "Such discoveries are 'manifestations of . . . nature, free to all men and reserved exclusively to none.'" *Id.* at 1293 (citing *Chakrabarty*, 447 U.S. at 309, 100 S.Ct. 2204) (quoting *Funk Bros. Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127, 130, 68 S.Ct. 440, 92 L.Ed. 588 (1948)). In practice, these three exceptions should arise infrequently and should not be understood to subvert the patent's constitutional mandate "[t]o promote the Progress of Science and useful Arts." U.S. Const. art. I, § 8, cl. 8; *see, e.g.*, *Research Corp.*, 627 F.3d at 868 (Fed.Cir.2010) ("[S]ection 101 does not permit a court to reject subject matter categorically because it finds that a claim is not worthy of a patent.").

In contrast to § 101, which sets forth the type of subject matter that is patent eligible, §§ 102 and 103 broadly ensure that the public remains free to use that which is *known* and *obvious variants* thereof. *See* 35 U.S.C. §§ 102, 103. In addition, § 112 protects the public storehouse of knowledge by preventing persons from obtaining patent protection for inventions not fully disclosed, enabled, or claimed with particularity. *See* 35 U.S.C. § 112. The comprehensive provisions of 35 U.S.C. §§ 102, 103, and 112 do the substantive work

of disqualifying those patent eligible inventions that are "not worthy of a patent." *Research Corp*., 627 F.3d at 868. "Section 101 is a general statement of the type of subject matter that is eligible for patent protection 'subject to the conditions and requirements of this title.' Specific conditions for patentability follow. . . . The question therefore of whether an invention is novel 'is wholly apart from whether the invention falls into a category of statutory subject matter.'" *Diamond v. Diehr*, 450 U.S. 175, 198-90, 101 S.Ct. 1048, 67 L.Ed.2d 155 (1981) (citing *In re Bergy*, 596 F.2d 952, 961 (CCPA 1979)).

It should be self-evident that each of these four statutory provisions—§§ 101, 102, 103, and 112—serves a different purpose and plays a distinctly different role. No one section is more important than any other. Together, they evince the intent of Congress in furthering the constitutional objective of promoting the progress of the useful arts. Because each of these sections serves a different purpose and plays a different role, invalidity, patentability, and patent eligibility challenges under these sections present distinctly different questions. *See Prometheus*, 132 S.Ct. at 1303-04. District courts have great discretion to control the conduct of proceedings before them, including the order of presentation of issues and evidence and the sequence of events proscribed by the Federal Rules and leading up to judgment. *See, e.g*., *Amado v. Microsoft Corp*., 517 F.3d 1353, 1358 (Fed.Cir.2008) ("District courts . . . are afforded broad discretion to control and manage their dockets, including the authority to decide the order in which they hear and decide issues pending before them."). Although § 101 has been characterized as a "threshold test," *Bilski II*, 130 S.Ct. at 3225, and certainly *can* be addressed before other matters touching the validity of patents,

it need not *always* be addressed first, particularly when other sections might be discerned by the trial judge as having the promise to resolve a dispute more expeditiously or with more clarity and predictability. *See MySpace, Inc. v. GraphOn Corp*., 672 F.3d 1250, 1260 (Fed.Cir.2012). Thus, consistent with its role as the master of its own docket, a district court properly acts within its discretion in deciding when to address the diverse statutory challenges to validity.

Here, the district court exercised its discretion to entertain a challenge to the validity of the patents in suit under 35 U.S.C. § 101. The district court's decision ultimately turned on, and thus this appeal is primarily directed to, the issue of whether the claimed inventions fall within the "abstract ideas" exception to patent eligibility. While the Supreme Court's recent decision in *Prometheus* reiterated the trilogy of "implicit" exceptions to patent eligibility, including the exception for abstract ideas, it did not directly address how to determine whether a claim is drawn to an abstract idea in the first instance.

The abstractness of the "abstract ideas" test to patent eligibility has become a serious problem, leading to great uncertainty and to the devaluing of inventions of practical utility and economic potential. *See* Donald S. Chisum, *Weeds and Seeds in the Supreme Court's Business Method Patent Decision: New Directions for Regulating Patent Scope*, 15 Lewis & Clark L.Rev. 11, 14 (2011) ("Because of the vagueness of the concepts of an 'idea' and 'abstract,' . . . the Section 101 abstract idea preemption inquiry can lead to subjectively-derived, arbitrary and unpredictable results. This uncertainty does substantial harm to the effective operation of the patent system."). 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." *Bilski II*, 130 S.Ct. at 3230 (quoting *Le Roy v. Tatham*, 55 U.S. (14 How.) 156, 175, 14 L.Ed. 367 (1852)). 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." *Alappat*, 33 F.3d at 1542 n. 18 (Fed.Cir.1994). 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." *Research Corp.*, 627 F.3d at 868. 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.'" Mark A. Lemley et al., *Life After* Bilski, 63 Stan. L.Rev. 1315, 1316 (2011).

Several decisions have looked to the notion of "preemption" to further elucidate the "abstract idea" exception. In *Bilski*, the Supreme Court explained that "[a]llowing petitioners to patent risk hedging would *preempt use of this approach in all fields*, and would effectively grant a monopoly over an abstract idea." 130 S.Ct. at 3231 (emphasis added). Previously, in *O'Reilly v. Morse*, 56 U.S. 62, 15 How. 62, 14 L.Ed. 601 (1853), the Supreme Court held that a claim to electromagnetism was not eligible for patent protection because the patentee "claim[ed] *the exclusive right to*

every improvement where the motive power is the electric or galvanic current, and the result is the marking or printing intelligible characters, signs, or letters at a distance." *Id*. at 112-13 (emphases added). The *Morse* Court reasoned that the claim would effectively "*shut* [ ] *the door against inventions of other persons . . .* in the properties and powers of electro-magnetism" because "*it matters not by what process or machinery the result is accomplished*." *Id*. at 113 (emphasis added). Again, in *Gottschalk v. Benson*, 409 U.S. 63, 93 S.Ct. 253, 34 L.Ed.2d 273 (1972), the Supreme Court emphasized the concept of "pre-emption," holding that a claim directed to a mathematical formula with "no substantial practical application except in connection with a digital computer" was directed to an unpatentable abstract idea because "the patent would *wholly pre-empt the mathematical formula* and in practical effect would be a patent on an algorithm itself." *Id*. at 71-72, 93 S.Ct. 253 (emphasis added). In *Parker v. Flook*, 437 U.S. 584, 98 S.Ct. 2522, 57 L.Ed.2d 451 (1978), the Court again emphasized the importance of claims not "preempting" the "basic tools of scientific and technological work," and further held that mere field of use limitations—there, to the oil refining and petrochemical industries—or the addition of "post-solution" activity—there, adjusting an "alarm limit" according to a claimed mathematical calculation—could not "transform an unpatentable principle into a patentable process." *Id*. at 589, 98 S.Ct. 2522.

In contrast to *Morse*, *Benson*, and *Flook*—where the claims were found to "pre-empt" an "idea" or algorithm—in *Diehr*, the Supreme Court held that the claims at issue (directed to a process for curing rubber using the mathematical "Arrhenius" equation) *did not* "pre-empt the use of that equation." *Diehr*, 450 U.S. at

187, 101 S.Ct. 1048. Rather, the claims "only foreclose[d] from others the *use of that equation in conjunction with all of the other steps in the* [ ] *claimed process*." *Id*. (emphasis added). The *Diehr* Court held that the claims were "not barred at the threshold by § 101" because they were "an *application* of a law of nature or mathematical formula to a known structure or process," which "incorporate[d] in it a more efficient solution of the equation." *Id*. at 187, 188, 101 S.Ct. 1048.

Our Constitution gave Congress the power to establish a patent system "[t]o promote the Progress of Science and useful Arts. . . ." U.S. Const. art. I, § 8, cl. 8. The patent system is thus intended to foster, not foreclose, innovation. *See id*. While every inventor is granted the right to exclude, or "pre-empt," others from practicing his or her claimed invention, no one is entitled to claim an exclusive right to a fundamental truth or disembodied concept that would foreclose *every future innovation* in that art. *See Morse*, 56 U.S. at 112-13. As the Supreme Court has "repeatedly emphasized . . . patent law [must] not inhibit further discovery by improperly tying up the future use of laws of nature." *Prometheus*, 132 S.Ct. at 1301. "[T]here is a danger that grant of patents that tie up [laws of nature, physical phenomena, and abstract ideas] will inhibit future innovation premised upon them, a danger that becomes acute when a patented process amounts to *no more than* an instruction to 'apply the natural law,' or otherwise forecloses more future invention than the underlying discovery could reasonably justify." *Id*. (emphasis added); *see also Benson*, 409 U.S. at 68, 93 S.Ct. 253 ("Here the 'process' claim is so abstract and sweeping as to cover both known and *unknown* uses of the BCD to pure binary conversion." (emphasis added)). Thus, the essential concern is not

preemption, *per se*, but the extent to which preemption results in the foreclosure of innovation. Claims that are directed to no more than a fundamental truth and foreclose, rather than foster, future innovation are not directed to patent eligible subject matter under § 101. No one can claim the exclusive right to all future inventions. *Morse*, 56 U.S. at 112-13; *Benson*, 409 U.S. at 68, 93 S.Ct. 253.

In determining whether a claim is directed to a non-statutory abstract idea, the Supreme Court acknowledged this court's "machine-or-transformation test [as] a useful and important clue, an investigative tool," but not as a dispositive test. *Bilski II*, 130 S.Ct. at 3227. As four Supreme Court Justices acknowledged, during the Industrial Age, few patents were granted for discoveries that did not satisfy the machine-or-transformation test. *Id*. Today, computers play a role in every part of our daily life. They are found in everything from toasters to transponders. The computer, with all of its hardware and software variations, may be one of the greatest inventions of all time, and there can be no question that advances in computer technology have fostered and will continue to foster innovation in all areas of science and technology. Many patents drawn to inventions implemented in computer hardware or software, however, are argued not to pass the machine-or-transformation test. Thus, courts must sometimes look beyond the machine-or-transformation test to distinguish eligible from ineligible computer-related claims. *See Bilski II*, 130 S.Ct. at 3227.

The mere implementation on a computer of an otherwise ineligible abstract idea will not render the asserted "invention" patent eligible. *See Fort Props. Inc. v. Am. Master Lease LLC*, 671 F.3d 1317, 1322

(Fed.Cir.2012) ("[An] abstract concept cannot be transformed into patentable subject matter merely because of connections to the physical world."); *Dealertrack Inc. v. Huber*, 674 F.3d 1315, 1333 (Fed.Cir.2012) ("Simply adding a 'computer aided' limitation to a claim covering an abstract concept, without more, is insufficient to render the claim patent eligible."); *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1375 (Fed.Cir.2011) ("[W]e have never suggested that simply reciting the use of a computer to execute an algorithm that can be performed entirely in the human mind" is sufficient to render a claim patent eligible.). On the other hand, where the "addition of a machine impose[s] a meaningful limit on the scope of a claim," and "play[s] a significant part in permitting the claimed method to be performed, *rather than function[ing] solely as an obvious mechanism for permitting a solution to be achieved more quickly*, i.e., through the utilization of a computer for performing calculations," that machine limitation renders the method patent eligible. *SiRF Tech., Inc. v. Int'l Trade Comm'n*, 601 F.3d 1319, 1333 (Fed.Cir.2010) (emphasis added); *see also Diehr*, 450 U.S. at 187, 101 S.Ct. 1048 ("It is now commonplace that an *application* of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection."); *Research Corp.*, 627 F.3d at 868 (holding that a process is patent eligible subject matter when it "presents functional and palpable application in the field of computer technology."); *Alappat*, 33 F.3d at 1544-45 (holding that claims directed to a specially-programmed computer—a "specific machine to produce a useful, concrete, and tangible result"—are directed to patent eligible subject matter). It can, thus, be appreciated that a claim that is drawn to a *specific way* of doing something with a computer is likely to be

patent eligible whereas a claim to *nothing more than the idea* of doing that thing on a computer may not.[1] But even with that appreciation, great uncertainty remains, and the core of that uncertainty is the meaning of the "abstract ideas" exception.

As the Supreme Court has recently acknowledged, "too broad an interpretation of [the exceptions to § 101] could eviscerate patent law. For all inventions at some level embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas." *Prometheus*, 132 S.Ct. at 1293. Any claim can be stripped down, or simplified, removing all of its concrete limitations, until at its core, something that could be characterized as an abstract idea is revealed. But nothing in the Supreme Court's precedent, nor in ours, allows a court to go hunting for abstractions by ignoring the concrete, palpable, tangible, and otherwise not abstract invention the patentee actually claims. It is fundamentally improper to paraphrase a claim in overly simplistic generalities in assessing whether the claim falls under the limited "abstract ideas" exception to patent eligibility under 35 U.S.C. § 101. Patent eligibility must be evaluated based on what the claims recite, not merely on the ideas upon which they are premised. In assessing patent eligibility, a court must consider the asserted claim as a whole. *Diehr*, 450 U.S. at 188, 101 S.Ct. 1048.

> It is inappropriate to dissect the claim into old and new elements and then to ignore the presence of

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[1] *See Lemley*, 63 Stan. L.Rev. at 1345 ("Under an appropriate § 101 scope analysis, the relevant concern is not whether there is a physical machine per se in the specification or claim language. Rather, the question should be whether the claim is so abstract and sweeping as to preclude all uses of the inventive idea, or whether it is sufficiently applied.").

> the old elements in the analysis. This is particularly true in a process claim because a new combination of steps in a process may be patentable even though all the constituents of the combination were well known and in common use before the combination was made. The 'novelty' of any element or steps in a process, or even of the process itself, is of no relevance in determining whether the subject matter of a claim falls within the § 101 categories of possibly patentable subject matter.

Id. at 188-89, 101 S.Ct. 1048.[2]

In light of the foregoing, this court holds that when—after taking all of the claim recitations into consideration—it is not manifestly evident that a claim is directed to a patent ineligible abstract idea,

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[2] The dissent contends that following *Prometheus*, "there is no doubt that to be patent eligible under § 101, the claims must include an 'inventive concept.'" Dissent 1357. From this, the dissent criticizes the majority for not inquiring whether the asserted claims include such an inventive concept or even whether the claims disclose anything inventive. But that is precisely what the majority has done in examining the language of the claims themselves and in criticizing the district court for ignoring the invention the patentee actually claims. The Supreme Court's reference to an "inventive concept" cannot be read to endorse overlooking the actual terms of the claims or the distillation of claim language to mere generalities. *Prometheus* simply states "that a process that focuses upon the use of a natural law also contain *other elements or a combination of elements*, sometimes referred to as an 'inventive concept,' *sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the natural law itself*." *Prometheus*, 132 S.Ct. at 1294 (emphases added). This is not a new idea, and imposes no "novelty" or "nonobviousness" inquiry into the patent eligibility analysis under § 101. *See Diehr*, 450 U.S. at 188-89, 101 S.Ct. 1048.

that claim must not be deemed for that reason to be inadequate under § 101. It would undermine the intent of Congress to extend a judicially-crafted exception to the unqualified statutory eligibility criteria of § 101 beyond that which is "implicitly" excluded as a "fundamental truth" that is "free to all men and reserved exclusively to none." *Bilski II*, 130 S.Ct. at 3225, 3230 (citations omitted); *see also id*. at 3226 ("This Court has 'more than once cautioned that courts should not read into the patent laws limitations and conditions which the legislature has not expressed.'" (quoting *Diehr*, 450 U.S. 175, 182, 101 S.Ct. 1048 (citation omitted))). Unless the single most reasonable understanding is that a claim is directed to nothing more than a fundamental truth or disembodied concept, with no limitations in the claim attaching that idea to a specific application, it is inappropriate to hold that the claim is directed to a patent ineligible "abstract idea" under 35 U.S.C. § 101.[3]

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[3] The dissent expresses concern that the majority "devises a new approach to subject matter patentability" in the face of perceived Supreme Court guidance. Dissent 1356-57. With all due respect for my sister in the dissent, the majority does no such thing. The majority merely recognizes that before the "implicit" exception for abstractness recognized by the Supreme Court and acknowledged by this court is allowed to overtake the intent of Congress as reflected in the broad statutory language of § 101, the determination of abstractness must be manifest. If a court, in applying all of the guidance of the Supreme Court in cases like *Prometheus*, *Bilski II*, *Diehr*, *Flook*, and *Benson*, and in considering all of the precedent from this court in cases like *Fort Properties*, *Dealertrack*, *CyberSource*, *Research Corp*., *SiRF*, and *Alappat*, is not wholly convinced that the subject matter of the claims is abstract, the claims in question must be held patent eligible.

ii. Application

Alice's asserted claims are directed generally to the exchange of obligations between parties using a computer. The asserted patents, with the exception of minor differences, share a common specification. While the method, system, and media claims fall within different statutory categories, the form of the claim in this case does not change the patent eligibility analysis under § 101. *CyberSource*, 654 F.3d at 1374. "Regardless of what statutory category ("process, machine, manufacture, or composition of matter," . . .) a claim's language is crafted to literally invoke, we look to the underlying invention for patent eligibility purposes." *Id*. "Labels are not determinative in § 101 inquiries . . . because the form of the claim is often an exercise in drafting." *In re Maucorps*, 609 F.2d 481, 485 (CCPA 1979) (internal citation omitted). Contrary to Alice's argument, therefore, the fact that computer systems are "machines" does not end the inquiry. *Alappat*, 33 F.3d at 1542 ("Because claim 15 is directed to a 'machine,' . . . [it] appears on its face to be directed to § 101 subject matter. This does not quite end the analysis, however, because the Board majority argues that the claimed subject matter falls within . . . the 'mathematical algorithm' exception."). "[T]he basic character of a process claim . . . is not changed by claiming only its performance by computers, or by claiming the process embodied in program instructions on a computer readable medium." *CyberSource*, 654 F.3d at 1375.

Because mere computer implementation cannot render an otherwise abstract idea patent eligible, *see id*. at 1374-75, the analysis here must consider whether the asserted claims (method, system, and media) are substantively directed to nothing more

than a fundamental truth or disembodied concept without any limitation in the claims tying that idea to a specific application, *see supra* Part II.D.i. The district court looked past the details of the claims in characterizing them as being directed to the fundamental concept "of employing an intermediary to facilitate simultaneous exchange of obligations in order to minimize risk." *CLS Bank*, 768 F.Supp.2d at 243. By doing so, the district court was able to treat the claims as encompassing nothing more than fundamental truths, much like the patent ineligible "abstract ideas" in *Bilski*, and this court's post-*Bilski* cases: *CyberSource*, *Dealertrack*, and *Fort Properties*. As explained above, however, ignoring claim limitations in order to abstract a process down to a fundamental truth is legally impermissible.[4]

Determining whether Alice's claims are directed to nothing more than a fundamental truth or disembodied concept requires this court to consider the scope and content of the claims. For the purpose of deciding patent eligibility at the district court, the parties agreed to a broad claim construction that was favorable to Alice. The district court concluded that each claim, including each of Alice's method claims, discussed below, requires computer implementation. *See CLS Bank*, 768 F.Supp.2d at 236 ("CLS has agreed to a broad construction of terms favorable to Alice, and because the specification reveals a computer based invention, the Court can reasonably assume for

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[4] The dissent engages in the same flawed analysis as the district court by allegedly "[s]tripp[ing the claims] of jargon" and creating a table of the "plain English translation" for each claim element. Dissent 1357-58. It is impermissible for the court to rewrite the claims as it sees them. The invention is defined in the claims by the patentee, not the court. *See* 35 U.S.C. § 112.

present purposes that the terms 'shadow' credit and/or debit record and 'transaction' in the '479 Patent recite electronic implementation and a computer or an analogous electronic device.").

The patent specifications are consistent with the understanding that each asserted claim requires computer implementation. The asserted system and media claims of the '720 and '375 Patents explicitly recite "machine" limitations. *See, e.g.*, '720 Patent col.65 ll.42-48 ("A data processing system . . . comprising a data storage unit . . . ; and a computer. . . ."); '375 Patent col.68 ll.5-7 ("A computer program product comprising a computer readable storage medium having computer readable program code embodied in the medium. . . .").

With respect to the asserted method claims, the '510 Patent claims recite an "electronic adjustment" limitation, *see, e.g.*, '510 Patent col.64 ll.11-12 (independent claim 1), which, for the purpose of this motion, CLS Bank agreed "requir[es] the use of a computer." Appellee Br. 6. The '510 Patent specification is consistent with the understanding that the claims require the use of a computer system. *See* '510 Patent col.3 ll.45-46 (disclosure of the invention) ("'The entities submit such orders to a 'system' which seeks to price and match the most appropriate counter-party. . . ."); col.28 l.45-col.29 l.4 (explaining that the shadow debit/credit records are electronically stored in a system called "INVENTICO"); col.29 ll.41-56 ("[E]ach [participating] entity electronically notifies the applicable CONTRACT APP of the 'opening balances' of all the debit and credit INVENTICO accounts it maintains. . . . Upon receipt of [these] notifications, the applicable CONTRACT APP updates/confirms its stakeholder shadow balances. Thus, at this point-in-time, all credit and debit shadow

account balances should be equivalent to their actual debit and credit account balances.").

The specification of the '479 Patent is similarly consistent with the understanding that the asserted claims require computer implementation. '479 Patent col.3 ll.29-38 (disclosure of the invention) (same as '510 Patent); col.4 ll.8-12 ("The present invention also provides an automated infrastructure . . . [which] allows the parties to participate directly without requiring an intermediary.") According to Alice's expert, "the person of ordinary skill in the art would understand . . . that claims 33 and 34 of the '479 [P]atent are limited to electronically implemented methods." Ginsberg Decl., ECF No. 95-3, Ex. 1, ¶ 32. While the asserted claims of the '479 Patent do not contain the "electronic adjustment" limitation, they do contain the same "shadow credit record" and "shadow debit record" limitations as the '510 Patent claims. The specification of the '479 Patent, like the '510 Patent, supports the understanding that the shadow debit/credit record limitations require computer implementation. *See* '479 Patent col.24 l.59-col.25 l.2 (explaining that the "CONTRACT APP" effects debits and credits to accounts in the INVENTICO system by "debiting/crediting, on a real-time basis, the relevant shadow records (in the data file PAYACC SHADOW) of applicable stakeholder accounts . . . , [which are] external to INVENTICO."). Alice's expert testified in his declaration that one of skill in the art understands that the "data file PAYACC SHADOW" is a "data file[ ] in a data storage unit." Ginsberg Decl., ECF No. 95-3, Ex. 1, ¶ 32. We find no basis to question the district court's assumption, for the purposes of this motion, that all of Alice's asserted claims require a computer system. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1315-16 (Fed.Cir.2005) (en banc).

Although computer implementation indicates that these claims would likely satisfy the "machine" prong of the machine-or-transformation test, *see CyberSource*, 654 F.3d at 1375 and *Alappat*, 33 F.3d at 1545, the mere fact of computer implementation alone does not resolve the patent eligibility question, *see Dealertrack*, 674 F.3d at 1333 ("Simply adding a 'computer aided' limitation to a claim covering an abstract concept, without more, is insufficient to render the claim patent eligible."); *CyberSource*, 654 F.3d at 1375. Indeed, almost every method in the Digital Age can be implemented on a specially-programmed computer. *See, e.g.*, *SiRF Tech.*, 601 F.3d at 1333 ("In order for the addition of a machine to impose a meaningful limit on the scope of a claim, it must play a significant part in permitting the claimed method to be performed, rather than function solely as an obvious mechanism for permitting a solution to be achieved more quickly, i.e., through the utilization of a computer for performing calculations.").

In *Bilski*, *CyberSource*, *Dealertrack*, and *Fort Properties* ("the *Bilski* line of cases"), the Supreme Court or this court found some basis in the claims upon which to determine that they were directed to nothing more than patent ineligible abstract ideas. Unlike the *Bilski* line of cases, however, it is difficult to conclude that the computer limitations here do not play a significant part in the performance of the invention or that the claims are not limited to a very specific application of the concept of using an intermediary to help consummate exchanges between parties. The dissent criticizes the majority for failing to explain "why the specific computer implementation in this case brings the claims within patentable subject matter," Dissent 1357, but this criticism is misplaced. The limitations

of the *claims as a whole*, not just the computer implementation standing alone, are what place meaningful boundaries on the meaning of the claims in this case.

The asserted claims appear to cover the practical application of a business concept in a specific way, which requires computer implemented steps of exchanging obligations maintained at an exchange institution by creating electronically maintained shadow credit and shadow debit records, and particularly recite that such shadow credit and debit records be held independently of the exchange institution by a supervisory institution; that start-of-the-day balances be obtained from the exchange institution; that adjustments be made to the credit records based on only certain specified allowed transactions under the "adjusting" limitation; that such adjustments be made in chronological order; that at the end of the day, instructions be given to the exchange institution to reflect the adjustments made on the basis of the permitted transactions; and that such adjustments affect irrevocable, time invariant obligations placed on the exchange institution. '479 Patent col.65 ll.28-50. Transactions "that do not result in the value of the shadow debit record being less than the value of the shadow credit record at any time" are not permitted under the "adjusting" limitation, and do not result in any ultimate exchange of obligations in the INVENTICO system. *Id*. col.65 ll.36-43, col.24 l.59-col.25 l.2. The claim limitations can be characterized as being integral to the method, as "play[ing] a significant part in permitting the method to be performed," and as not being token post-solution activity. It is clear, moreover, that the limitations requiring specific "shadow" records leave broad room for other methods of using intermediaries to help consummate exchanges, whether

with the aid of a computer or otherwise, and, thus, do not appear to preempt much in the way of innovation.

While the use of a machine in these limitations is less substantial or limiting than the industrial uses examined in *Diehr* (curing rubber) or *Alappat* (a rasterizer), the presence of these limitations prevents us from finding it manifestly evident that the claims are patent ineligible under § 101. *See Research Corp.*, 627 F.3d at 868. In such circumstances, we must leave the question of validity to the other provisions of Title 35.

Accordingly, this court holds that Alice's method, system, and product claims are directed to statutory subject matter under § 101.

III. CONCLUSION

For the foregoing reasons, this court reverses the district court's summary judgment of invalidity under 35 U.S.C. § 101 of claims 33 and 34 of the '479 Patent and each claim of the '510, '720, and '375 Patents.

REVERSED

PROST, Circuit Judge, dissenting.

The majority resists the Supreme Court's unanimous directive to apply the patentable subject matter test with more vigor. Worse yet, it creates an entirely new framework that in effect allows courts to avoid evaluating patent eligibility under § 101 whenever they so desire. I too find it difficult to answer the questions presented here with absolute certainty. Nonetheless, I believe that precedent and common sense counsel that the asserted patent claims are abstract ideas repackaged as methods and systems. Thus, with respect, I dissent.

I

When it comes to subject matter patentability, we do not write on a blank slate. Just a few months ago, the Supreme Court reversed us in a § 101 case for a second time in its last three terms, hinting (not so tacitly) that our subject matter patentability test is not sufficiently exacting. *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, — U.S. —, 132 S.Ct. 1289, 182 L.Ed.2d 321 (2012); *Bilski v. Kappos*, — U.S. —, 130 S.Ct. 3218, 177 L.Ed.2d 792 (2010); *see also WildTangent, Inc. v. Ultramercial, LLC*, — U.S. —, 132 S.Ct. 2431, 182 L.Ed.2d 1059 (2012), *granting cert., vacating, and remanding Ultramercial, LLC v. Hulu*, LLC, 657 F.3d 1323 (Fed.Cir.2011). The Court once again iterated that "the prohibition against patenting abstract ideas cannot be circumvented by attempting to limit the use of the formula to a particular technological environment." *Prometheus*, 132 S.Ct. at 1294 (quoting *Bilski*, 130 S.Ct. at 3230). But this time the Court also made clear what had been written between the lines before: It is not sufficient to put an abstract idea into use with "[p]urely 'conventional or obvious' 'pre-solution activity.'" *Prometheus*, 132 S.Ct. at 1298; *cf. Bilski*, 130 S.Ct. at 3231 (noting that the claimed invention was directed at a "fundamental economic practice long prevalent in our system of commerce"); *Parker v. Flook*, 437 U.S. 584, 594, 98 S.Ct. 2522, 57 L.Ed.2d 451 (1978) ("Respondent's process is unpatentable under § 101, not because it contains a mathematical algorithm as one component, but because once that algorithm is assumed to be within the prior art, the application, considered as a whole, contains no patentable invention."). The Court accordingly declined the Solicitor General's invitation to leave the screening of low quality patents to § 102 and § 103, even though the

government promised that "the claims are likely invalid under those provisions." Brief for the United States as Amicus Curiae in Support of Neither Party at 9, *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, — U.S. —, 132 S.Ct. 1289, 182 L.Ed.2d 321 (2012). Now there is no doubt that to be patent eligible under § 101, the claims must include an "inventive concept." *Prometheus*, 132 S.Ct. at 1294.

The majority has failed to follow the Supreme Court's instructions—not just in its holding, but more importantly in its approach. The majority does not inquire whether the asserted claims include an inventive concept. Even more fundamentally, the majority questions whether the Supreme Court's abstract idea test is workable at all. Maj. Op. 1348-49. Based on this apprehension, I take it, the majority devises a new approach to subject matter patentability. We must now avoid deciding a § 101 case unless unpatentability is "manifestly evident." Maj. Op. 1352.

I would be more empathetic if the majority's approach was based on a case-specific determination, made upon the application of the Supreme Court's abstract idea test to the asserted claims. As mentioned, however, the majority does not even attempt to inquire whether the claims disclose anything inventive. The bulk of the analysis focuses on the fact that the claims require "computer implementation," which the majority itself deems insufficient to pass muster under § 101. Maj. Op. 1352-55. Nor is there any explanation for why the specific computer implementation in this case brings the claims within patentable subject matter. *See also infra* Part III. The majority merely posits that the additional limitations in the claims "can be characterized as being integral to

the [invention]," but it does not explain whether they *should* be characterized as such, and what "integral" means in the context of § 101 in the first place. Maj. Op. 1355-56.

So why does the majority reverse the district court? Frankly, because "it is difficult to conclude that the computer limitations here do not play a significant part in the performance of the invention." Maj. Op. 1355. That suggests that the majority's "manifestly evident" standard is more of an escape hatch than a yardstick. In other words, the majority has resurrected the very approach to § 101 that the Solicitor General advocated—and the Supreme Court laid to rest—in *Prometheus*. I cannot agree.

II

Even if we were to punt the subject matter issue whenever it is difficult, we would not have any justification for reversing the district court in this case—especially on the method claims. The basic idea behind the claimed invention is the use of an intermediary in a financial transaction. At its most basic form, in a transaction between parties 'A' and 'B,' a middle-man collects funds from 'A' but will not pass them to 'B' until 'B' has also performed. In more complicated settings, the intermediary makes intelligent choices in selecting the parties to the transaction in a way to minimize or hedge the transaction risk. In any event, this basic idea of "credit intermediation" is not just abstract; it is also literally ancient. *See* Temin, Peter, *Financial Intermediation in the Early Roman Empire* (November 2002), MIT Department of Economics Working Paper No. 02-39, *available at* http://ssrn.com/abstract=348103 or http://dx.doi.org/10.2139/ssrn.348103 (exploring the use of financial intermediaries in the Early Roman Empire).

So where is the invention? The majority states that it is not the computer implementation, but "the claims as a whole" that make the invention patentable. Maj. Op. at 1355. But setting any need for computer implementation aside, there is nothing in the method steps themselves that brings the invention within patentable subject matter. Stripped of jargon, representative method claim 33 simply breaks down the idea of a financial intermediary into four steps: (a) creating a debit and credit account for each party, (b) checking the account balances in the morning, (c) adjusting the account balances through the day, and (d) paying the parties at the end of the day if both parties have performed.[1] The claim in effect presents an abstract

[1] Table 1:

The Recited Steps	Plain English Translation
(a) creating a shadow credit record and a shadow debit record for each stakeholder party to be held independently by a supervisory institution from the exchange institutions;	(a) creating a debit and credit account for each party,
(b) obtaining from each exchange institution a start-of-day balance for each shadow credit record and shadow debit record;	(b) checking the account balances in the morning,
(c) for every transaction resulting in an exchange hange obligation, the supervisory institution adjusting each respective party's shadow credit record or shadow debit record. allowing only these [sic] transactions that do not	(c) adjusting the account balances through the day, and

idea and then says "apply it." That is not enough. *Prometheus*, 132 S.Ct. at 1294 ("[T]o transform an unpatentable law of nature into a patent-eligible *application* of such a law, one must do more than simply state the law of nature while adding the words 'apply it.'").

The majority objects that "[i]t is impermissible for the court to rewrite claims as it sees them." Maj. Op. 1353-54 n. 4. But that is precisely what courts do in claim construction everyday. Perhaps what the majority actually means is that the plain English translation in Table 1 somehow glosses over a limitation that would otherwise narrow the claims to something that is non-abstract. One would wish that the majority had not kept that limitation a secret. The only hint appears

result in the value of the shadow debit record being less than the value of the shadow credit record at any time, each said adjustment taking place in chronological order; and.	
(d) at the end-of-day, the supervisory institution instructing one of the exchange institutions to exchange credits or debits to the credit record and debit record of the respective parties in accordance with the adjustments of the said permitted transactions, the credits and debits being irrevocable, time invariant obligations placed on the exchange institutions	(d) paying the parties at the end of the day if both parties have sufficiently performed.

where the majority points to the phrase "shadow records," as if that alone transmutes the abstract idea of the claims into patentable subject matter. Maj. Op. 1355-56. But the claims use "shadow" to simply define an account that is used to track a party's payments (the account is a shadow of the party's performance). That is not a limiting feature at all; any financial intermediation would in one way or another use a "shadow" account. Therefore, the representative method claim does not limit the method steps in a way that the Supreme Court considers to be meaningful. It merely recites the steps of performing as an intermediary in a financial transaction, which is an abstract idea, nothing more and nothing less. *Cf. Bilski*, 130 S.Ct. at 3231.

That leaves determining whether the computer implementation—assuming one is required by the method claims—makes the invention patentable. It does not. As the majority itself notes, "the mere fact of computer implementation alone does not resolve the patent eligibility question." Maj. Op. 1355. Nor is there anything about the use of computers in the method claims in this case that brings them within patentable subject matter. In *Gottschalk v. Benson*, 409 U.S. 63, 65, 93 S.Ct. 253, 34 L.Ed.2d 273 (1972), for example, the Supreme Court considered a patent "on a method of programming a general-purpose digital computer to convert signals from binary-coded decimal form into pure binary form." *Id*. Most of the steps of representative claim 8 expressly required the use of a shift register, a form of digital computer. *Id*. at 73, 93 S.Ct. 253. Indeed, the Supreme Court emphasized that the conversion method had "no substantial practical application except in connection with a digital computer." *Id*. at 71, 93 S.Ct. 253. That did not prevent the Court from holding, however, that the asserted claims were

abstract. *Id*. at 72-73, 93 S.Ct. 253. More recently, we evaluated the patentability of a claim for "[a] computer aided method of managing a credit application" that recited a "display device" and "terminal devices," which the district court correctly construed as some form of computer implementation. *Dealertrack, Inc. v. Huber*, 674 F.3d 1315, 1331-35 (Fed.Cir.2012). We nonetheless looked beyond the computer implementation to the inventive concept of the patent and held that the claim disclosed an abstract idea. *Id*. at 1333 ("Dealertrack's claimed process in its simplest form includes three steps: receiving data from one source (step A), selectively forwarding the data (step B, performed according to step D), and forwarding reply data to the first source (step C). The claim 'explain[s] the basic concept' of processing information through a clearinghouse [and is therefore abstract]."); *see also Fort Props., Inc. v. Am. Master Lease, LLC*, 671 F.3d 1317, 1323-24 (Fed.Cir.2012) (holding that a claim limitation that required a computer to generate deed-shares was abstract).

These authorities should have compelled us to hold that the asserted method claims in this case are abstract. The connection between the basic idea behind the claimed invention and the use of computers is not any stronger here than the relationship between the binary conversion system and the shift register in *Benson*, or the credit application system and computers in *Dealertrack*. Indeed, unlike in *Benson* and *Dealertrack*, the representative method claim does not even recite the use of a computer. And while some of the dependent claims recite computers, the specification shows that the use of computers is simply incidental. *See also infra* Part III. As I see it, therefore, the method claims do not present a difficult case. But district courts and litigants will now face a difficult task

in deciphering the law and harmonizing precedent: What is it that sets *Benson*, *Bilski*, and *Prometheus*—and *Dealertrack*—apart from this case, and what legal principle justifies responding to a unanimous Supreme Court decision against patentability with even a stricter subject matter standard? I do not know, and I cannot find the answer in the majority opinion.

III

The system claims present somewhat of a closer question, in part because the Supreme Court has not decided a § 101 case that involves system claims. There is a perfectly reasonable argument that system claims are never abstract as a matter of law. After all, systems comprise objects, and objects are literally not abstract. A bright-line rule that brings all systems within patentable subject matter is also easy to comprehend and administer. Evaluating whether systems are abstract, on the other hand, may run the risk of stepping too far into making novelty and obviousness determinations under the guise of the abstractness test.

Nonetheless, I would affirm the district court on the system claims as well. To begin with, I do not believe that we are free to decide that system claims may never be abstract. The Supreme Court has warned that "patent eligibility [does not] 'depend simply on the draftsman's art.'" *Prometheus*, 132 S.Ct. at 1294 (quoting *Flook*, 437 U.S. at 593, 98 S.Ct. 2522). A bright-line rule would conflict with the Supreme Court's admonition against putting form before substance in this area of patent law. More fundamentally, however, providing all system claims with immunity from the subject matter inquiry would eviscerate the abstract idea test altogether. Any method claim that uses a general purpose computer may also be drafted as a

system (containing computers) that carries out the method. The close similarity between the representative system and method claims in this case provides a great example. Thus, I generally agree with the majority that the mere fact that a claim recites a system does not put it beyond the abstract idea test. Maj. Op. 1352.

Once we accept that system claims may be abstract, however, there is little room to suggest that the system claims in this case fall within patentable subject matter. As already mentioned, the Supreme Court has directed us to inquire whether the claim limitations that are added to the abstract idea are inventive. Of course, I do not understand that prescription as a permit to collapse the obviousness and novelty inquiries into § 101. But there are cases where we may simply consult the claims and the specification in order to conclude that the additions are mere pre or post solution activity. That is, there are cases in which we can easily tell that the invention is not about systems or computers; it is merely an abstract idea clothed as something more tangible. In those circumstances, we may not simply defer the threshold question of patentability to other provisions of the Act; rather, where the case squarely presents the issue, we must invalidate the patent under § 101. *See supra* Part I.

This is one such case. Apart from the abstract idea of avoiding transaction risk by using financial intermediaries, representative system claim 1 of the '720 patent recites 1) a computer memory that contains account balance information, '720 patent col.65 ll.42-61. One need not be a computer scientist to suspect that this level of computer implementation is not inventive. But intuition is not our only guide; we also

have the patent specification. The "disclosure of the invention" section of the '720 patent almost exclusively discusses the concept of risk minimization in financial transactions. Although it summarily states that "[t]he invention also encompasses apparatus . . . dealing with the handling of contracts," it does not mention what aspect of the apparatus is an advancement in the art. *Id*. col.5 ll.27-29. Quite the opposite: it explains that the object of the invention can be "achieved by a computing/telecommunications infrastructure that is capable of being accessed worldwide by any enterprise/individual having access to a computer and a telephone network." *Id*. col.5 ll.47-50. The rest of the 65-column-long specification is similarly devoid of any teaching for how one must implement computer systems. For example, there is no instruction for connecting various components of the system and no discussion of how existing systems need be modified or improved in order to implement the one that is claimed. Indeed, even the "preferred embodiment" is not limited to a single system: According to the specification, the best mode of the invention may be implemented with "[a] large range of communication hardware products," "[o]ne amongst many of [which] are personal computers and associated printers." *Id*. col.7 l.65-col.8 l.3. Other options include "a mini or mainframe computer," "a tone dialing telephone," or even "a voice connection via an operator." *Id*. col.8 ll.6-12. As far as an actual system is concerned, therefore, implementation is irrelevant—anything goes. Instead, the specification discusses at length and in painful detail various forms of transactions, contracts, order processing, order authorization, risk management, and other financial concepts. Even a quick glance at the '720 patent reveals that the claimed invention is not about physical systems; it is the abstract idea of

risk-management in financial transactions carried out on an already known infrastructure. That invention, even if new, is an unpatentable abstract idea.

In sum, if we are to assess system claims for subject matter patentability—and I believe that we are currently so obligated—we must also follow the Supreme Court's instructions on how the abstract idea test should be applied. That is, we must look beyond the non-inventive aspect of the claims and ask whether the remaining portion is an abstract idea. Following that approach, in my view, unavoidably leads to the conclusion that similar to the method claims, the asserted system claims are not patentable. Perhaps, the Supreme Court will reconsider its broad instructions in *Prometheus* once it considers system claims, but until then we would only add confusion and uncertainty by creating our own ad-hoc approach. I respectfully dissent.[2]

[2] I am also of the view that the computer medium claims are not patentable under § 101. But since the majority has not addressed the issue separately, I see no need to discuss it.

APPENDIX C

UNITED STATES DISTRICT COURT
DISTRICT OF COLUMBIA

Civil Action No. 07-974 (RMC)

CLS BANK INTERNATIONAL,
Plaintiff,

v.

ALICE CORPORATION PTY. LTD.,
Defendant.

March 9, 2011

MEMORANDUM OPINION

ROSEMARY M. COLLYER, District Judge.

CLS Bank International moves for summary judgment, contending that all patent claims asserted by Alice Corporation Pty. Ltd. in this case are invalid under 35 U.S.C. § 101 for lack of patentable subject matter. Alice cross-moves for partial summary judgment, arguing that its asserted claims are directed to patent-eligible subject matter. Before the Court are claims 33 and 34 of U.S. Patent No. 5,970,479, and every claim of U.S. Patent No. 6,912,510; U.S. Patent No. 7,149,720; and U.S. Patent No. 7,725,375. For the reasons set out below, the Court finds each of the claims at issue to be directed to unpatentable subject matter and will grant summary judgment in full to CLS.

I. FACTS

A. The Patents

Alice is an Australian company that owns four United States patents; it asserts that CLS infringes these four patents. CLS is an "Edge Act Corporation," organized under Section 25A of the Federal Reserve Act, as amended, 12 U.S.C. § 611, and authorized by statute to engage in international banking activities. In response to Alice's charge of infringement, CLS challenges the subject matter patentability of the asserted claims of the four patents. Alice's four patents at issue are: (1) U.S. Patent No. 7,149,720 ("'720 Patent"); (2) U.S. Patent No. 6,912,510 ("'510 Patent"); (3) U.S. Patent No. 5,970,479 ("'479 Patent"); and U.S. Patent No. 7,725,375 ("'375 Patent") (collectively the "Patents"). The relevant claims of the '479 and '510 Patents are directed to a method (i.e., process), while the claims of the '720 and '375 Patents are directed to a system or product. The Court has not construed the allegedly infringed claims.

In the early 1990's, the founder of Alice, Ian Shepherd, invented an "innovative trading platform" which entailed a "computerized system for the establishment, settlement, and administration of financial instruments, principally of basic derivatives, that would solve problems inherent in the way such trading had been done in the past." Alice Mem. in Supp. of Mot. for Summ. J. & Opp'n [Dkts. 95, 96] 4 ("Alice Mem."). One aspect of the trading platform is "an automated method and system for eliminating counter-party risk when parties who were often unknown to each other and in different time zones wanted to exchange payments." *Id*. The "electronic settlement mechanism [ ] settled trades without the risk that one party would perform and the other would not." *Id*. Alice's expert,

Paul Ginsberg, explains that the Patents "disclose and claim in various ways a novel computerized trading platform for exchanging obligations in which a trusted third party, running a computer system programmed in a specific way, settles parties' obligations so as to eliminate what is variously referred to as 'Herstatt,' 'counterparty,' or 'settlement' risk—the risk that only one party's obligation will be paid, leaving the other party without its principal." *Id*. 4-5 (citing Alice Mem., [Ex. 1] Ginsberg Decl. ¶¶ 23-24). "The trusted third party—a 'supervisory institution'—operates a data processing system that exchanges both parties' obligations or neither." *Id*. at 5.

Mr. Ginsberg elucidates the risk the Patents are intended to mitigate. "When obligations arise from a trade made between two parties, e.g., a trade of stock or a trade of foreign currency, typically, there is a gap in time between when the obligation arises and when the trade is 'settled.'" Ginsberg Decl. ¶ 21. "In a number of financial contexts, the process of exchanging obligations, or settlement, is separate from the process of entering into a contract to perform a trade." *Id*. Mr. Ginsberg provides the example of two banks that wish to exchange large sums of currency would normally enter into a binding agreement to make an enumerated exchange but would postpone the actual exchange until after the price is set and the agreement confirmed, which is typically a two day period. *Id*. ¶ 22. After two days, the two banks would "settle" the trade by both paying their predetermined amounts to the other bank. However, a risk exists that one bank might wire its money, but the second bank would fail to do the same; the loss possibly becoming permanent, for instance, if the second bank thereafter goes bankrupt or is shut down by regulators. *Id*. ¶ 23. The Patent claims at issue here seek to minimize this "settlement"

risk that only one side of a trade would be fulfilled during the settlement process. *Id*. "Generally speaking, a trusted third party might operate a computer system that is configured in a particular way to exchange the parties' obligations, and by performing the particular electronic method using that computer system, can lessen settlement risk." *Id*. ¶ 24.

Therefore, Mr. Ginsberg reads the asserted claims of the four Patents to be "generally directed to methods or systems that help lessen settlement risk using a computer system." *Id*. Very broadly speaking, the process claims are directed to methods of exchanging financial obligations between parties while the system claims relate to data processing systems to implement the steps of exchanging obligations and the computer product claims enable a computer to send a transaction to the system to be implemented and allow a user to view the steps of exchanging obligations being performed.

1. '479 Patent

The '479 Patent is entitled "Methods and Apparatus Relating to the Formulation and Trading of Risk Management Contracts." *See* CLS Mem. in Supp. of Mot. for Summ. J. [Dkt. # 94] ("CLS Mem."), [Ex. 1] '479 Patent. The application for the '479 Patent was filed on May 28, 1993, and the Patent issued on October 19, 1999. The '479 Patent, at large, allegedly "discloses a complex computer-based system and various electronic methods for formulating risk management contracts, trading the contracts, and exchanging the resulting obligations." Ginsberg Decl. ¶ 25. The specification discloses:

> The invention encompasses methods and apparatus enabling the management of risk relating to

> specified, yet unknown, future events by enabling entities (parties) to reduce their exposure to specified risks by constructing compensatory claim contract orders on yet-to-be-identified counter-parties, being contingent on the occurrence of the specified future events. The entities submit such orders to a 'system' which seeks to price and match the most appropriate counter-party, whereupon matched contracts are appropriately processed through to their maturity. Therefore, the invention enables parties to manage perceived risk in respect of known, yet non-predictable, possible future events.

'479 Patent, col. 3:29-42. The disclosure of the '479 Patent reveals an invention that, as a whole, appears to be directed to a seemingly complex trading platform which facilitates a wide array of parties to come together and enter into contracts to hedge against future risks of all sorts; the system allows parties to trade such contracts already entered into, the system manages contracts until maturity, and the system provides for the transfer or exchange of entitlements or payments once they arise.

Only claims 33 and 34 of the '479 Patent are at issue in this matter. These two claims are directed to a "method of exchanging obligations" between parties, and in their entirety, they claim:

> 33. A method of exchanging obligations as between parties, each party holding a credit record and a debit record with an exchange institution, the credit records and debit records for exchange of predetermined obligations, the method comprising the steps of:

(a) creating a shadow credit record and a shadow debit record for each stakeholder party to be held independently by a supervisory institution from the exchange institutions;

(b) obtaining from each exchange institution a start-of-day balance for each shadow credit record and shadow debit record;

(c) for every transaction resulting in an exchange obligation, the supervisory institution adjusting each respective party's shadow credit record or shadow debit record, allowing only these transactions that do not result in the value of the shadow debit record being less than the value of the shadow credit record at any time, each said adjustment taking place in chronological order; and

(d) at the end-of-day, the supervisory institution instructing ones of the exchange institutions to exchange credits or debits to the credit record and debit record of the respective parties in accordance with the adjustments of the said permitted transactions, the credits and debits being irrevocable, time invariant obligations placed on the exchange institutions.

34. The method as in claim 33, wherein the end-of-day instructions represent credits and debits netted throughout the day for each party in respect of all the transactions of that day.

'479 Patent, col. 65:23-54. Both claims recite a "shadow credit record," a "shadow debit record," and a "transaction." *See, e.g.*, *id*. col. 65:27, 33 (Claim 33).

The methods in claims 33 and 34 relate to just one feature of the entire invention disclosed in the '479

Patent, *see* Ginsberg Decl. ¶ 26; a concluding step of sorts, when contracted-for obligations become ripe and are exchanged. *See* '479 Patent, col. 5:61-63 (noting the invention "also encompasses apparatus and method dealing with the handling of contracts at maturity, and specifically the transfer of entitlement"). The '479 Patent was the first of the Patents to issue and the inventions disclosed by the '510, '720, and '375 Patents are continuations of the '479 Patent which, with only minor differences, share a common specification. *See* Ginsberg Decl. ¶ 25; Alice Mem. 4.

2. '510 Patent

The '510 Patent is entitled "Methods of Exchanging an Obligation." *See* CLS Mem., [Ex. 2] '510 Patent. The application for the '510 Patent was filed on May 9, 2000, and it issued on June 28, 2005. Each of the 75 claims of the '510 Patent is directed to a particular method of exchanging an obligation. For instance, claim 1 of the '510 Patent is directed to:

> 1. A method of exchanging an obligation between parties, wherein an exchange obligation is administered by a supervisory institution, and wherein at least one credit record and one debit record is maintained with an exchange institution, the method comprising:
>
> (a) maintaining a shadow credit record and a shadow debit record for a party to be held independently by the supervisory institution from the exchange institution;
>
> (b) for every transaction resulting in an exchange obligation, the supervisory institution electronically adjusting said shadow credit record and/or shadow debit record, allowing only those transactions that do not result in a

> value of said shadow debit record being less than a value of said shadow credit record; and
>
> (c) at the end of a period of time, the supervisory institution providing an instruction to the exchange institution to credit and/or debit in accordance with said adjustments of said allowed transactions, wherein said instruction being an irrevocable, time invariant obligation placed on the exchange institution.

'510 Patent, col. 64:2-21. Each of the five independent claims—claims 1, 27, 61, 65, and 68—of the '510 Patent calls for "electronically adjusting" records or accounts. *Id*. col. 64:11-12 (Claim 1); *id*. col. 65:25-26 (Claim 27); *id*. col. 66:63-64 (Claim 61); *id*. col. 67:24-25 (Claim 65); *id*. col. 68:7 (Claim 68).

An exchange of obligations, however defined, is the stated purpose of the methods claimed in the '510 Patent claims and claims 33 and 34 of the '479 Patent. Alice argues that claims 33 and 34 of the '479 Patent and every claim of the '510 Patent are implemented electronically using a computer coupled to a data storage method. *See* Ginsberg Decl. ¶¶ 28-43. CLS disputes that these methods directly or indirectly claim the use of a computer.

3. '720 Patent

The '720 Patent is entitled "Systems for Exchanging an Obligation." CLS Mem., [Ex. 3] '720 Patent. The application for the '720 Patent was filed on December 31, 2002, and it issued on December 12, 2006. Each claim of the '720 Patent, claims 1-84, is directed to a particular data processing system.

As a representative example, claim 1 of the '720 Patent is directed to:

> 1. A data processing system to enable the exchange of an obligation between parties, the system comprising:
>
> (a) data storage unit having stored therein information about a shadow credit record and shadow debit record for a party, independent from a credit record and debit record maintained by an exchange institution; and
>
> (a) [sic] computer, coupled to said data storage unit, that is configured to (a) receive a transaction; (b) electronically adjust said shadow credit record and/or said shadow debit record in order to effect an exchange obligation arising from said transaction, allowing only those transactions that do not result in a value of said shadow debit record being less than a value of said shadow credit record; and (c) generate an instruction to said exchange institution at the end of a period of time to adjust said credit record and/or said debit record in accordance with the adjustment of said shadow credit record and/or said shadow debit record, wherein said instruction being an irrevocable, time invariant obligation placed on said exchange institution.

'720 Patent, col. 65:42-61. Each of the six independent claims—claims 1, 28, 60, 64, 68, and 80—of the '720 Patent recites "a data storage unit having stored therein" information about accounts or records, and a "computer, coupled to said data storage unit," that is "configured" to perform certain steps. *See id*. col. 65:42-61 (Claim 1); *id*. col. 67:1-18 (Claim 28); *id*. col. 68:33-53 (Claim 60); *id*. col. 68:62-66 & col. 69:1-11 (Claim 64); *id*. col. 69:20-42 (Claim 68); *id*. col. 70:20-37 (Claim 80).

4. '375 Patent

The '375 Patent is entitled "Systems and Computer Program Products for Exchanging an Obligation." CLS Mem., [Ex. 4] '375 Patent. The application leading to the '375 Patent was filed on June 27, 2005, and it issued on May 25, 2010. Claims 1-38 and 42-47 of the '375 Patent are directed to data processing systems which enable the exchange of an obligation. As with the '720 Patent claims, the three independent system claims—claims 1, 14, and 26-of the '375 Patent each requires "a data storage unit having stored therein" information about accounts or records, and a "computer, coupled to said data storage unit," that is "configured" to perform certain steps. *See* '375 Patent, col. 65:1-30 (Claim 1); *id*. col. 66:1-29 (Claim 14); *id*. col. 66:61-65 & col. 67:1-26 (Claim 26). The '375 Patent incorporates additional elements to the systems claimed in the '720 Patent. For instance, independent claim 1 further recites a "first party device," *id*. col. 65:4, claim 12 adds a "second party device," *id*. col. 65:62, and claim 14 recites a "communications controller." *Id*. col. 66:3.

Independent claim 39 and claims 40 and 41, which depend from claim 39,[1] of the '375 Patent are, on the

[1] "[A] claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers." 35 U.S.C. § 112. In other words, a dependent claim incorporates all of the limitations of the claim from which it "depends" and adds something new; thus, a dependent claim has a narrower scope than the claim from which it depends. Further, "the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim." *Phillips v. AWH Corp*., 415 F.3d 1303, 1315 (Fed.Cir.2005).

other hand, directed to computer program products containing particular program code.

Claim 39 of the '375 Patent is directed to:

> 39. A computer program product comprising a computer readable storage medium having computer readable program code embodied in the medium for use by a party to exchange an obligation between a first party and a second party, the computer program product comprising:
>
> program code for causing a computer to send a transaction from said first party relating to an exchange obligation arising from a currency exchange transaction between said first party and said second party; and
>
> program code for causing a computer to allow viewing of information relating to processing, by a supervisory institution, of said exchange obligation, wherein said processing includes (1) maintaining information about a first account for the first party, independent from a second account maintained by a first exchange institution, and information about a third account for the second party, independent from a fourth account maintained by a second exchange institution; (2) electronically adjusting said first account and said third account, in order to effect an exchange obligation arising from said transaction between said first party and said second party, after ensuring that said first party and/or said second party have adequate value in said first account and/or said third account, respectively; and (3) generating an instruction to said first exchange institution and/or said second exchange institution to adjust said second

> account and/or said fourth account in accordance with the adjustment of said first account and/or said third account, wherein said instruction being an irrevocable, time invariant obligation placed on said first exchange institution and/or said second exchange institution.

Id. col. 68:5-35. Thus, each of the three product claims asserts a "computer readable storage medium" and "computer readable program code embodied in the medium." *Id*. col. 68:5-7 (Claim 39).

B. Procedural History

On May 24, 2007, CLS brought suit against Alice, seeking a declaratory judgment of non-infringement, patent invalidity, and patent unenforceability under the Patent Act, 35 U.S.C. § 1 *et seq*., and the Declaratory Judgment Act, 28 U.S.C. §§ 2201, 2202. On August 16, 2007, Alice counter claimed that CLS was infringing three of its patents: the '479, '510, and '720 Patents. By agreement of the parties, initial discovery commenced on the question of (1) the operation of CLS Bank International, and (2) CLS Bank International's relationship with the CLS system.

In March 2009, CLS moved for summary judgment on the basis that (a) any patent infringement by CLS could not be said to be occurring within the United States and (b) Alice's claims lacked patentable subject matter eligibility. Alice opposed and cross-moved on both issues. As for extraterritoriality, on October 13, 2009, 667 F.Supp.2d 29 (D.D.C.2009), the Court denied CLS's motion, finding that U.S. patent laws reached CLS's alleged infringing acts since CLS both "uses" its CLS Core System and "offers to sell, or sells" its methods within the United States. The Court also denied without prejudice Alice's cross-motion as

premature since it sought a declaration of infringement. *See* Redacted Mem. Op. & Order [Dkt. 79, 78]. The Court then certified CLS's immediate appeal, but the United States Court of Appeals for the Federal Circuit denied CLS's request for an interlocutory appeal. *See* Federal Circuit Order [Dkt. # 87].

On June 16, 2009, the Court denied without prejudice the cross-motions on subject matter eligibility on the grounds that the Supreme Court had granted certiorari in *In re Bilski*, 545 F.3d 943 (Fed.Cir.2008) (en banc) ("*Bilski I*"), upon which the parties had relied heavily in their briefing. The Court ordered re-filing for after the Supreme Court issued its decision. *See* Minute Entry Order 6/16/2009. After the Supreme Court issued *Bilski v. Kappos*, — U.S. —, 130 S.Ct. 3218, 177 L.Ed.2d 792 (2010) ("*Bilski II*"), the parties renewed their briefs. Further, on August 5, 2010, the Court granted Alice leave to file an amended answer containing an additional counterclaim charging CLS with infringement of its '375 Patent, which had only been issued three months prior. Briefing on the question of whether Alice's claims at issue in this litigation are directed to patent eligible subject matter under the Patent Act is now ripe, after oral argument was held on January 14, 2011.

II. LEGAL STANDARD

A. Summary Judgment

Under Rule 56 of the Federal Rules of Civil Procedure, summary judgment shall be granted "if the movant shows that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law." Fed.R.Civ.P. 56(a); *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 247, 106 S.Ct. 2505, 91 L.Ed.2d 202 (1986). Moreover, summary

judgment is properly granted against a party who "after adequate time for discovery and upon motion . . . fails to make a showing sufficient to establish the existence of an element essential to that party's case, and on which that party will bear the burden of proof at trial." *Celotex Corp. v. Catrett*, 477 U.S. 317, 322, 106 S.Ct. 2548, 91 L.Ed.2d 265 (1986).

In ruling on a motion for summary judgment, the court must draw all justifiable inferences in the nonmoving party's favor and accept the nonmoving party's evidence as true. *Anderson*, 477 U.S. at 255, 106 S.Ct. 2505. A nonmoving party, however, must establish more than "the mere existence of a scintilla of evidence" in support of its position. *Id*. at 252, 106 S.Ct. 2505. In addition, the nonmoving party may not rely solely on allegations or conclusory statements. *Greene v. Dalton*, 164 F.3d 671, 675 (D.C.Cir.1999). Rather, the nonmoving party must present specific facts that would enable a reasonable jury to find in its favor. *Id*. at 675. If the evidence "is merely colorable, or is not significantly probative, summary judgment may be granted." *Anderson*, 477 U.S. at 249-50, 106 S.Ct. 2505 (citations omitted).

B. Subject Matter Eligibility under the Patent Act

Section 101 of the Patent Act delineates which inventions are patentable: "Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title." 35 U.S.C. § 101. Congress created four independent categories of inventions or discoveries that are eligible for patent protection: processes, machines, manufactures, and compositions of matter. A "process" is defined in the Patent Act as a "process, art or

method, and includes a new use of a known process, machine, manufacture, composition of matter, or material." *Id*. § 100(b). The Supreme Court has described a "process" as follows:

> That a process may be patentable, irrespective of the particular form of the instrumentalities used, cannot be disputed. . . . A process is a mode of treatment of certain materials to produce a given result. It is an act, or a series of acts, performed upon the subject-matter to be transformed and reduced to a different state or thing. If new and useful, it is just as patentable as is a piece of machinery. In the language of the patent law, it is an art. The machinery pointed out as suitable to perform the process may or may not be new or patentable; whilst the process itself may be altogether new, and produce an entirely new result. The process requires that certain things should be done with certain substances, and in a certain order; but the tools to be used in doing this may be of secondary consequence.

Diamond v. Diehr, 450 U.S. 175, 182-83, 101 S.Ct. 1048, 67 L.Ed.2d 155 (1981) (quoting *Cochrane v. Deener*, 94 U.S. 780, 787-88, 24 L.Ed. 139 (1877)).

By writing § 101 in expansive terms, "Congress plainly contemplated that the patent laws would be given wide scope." *Diamond v. Chakrabarty*, 447 U.S. 303, 308, 100 S.Ct. 2204, 65 L.Ed.2d 144 (1980). "Congress took this permissive approach to patent eligibility to ensure that ingenuity should receive a liberal encouragement." *Bilski II*, 130 S.Ct. at 3225 (internal quotation marks omitted); *In re Comiskey*, 554 F.3d 967, 977 (Fed.Cir.2009) (recognizing that patentable subject matter under § 101 is "extremely broad"). In fact, the Supreme Court has "more than once

cautioned that courts should not read into the patent laws limitations and conditions which the legislature has not expressed." *Bilski II*, 130 S.Ct. at 3226 (quoting *Diehr*, 450 U.S. at 182, 101 S.Ct. 1048 (internal quotation marks omitted)).

The Supreme Court has enunciated three exceptions to the Patent Act's broad subject matter eligibility framework: "laws of nature, physical phenomena, and abstract ideas." *Bilski II*, 130 S.Ct. at 3225 (quoting *Chakrabarty*, 447 U.S. at 309, 100 S.Ct. 2204). Thus, even if an invention appears to nominally claim subject matter that would be statutorily covered by the Patent Act, it will be denied patent protection if it falls into one of the "fundamental principles" exceptions, i.e. a law of nature, natural phenomena, and/or an abstract idea, which have been expounded by the Supreme Court in *Gottschalk v. Benson*, 409 U.S. 63, 93 S.Ct. 253, 34 L.Ed.2d 273 (1972), *Parker v. Flook*, 437 U.S. 584, 98 S.Ct. 2522, 57 L.Ed.2d 451 (1978), *Diehr*, 450 U.S. 175, 101 S.Ct. 1048, and most recently *Bilski II*, 130 S.Ct. 3218. An underlying reason for these exceptions is that "[p]henomena of nature, though just discovered, mental processes, and abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work." *Benson*, 409 U.S. at 67, 93 S.Ct. 253; *accord Diehr*, 450 U.S. at 185, 101 S.Ct. 1048 ("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.") (citation omitted). Although the "fundamental principles" exceptions are not statutory, the Supreme Court has found them to be consistent with the requirement that a patentable invention be "new and useful." *Bilski II*, 130 S.Ct. at 3225 (citing 35 U.S.C. § 101). The Supreme Court recently emphasized that a lower

court should be attentive to the "guideposts" of *Benson*, *Flook*, and *Diehr* when considering these exceptions to subject matter patentability. *Id*. at 3231.

In 1972, the *Benson* Court held that a method of programming a computer to convert binary-coded decimal numerals to their equivalent pure binary numerals was not a "process" as covered by the Patent Act. The Court found the method truly claimed an "algorithm," as it represented a general formulation for computers to solve the mathematical problem of converting one numerical representation to another, which merely constituted an algorithm from which specific applications could be developed. *Benson*, 409 U.S. at 65, 93 S.Ct. 253. The Court held that the *Benson* patent would preempt the use of the algorithm by others as the claim could cover known and future unknown uses of the code conversion formula in many different fields and for many different purposes, and effectively preempt its use in existing machinery, future-devised machinery, or no machinery at all. *Id*. at 68, 93 S.Ct. 253. The Court also found that the computer failed to limit the invention since the algorithm had no practical application except in connection with a computer; therefore a patent on the invention served as a patent on the algorithm itself. *Id*. at 71-2, 93 S.Ct. 253.

In 1978, the *Flook* Court rejected another patent because it was directed to unpatentable subject matter, another algorithm, although the patent contained greater limitations and entailed a more specific application than the patent in *Benson*. The *Flook* patent concerned monitoring conditions during catalytic conversion processes in the petrochemical and oil-refining industries, and the claims were directed to a method of computing an alarm limit, which is the point

at which catalytic conversion conditions can produce inefficiencies or danger. The Court recognized that the only novel part of the method was that it employed a new mathematical formula for calculating and/or updating the alarm limit, and that the invention really claimed the algorithm itself. *Flook*, 437 U.S. at 585-86, 98 S.Ct. 2522. That the claims were limited to the petrochemical and oil-refining industries and would therefore not preempt the wholesale use of the algorithm was insufficient to render the claims patentable. *Id*. at 589-90, 98 S.Ct. 2522. Likewise, the methods were not saved by the "post-solution" activity of adjusting the actual alarm limit based on the results of the algorithm since a "competent draftsman could attach some form of post-solution activity to almost any mathematical formula." *Id*. at 590, 98 S.Ct. 2522

In 1981, the Supreme Court colored the outer limits of the fundamental principles exceptions in *Diehr*, in which the Court upheld the subject matter eligibility of a claim to a process for producing cured synthetic rubber products. While the invention employed a well-known mathematical formula in one of its steps, the patent did not seek to preempt the use of the formula itself, but only preempt its use in conjunction with all the other steps in the claimed method. *Diehr*, 450 U.S. at 187, 101 S.Ct. 1048. Admittedly, the mathematical formula would not be patentable on its own, "but when a process for curing rubber is devised which incorporates in it a more efficient solution of the equation, that process is at the very least not barred at the threshold by § 101." *Id*. at 188, 101 S.Ct. 1048. The Court distinguished *Flook* by explaining: "We were careful to note in *Flook* that the patent application did not purport to explain how the variables used in the formula were to be selected, nor did the application contain any disclosure relating to chemical processes

at work or the means of setting off an alarm or adjusting the alarm limit. All the application provided was a 'formula for computing an updated alarm limit.'" *Id*. at 192 n. 14, 101 S.Ct. 1048 (internal citations omitted).

Most recently, in 2010, the Supreme Court found a business method unpatentable as directed to an abstract idea. *See Bilski II*, 130 S.Ct. at 3231. The *Bilski II* Court invalidated process claims generally directed to instructing buyers and sellers how to hedge risk and how to apply the methods to the energy commodities market. *Id*. The Court pointed out that hedging is a "fundamental economic practice long prevalent in our system of commerce and taught in any introductory finance class." *Id*. (citation omitted). "Allowing petitioners to patent risk hedging would pre-empt use of this approach in all fields, and would effectively grant a monopoly over an abstract idea." *Id*. The Court also found the dependent claims applying the methods of hedging risk to the energy commodities market unpatentable as vain attempts to limit an fundamental concept to a particular field of use or to add post-solution components. *Id*. The Court found that the patent claims "attempt to patent the use of the abstract idea of hedging risk in the energy market and then instruct the use of well-known random analysis techniques to help establish some of the inputs into the equation." *Id*. In fact, "these claims add even less to the underlying abstract principle than the invention in *Flook* did, for the *Flook* invention was at least directed to the narrower domain of signaling dangers in operating a catalytic converter." *Id*.

While an abstract idea in itself is not patentable, a claim "is not unpatentable simply because it contains a law of nature or a mathematical algorithm." *Flook*, 437 U.S. at 590, 98 S.Ct. 2522. "It is now commonplace

that an *application* of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection." *Diehr*, 450 U.S. at 187, 101 S.Ct. 1048 (emphasis in original); *id*. at 192, 101 S.Ct. 1048 ("[W]hen a claim containing a mathematical formula implements or applies that formula in a structure or process which, when considered as a whole, is performing a function which the patent laws were designed to protect (e.g., transforming or reducing an article to a different state or thing), then the claim satisfies the requirements of § 101."). It is also clear that when a court examines whether a claim is directed to an abstract idea, the court must view each claim as a whole. "In determining the eligibility of respondents' claimed process for patent protection under § 101, their claims must be considered as a whole . . . This is particularly true in a process claim because a new combination of steps in a process may be patentable even though all the constituents of the combination were well known and in common use before the combination was made." *Diehr*, 450 U.S. at 188, 101 S.Ct. 1048; *see also King Pharms., Inc. v. Eon Labs., Inc*., 616 F.3d 1267, 1277 (Fed.Cir.2010) (reasserting that "§ 101 patentability analysis is directed to the claim as a whole, not individual limitations" within the claim).

There is no clear definition of what constitutes an abstract idea; instead, courts analogize from the standards etched out by the cases just discussed. As the Federal Circuit recently acknowledged, "the Supreme Court did not presume to provide a rigid formula or definition for abstractness." *Research Corp. Techs. v. Microsoft Corp*., 627 F.3d 859, 868 (Fed.Cir.2010) (citing *Bilski II*, 130 S.Ct. at 3238). The Federal Circuit declined to "presume to define

'abstract' beyond the recognition that this disqualifying characteristic should exhibit itself so manifestly as to override the broad statutory categories of eligible subject matter and the statutory context that directs primary attention on the patentability criteria of the rest of the Patent Act." *Id*.

Ultimately, the determination of whether an asserted claim is invalid for lack of subject matter patentability under § 101 is a question of law. *See Bilski I*, 545 F.3d at 950. A patent is presumed to be valid by statute, 35 U.S.C. § 282; therefore, a patent challenger bears the burden of proving invalidity by clear and convincing evidence. *See Pfizer, Inc. v. Apotex, Inc*., 480 F.3d 1348, 1359 (Fed.Cir.2007). This standard of proof applies equally at summary judgment. *See National Presto Indus. v. West Bend Co*., 76 F.3d 1185, 1189 (Fed.Cir.1996). While invalidity is a question of law, "determination of this question may require findings of underlying facts specific to the particular subject matter and its mode of claiming." *Arrhythmia Research Technology, Inc. v. Corazonix Corp*., 958 F.2d 1053, 1056 (Fed.Cir.1992).

Whether an invention falls within a subject matter eligible for § 101 protection is also a threshold question. *See Comiskey*, 554 F.3d at 975. "It is well-established that '[t]he first door which must be opened on the difficult path to patentability is § 101.'" *Id*. at 973 (quoting *State Street Bank & Trust Co. v. Signature Fin. Group, Inc*., 149 F.3d 1368, 1372 n. 2 (Fed.Cir.1998)). Only after an invention has satisfied § 101, will it be analyzed under the remaining hurdles of the Patent Act, which include the requirement that an invention be novel, *see* § 102; nonobvious, *see* § 103;

and fully and particularly described, *see* § 112. *See Bilski II*, 130 S.Ct. at 3225.[2]

III. ANALYSIS

CLS argues that Alice's claims are not patentable because they are directed to an abstract idea—the exchange of an obligation when sufficient value is present—which is supported by its argument that the method claims fail to satisfy the machine-or-transformation test. Thus, CLS posits that Alice's method claims in the '510 Patent and claims 33 and 34 of the '479 Patent are directed to an abstract idea, and then by the draftsman's art, this abstract idea is recast as computer system and product claims in the '720 and '375 Patents to carry out the same methods. CLS argues this is further evidenced by the fact the Patents share essentially the same specification and disclosure.

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[2] The Federal Circuit recently explained, in overturning a district court's finding that a method claim was abstract, that

> an invention which is not so manifestly abstract as to override the statutory language of section 101 may nonetheless lack sufficient concrete disclosure to warrant a patent. In section 112, the Patent Act provides powerful tools to weed out claims that may present a vague or indefinite disclosure of the invention. Thus, a patent that presents a process sufficient to pass the coarse eligibility filter may nonetheless be invalid as indefinite because the invention would 'not provide sufficient particularity and clarity to inform skilled artisans of the bounds of the claim.' *Star Scientific., Inc. v. R.J. Reynolds Tobacco Co*., 537 F.3d 1357, 1371 (Fed.Cir.2008). That same subject matter might also be so conceptual that the written description does not enable a person of ordinary skill in the art to replicate the process.

Research Corp., 627 F.3d at 869.

A. Method Claims

CLS first attacks claims 33 and 34 of the '479 Patent and every claim of the '510 Patent—which collectively entail the only method claims at issue in this litigation—arguing these method claims fail as abstract and because they fail to meet the machine-or-transformation test. Alice responds that the methods are not abstract, but a functional application of a method to satisfy a need, and that the claims further satisfy the machine-or-transformation test.

1. Statutory Category

The first question is whether the methods in claims 33 and 34 of the '479 Patent and all claims in the '510 Patent statutorily qualify for patent protection. Congress broadly defined the categories of inventions to be afforded patent protection to ensure that "ingenuity should receive a liberal encouragement." *Chakrabarty*, 447 U.S. at 308-09, 100 S.Ct. 2204. The Patent Act defines "process" as a "process, art or method, and includes a new use of a known process, machine, manufacture, composition of matter, or material." 35 U.S.C. § 100(b). The relevant claims of the '479 and '510 Patents are directed to particular methods, or steps, of exchanging obligations. Thus, the claims nominally satisfy the statutory language of § 101 and the process definition laid out in § 100(b). However, the analysis does not end here as the machine-or-transformation test helps guide a court in the decision as to whether a process is subject matter eligible under the Patent Act.

2. Machine-or-Transformation Test

To determine whether a process claims subject matter that is patent eligible, a court may look to the useful and important "machine-or-transformation"

("MOT") test for guidance. *See Prometheus Labs., Inc. v. Mayo Collaborative Servs. & Mayo Clinic Rochester*, 628 F.3d 1347, 1355 (Fed.Cir.2010). Under the MOT test, an invention is a process if "(1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing." *Bilski I*, 545 F.3d at 954. Further, "the use of a specific machine or transformation of an article must impose meaningful limits on the claim's scope to impart patent-eligibility" and "the involvement of the machine or transformation in the claimed process must not merely be insignificant extra-solution activity." *Id*. at 961-62. The MOT test is neither the exclusive nor the dispositive standard to determine whether an invention qualifies as a process under § 101, yet it remains a "useful and important clue, an investigative tool" in the analysis. *Bilski II*, 130 S.Ct. at 3227. Therefore, this Court analyzes the claims under the MOT analysis to inform its ultimate finding.

The Court first finds the relevant claims of the '479 and '510 Patents do not involve any "transformation" under the MOT test. Alice argues that the electronic transformation of data caused by the methods' electronic adjustment of accounts satisfies the transformation prong of the test. *See* Alice Mem. 33. The Federal Circuit recently grappled with its "measured approach" to allowing the manipulation of electronic signals or data or even "abstract constructs," such as legal obligations, to qualify as transformations under the Patent Act. *Bilski I*, 545 F.3d at 962. The Federal Circuit pointed to only one example where "the electronic transformation of the data itself into a visual depiction" was sufficient to meet the test. *Id*. at 963 (citing *In re Abele*, 684 F.2d 902, 908-09 (C.C.P.A.1982)). It was not the mere manipulation of data itself that led the U.S. Court of Customs and Patent Appeals (the

predecessor to the U.S. Court of Appeals for the Federal Circuit) to find the method was transformative, but that the process involved the conversion of X-ray data into a visual depiction which represented specific physical objects, i.e., bones. *See Bilski I*, 545 F.3d at 962-63.[3] Taken to the extreme, Alice's argument would convert almost any use of a computer, or other electronic device with memory, to a transformation under the MOT test simply because data would necessarily have to be manipulated, and on a microscopic level, a hard drive, for instance, would be "transformed" by the process of "magnetizing or demagnetizing part of a hard disk drive platter corresponding to a bit of data." *See* Alice Mem. 33.

Further, for a transformation to satisfy the MOT test, the "transformation must be central to the

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[3] Alice cites to *Arrhythmia Research Technology, Inc. v. Corazonix Corp.*, 958 F.2d 1053 (Fed.Cir.1992), as further support that the method claims before the Court involve a transformation under the MOT test. In *Arrhythmia* the Federal Circuit found the conversion, application, determination, and comparison of electrocardiograph signals to be "physical process steps that transform one physical, electrical signal into another" and, accordingly that the process satisfied the second step of the *Freeman-Walter-Abele* test—which requires that an algorithm be applied to physical elements or process steps to be patent eligible. *Id.* at 1059. This analysis is inapposite. First, the Federal Circuit's analysis was not related to the MOT test. Second, the Circuit has since found the *Freeman-Walter-Abele* test to be an inadequate indicator of subject matter patentability and has warned that portions of prior decisions relying solely on this test should no longer be relied upon. *Bilski I*, 545 F.3d at 959 n. 17. The *Bilski I* Court clarified that "the proper inquiry under § 101 is not whether the process claim recites sufficient "physical steps," but rather whether the claim meets the machine-or-transformation test." *Id.* at 961 (referring to the 'physical steps' test developed in *In re Comiskey*, 499 F.3d 1365 (Fed.Cir.2007)).

purpose of the claimed process." *Bilski I*, 545 F.3d at 962. Assuming the asserted process claims in the Patents are implemented by computer, the claims are nonetheless directed to "a method of exchanging obligations," not to the manipulation of an electronic hard drive or memory, and any such electronic transformation is at most incidental to the exchange of obligations, not to mention it would also constitute insignificant extra-solution activity. Further, the exchange of "obligations" itself involves no particular article being transformed since obligations are a mere abstraction. "Purported transformations or manipulations simply of public or private legal obligations or relationships, business risks, or other such abstractions cannot meet the test because they are not physical objects or substances, and they are not representative of physical objects or substances." *Bilski I*, 545 F.3d at 963.[4] The method claims before the Court, that is, every claim of the '510 Patent and claims 33

[4] Similarly, a district court found a method directed towards discovering credit card fraud did not meet the transformation prong of the MOT test, despite the manipulation of credit information, because no article or physical object was transformed. The credit card number and the card itself were found to represent merely "a common underlying abstraction—a credit card account, which is a series of rights and obligations" existing between the account holder and card issuer. *CyberSource Corp. v. Retail Decisions, Inc*., 620 F.Supp.2d 1068, 1074 (N.D.Cal.2009). Although the credit card information manifests in a physical credit card, the district court noted: "Options like those described in the *Bilski* patent do not simply float in the ether. A piece of paper upon which the terms of an option are written is, like a credit card, a physical object. Yet this connection to a physical medium does not create patent eligibility, because an option ultimately represents the abstraction of a legal obligation or business risk." *Id*.

and 34 of the '479 Patent, fail to transform any article under the machine-or-transformation test.

The closer question is whether Alice's process claims are tied to a particular machine or apparatus under the MOT test. A "machine" is a "a concrete thing, consisting of parts, or of certain devices and combination of devices." *In re Nuijten*, 500 F.3d 1346, 1355 (Fed.Cir.2007) (quoting *Burr v. Duryee*, 68 U.S. (1 Wall.) 531, 570, 17 L.Ed. 650 (1863)). The Court first looks to the '510 Patent claims, each of which recites "electronically adjusting" records and/or accounts as a step within the claim.[5] The Court has yet to construe the terms of these claims, but CLS concedes for purposes of these motions that the recitation of "electronically adjusting" by each of the '510 Patent claims means that the claims require the use of a computer. CLS Opp'n & Reply in Supp. of Mot. for Summ. J. [Dkt. 97, 98] ("CLS Reply") at 11 n. 6.

The Court will also presume, for purposes of these motions, that claims 33 and 34 of the '479 Patent are directed to computer implementation, a position CLS contests. To be sure, claims 33 and 34 of the '479 Patent contain no unambiguous reference to a machine or apparatus. Alice posits that a person of ordinary skill in the relevant art reading these claims in light of the specification and other claims of the '479 Patent would understand the term "transaction" to require the use of electronic data processing systems, *see* Alice Reply in Supp. of Mot. for Summ. J. [Dkt. # 99] ("Alice Reply") 23, and the terms "shadow credit

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[5] *See* '510 Patent, col. 64:11-12 (Claim 1); *id*. col. 65:25-26 (Claim 27); *id*. col. 66:63-64 (Claim 61); *id*. col. 67:24-25 (Claim 65); *id*. col. 68:7 (Claim 68) (collectively, the five independent claims of the '510 Patent).

record" and "shadow debit record" to require electronic storage of data files in a data storage unit. *Id*. (citing Ginsberg Decl. ¶ 32); *see also* '479 Patent, col. 65:27, 33 (Claim 33). At a minimum, Alice argues that claims 33 and 34 are directed to implementation by a computer system including a processor and memory. *See* Alice Mem. 31; *see also* Ginsberg Decl. ¶ 43 (noting that the process claims "expressly recite methods of performing a particular transaction electronically, which requires (explicitly or implicitly) the use of a computer system").

Whether a claim is valid under § 101 is a matter of claim construction, *see State Street*, 149 F.3d at 1370, and for purposes of these motions, CLS has agreed to assume a construction of terms favorable to Alice.[6] The specification for the '479 Patent reveals that the invention entails systems and methods to be realized through the use of a computer with specific programming. *See, e.g*., '479 Patent, col. 4:24-42; *see also* Ginsberg ¶ 29 ("The entire patent is directed to computer systems and the software applications, e.g., 'CONTRACT APPS,' needed to perform the methods described in the patent."). However, claims 33 and 34 are independent of the broader, more intricate trading platform system revealed in the specification and claimed by the '479 Patent. However, because the

[6] To have the Court consider CLS's § 101 defense before conducting a possible Markman hearing, *see Markman v. Westview Instruments, Inc*., 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996), CLS agreed to assume a construction of claims favorable to Alice. *See, e.g*., Alice Mem., [Ex 6] Tr. of Aug. 6, 2010 Status Conference at 12:22-25 (reflecting that counsel for CLS stated: "I will say even as to *Markman* our briefing will assume a broad construction favorable to Alice, so we're going to assume that in arguing whether this is really a patentable subject mater or not so that we can expedite that").

relevant terms of claims 33 and 34 of the '479 Patent have yet to be construed, because CLS has agreed to a broad construction of terms favorable to Alice, and because the specification reveals a computer-based invention, the Court can reasonably assume for present purposes that the terms "shadow" credit and/or debit record and "transaction" in the '479 Patent recite electronic implementation and a computer or an analogous electronic device.

The single fact that Alice's method claims are implemented by computer does not mean the methods are tied to a particular machine under the MOT test. The requirement that shadow accounts and/or records be adjusted electronically, or that information be stored electronically, may not sufficiently tie the claims to a particular machine or apparatus that imposes meaningful limits on the claims' scope. *See* CLS Reply 10. At what point does a method that is to be implemented by computer become sufficiently tied to a *particular* computer, so that it satisfies the machine prong of the MOT test? This question has not been clearly answered by the Federal Circuit or the Supreme Court. *See, e.g.*, *Bilski I*, 545 F.3d at 962 ("We leave to future cases the elaboration of the precise contours of machine implementation, as well as the answers to particular questions, such as whether or when recitation of a computer suffices to tie a process claim to a particular machine.").

The Court concludes that nominal recitation of a general-purpose computer in a method claim does not tie the claim to a particular machine or apparatus or save the claim from being found unpatentable under § 101. *See, e.g.*, *Fuzzysharp Techs., Inc. v. 3D Labs Inc.*, Ltd., No. 07-5948, 2009 WL 4899215, at *4, 2009 U.S. Dist. LEXIS 115493, *12 (N.D.Cal. Dec. 11, 2009)

("Courts applying *Bilski* have concluded that the mere recitation of 'computer' or reference to using a computer in a patent claim us [sic] insufficient to tie a patent claim *to a particular machine*.") (emphasis in original) (referring to *Bilski I*, 545 F.3d 943); *Cf. Benson*, 409 U.S. 63, 93 S.Ct. 253 (finding method claims to be performed on a general purpose computer to be invalid as an algorithm). On the other hand, a computer that has been specifically programmed to perform the steps of a method may no longer be considered a general purpose computer, but instead, a particular machine. *Cf. In re Alappat*, 33 F.3d 1526, 1545 (Fed.Cir.1994) (finding that "a general purpose computer in effect becomes a special purpose computer once it is programmed to perform particular functions pursuant to instructions from program software").

With evolving guidance on this issue, district courts have determined that a method claim that is directed to a general purpose computer is not tied to a particular machine under the MOT test.[7] *See, e.g.*, *Fuzzysharp*, 2009 WL 4899215 at *4, 2009 U.S. Dist. LEXIS 115493 at *12 ("The salient question is not whether the claims are tied to a computer. Rather, as *Bilski* makes clear, the question is whether the claims are

[7] While a few of the cases cited for this proposition were decided before the Supreme Court issued *Bilski II*, that decision did not touch upon the contours of when a method claim is tied to a particular machine or apparatus under the MOT test. The Court's decision did, of course, dethrone the MOT test as the exclusive test for process patentability under § 101. Thus, while some of these earlier lower-court decisions may have based their holdings entirely upon the results of their application of the MOT test, something against which the Supreme Court has now spoken, the analysis of these decisions as to when a method is tied to a particular machine or apparatus itself remains unaltered after *Bilski II*.

tied *to a particular machine*.") (citing *Bilski I*, 545 F.3d at 961) (emphasis in original). In *DealerTrack*, a district court found asserted claims directed to a "computer aided method" of managing a credit application to be invalid under § 101. *DealerTrack, Inc. v. Huber*, 657 F.Supp.2d 1152 (C.D.Cal.2009). The court found the method at issue was not tied to a particular machine because the patent failed to specify how the hardware and database recited were "specially programmed" to implement the method, and the claimed central processor was "nothing more than a general purpose computer that has been programmed in some unspecified manner." *Id*. at 1156; *see also Accenture Global Servs. GmbH v. Guidewire Software, Inc*., 691 F.Supp.2d 577, 597 (D.Del.2010) (suggesting that a method conducted by a "data processing system," which also claimed a "claim folder," "display device," and "screen," was not tied to a particular computer per the MOT test because the terms failed to "imply a specific computer having any particular programming—they are descriptive of a general computer system at best").

The *Fuzzysharp* court also found certain method claims were not tied to a particular machine. The claims at issue related to "reducing the indivisibility related computations in 3-D graphics" and the district court accepted that the claims required a device such as a computer because at least one claim recited "computer storage," and the parties agreed that certain terms required a "computer screen." *Fuzzysharp*, 2009 WL 4899215 at *3-4, 2009 U.S. Dist. LEXIS 115493 at *11-12. Nonetheless the court found that the claims were not tied to a particular machine because they either contained only a "passing reference to 'computer storage' " or simply made "a general [ ] reference to 'a' computer." *Id*. at *4, 2009 U.S. Dist. LEXIS 115493 at

*12-15. The court noted that ultimately the challenged method claims employed algorithms and calculations which would require a computer, but no particular computer. *Id*. at *5, 2009 U.S. Dist. LEXIS 115493 at *15.[8]

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[8] In light of *Bilski I* and *Bilski II*, the Board of Patent Appeals and Interferences has shown a similar inclination. *See, e.g*., *Ex Parte Monk*, No. 2009-013250, 2010 WL 5477256, *3 (B.P.A.I. Dec. 30, 2010) (finding claims directed to a method of monitoring credit fraud not tied to a particular machine per the MOT test because the recitation of "analysis engines and a global negative file" represented "at most, the use of a general computer" since the specification disclosed that any microprocessor based system capable of monitoring ongoing credit activity and/or authorizing activity in response could form the analysis engines, and the global negative files could be stored on any general purpose computer); *Ex Parte Kuno*, No. 2009-006896, 2010 WL 5127425, *10 (B.P.A.I. Dec. 13, 2010) ("Although the preamble of claim 1 calls for a 'processor-based' method, the body of the claim recites no structure at all, let alone a particular machine to which the recited process is tied. But even if a processor were recited in the body of the claim, such a nominal structural recitation would be a tantamount to a general purpose computer and would not tie the process to a particular machine or apparatus."); *Ex Parte Myr*, No. 2009-005949, 2009 WL 3006497, *9-10 (B.P.A.I. Sept. 18, 2009) (finding method claims unpatentable, in part, because claims which used the phrase "computer-implemented" only tied the process to "any general-purpose computer" and the recitation "method executed in a computer apparatus" is "so generic as to encompass any computing system, such that anyone who performed this method in practice would fall within the scope of these claims"); *Ex Parte Nawathe*, No. 2007-3360, 2009 WL 327520, *4 (B.P.A.I. Feb. 9, 2009) (rejecting under § 101 claims reciting a computerized method of inputting and representing XML documents since the "computerized recitation purports to a general purpose processor [ ] as opposed to a particular computer specifically programmed for executing the steps of the claimed method"); *but see Ex Parte Kohda*, No. 2009-006262, 2010 WL 4780565, *3 (B.P.A.I. Nov. 22, 2010) (remanding to patent examiner for further findings and suggesting that under the

To determine whether a machine is particular under the MOT test, courts also look to whether the machine or apparatus imposes meaningful limits on the process itself. "In order for the addition of a machine to impose a meaningful limit on the scope of a claim, it must play a significant part in permitting the claimed method to be performed, rather than function solely as an obvious mechanism for permitting a solution to be achieved more quickly, i.e., through the utilization of a computer for performing calculations." *SiRF Tech., Inc. v. ITC*, 601 F.3d 1319, 1333 (Fed.Cir.2010). A machine meaningfully limits a method when the machine is "essential to the operation of the claimed methods." *Id*. In *SiRF Tech*., decided before *Bilski II*, the Federal Circuit held that claimed methods for teaching a GPS receiver an improved manner in which to calculate its position were tied to a particular machine. *Id*. The Federal Circuit underscored the fact that the machine imposed meaningful limits on the methods since the methods could not be performed without the machine itself—the GPS receiver—and there was no evidence that the calculations required by the claims could be performed entirely in the human mind. *Id*. at 1332-33; *see also CyberSource Corp. v. Retail Decisions, Inc*., 620 F.Supp.2d 1068, 1077 (N.D.Cal.2009) (finding a method for detecting fraud in credit card transactions over the Internet directed to unpatentable subject matter as the method was not limited to a particular machine, in part, because the process could occur offline: "To give but

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broadest reasonable construction the claims could be read to recite a particular apparatus under the MOT test since they claimed an electronic shopping cart—which appears to collect information on customers purchases thereby targeting advertisements the customers would see).

one example, a merchant taking an order over the telephone could use records or databases to cross-check all credit card numbers associated with that telephone number").

Similarly, in *Every Penny Counts*, a district court invalidated a method claim because it failed the MOT test. *See Every Penny Counts, Inc. v. Bank of Am. Corp.*, No. 2:07-042, 2009 WL 6853402, 2009 U.S. Dist. LEXIS 53626 (M.D.Fla. May 27, 2009). The claim was directed to a system in which a consumer could have a portion of any credit or debit transaction set aside—that amount determined either by rounding up each transaction to the nearest dollar and setting aside the difference or by adding a predetermined amount to each transaction—and then have the portion routed to either the consumer's savings account, a preferred charitable organization, or a portion to each. *Id.* at *1, 2009 U.S. Dist. LEXIS 53626 at *2. The district court first found the claim, categorized as a system, to be truly directed to a process since it "has no substantial practical application except in connection with computers, cash registers, and networks, but it is not comprised of those devices." *Id.* at *2, 2009 U.S. Dist. LEXIS 53626 at *7 (internal quotation marks omitted). The court then found that although the process recited implementation by a "network," "entry means" and a "computing means in said network being responsive to said data," the so-described computer failed to impose a meaningful limitation on the process because the claim was essentially "a mathematical algorithm [that] uses machines for data input and data output and to perform the required calculations." *Id.* at *3, 2009 U.S. Dist. LEXIS 53626 at *7.

Granting Alice's position that "claims 33 and 34 of the '479 patent are properly limited to implementations of the claim methods using a computer, just as the '510 patent requires," *see* Alice Mem. 32 n. 15, the Court nonetheless finds the method claims before the Court—claims 33 and 34 of the '479 Patent and each claim of the '510 Patent—are not tied to a particular machine under the MOT test. Assuming accounts and/or records will be electronically adjusted, which requires information to be stored electronically in a data storage unit, and that an irrevocable instruction is conducted electronically, the method claims here at best recite implementation by a general-purpose computer.[9]

The claims before the Court at most implicitly recite a computer by claiming electronic adjustment of

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[9] Alice holds up *AT & T Corp. v. Excel Commc'ns*, 172 F.3d 1352 (Fed.Cir.1999), and, again, Arrhythmia to dispute the need for a claim to recite more than a processor and a memory in order to be tied to a particular machine. However, the *Arrhythmia* Court did not conduct its analysis under the MOT test, nor did the case base its finding on the interconnectedness between a method claim and electronic equipment. The Circuit instead found the process before it was valid because it included physical process steps under the now defunct *Freeman-Walter-Abele* test. *See Arrhythmia*, 958 F.2d at 1059; *see also supra* note 3. Similarly, the Federal Circuit relied on the "useful, concrete, and tangible result" test in *AT & T* to find a process claim valid per § 101. *See AT & T Corp*., 172 F.3d at 1358. The *Freeman-Walter-Abele* test and the "physical steps" tests were predecessors of sorts to, and superceded by, the "useful, concrete, and tangible result" test. This test has also since been rejected explicitly by the Federal Circuit and the Supreme Court. *See Bilski I*, 545 F.3d at 959-60; *id*. at 960 n. 19; *In re Ferguson*, 558 F.3d 1359, 1364 (Fed.Cir.2009) (reaffirming that the "useful, concrete, and tangible" result test has no continuing validity); *Bilski II*, 130 S.Ct. at 3231.

records or accounts.[10] This contrasts with other cases in which district courts found methods were not tied to a particular machine and were unpatentable under § 101 despite explicit recitation of hardware or computer components. *See, e.g.*, *Every Penny*, 2009 WL 6853402 at *2-3, 2009 U.S. Dist. LEXIS 53626 at *7 (reciting "network," "entry means" and "computing means in said network being responsive to said data"); *Fuzzysharp*, 2009 WL 4899215 at *4, 2009 U.S. Dist. LEXIS 115493 at *12 (reciting "computer" and "computer storage"); *DealerTrack*, 657 F.Supp.2d at 1153 (reciting, *inter alia*, "computer aided method" and "remote application entry and display device"); *Accenture Global Servs.*, 691 F.Supp.2d at 597 (suggesting, but not holding, that claims reciting "data processing

[10] Alice posits that the "electronic adjustment step, along with the maintenance of electronic accounts, and the generation of electronic instructions, are carried out because the computer implementing the claimed method acts as an electronic third party between two counterparties in an effort to minimize the risk that one counterparty will default." Alice Mem. 36 (citing Ginsberg Decl. ¶¶ 40-45). The claims recite a "supervisory institution" as the intermediary facilitating the exchange of obligations. *See* '479 Patent, claims 33-34; '510 Patent, claims 1-75. Alice suggests at one point that the intermediary may be a person or a company, *see* Alice Mem. 4-5 (contending that the patents disclose and claim in various ways a computerized trading platform for exchanging obligations in which "a trusted third party, running a computer system programmed in a specific way," settles the obligations and that the "the trusted third party—a 'supervisory institution'—operates a data processing system"), but even if the "supervisory institution" is a company or a computer, meaning a computer controls the entire method rather than a person implementing the steps of the method by way of computer, the claims before the Court at most implicitly recite a general purpose computer.

system," "claim folder," "display device," and "screen" were not patentable).

To be sure, the specification of the '479 Patent, which the '510 Patent largely shares, reveals a seemingly intricate "trading platform" invention consisting of systems and methods, with apparent software applications to be used in implementing the invention. The '479 Patent specification speaks to methods being conducted by way of specifically programmed computing devices. *See, e.g.*, '479 Patent, col. 28:12-16 ("The invention has industrial application in the use of electrical computing devices and data communications. The apparatus and methods described allow the management of risk in an automated manner by means of programming of the computing devices."); '510 Patent, col. 31:66-67 & col. 32:1-3 (same). The specification undoubtedly provides context for reading a patent's claims, but the plain language of the claims themselves is the measure of the breadth of patent protection granted. *See Innova/Pure Water, Inc. v. Safari Water Filtration Sys.*, 381 F.3d 1111, 1116 (Fed.Cir.2004).

Alice points to unasserted claims 12 and 28 of the '479 Patent to demonstrate that if claims 33 and 34 are interpreted in context of other '479 Patent claims, it becomes clear that claims 33 and 34 also require computer implementation. *See* Ginsberg ¶¶ 30-31. The Court has accepted this proposition, however this juxtaposition reinforces the Court's conclusion that claims 33 and 34 of the '479 Patent are independent of the broader computer system revealed in the specification, and it demonstrates that the drafters of the claims of the '479 Patent knew how to explicitly

recite to computer components.[11] Claim 12 discloses a detailed system which incorporates other claims, including the computer based processing system revealed in claim 1, and additionally claims an exchange institution holding a debit and credit record, that the "data processing apparatus" be "configured" to maintain a shadow credit and debit record for each stakeholder, and the "data processing means being configured" to obtain a start-of-day balance for the shadow credit and debit records and to at the end-of-day instruct the exchange institutions to adjust their records according to the transactions performed. *See* '479 Patent, col. 61:53-67 & col. 62:1-7. Claim 28 of the '479 Patent, on the other hand, is directed to a method of exchanging obligations similar to claims 33 and 34, but recites additional elements, such as a "data processing apparatus"—incorporated from claim 18—and that an independent shadow credit and debit record be maintained and that "at the end-of-day, the data processing apparatus instructing ones of the exchange institutions" to effectuate the exchanges accordingly. *Id*. col. 64:13-40.

Therefore, even assuming a reasonable construction favorable to Alice that claims 33 and 34 of the '479 Patent and each claim of the '510 Patent recites to computer implementation, the asserted claims contain no indication that the computers, or other devices

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[11] "Other claims of the patent in question, both asserted and unasserted, can also be valuable sources of enlightenment as to the meaning of a claim term. Because claim terms are normally used consistently throughout the patent, the usage of a term in one claim can often illuminate the meaning of the same term in other claims. Differences among claims can also be a useful guide in understanding the meaning of particular claim terms." *Phillips v. AWH Corp*., 415 F.3d 1303, 1314 (Fed.Cir.2005).

required to implement the methods, are specifically programmed. The claims make no mention of any specific hardware, let alone software or specifically programmed hardware. Alice's expert construes the claims to require "a computer configured and programmed to carry out the processes of the claims." Ginsberg Decl. ¶ 15. Alice argues the term "shadow record" refers to electronic records maintained in a data storage unit by a computer programmed with application software. Alice Reply 24. While the specification and other claims of the '479 Patent may reveal specifically programmed computers, only claims 33 and 34 of the '479 Patent and the claims of the '510 Patent are before the Court, and according to the plain language of the terms actually employed in these claims it cannot be said that they reasonably recite to a specifically programmed computer.

Furthermore, that the processes before the Court are conducted electronically, by way of a computer, fails to impose a meaningful limitation on the processes themselves. *See Every Penny Counts*, 2009 WL 6853402 at *2-3, 2009 U.S. Dist. LEXIS 53626 at *7 (finding the computerized method required machines for data input and output, and to perform calculations, but the machines imposed no limit on the process itself). A computer may facilitate and expedite the claimed methods, however the methods before the Court could be performed without use of a computer. Alice's expert acknowledges that the methods could be performed in a non-electronic format. "In an abstract sense, it is possible to perform the business methods of maintaining accounts, and providing an instruction without a computer or other hardware." Ginsberg Decl. ¶ 40. "If someone had thought of this invention 100 years ago, they might have implemented it in a

non-electronic manner using various pre-computing tools such as an abacus or handwritten ledgers." *Id*.

Looking at the methods claimed by Alice, the Court need not even engage in abstraction to contemplate how they could be implemented without the use of electronics. The method of exchanging obligations by employing an intermediary to consummate the exchange after ensuring the parties have adequate value to guarantee the exchange, perhaps by keeping an up-to-date record of the parties' abilities to honor their obligations, and then providing an irrevocable instruction to the parties—or their representative banks or other value holders—to adjust their accounts or records accordingly, does not require the use of computers. *See Ultramercial, LLC v. Hulu, LLC*, No. 09-06918, 2010 WL 3360098, *5, 2010 U.S. Dist. LEXIS 93453, *13 (C.D.Cal. Aug. 13, 2010) (finding a computerized method invalid, in part, because "[t]here is nothing inherently computer-specific about receiving media from a content provider, choosing a sponsor for the media, selecting an ad for the sponsor, verifying the viewer's activity, assigning passwords, charging the sponsor for the advertisement, or any of the remaining steps"); *see also Benson*, 409 U.S. at 67, 93 S.Ct. 253 ("The mathematical procedures can be carried out in existing computers long in use, no new machinery being necessary. And, as noted, they can also be performed without a computer."); *Flook*, 437 U.S. at 586, 98 S.Ct. 2522 ("Although the computations can be made by pencil and paper calculations, the abstract of disclosure makes it clear that the formula is primarily useful for computerized calculations producing automatic adjustments in alarm settings."). Claims 33 and 34 of the '479 Patent and the claims of

the '510 Patent are not meaningfully limited by a computer since a computer is not essential to the operation of the methods. *See SiRF Tech*., 601 F.3d at 1333.

Even if computer implementation is not inherently necessary for the methods claimed, a computerized approach would indubitably expedite the exchanges. However, it is also true that simply because method claims call for computerized implementation to be usefully or pragmatically applied "does not mean, however, that the patent claims are limited to use on a computer, or, more importantly, that they are *tied* to one." *Ultramercial*, 2010 WL 3360098 at *5, 2010 U.S. Dist. LEXIS 93453 at *13 (emphasis in original). "That the disclosed invention is only used on computers or computer networks cannot alone satisfy the machine test without rendering the test completely toothless." *Id*. It is a truism that the "the particular methods claimed in these patents only work, as intended, when carried out using a computer," Ginsberg ¶ 41, but that alone does not mean that a computer meaningfully limits the processes. For the foregoing reasons, the Court finds that claims 33 and 34 of the '479 Patent and claims 1-75 of the '510 Patent fail to satisfy the machine-or-implementation test.[12] However, even if these claims were to satisfy the MOT test, the Court would still move next to analyze the claims under the abstract idea exception.

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[12] The Court notes that there will likely soon be further guidance from the Federal Circuit on the extent of interconnectedness required between a machine and a process for the process to satisfy the MOT test as several cases this Court finds persuasive—*Every Penny*, *DealerTrack*, *Fuzzysharp*, and *Ultramercial*—are all currently before the Circuit. The outstanding motions, however, have been pending too long to await further guidance.

3. Abstract Idea Exception to Patentability

CLS asserts that Alice's methods, claims 33 and 34 of the '479 Patent and claims 1-75 of the '510 Patent, attempt to patent the abstract idea of "'exchanging an obligation between parties' after ensuring that there is 'adequate value' in independent accounts maintained for the parties." CLS Mem. 24. CLS analogizes the method claims to a "two-sided 'escrow' arrangement for financial transactions" and likens Alice's supposed escrow-type invention to the hedging claims that were invalidated by the Supreme Court in *Bilski II*. *Id*. at 25. Alice defends the methods as "more than a mere statement of a concept," and insists they constitute "a particular solution to a real world problem in need of solving—eliminating counterparty risk with a complicated computer system programmed to perform the settlement." Alice Mem. 34. Alice argues against abstractness in that the "performance of the method can be observed and verified; settlements are completed electronically, with accounts being electronically debited and credited." *Id*. (citing Ginsberg Decl. ¶¶ 44-45).

The claims before the Supreme Court in *Bilski II*, which the Court found to encapsulate the concept of hedging, were directed to the steps of initiating a series of transactions between a commodity provider and consumers at a fixed rate which corresponded to consumers' risk positions, identifying market participants for the commodity who had a counter-risk position, and then initiating a series of transactions at a fixed price between the commodity provider and those market participants having a counter-risk position. *See Bilski II*, 130 S.Ct. at 3223-24. The Supreme Court found the invention claimed a fundamental economic practice. *Id*. at 3231. Similarly, a district

court found a business method directed to allowing Internet users to view copyrighted material free of charge in exchange for viewing certain advertisements to be an unpatentable abstract idea. *See Ultramercial*, 2010 WL 3360098 at *6, 2010 U.S. Dist. LEXIS 93453 at *17. The district court found the method abstract because at its core sat "the basic idea that one can use advertisement as an exchange or currency." *Id*.

CLS argues that Alice's method claims are directed to unpatentable processes for exchanging an obligation based on a mathematical algorithm, as well as the abstract idea of transformation or manipulation of legal obligations or business risks. CLS Reply 23. The Court need not consider whether the methods, at heart, claim nothing more than an algorithm because the Court agrees that the methods are directed to an abstract idea of employing an intermediary to facilitate simultaneous exchange of obligations in order to minimize risk. This is a basic business or financial concept much like those struck down in *Bilski II* or *Ultramercial*. At the heart of these claims is the fundamental idea of employing a neutral intermediary to ensure that parties to an exchange can honor a proposed transaction, to consummate the exchange simultaneously to minimize the risk that one party does not gain the fruits of the exchange, and then irrevocably to direct the parties, or their value holders, to adjust their accounts or records to reflect the concluded transaction. Using an intermediary, which may independently maintain records or accounts on the parties to ensure each party has sufficient value or worth to complete a proposed exchange, as a way to guarantee that a transaction is ultimately honored by all parties, thereby minimizing risk, remains a fundamental, abstract concept.

To demonstrate, independent claim 27 of the '510 Patent requires the supervisory institution to maintain an account for a first party which is independent of an account held by an exchange institution, to facilitate an exchange of obligations if the first party's account value (however defined) does not drop below zero, and to conduct a transaction with the exchange institution that is irrevocable at the end of a period to reflect the exchange of obligations made. *See* '510 Patent, claim 27. Essentially, this claim is directed to the abstract and fundamental concept of using an intermediary to guarantee an exchange. Similar to the invention in *Flook*, which was found merely to provide a formula for computing an alarm limit, *see Diehr*, 450 U.S. at 192 n. 14, 101 S.Ct. 1048, the invention here simply provides the formula, or manner, in which to use an electronic intermediary to exchange obligations as a way to hedge against the risk of loss. Independent claim 33 of the '479 Patent and independent claims 1, 61, 65, and 68 of the '510 Patent, each is directed as a whole to this same abstract concept.

Alice argues that the claimed methods "require the use of a computer and data storage unit programmed to perform a particular financial transaction, implement a concept in a tangible way with tangible, real world results—money is exchanged in the absence of counterparty risk." Alice Mem. 34. There may be no dispute that the methods claimed engender a practical result, but this fact alone does not rescue the claims from the realm of abstraction. Some abstract ideas, such as fundamental business concepts, although not patentable standing alone will nonetheless produce useful results when basically applied. *Cf. Bilski I*, 545 F.3d at 965 ("[T]he claimed process here as a whole is directed to the mental and mathematical process of identifying transactions that would hedge risk. The

fact that the claim requires the identified transactions actually to be made does no more to alter the character of the claim as a whole."); *see also Diehr*, 450 U.S. at 192 n. 14, 101 S.Ct. 1048 (noting that the claims in *Flook* "did more than present a mathematical formula" but presented steps to calculate an updated alarm limit and replace the outdated alarm limit for which there were a "broad range of potential uses" in the petrochemical and oil refinery industries); *Ultramercial*, 2010 WL 3360098 at *7, 2010 U.S. Dist. LEXIS 93453 at *19 (stating that despite the Supreme Court coming to different conclusions on subject matter eligibility in *Diehr* and *Bilski II*: "In both [cases], the claimed invention discloses a real-world application of a mathematical formula. In both, a well-known or basic principle is linked to its practical use."). It would seem logical that the concept and application of hedging in the energy markets before the Supreme Court in *Bilski II* would produce practical and real world results; however the Court did not focus on this point, but instead held the claims were "broad examples" of a concept and the patent would ultimately preempt the use of the concept itself. *Bilski II*, 130 S.Ct. at 3231. The fact that a claim produces practical results may inform the abstract analysis, but it is not dispositive of subject matter eligibility.[13]

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[13] Alice does not argue that the identification of tangible, real-world applications is sufficient to satisfy the subject matter eligibility question. Yet, it is important to note that the "useful, concrete, and tangible result" test has been clearly disavowed by both the Federal Circuit and the Supreme Court. *See supra* note 9. An administrative patent judge, writing before the test was invalidated, noted that: "The decisions by the Court of Appeals for the Federal Circuit in *State Street Bank & Trust Co. v. Signature Financial Group Inc*. [149 F.3d 1368 (1998)] and *AT & T Corp. v. Excel Communications, Inc*. [172 F.3d 1352 (1999)]

A district court should instead focus on the extent to which the application of an abstract idea is specific and/or limited to determine whether an invention is patent eligible. Recently, the Federal Circuit reversed a district court's finding that a method for "rendering a halftone image of a digital image by comparing, pixel by pixel, the digital image against a blue noise mask" was unpatentable as directed to an abstract algorithm. *See Research Corp.*, 627 F.3d at 868. The Circuit found the invention was not abstract, in part, because it presented "functional and palpable applications in the field of computer technology" and addressed "a need in the art for a method of and apparatus for the halftone rendering of gray scale images in which a digital data processor is utilized in a simple and precise manner to accomplish the halftone rendering." *Id.* at 868-69. "Indeed, this court notes that inventions with specific applications or improvements to technologies in the

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have made it easier for the public to obtain patents covering computer implemented business-related inventions. In those decisions, the Court of Appeals for the Federal Circuit held that computer implemented business method-related inventions are deemed 'statutory' subject matter (subject matter that can be patented) under 35 U.S.C. § 101 if they have a 'practical application,' i.e., produce a 'useful, concrete and tangible result'. . . . This holding has had a profound effect on the growth of new patents and patent applications covering computer implemented business method inventions. The number of new applications of these types filed in Class 705 (designated as business and management data processing class) increased from 1370 in Fiscal Year 1998 to 2600 in Fiscal Year 1999 and to 7800 in Fiscal Year 2000. The number of patents issued from these types of applications increased from a total of 447 prior to 1986 to a total of 2,850 as of the end of Fiscal Year 1999." Chung K. Pak, *Patenting E-Commerce Inventions: Perspective From an Administrative Patent Judge*, 85 J. Pat. & Trademark Off. Soc'y 447, 448-49 (2003) (internal citations omitted).

marketplace are not likely to be so abstract that they override the statutory language and framework of the Patent Act." *Id*. at 869.

An analysis of the preemptive power of a claim is inextricably linked with the question of whether the application of an abstract idea is specific or limited. "Pre-emption of all uses of a fundamental principle in all fields and pre-emption of all uses of the principle in only one field both indicate that the claim is not limited to a particular application of the principle." *Bilski I*, 545 F.3d at 957; *see also Accenture*, 691 F.Supp.2d at 595 ("While it is not permissible to pre-empt the use of an intangible principle, an application of the principle may be patentable; the scope of the exclusion of others to practice or utilize the fundamental principle imparted by the claims must be examined.").[14] The abstract idea claimed by Alice's methods in claims 33 and 34 of the '479 Patent and each claim of the '510 Patent effectively preempt the use of an electronic intermediary to guarantee exchanges across an incredible swath of the economic sector. The *CyberSource* court found the claims before it "broadly preempt the fundamental mental process of fraud detection using associations between credit card numbers." *CyberSource*, 620 F.Supp.2d at 1077. Taking note of the fact that credit card transactions over the Internet have "become a staple of modern business,"

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[14] *See also Bilski I*, 545 F.3d at 953 ("Patents, by definition, grant the power to exclude others from practicing that which the patent claims. *Diehr* can be understood to suggest that whether a claim is drawn only to a fundamental principle is essentially an inquiry into the scope of that exclusion; i.e., whether the effect of allowing the claim would be to allow the patentee to pre-empt substantially all uses of that fundamental principle. If so, the claim is not drawn to patent-eligible subject matter.").

the court found the methods would "preempt the use of fundamental mental processes across an extraordinarily large and important segment of the commercial system." *Id*. The same is true here.

The processes claimed by Alice employ a supervisory institution to serve as an intermediary to exchange obligations, which may monitor the credit/debit accounts/records at the parties' exchange institution, and when sufficient value is present, the supervisory institution conducts the exchange of obligations and instructs the parties, or their value holding exchange institutions, to adjust their accounts/records accordingly. The methods broadly claim the idea of exchanging "obligations" by way of an intermediary. Although each claim should be considered independently and as a whole, by looking to the dependent claims of '510 Patent one understands the reach of the methods claimed. The dependent claims recite potential "obligations" as those that arise from any transaction linked to a "share price," a "weather event," a "market event," or a "currency exchange transaction,"[15] and explain that the exchange of obligations may represent the transfer of or transaction in "shares in financial or physical assets," "a wager," "a commodity," or "money for goods, services, promises, credits or warrants."[16] If patentable, these claims could preempt the use of an electronic intermediary, using a shadow credit and/or debit records, as a manner in which to exchange an infinite array of tangible and intangible representations of value.

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[15] *See* '510 Patent, col. 64:22 (Claim 2); *id*. col. 64:25 (Claim 3); *id*. col. 64:27 (Claim 4); *id*. col. 64:61 (Claim 18) (respectively).

[16] *See* '510 Patent, col. 64:29-30 (Claim 5); *id*. col. 64:32 (Claim 6); *id*. col. 64:34 (Claim 7); *id*. col. 64:36-37 (Claim 8) (respectively).

The remaining dependent claims in the '510 Patent as a whole also speak to the type of entity that might be an "exchange institution"—i.e. a credit card company, a debit card company, a bank, or a guarantor,[17] or they set forth basic realities of exchanging financial obligations, such as the fact that various institutions might exist in different time zones or be domiciled in legally and/or geographically different countries. *See* '510 Patent, col. 64:62-63 (Claim 19); *id*. col. 65:56-57 (Claim 37). Rather than limit the invention reflected in the '510 Patent, the dependent claims illustrate how broadly the invention might sweep its monopoly across commerce. These dependent claims are, inter alia, broad examples of what tangible and intangible items might be exchanged and the financial and institutional value holders to be governed by the '510 Patent. The claims simply recite how an electronic intermediary can be used to effectuate an almost infinite array of exchanges in the modern financial world. Unlike the concrete and palpable blue noise mask and pixel-by-pixel comparison method which resulted in a higher quality halftone digital image all while using less processor power and memory space which was before the Federal Circuit in *Research Corp*., *see* 627 F.3d at 865, Alice's method claims are hardly limited to "specific applications" of an fundamental concept. *Id*. at 869.

It is clear that "limiting an abstract idea to one field of use or adding token postsolution components" does not make an abstract idea patentable. *Bilski II*, 130 S.Ct. at 3231; *see also Diehr*, 450 U.S. at 191, 101 S.Ct. 1048 (holding that the limitation against patenting an abstract idea cannot be circumvented by "attempting

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[17] *See* '510 Patent, col. 64:47 (Claim 12); *id*. col. 64:49 (Claim 13); *id*. col. 64:51 (Claim 14); *id*. col. 64:55 (Claim 16) (respectively).

to limit the use of the formula to a particular technological environment," or by adding "insignificant postsolution activity" to transform a principle into a process). Limiting the use of the unpatentable Pythagorean theorem by claiming it could be usefully applied to surveying techniques would not make the invention patentable, *see Bilski I*, 545 F.3d at 957 (citing to *Flook*, 437 U.S. at 590, 98 S.Ct. 2522), no more than limiting the concept of hedging to the energy and commodities markets. *See Bilski II*, 130 S.Ct. at 3231; *see also CyberSource*, 620 F.Supp.2d at 1077. The method claims before the Court are not limited to any particular industry, but are supposedly limited by the use of a computer. As financial transactions, and the maintenance of accounts and/or records on a party's value or wealth, are increasingly likely to be monopolized by electronic and computer implementation and storage, the fact these claims are implemented electronically fails to limit the methods. *See Benson*, 409 U.S. at 71-72, 93 S.Ct. 253 (explaining that the practical effect of granting patent protection would be patenting an abstract idea since the algorithm before that court "ha[d] no substantial practical application except in connection with a digital computer"); *see also Ultramercial*, 2010 WL 3360098 at *6, 2010 U.S. Dist. LEXIS 93453 at *18. The method claims before the Court are not limited by electronic implementation, and in looking at the method claims as a whole they would serve to patent the fundamental and abstract concept itself. *See Benson*, 409 U.S. at 71-2, 93 S.Ct. 253.

Similar to *Bilski II*, in which the Supreme Court invalidated the dependent claims which purported to limit hedging to be "broad examples of how hedging can be used in commodities and energy markets," *Bilski II*, 130 S.Ct. at 3231, the dependent claims of the

'510 Patent and claim 34 of the '479 Patent, each when considered as a whole, constitute broad examples of potential parties, institutions, obligations, and circumstances under which the exchange of obligations—each dependent claim is no more than an attempt to limit the abstract concept to a field of use or to limit the invention by adding token postsolution components.

Also, that the methods entail an irrevocable instruction, assumed to be electronic in nature, to require that exchange institutions adjust their accounts or records according to the exchange conducted by the supervisory institution is subsumed within the abstract idea itself, if not insignificant postsolution activity. *See Flook*, 437 U.S. at 590, 98 S.Ct. 2522 ("The notion that post-solution activity, no matter how conventional or obvious in itself, can transform an unpatentable principle into a patentable process exalts form over substance."); *Bilski I*, 545 F.3d at 966 (noting that abstract hedging claims required "performing the post-solution step of consummating those transactions"). In claiming the abstract idea of using an intermediary to guarantee the exchange of obligations to minimize risk, the final action that the parties, or their account holders, be met with an irrevocable instruction to adjust their account or record to reflect the consummated transaction is no more an inherent and necessary step in the abstract idea, if not an obvious post-solution step.

The Court finds claims 33 and 34 of the '479 Patent and claims 1-75 of the '510 Patent invalid are not directed to patentable subject matter.[18] The Court

[18] While the Court presumes that claims 33 and 34 of the '479 Patent are implemented electronically, a finding that the claims require no computer implementation at all, a point CLS argues,

gives Alice the broadest reasonable construction of claim terms for purposes of its conclusion, for a court can bypass construction if construing the claims is not a material issue in resolving the motion. *See National Presto Indus.*, 76 F.3d at 1189. We now move to the remaining system and product claims at issue.

B. Computer System & Product Claims

The claims of the '720 and '375 Patents represent system and product claims. CLS contends that Alice simply recasts its abstract method claims in a physical embodiment in an attempt to employ the draftsman's art to save these claims from falling within the fundamental principles exceptions. Alice counters that these claims clearly fall within the category of inventions protected by the Patent Act and that there is no controlling precedent of courts finding a machine, a physical object made of parts, to be unpatentable as abstract.

1. Statutory Category

The claims of the '720 and '375 Patents are directed to either a machine or a manufacture under § 101. A "machine" is a "a concrete thing, consisting of parts, or of certain devices and combination of devices." *Nuijten*, 500 F.3d at 1355 (quoting *Burr*, 68 U.S. at 570). A machine "includes every mechanical device or combination of mechanical powers and devices to perform some function and produce a certain effect or result." *Id.* (quoting *Corning v. Burden*, 56 U.S. 252, 267, 15 How. 252, 14 L.Ed. 683 (1854)). A manufacture, on the other hand, is one or more articles prepared "for use from raw or prepared materials by

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would only bolster the Court's finding that the claims are abstract.

giving to these materials new forms, qualities, properties, or combinations, whether by hand-labor or by machinery." *Id*. at 1356 (quoting *Chakrabarty*, 447 U.S. at 308, 100 S.Ct. 2204). Machine and method claims differ: "A machine is a thing. A process [or method] is an act, or a mode of acting. The one is visible to the eye—an object of perpetual observation. The other is a conception of the mind, seen only by its effects when being executed or performed." *Expanded Metal Co. v. Bradford*, 214 U.S. 366, 384, 29 S.Ct. 652, 53 L.Ed. 1034 (1909) (citation omitted).

Each of the 84 claims in the '720 Patent is directed to a particular "data processing system" to enable an exchange of obligations. Every claim in the '720 Patent recites "a data storage unit having stored therein" information about shadow accounts and/or records, and a "computer, coupled to said data storage unit," that is "configured" to perform steps of exchanging obligations similar to those laid out in the asserted method claims.[19] As an example, independent claim 1 of the '720 Patent claims a data storage unit with stored information about a shadow credit and debit record that is independent of accounts held by an exchange institution, and which is coupled with a computer configured to receive a transaction, electronically adjust the shadow credit and/or debit record to effect the exchange of an obligation if the value of the shadow debit record does not fall below the value of the shadow credit record, and generate an irrevocable instruction to an exchange institution to adjust its

[19] *See* '720 Patent, col. 65:42-61 (Claim 1); *id*. col. 67:1-18 (Claim 28); *id*. col. 68:33-53 (Claim 60); *id*. col. 68:62-66 & col. 69:1-11 (Claim 64); *id*. col. 69:20-42 (Claim 68); *id*. col. 70:20-37 (Claim 80) (collectively, the six independent claims of the '720 Patent).

record(s) accordingly. *See* '720 Patent, col. 65:42-61. Essentially, the independent claims of the '720 Patent claim a computer that is configured to perform methods of exchanging an obligation, such as claims 1, 28, 60, and 68, or they claim methods of facilitating a purchase between parties, such as claims 64 and 80.

Similarly claims 1-38 and 42-47 of the '375 Patent are directed to a particular "data processing system" which enables the exchange of obligations. As with the claims in the '720 Patent, claims 1-38 and 42-47 of the '375 Patent each requires "a data storage unit having stored therein" information about accounts or records, and a "computer, coupled to said data storage unit," that is "configured" to perform certain steps of effecting an exchange obligation.[20] In contrast to the '720 Patent claims, the '375 Patent systems additionally claim a computer configured to "receive a transaction" from a "first party device," a "second party device," and/or a "communications controller." *See, e.g.*, '375 Patent, col. 65:4 (Claim 1); *id*. col. 65:62 (Claim 12); *id*. col. 66:3 (Claim 14). The first or second party devices represent, as an example, "communications hardware products used by the stakeholders to communicate data or instructions to or from the processing units and are also referred to as stakeholder input/output devices." Ginsberg Decl. ¶ 53. "These may be personal computers [or] mini- or mainframe computers fitted with modems." *Id*. Separately, the "communications controller" effects communications between the devices and the computer system by performing communications coordination and/or by adding security processing for the instructions. *Id*. ¶ 54; *see also* '375

[20] *See* '375 Patent, col. 65:1-30 (Claim 1); *id*. col. 66:1-29 (Claim 14); *id*. col. 66:61-65 & col. 67:1-26 (Claim 26) (collectively, the three independent system claims of the '375 Patent).

Patent, col. 7:46-54. Therefore, claims 1-38 and 42-47 of the '375 Patent add to the computer system claimed by the '720 Patent a mechanism by which parties independently may input the transaction(s) they wish the computer system to effectuate.

Independent claim 39 and dependent claims 40 and 41 of the '375 Patent are directed to a "computer program product" containing a particular program code. *See* '375 Patent, col. 68:5 (Claim 39); *id*. col. 68:36 (Claim 40); *id*. col. 68:38 (Claim 41). Each of these claims recites a "computer readable storage medium" having "computer readable program code embodied in the medium." *Id*. col. 65:5-7 (Claim 39). The parties appear to agree for the present that these claims represent a computer readable medium containing software that instructs a computer how to submit a transaction and allow a party to view information on the processing of the exchange of obligations by the supervisory institution, which mimics the methods claimed in the '510 Patent. *See* CLS Mem. 35; Alice Mem. 25.

The Court first determines whether these claims fall within the statutory class of inventions covered by § 101. At first glance, a computer is a concrete item made of parts that would appear to fit clearly within the statutory protection afforded by § 101 as a machine, *see Nuijten*, 500 F.3d at 1355, so that every claim of the '720 Patent and claims 1-38 and 42-47 of the '375 Patent appear to fit within the § 101 categories.[21] Claims 39-41 of the '375 Patent are directed to

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[21] However, there is the possibility that if the '720 and '375 Patents system claims are only directed to a general purpose computer lacking specific programming, the general purpose computer claimed would not be considered a machine under § 101. *See* 35 U.S.C. § 101; *Alappat*, 33 F.3d at 1545 (holding a

a computer program product. The body of claim 39, from which claims 40 and 41 depend, recites "program code," which alone could be statutorily invalid as "an idea without physical embodiment," *see Microsoft Corp. v. AT & T Corp.*, 550 U.S. 437, 449, 127 S.Ct. 1746, 167 L.Ed.2d 737 (2007); however the preamble to claim 39 recites a computer readable storage medium containing a computer readable program. *See* '375 Patent, col. 65:5-7. A computer readable medium, such as a disk or hard drive, containing program code could be considered either a manufacture or a machine under § 101.[22] *See Nuijten*, 500 F.3d at 1355-56; *cf. In re Beauregard*, 53 F.3d 1583 (Fed.Cir.1995).

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claim which read on a general purpose computer was a machine under § 101 because a "general purpose computer in effect becomes a special purpose computer once it is programmed to perform particular functions pursuant to instructions from program software" thereby creating a "new machine" to qualify as a statutorily patentable invention under § 101). Although no specific software or program code is explicitly recited in the claims of the '720 Patent or claims 1-38 or 42-47 of the '375 Patent, the claims do state that a computer is "configured" to perform the functions. Therefore, assuming a broad construction of the claims, the Court assumes for purposes of these motions that the computer systems claimed have been specifically programmed and statutorily qualify as an machine under § 101.

[22] The Board of Patent Appeals and Interferences recently found that a computer program recorded on a computer-readable medium qualified statutorily for patent protection. "Computer programs and data structures are deemed 'functional descriptive material,' which impart functionality when employed as a computer component. When functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized." *Ex Parte Comer*, No. 2009-006782, 2010 WL 3626532, *4 (B.P.A.I. Sept. 16, 2010).

2. Abstract Idea Exception to Patentability

Assuming the claims of the '720 and '375 Patents are directed to machines or manufactures under § 101, the Court must still analyze these inventions under the exceptions for fundamental principles which apply to all four categories of § 101 patent eligible inventions. *See AT & T Corp. v. Excel Commc'ns*, 172 F.3d 1352, 1357-58 (Fed.Cir.1999); *see also Benson*, 409 U.S. at 67-8, 93 S.Ct. 253; *In re Ferguson*, 558 F.3d 1359, 1363 (Fed.Cir.2009).[23] The "specific question whether a machine represents nothing more than a law of nature, natural phenomenon, or abstract idea is unquestionably the correct one in light of *Bilski*." *Chamberlain Group, Inc. v. Lear Corp.*, No. 5-3449, 756 F.Supp.2d 938, 968, n. 13, 2010 WL 4884448, at *26 n. 13, 2010 U.S. Dist. LEXIS 124566, *80 n. 13 (N.D.Ill. Nov. 24, 2010) (citing *Bilski II*, 130 S.Ct. at 3225); *see also id*. at 967, at *24, 2010 U.S. Dist. LEXIS 124566 at *74-75.[24]

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[23] For instance, in *Alappat* the Federal Circuit also analyzed the machine claim before it under the fundamental principles exception to ensure that the claim did not simply recite a mathematical algorithm or an abstract idea. *See Alappat*, 33 F.3d at 1544. The Federal Circuit found the machine claim, as a whole, was not directed to an algorithm or abstract idea, in part by employing the "useful, concrete, and tangible result" test. *See id*. That the claim qualified as a machine statutorily, *see supra* note 21, was not determinative in the Circuit's analysis, however, of whether the claim was abstract. The Court reads the case to instruct that while programming a general purpose computer may be how a "machine" is adjusted to fit within the patent eligible categories of § 101, such programming does not immunize the claim from failing under the abstract idea analysis.

[24] "Labels are not determinative in § 101 inquiries. *Benson* applies equally whether an invention is claimed as an apparatus or process, because the form of the claim is often an exercise in

Alice holds up *State Street* to support its argument that its process and/or software claims are directed to patent eligible subject matter. In *State Street*, the Federal Circuit reviewed machine claims under the abstract analysis and ultimately found the claims were patentable because they satisfied the "useful, concrete, and tangible result." *See State Street*, 149 F.3d at 1373. The Federal Circuit concluded, "[t]he question of whether a claim encompasses statutory subject matter should not focus on which of the four categories of subject matter a claim is directed to-process, machine, manufacture, or composition of matter—but rather on the essential characteristics of the subject matter, in particular, its practical utility." *Id*. at 1375. In analyzing the *State Street* claims, the Circuit did not note any potential preemptive effects of the claims, but focused only on the results produced by the claims. However, the "useful, concrete, and tangible result" test has been thoroughly rejected, *see Bilski II*, 130 S.Ct. at 3221, at least partly because its application proved too liberal in filtering out abstract claims. *See id*. at 3232 n. 1 (Stevens, J. concurrence); *id*. at 3259 (Breyer, J. concurrence) (noting the "useful, concrete, and tangible result" test would, if taken

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drafting. Moreover, that the claimed computing system maybe a 'machine' within 'the ordinary sense of the word,' . . . is irrelevant." *State Street Bank & Trust Co. v. Signature Fin. Group, Inc*., 927 F.Supp. 502, 511 (D.Mass.1996), *rev'd on other grounds*, 149 F.3d 1368. The Federal Circuit in *State Street* faulted the district court's conclusion in its abstract analysis, not that the district court actually applied the abstract analysis to the respondent's method and machine claims. The Circuit noted that "although we do not make this determination here, the judicially created exceptions, i.e., abstract ideas, laws of nature, etc., should be applicable to all categories of statutory subject matter, as our own precedent suggests." *State Street*, 149 F.3d at 1372 n. 1 (citations omitted).

literally, allow claims to be patentable where the Supreme Court has held to the contrary (citing cases, including *Flook*) and that the test "preceded the granting of patents that ranged from the somewhat ridiculous to the truly absurd") (internal citations and quotation marks omitted).

In the instant matter, the Court follows the reasoning of the Supreme Court in *Bilski II*, which concentrated not on the usefulness or practicality of claims, but on whether claims are directed to a fundamental concept as demonstrated, as least in part, by their preemptive force. *See id*. at 3231. Just as the claims in *Bilski II* were not saved from the abstract exception because they may have nominally claimed a "process" under § 101, nor can Alice's system or product claims be saved only by the fact they may nominally recite a "computer" or "manufacture."

CLS argues that the language of Alice's system and method claims are essentially one and the same, merely replacing the term "supervisory institution" from the '510 Patent with an unspecified "computer" in every claim of the '720 Patent and claims 1-38 and 42-47 of the '375 Patent. *See* CLS Mem. 34. Accordingly, CLS argues the system claims in the '720 and '375 Patents represent nothing more than an attempt to recast an abstract method as tangible hardware to circumvent the limitations on subject matter eligibility. *See id*. at 34. Alice acknowledges the similarity, but disputes that the various claims are identical. *See* Ginsberg Decl. ¶ 52. The similarities are immediately apparent, even if not entirely identical. As an example, system claim 68 of the '720 Patent mimics the language of method claim 68 of the '510 Patent language in that the method steps are almost identical but the "supervisory institution" recited in method

claim 68 of the '510 Patent is replaced by a "data processing system," or a computer, in the system claim. Compare '720 Patent, col. 69:20-42, with '510 Patent, col. 67:38-41 & col. 68:1-19; *see also* CLS Mem. 13.

The Court has found Alice's asserted method claims to be directed to an abstract concept. The system claims of the '720 Patent represent merely the incarnation of this abstract idea on a computer, without any further exposition or meaningful limitation. Although it is unsettled as to when a claim to a machine or manufacture is abstract,[25] the Court concludes that the system claims in the '720 Patent would preempt the use of the abstract concept of employing a neutral intermediary to facilitate simultaneous exchange of obligations in order to minimize risk on any computer, which is, as a practical matter, how these processes are likely to be applied. *Cf. Alappat*, 33 F.3d at 1544 ("Indeed, [machine] claim 15 as written is not 'so abstract and sweeping' that it would 'wholly pre-empt' the use of any apparatus employing the combination of mathematical calculations recited therein.") (quoting *Benson*, 409 U.S. at 68-72, 93 S.Ct. 253). Unlike the machine claim in *Alappat*, the '720 Patent claims, as written, would wholly preempt the use of the abstract concept in any computer. Despite the fact that

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[25] *See, e.g.*, *Ferguson*, 558 F.3d at 1367 (Newman, J., concurring) ("There are indeed many uncertainties remaining in this court's restructure of the legal framework of modern technology and its fruits. However, the potentially complex issues of when computers are *Bilski*-acceptable machines do not arise in the Ferguson claims. I agree that these issues require clarification, for uncertainty as to legal rights is as much a disincentive to commerce as is their deprivation. However, this case is not the appropriate vehicle for dictum of potentially large consequence.") (referring to *Bilski I*, 545 F.3d 943).

the '720 Patent system claims and Alice's asserted method claims are directed to different patent eligible categories under § 101, their preemptive effect would be largely one and the same. As the Court finds the '720 Patent claims are directed to the same abstract concept as the method claims, the reasoning underlying the abstract determination on the method claims applies with equal force to the claims of the '720 Patent. *See supra* Part III(A)(3).

The impact of the '720 Patent on common and everyday financial transactions speaks to its preemptive effect. Independent claims 1, 27, 60, and 68 of the '720 Patent mirror the fundamental concepts claimed by the '510 Patent. System claim 64, on the other hand, essentially enables a purchase between a buyer and seller, in which the system recited maintains a shadow account for a buyer and seller independent of those held by a bank, and the computer is configured to receive a transaction, adjust the accounts of the buyer and seller to effectuate the purchase if the accounts have sufficient value, and to generate an irrevocable instruction to the bank(s) to adjust their account(s) accordingly. *See* '720 Patent, col. 68:62-66 & col. 69:1-11. Such a "system" is simply an electronic intermediary that maintains its own shadow accounts to guarantee and effect purchases between parties. Claim 67, which depends from claim 64, further entails means "for allowing said buyer to acquire an item from said seller, wherein the purchase relates to said item." *Id*. col. 69:17-19. Independent claim 80 of the '720 Patent is directed to the same basic concept of enabling a purchase by an electronic intermediary as claim 64, except it defines the stakeholders as a "first party" and a "second party" and refers to first or second accounts. *Id*. col. 70:20-37.

Chamberlain, a district court decision following *Bilski II*, well illustrates the issue here. The *Chamberlain* invention claimed a physical transmitter that sent out an encrypted signal to control an actuator (as part of a garage door opening system), which the court held was a machine under § 101. *See Chamberlain*, 756 F.Supp.2d at 965-68, 2010 WL 4884448 at *23-25, 2010 U.S. Dist. LEXIS 124566 at *73, 78-79. In analyzing the exception for fundamental principles, the court found the claims before it were not an attempt to patent a mere algorithm and that no preemption concerns were raised. *Id*. at 968-69, at *26, 2010 U.S. Dist. LEXIS 124566 at *84. When viewed in the context of the entire claim, the algorithm was directed at a "physical product that is to be used for a specific purpose" and would not "preclude the use of the mathematical algorithms that operate within the transmitter for other purposes." *Id*. at 969, at *26, 2010 U.S. Dist. LEXIS 124566 at *84-85. The court also noted that the physical transmitter was not simply insignificant extra-solution activity since "the machine, to the contrary, constitutes the very heart of the invention." *Id*. at 969, at *26, 2010 U.S. Dist. LEXIS 124566 at *85.

The machine claims before the *Chamberlain* court stand in stark contrast to the '720 Patent claims before this Court. Here, preemption concerns of a basic concept across an unlimited field are preeminent. The system claims are not a specific and limited application of a general business concept, but instead seek to preempt the concept itself when employed by any computer coupled with a data storage unit. The system claims are no more limited than the method claims simply because they are directed to a data processing system. The effect of allowing these claims to be patentable would be to allow Alice "to pre-empt

substantially all uses of th[e] fundamental principle." *Bilski I*, 545 F.3d at 953.

Further, the dependent claims of the '720 Patent only serve to limit the invention to a field of use and are no more than token postsolution components. *See Bilski II*, 130 S.Ct. at 3231. The dependent claims merely demonstrate the all-encompassing nature of the steps, or methods, that the '720 Patent system claims are intended to implement. As with the dependent claims of the '510 Patent, the dependent claims of the '720 Patent describe a plethora of possible transactions or accounts that would be covered by the system,[26] what the "exchange institution" might be,[27] or circumstances under which the exchanges might be effectuated.[28]

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[26] *See, e.g.*, '720 Patent, col. 65:64-65 ("transaction linked to a share price") (Claim 2); *id*. col. 65:28 ("weather event") (Claim 3); *id*. col. 66:3 ("market event") (Claim 4); *id*. col. 66:5-6 ("transfer of shares in financial or physical assets") (Claim 5); *id*. col. 66:10 ("transfer of a commodity") (Claim 7); *id*. col. 66:13 ("money for goods, services, promises, credits or warrants") (Claim 8); *id*. col. 66:64-67 ("claim 1, further comprising means for allowing said party to acquire an item from another party, wherein the exchange obligation relates to said item") (Claim 27); *id*. col. 70:1-2 ("exchange obligation involves currency") (Claim 74).

[27] *See, e.g.*, '720 Patent, col. 66:22 ("a credit card company") (Claim 12); *id*. col. 66:24 ("a debit card company") (Claim 13); *id*. col. 66:26 ("bank") (Claim 14); *id*. col. 69:44 ("central bank") (Claim 69); *id*. col. 70:3-5 ("non-bank clearing house or depository") (Claim 75).

[28] *See, e.g.*, '720 Patent, col. 66:38-40 (where exchange institutions operate in different times zones) (Claim 19); *id*. col. 66:41-43 (where exchange institutions have different processing cycles) (Claim 20); *id*. col. 66:47-50 (where "said data storage unit has stored therein a balance for said shadow credit record and/or shadow record obtained from said exchange institution") (Claim

While not dispositive for this analysis, it is worthwhile to note that the dependent claims of the '720 Patent recite details to flesh out the steps, parties, and circumstances under which obligations are to be exchanged—mirroring the '510 Patent dependent claims—but do not further describe or limit the claimed data processing system as a machine. Unlike the machine claims in *Chamberlain*, the steps of exchanging an obligation (and not the computer system claimed) are the true "heart" of Alice's invention. *Cf. Chamberlain*, 756 F.Supp.2d at 968-70, 2010 WL 4884448 at *26-27, 2010 U.S. Dist. LEXIS 124566 at *85.[29] The Court looks to what, at base, is claimed by the '720 Patent claims—and that is an abstract concept. The Court agrees with CLS that, in these circumstances, "a computer system merely 'configured' to implement an abstract method is no more patentable than an abstract method that is simply 'electronically' implemented." CLS Reply 31; *see also Kuno*, 2010 WL 5127425 at *10 (finding machine and manufacture claims abstract and noting that "[i]n essence, these claims merely recite a general purpose computing device intended to facilitate the future execution of the recited [algorithms] similar to those in the independent method claims that we found to be ineligible under § 101").[30]

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22); *id*. col. 70:41-42 (instruction is generated at the end of the day) (Claim 82).

[29] *See also* Ginsberg Decl. ¶ 52 (speaking of the '720 and '375 Patents, noting that "at a general level, the basic settlement operations could be performed without the aid of a computer if they were not so claimed").

[30] To be clear, the Court does not hold that Alice's process claims in the '720 Patent fail to recite patent eligible subject matter because they mimic the asserted method claims in the

The Court also applies this analysis and result to system claims 1-38 and 42-47 of the '375 Patent. Although these claims recite an additional component of allowing stakeholders an ability to transmit requested transactions directly to the computer system via a "first party device," a "second party device," or a "communications controller,"[31] the claims simply indicate that the stakeholders can interact with the computer system, without intermediaries, and that the computer system itself will ultimately effect the exchange of obligations. That the parties can directly input desired transactions using modems, land line phones, a fax machine, or otherwise, *see* '375 Patent, col. 7:55-67 & col. 8:1-5, to reach a "communications controller" represents token "postsolution components" and fails to make the claims patentable. *See Bilski II*, 130 S.Ct. at 3231. The "fact that the claim requires the identified transactions actually to be made does no more to alter the character of the claim as a whole." *Bilski I*, 545 F.3d at 965.

The dependent claims at most attempt to limit the fundamental concept to a field of use, by defining the "obligations" that are to be exchanged, the conditions under which obligations are to be exchanged, and/or the respective parties and institutions to the transaction. At the heart of these claims is the same fundamental concept of employing a neutral intermediary to facilitate a simultaneous and irrevocable exchange of obligations in order to minimize risk. The system

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'479 and '510 Patents. The Court finds the '720 Patent process claims when considered as a whole to be unpatentable because, similar to the method claims they mimic, they are directed to an abstract concept.

[31] *See, e.g.*, '375 Patent, col. 65:4 (Claim 1); *id*. col. 65:62 (Claim 12); *id*. col. 66:3 (Claim 14) (respectively).

claims in the '375 Patent recite no more specific or limited application of the fundamental concept than the claims already addressed.

Lastly, the three program claims in the '375 Patent are also directed to the same abstract concept despite the fact they nominally recite a different category of invention under § 101 than the other claims asserted by Alice. Claim 39 recites "program code" to cause a computer to allow a party to send a transaction relating to "an exchange obligation arising from a currency exchange transaction between" a first and second party. '375 Patent, col. 68:10-12, 14. The program code also causes the computer to allow a party to view information relating to the "processing" of the obligation exchange by a supervisory institution. *Id*. col. 68:15. The processing that one can view by way of the program code constitutes the general steps of exchanging an obligation that arise in the other Patents, i.e., maintaining information about the parties' accounts, electronically adjusting the accounts to effect the exchange obligation, and generating an irrevocable instruction to the exchange institutions. *Id*. col. 68:17-35. CLS argues that claims 39-41 of the '375 Patent do no more than mirror method claim 68 of the '510 Patent, except that the computer program allows a party, by computer, to send a transaction and view information relating to the method claims. CLS Mem. 35. It is true that independent claim 39 recites as part of the claim a process almost identical to a method claimed in the '510 Patent. *Compare* '375 Patent, col. 68:17-35, *with* '510 Patent, col. 68:1-19.

To be sure, the application of an abstract idea does not render a claim unpatentable under § 101, *see Diehr*, 450 U.S. at 187, 101 S.Ct. 1048, however these claims seek to claim the fundamental concept itself,

and not a limited or specific application of the concept. Claims 39-41 of the '375 Patent allow a party to use a computer to submit a preferred transaction—the first and necessarily inherent step in the fundamental concept of employing an intermediary to facilitate a simultaneous and irrevocable exchange of obligations to minimize risk—and then to observe the processing, or implementation, of the fundamental concept itself. The additional elements of programming to allow a party to submit a transaction and view the exchange does little to mitigate the preemptive effect of these claims on the fundamental concept. Moreover, dependent claim 40 does no more than attempt to limit the invention to a field of use by confining the submitted "transaction" to one that involves currency, *see* '375 Patent, col. 68:37, and claim 41 similarly attempts to limit the claim by only allowing a party to view preauthorized information relating to the processing. *Id*. col. 68:38-41. These two dependent claims represent no more than "broad examples" of how the fundamental concept can be applied and implemented. *See Bilski II*, 130 S.Ct. at 3231.

IV. CONCLUSION

For the foregoing reasons, the Court will grant CLS's motion for summary judgment. The Court finds claims 33 and 34 of the '479 Patent and each claim of the '510 Patent, '720 Patent, and '375 Patent to be directed to an abstract idea under the *Benson*, *Flook*, *Diehr*, and *Bilski* Supreme Court line of precedent. Accordingly, these claims are invalid as being directed to patent-ineligible subject matter under § 101 of the Patent Act. A memorializing Order accompanies this Memorandum Opinion.

APPENDIX D

UNITED STATES COURT OF APPEALS
FEDERAL CIRCUIT

No. 2011-1301

CLS BANK INTERNATIONAL,
Plaintiff-Appellee,

and

CLS SERVICES LTD.,
Counterclaim-Defendant Appellee,

v.

ALICE CORPORATION PTY. LTD.,
Defendant-Appellant.

Oct. 9, 2012

Appeal from the United States District Court for the District of Columbia, No. 07-CV-0974, Rosemary M. Collyer, Judge.

ORDER

Before RADER, Chief Judge, NEWMAN, LOURIE, BRYSON, LINN, DYK, PROST, MOORE, O'MALLEY, REYNA, and WALLACH, Circuit Judges.

PER CURIAM.

A petition for rehearing en banc was filed by Appellees CLS Bank International and CLS Services Ltd. (collectively "CLS Bank"), and a response thereto

was invited by the court and filed by Appellant Alice Corporation Pty. Ltd. ("Alice").

The petition for rehearing was considered by the panel that heard the appeal, and thereafter the petition for rehearing en banc, the response, and the briefs of amici curiae were referred to the circuit judges who are authorized to request a poll of whether to rehear the appeal en banc. A poll was requested, taken, and the court has decided that the appeal warrants en banc consideration.

Upon consideration thereof,

IT IS ORDERED THAT:

(1) The petition of CLS Bank for rehearing en banc is granted.

(2) The court's opinion of July 9, 2012 is vacated, and the appeal is reinstated.

(3) The parties are requested to file new briefs addressing the following questions:

a. What test should the court adopt to determine whether a computer-implemented invention is a patent ineligible "abstract idea"; and when, if ever, does the presence of a computer in a claim lend patent eligibility to an otherwise patent-ineligible idea?

b. In assessing patent eligibility under 35 U.S.C. § 101 of a computer-implemented invention, should it matter whether the invention is claimed as a method, system, or storage medium; and should such claims at times be considered equivalent for § 101 purposes?

(4) This appeal will be heard en banc on the basis of the originally-filed briefs, additional briefing ordered herein, and oral argument. An original and thirty copies of all originally-filed briefs shall be filed within

20 days from the date of filing of this order. An original and thirty copies of new en banc briefs shall be filed, and two copies of each en banc brief shall be served on opposing counsel. CLS Bank's en banc brief is due 45 days from the date of this order. Alice's en banc response brief is due within 30 days of service of the CLS Bank new en banc brief, and the reply brief within 15 days of service of the response brief. Briefs shall adhere to the type-volume limitations set forth in Federal Rule of Appellate Procedure 32 and Federal Circuit Rule 32.

(5) The court invites the views of the United States Patent and Trademark Office as amicus curiae. Other briefs of amici curiae will be entertained, and any such amicus briefs may be filed without consent and leave of court but otherwise must comply with Federal Rule of Appellate Procedure 29 and Federal Circuit Rule 29.

(6) Oral argument will be held at a time and date to be announced later.