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Legal delineation of business methods as patent eligible subject matter: A study in the light of quartet cases of the decade

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Abstract
To be entitled to a patent, a claimed invention must satisfy certain patentability requirements. Perhaps the most basic requirement is that the subject matter sought to be patented is in fact eligible for patent protection. In addition, the invention must meet other patentability requirements, including novelty, non-obviousness, written description, and enablement. Business methods are defined as an innovative way of completing a matter or doing an activity and in the patent context, a business method fall under the subject matter process and not under machine, manufacture and composition of matter. This article makes a study of the legal delienation of business methods as patent eligible subject matter specially in the light of this decade's quartet Section101 decisions delivered by Supreme Court of USA. a) The first part of the article provides the introduction, then it proceeds b) to examine the international standards of patent eligibility, c) thirdly it tries to situate the business methods patents in the US patent code and then analyses the quartet of cases decided by the S.C and then lastly d) ponders on bringing predictability to the law of patents.

Keywords: process, business methods, patents, exclusion, abstract

1. Introduction
Patent protection is a two-edged sword. On the one hand, the promise of exclusive rights provides monetary incentives that lead to creation, invention and discovery. On the other hand, that very exclusivity can impede the flow of information that might permit, indeed spur, invention by, for example, raising the price of using the patented ideas once created, requiring potential users to conduct costly and time-consuming searches of existing patents and pending patent applications and requiring the negotiation of complex licensing arrangements [1]. At a time when patent law is coming to the foreground, not just in the legal world, but among the public at large, the specific values and merits on both sides of the patent system should be evaluated and re-examined [2].

To be entitled to a patent, a claimed invention must satisfy certain patentability requirements. Perhaps the most basic requirement is that the subject matter sought to be patented is in fact eligible for patent protection. In addition, the invention must meet other patentability requirements, including novelty, non-obviousness, written description, and enablement. Patent law's general rules must govern inventive activity in many different fields of human endeavor, with the result that the practical effects of rules that reflect a general effort to balance these considerations may differ from one field to another.

Until its recent spate of decisions, the last time the Court addressed the law of patentable subject matter was nearly four decades ago. In its 1980 decision in Diamond v. Chakrabarty [3], the Court held that a genetically engineered microorganism could be patented. Similarly, in its 1981 opinion Diamond v. Diehr [4], the Court ruled that a process for curing artificial rubber through the use of a computer and a mathematical formula was patentable. These two decisions arguably set the stage for a period where the range of patentable subject matter was quite broad. The Supreme Court revisited the law of patentable subject matter in a series of four decisions issued from 2010 through 2014. In each instance, the Court held each invention it considered to be unpatentable. This article discusses each decision in the order of issuance. But before that it tries to map the International approach in defining patentable subject matter and then defines the terms process and business methods.

2. International approaches to defining patent eligible subject matter
2.1 The TRIPS Agreement – Art 27.1
The World Trade Organization (WTO) Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) sets forth the minimum requirements applicable to all WTO members for the protection and enforcement of intellectual property rights, including patent rights [5]. The United States is a WTO member and a signatory to the TRIPS Agreement [6]. Article 27(1) of the TRIPS Agreement generally requires WTO members to make patents "*available for any inventions, whether products or processes, in all fields of technology, provided they are new, involve inventive step and are capable of industrial application"* [7].

Thus, under TRIPs, the patent eligible subject matter is very broad so as to include all fields of technology. However, the three criteria of new, inventive step and industrial application determine the patentability of the subject matter. Business methods patents are also one of the fields where a grant of patent can be thought of.

2.2 U.S.A.
The United States Constitution states that *"Congress shall have the power.., to promote the Progress of Science and*

useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries." [8] In interpreting this Constitutional language, Congress has deemed patent protection available to inventors and to their discoveries.

The legislative basis for patentable subject matter is set forth in 35 U.S.C. Sec.101. It says:

> *"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 therefore, subject to the conditions and requirements of this title."* [9]

This legislative language has changed little during the history of U.S. patent law. The first patent statute permitted patenting of "any useful art, manufacture, engine, machine, or device, or any improvement therein." [10] Enacted three years later, the second patent statute provided for patent protection for "any new and useful art, machine, manufacture or composition of matter, or any new and useful improvement on any art, machine, manufacture or composition of matter." [11] This language is nearly identical to the current statutory language.

In 1930, Congress enacted the Plant Patent Act to extend patent protection to asexually reproduced plants [12]. In the Patent Act of 1952, Congress moved the plant patent provision to another section, replaced the word "art" with "process," and provided a definition for the latter [13].

Congress intended § 101 to be broadly construed, as is evident both in the language of the statute and accompanying commentary. The plainest and clearest evidence that Congress intended patent eligible subject matter to be broad in scope is in the House and Senate Reports on the revisions to Title 35.

"A person may have "invented" a machine or a manufacture, which may include anything under the sun that is made by man, but it is not necessarily patentable under section 101 unless the conditions of the title are fulfilled". [14]

The same emphasized language was used in Senate hearings by P.J. Federico who, along with Judge Giles Rich, was a principal architect of the 1952 Act.14 The Supreme Court acknowledged this intent in Diehr, stating "we may not be unmindful of the Committee Reports accompanying the 1952 Act which inform us that Congress intended statutory subject matter to 'include anything under the sun that is made by man." [15] This language reflects the foundational principle that human activity to "make" something is the touchstone of eligibility.

The 1952 Act …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."

Thus the requirements of Sec.101 are

a. "A" patent – means only one patent granted for each invention.
b. "Useful" – the invention must have a specific, substantial, and credible utility.
c. "Process, Machine, Manufacture, Composition of Matter" [16]

The Supreme Court has long recognized limits on patent eligible subject matter beyond those explicitly set out in the statute. It has held that Sec. 101 contains an important implicit exception: *Laws of nature, natural phenomena, and abstract ideas* are not patentable." [17] The court has interpreted §101and its predecessors in light of this exception for more than 150 years. These judicially created exceptions to patent eligibility have been applied and interpreted by the lower courts. As early as the mid-1800s, the Court stated that "[a] principle, in the abstract, is a fundamental truth," which "cannot be patented." [18] Nor can an exclusive right be obtained for a new power, such as steam or electricity [19]. In contrast, the Court noted that a patent could be obtained if the principle is applied to effectuate a practical result [20]. Regarding the claimed invention, a combination of machinery for manufacturing pipes with a new property of lead, the Court concluded that it could not be patented without first establishing its novelty [21]. In the same time period, the Court held Morse's claim to the use of electromagnetism for "marking or printing intelligible characters, signs, or letters at any distances" to be unpatentable [22]. The Court explained that Morse had not shown "that the electro-magnetic current, used as motive power, in any other method, and with any other combination, will do as well." [23] These early decisions formed the foundation of the Court's prohibition against patenting natural principles.

Thus it can be said that

a. While these exceptions are not required by the statutory text. They are consistent with the notion that a patentable process must be new and useful
b. And, in any case these exceptions has defined the reach of the statute as a matter of statutory stare decisis going back to 150 years.
c. Storehouse of knowledge: Free to all men Funk brothers The concept covered by these exceptions are part of the storehouse of knowledge of all men and reserved exclusively to none.

The Court's prime justification for the judicial exceptions to section 101 is that a patent claim should not wholly preempt a natural law, phenomenon, or product or an abstract idea, and thereby foreclose future innovation. To substantiate its reasoning the Court has often referred to fundamental laws of nature such as E=mc2, implying a broad impact on future development should any natural phenomena or abstract idea be patented. Yet at the same time, the Court has held that that the prohibition cannot be avoided even when a claim is narrowly limited to a specific technological environment.

3. Meaning and definition of subject-matter – legal & judicial interpretation

3.1 Process

A fundamental canon of statutory construction is that, unless otherwise defined, words will be interpreted as taking their ordinary, contemporary, common meaning [24]. Therefore, to start describing a process, one may first look to its dictionary definition: "A method of doing something, with all the steps involved. [25]" Patent law itself defines "process" to "mean a

process, art or method, and includes a new use of a known process, machine, manufacture, composition of matter, or material." [26] Thus, a series of steps is a "process" within the patent statute [27].

The term process has some limitations as the Supreme Court has limited patentable processes to exclude scientific principles, laws of nature, ideas, and, of most significance to this is the patentability of business methods, abstract ideas [28].

3.2 Process V. Abstract Idea

The patentability of abstract ideas has been addressed by the United States Supreme Court on several occasions. While doing this, there is always an attempt to draw the line between patentable processes and mere attempts to patent abstract ideas such as laws of nature or mathematical formulas. A few of the most cited examples of these Supreme Court decisions are Gottschalk v. Benson, Parker v. Flook, and Diamond v. Diehr.

In *Gottschalk v. Benson*, [29] the Court addressed a patent application for an invention consisting of an algorithm to convert binary-coded decimal numerals into pure binary code. In particular, the application described the claimed invention "as being related 'to the processing of data by program and more particularly to the programmed conversion of numerical information' in general-purpose digital computers." [30] In assessing the patentability of the claimed invention, the Court discussed various examples of abstract ideas courts had held ineligible for patent protection, stating that "phenomena of nature, mental processes, and abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work." [31] The Court found that Benson's claimed invention had no "substantial practical application" other than its use in a digital computer, so allowing the patent to issue would have effectively prohibited the public's use of the mathematical algorithm itself."

In *Parker v. Flook* [32], the claimed invention described a method of updating alarm limits, useful indicators used in the monitoring of operating conditions during catalytic conversion processes. The claimed invention only differed from the conventional method of changing alarm limits in its use of a mathematical algorithm to calculate the limits before updating them. The Court relied heavily on its prior decision in Benson to conclude that the claimed invention at issue in Parker was also not a patentable process because it described an abstract idea by merely applying a mathematical algorithm to a conventional process.

In *Diamond v. Diehr* [33], the Court addressed a patent application that described a method for molding raw, uncured synthetic rubber into cured precision products using a mathematical formula to complete some of its steps by way of a computer. The respondents in Diehr claimed their invention was a novel solution that their industry could use to obtain uniformly accurate cures by way of applying an Arrhenius equation to determine the appropriate time and temperature needed for uniform cures. The patent examiner rejected the application in light of the Court's Benson decision, and the Patent and Trademark Office Board of Appeals affirmed, but the Court of Customs and Patent Appeals reversed.

The Supreme Court agreed with the latter court, distinguishing the respondents' claimed invention from those discussed in Benson and Parker by finding that even though all three contained computer-related claims and the respondents' application did contain a mathematical formula, the respondents in Diehr did not seek to patent a mathematical formula; "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." Thus, abstract ideas and mathematical formulas, in and of themselves, are not patent-eligible processes." But, the mere presence of abstract ideas and mathematical formulas is not immediately indicative of an ineligible invention. Processes that apply those ideas or rely on those formulas as potential components are patent-eligible so long as they do not seek to foreclose others from using the ideas or formulas. Therefore, a business method, as a process, must be more than an abstract idea and must do more than merely describe an algorithm in order to be patent-eligible.

3.3 Business Methods

Similar to the discussion on processes, to start defining business methods, one may first look to its textual definition. Webster's New World Dictionary defines the term "business" to mean "a matter or activity." [34] The same dictionary defines the word "method" as "a way of doing anything; procedure; process." [35] Thus, the term *"business method"* can be understood to mean an innovative way of completing a matter or doing an activity [36]. More importantly, in the patent context, a business method is not a machine, manufacture, or composition of matter, so it must fall under the statutory subject matter of processes; this categorization of a business method is also commensurate with the dictionary definitions found in Webster's New World Dictionary [37].

3.4 Business method exception doctrine

Traditionally business methods were not regarded as patentable subject matter by the USPTO. The USPTO broached the subject of whether business methods should be patentable subject matter as early as 1869, when it was determined that methods of book-keeping should not be considered patentable subject matter, and were “contrary to the spirit of the patent law construed by the Office for years”. [38] Additionally, the patentability of business methods was discussed in 1883 in *United States Credit System Co. v. American Credit Indemnity Co*. [39] In that case, the Second Circuit affirmed that a method of “transacting common business” did not constitute patentable subject matter.

In the 1908 case of *Hotel Security Checking Co. v. Lorraine* [40] the Second Circuit held that a book-keeping system designed to prevent embezzlement by waiters, as a system of transacting business, was invalid due to a lack of novelty. However, in dicta, the court also stated that any business method *per se* was unpatentable [41]. Based on this dicta, the so-called “business method exception doctrine” developed, under which business methods were not considered patentable subject matter. As a result, business methods that might have otherwise been patentable subject matter were not disclosed to the public. It is likely that in most cases, these business methods were kept in-house as trade secrets [42], the result of which was that these business methods never entered the public domain. The business method exception doctrine continued over the years, and was cited by the Board of Patent

Appeals and Interferences in *In re Schrader*, in which the Board's invalidation of a patent under 35 U.S.C. § 101 was upheld by the Federal Circuit as recently as 1994 [43]. However, it should be noted that the Federal Circuit's majority opinion did not mention the business method exception, and only referred to the mathematical algorithm exception to 35 U.S.C. 101. [44]

4. The Quartet Cases

4.1 *Bilski v. Kappos* [45]

The petitioners', L. Bilsky, filed a patent application which seeks protection for a claimed invention that explains how commodities buyers and sellers in the energy market can protect, or hedge, against the risk of price changes. The key claims are claim 1, which describes a series of steps instructing how to hedge risk, and claim 4, which places the claim 1 concept into a simple mathematical formula. The remaining claims explain how claims 1 and 4 can be applied to allow energy suppliers and consumers to minimize the risks resulting from fluctuations in market demand. The patent examiner rejected the application on the grounds that the invention is not implemented on a specific apparatus, merely manipulates an abstract idea, and solves a purely mathematical problem. The Board of Patent Appeals and Interferences agreed and affirmed. The Federal Circuit, in turn, also affirmed.

The en banc court rejected its prior test for determining whether a claimed invention was a patentable "process" under Patent Act, 35 U. S. C. §101—i.e., whether the invention produced a "useful, concrete, and tangible result," [46] and holding instead that a claimed process is patent eligible if: (1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing. Concluding that this "machine-or-transformation test" is the sole test for determining patent eligibility of a "process" under §101, the court applied the test and held that the application was not patent eligible [47].

The Supreme court held that Bilskys' patent claim was not patent-eligible. Although this opinion came to the same conclusion as the Federal Circuit majority (Bilski's invention was not patentable subject matter), the majority did not go as far as the lower court in limiting patentable subject matter. The majority opinion had three important holdings: (1) the machine-or-transformation test is not the sole test but an important clue in determining patentability; (2) circumstances could exist where a business method would be patent-eligible; and (3) purely abstract ideas are not patentable.

As far as the machine-or-transformation test, the majority disagreed with the Federal Circuit's holding that the test was the sole test for what constitutes a "process." [48] The majority, interpreting the patent statutes strictly, cautioned against imposing limitations and conditions on the patent laws that the legislature had not expressed [49]. The machine-or-transformation test is not the sole test for patent eligibility under §101 although the test may be a useful and important clue or investigative tool.

The court also held that the patent law does not categorically exclude business methods. However it was still careful to point out that its opinion should not be read so as to remove all limitations from the patentability of business methods-business method claims, like all other claims, must still be novel, non-obvious, and fully and particularly described. "These limitations serve a critical role in adjusting the tension, ever present in patent law, between stimulating innovation by protecting inventors and impeding progress by granting patents when not justified by the statutory design." [50]

The majority further pointed to the mention of business methods in the infringement defense sections of the patent statutes to support the notion that circumstances exist when business methods would be patentable. Under §273(b)(1), if a patent-holder claims infringement based on "a method in [a] patent," the alleged infringer can assert a defence of prior use. By allowing this defence, the statute itself acknowledges that there may be business method patents. Section 273 thus clarifies the understanding that a business method is simply one kind of "method" that is, at least in some circumstances, eligible for patenting under §101. A contrary conclusion would violate the canon against interpreting any statutory provision in a manner that would render another provision superfluous [51]. Finally, while §273 appears to leave open the possibility of some business method patents, it does not suggest broad patentability of such claimed inventions [52].

Even though petitioners' application is not categorically outside of §101 under the two above approaches, the Court rejects, that does not mean it is a "process" under §. Petitioners seek to patent both the concept of hedging risk and the application of that concept to energy markets. Under Benson, Flook, and Diehr, however, these are not patentable processes but attempts to patent abstract ideas. Claims 1 and 4 explain the basic concept of hedging and reduce that concept to a mathematical formula. This is an unpatentable abstract idea, just like the algorithms at issue in Benson and Flook. Petitioners' remaining claims, broad examples of how hedging can be used in commodities and energy markets, attempt to patent the use of the abstract hedging idea, then instruct the use of well known random analysis techniques to help establish some of the inputs into the equation.

4.2 Mayo v. Prometheus [53]

In this case, the respondent, Prometheus Laboratories, Inc. (Prometheus), is the sole and exclusive licensee of the two patents at issue, which concern the use of thiopurine drugs to treat autoimmune diseases. When ingested, the body metabolizes the drugs, producing metabolites in the bloodstream. Because patients metabolize these drugs differently, doctors have found it difficult to determine whether a particular patient's dose is too high, risking harmful side effects, or too low, and so likely ineffective. The patent claims here set forth processes embodying researchers' findings that identify correlations between metabolite levels and likely harm or ineffectiveness with precision. Each claim recites (1) an "administering" step instructing a doctor to administer the drug to his patient (2) a "determining" step telling the doctor to measure the resulting metabolite levels in the patient's blood and (3) a "wherein" step describing the metabolite concentrations above which there is a likelihood of harmful side-effects and below which it is likely that the drug dosage is ineffective, and informing the doctor that metabolite concentrations above or below respectively) the drug dosage [54].

While the petitioners, Mayo, bought and used diagnostic tests based on Prometheus' patents. But in 2004 Mayo announced that it intended to sell and market its own, somewhat different, diagnostic test. Prometheus sued Mayo contending that Mayo's test infringed its patents. The District Court found that the test infringed the patents but granted summary judgement to Mayo, reasoning that the processes claimed by the patents effectively claim natural laws or natural phenomena namely, the correlations between thiopurine metabolite levels and the toxicity and efficacy of thiopurine drugs and therefore are not patentable. The Federal Circuit reversed, finding the processes to be patent eligible under the Circuit's "machine or transformation test." On remand from this Court for reconsideration in light of *Bilski* v. *Kappos*, which clarified that the "machine or transformation test" is not a definitive test of patent eligibility. The Federal Circuit reaffirmed its earlier conclusion.

The court held that Prometheus process is not patentable as the patent claims recite laws of nature which are themselves not patentable, the claimed processes are not patentable unless they have additional features that provide practical assurance that the processes are genuine applications of those laws rather than drafting efforts designed to monopolize the correlations [55] While deciding on this case, the court considered precedents laid down in Diehr [56] and Flook [57] In this case, the claim presents a case for patentability that is weaker than *Diehr*'s patent-eligible claim and no stronger than *Flook*'s unpatentable one. The three steps add nothing specific to the laws of nature other than what is well-understood, routine, conventional activity, previously engaged in by those in the field [58]. Further support was drawn from *O'Reilly* v. *Morse, Bilski, Benson*.

In telling a doctor to measure metabolite levels and to consider the resulting measurements in light of the correlations they describe, they tie up his subsequent treatment decision regardless of whether he changes his dosage in the light of the inference he draws using the correlations. And they threaten to inhibit the development of more refined treatment recommendations that combine Prometheus' correlations with later discoveries. This reinforces the conclusion that the processes at issue are not patent eligible, while eliminating any temptation to depart from case law precedent [59].

4.3 Ass'n for Molecular Pathology v. Myriad [60]

In this case, the respondent Myriad, obtained several patents after discovering the precise location and sequence of the BRCA1 and BRCA2 genes, mutations of which can dramatically increase the risk of breast and ovarian cancer. This knowledge allowed Myriad to determine the genes' typical nucleotide sequence, which, in turn, enabled it to develop medical tests useful for detecting mutations in these genes in a particular patient to assess the patient's cancer risk. If valid, Myriad's patents would give it the exclusive right to isolate an individual's BRCA1 and BRCA2 genes, and would give Myriad the exclusive right to synthetically create BRCA cDNA.

The petitioners filed suit, seeking a declaration that Myriad's patents are invalid under 35 U. S. C. §101. The District Court concluded that Myriad's claims were invalid because they covered products of nature. The Federal Circuit initially reversed, but on remand in light of *Mayo Collaborative Services* v. *Prometheus Laboratories, Inc.*, the Circuit found both isolated DNA and cDNA patent eligible.

The Supreme Court held that a naturally occurring DNA segment is a product of nature and not patent eligible merely because it has been isolated, but cDNA is patent eligible because it is not naturally occurring [61]. In holding so, the court said that patent protection strikes a delicate balance between creating "incentives that lead to creation, invention, and discovery" and "impeding the flow of information that might permit, indeed spur, invention." [62] Myriad's DNA claim falls within the law of nature exception. Myriad's principal contribution was uncovering the precise location and genetic sequence of the BRCA1 and BRCA2 genes.. Myriad did not create or alter either the genetic information encoded in the BCRA1 andBCRA2 genes or the genetic structure of the DNA. It found an important and useful gene, but groundbreaking, innovative, or even brilliant discovery does not by itself satisfy the §101 inquiry [63]. Finding the location of the BRCA1 and BRCA2 genes does not render the genes patent eligible "new... composition[s] of matter," §101. Myriad's patent descriptions highlight the problem with its claims: They detail the extensive process of discovery, but extensive effort alone is insufficient to satisfy §101's demands. Myriad's claims are not saved by the fact that isolating DNA from the human genome severs the chemical bonds that bind gene molecules together.

In holding such opinion the court relied on the precedents laid down in *Diamond* v. *Chakrabarty* [64] and *Funk Brothers Seed Co.* v. *Kalo Inoculant*

While in the case of cDNA, it is not a "product of nature," so it is patent eligible under§101. cDNA does not present the same obstacles to patentability as naturally occurring, isolated DNA segments. Its creation results in an exons-only molecule, which is not naturally occurring. Its order of the exons may be dictated by nature, but the lab technician unquestionably creates something new when introns are removed from a DNA sequence to make cDNA [65].

4.4 *Alice Corp. V. CLS Bank* [66]

The petitioner Alice Corporation is the assignee of several patents that disclose a scheme for mitigating "settlement risk," *i.e.,* the risk that only one party to an agreed-upon financial exchange will satisfy its obligation. In particular, the patent claims are designed to facilitate the exchange of financial obligations between two parties by using a computer system as a third-party intermediary. The patents in suit claim (1) a method for exchanging financial obligations, (2) a computer system configured to carry out the method for exchanging obligations, and (3) a computer-readable medium containing program code for performing the method of exchanging obligations.

The respondents (together, CLS Bank), who operate a global network that facilitates currency transactions, filed suit against petitioner, arguing that the patent claims at issue are invalid, unenforceable, or not infringed. Petitioner counterclaimed, alleging infringement. After *Bilski* v. *Kappos*, [67] was decided, the District Court held that all of the claims were ineligible for patent protection under 35 U. S. C. §101 because they are

directed to an abstract idea. The en banc Federal Circuit affirmed.

The Supreme Court held that because the claims are drawn to a patent-ineligible abstract idea, they are not patent eligible under §101. The Court relied on the principle that while applying the §101 exception, it must distinguish patents that claim that are the 'building blocks' of human ingenuity, are ineligible for patent protection, from those that integrate the building blocks into something more, thereby "transforming" them into a patent-eligible invention [68].

Using this framework, the Court laid down a two step test for determining the patent-eligible subject matter:

a. Firstly, the court must determine whether the claims at issue are directed to a patent-ineligible concept. If so, the Court then ask
b. whether the claim's elements, considered both individually and "as an ordered combination," "transform the nature of the claim" into a patent-eligible application [69].

(1) if under the first step, the claims at issue are directed to a patent-ineligible concept i.e. the abstract idea like of intermediated settlement. Then under "the longstanding rule that 'an idea of itself is not patentable,' The court held that like the risk hedging in *Bilski*, the concept of intermediated settlement is 'a fundamental economic practice long prevalent in our system of commerce,' and the use of a third-party intermediary or "clearing house" is a building block of the modern economy and thus is an "abstract idea" beyond §101's scope.

(2) Turning to the second step the method claims, which merely require generic computer implementation, fail to transform that abstract idea into a patent-eligible invention [70]. The court relied on the case of Mayo that "Simply appending conventional steps, specified at a high level of generality," to a method already "well known in the art" is not"*enough*" to supply the " 'inventive concept' " needed to make this transformation. The introduction of a computer into the claims does not alter the analysis. Neither stating an abstract idea "while adding the words 'apply it,' nor limiting the use of an abstract idea "to a particular technological environment," is enough for patent eligibility. Stating an abstract idea while adding the words "apply it with a computer" simply combines those two steps, with the same deficient result. Wholly generic computer implementation is not generally the sort of "additional feature" that provides any "practical assurance that the process is more than a drafting effort designed to monopolize the abstract idea itself.

Here, the court held that the representative method claim does no more than simply instruct the practitioner to implement the abstract idea of intermediated settlement on a generic computer. Taking the claim elements separately, the function performed by the computer at each step creating and maintaining "shadow" accounts, obtaining data, adjusting account balances, and issuing automated instructions is "purely 'conventional. Considered "as an ordered combination," these computer components "add nothing... that is not already present when the steps are considered separately." Viewed as a whole, these method claims simply recite the concept of intermediated settlement as performed by a generic computer. They do not, for example, purport to improve the functioning of the computer itself or effect an improvement in any other technology or technical field. An instruction to apply the abstract idea of intermediated settlement using some unspecified, generic computer is not "*enough*" to transform the abstract idea into a patent-eligible invention. Further, the court held that the petitioner's system and media claims add nothing of substance to the underlying abstract idea, they too are patent ineligible under §101 [71].

5. Conclusion

The Supreme Court decisions in Bilski, *Mayo v. Prometheus, Myriad, and Alice* present the current law of the land with respect to whether a particular invention is eligible for patenting. Several key themes may be gleaned from these four opinions.

First, the courts and USPTO conduct a two-part test developed from the case law. That test asks (1) whether the claim recites a law of nature, natural phenomenon, or abstract idea; and (2) if so, whether the claim includes additional, inventive elements that indicate the claim applies one of the three excluded subject matters, rather than being a fundamental concept per se. With regard to this second step, the Court will analyze a patent claim to determine if it preempts a field of activity. If a claim covers every practical application of a fundamental concept, then it cannot be patented under section 101. The Court referred to the second step as "a search for an inventive concept i.e., an element or combination of elements that is sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the ineligible concept itself."

Finally, although the machine-or-transformation test does not exclusively govern the patent eligibility of processes, it remains a useful guidepost within the decision making process. Section 101 determinations have proven amenable to resolution early within the process of litigation, often at the pleading stage or a prompt summary judgment motion [72].

Thus, to bring precision to the subject matter area of patent law, arguments should avoid the temptation of being cantered on formalistic [73] attempts to cabin abstract ideas. Rather, a pragmatic approach that takes into account policy considerations and economic reasoning is more likely to bring precision [74]. A logician who follows formalism will act on the end result of the prescription of an algorithm without regard to the purpose of the rule itself. It is the purest example of form-over-function.

Legal scholars have noted that accurate decision making rarely involves pure formalism. Laws are rules that exist as derivatives of Congressional will, and they should be applied in a way that reflects the intent of the rule drafter. Often times these rules attempt to give solutions to problems that are unforeseen and unanticipated. In those cases, reading the text of the rule rarely yields a complete answer. In order to reach an end result consistent with the drafter of the rule, "an inquiry into something other than the instructions of the enacting legislature" must be made, other considerations must be taken. In taking "those other considerations, the institution entrusted with the decision must make reference to considerations of both fact and policy [75]."

This is not to be confused with equating textualism to

formalism, and by syllogism regarding a textualist interpretation as one lacking qualifying considerations [76]. In interpreting the text of a statute, natural assumptions are made. Practical reason coexists with statutory interpretation, because a "complex judgment about how to best harmonize text, legislative history, statutory purpose, and contemporary public policy" must be made [77]. The take away message is that when other considerations are not made in conjunction with applying the rule, the purpose of the rule itself ceases to have import.

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4. 450 U.S. 175 (1981)
5. Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, 1869 U.N.T.S. 299, 33 I.L.M. 1197
6. WIPO (World Intellectual Property Organization), Contracting Parties/Signatories to TRIPS,nhttp://ibid.wipo.int/wipolex/en/other_treaties/parties.jsp?treaty_id=231&group_id=22 (last visited July 24, 2017)
7. TRIPS, Art. 27(1) (emphasis added). Specifically, inventions must also satisfy the criteria of novelty, inventive step/non-obviousness, and industrial applicability/utility.
8. U.S. CONST. art. I, § 8, cl. 8.
9. In addition to being patent eligible, an invention must also satisfy the other legislative requirements for patentability to qualify for patent protection. 35 U.S.C. § 102 (novelty), § 103 (non-obviousness), § 112 (written description, enablement, definiteness). Furthermore, a separate requirement for utility is grounded in the term "useful" in 35 U.S.C. § 101.
10. Patent Act of 1790, ch. 7, 1 Stat. 109 (1790)
11. Patent Act of 1793, ch. 11, § 1, 1 Stat. 318 (1793)
12. Act of May 23, 1930, Pub. L. No. 71-245, ch. 312, 46 Stat. 376.
13. 66 Stat. 797, ch. 10, § 101 (1952) ("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."); id. § 100(b) (defining "process" to mean "process, art, or method"); id. § 161 (1952) (providing for patent protection for plants); see J. E. M. Ag Supply, Inc. v. Pioneer Hi-Bred International, Inc., 534 U.S. 124 (2001)
14. Donald S chisum 3 S. Rep. No. 1979, 82d Cong., 2d Sess. 5 (1952); IBID.R. Rep. No. 1923, 82d Cong., 2d Sess. 6 (1952) (emphasis added
15. 5 Diehr, 450 U.S. at 182.
16. Thus, under Section 101, all patents issued in the U.S. must be classified into at least one of the following four statutory classes:
    Machines – A concrete thing consisting of parts or devices;
    Manufacture – An article produced from raw or prepared materials;
    Composition of Matter – A composition of substances or composite articles; and
    Processes -An act or a series of acts.[1]
17. Molecular Pathology v. Myriad Genetics, Inc., 569 U. S. ___, ___ (2013)
18. Le Roy v. Tatham, 55 U.S. 156, 175 (1852).
19. ibid
20. Id at 175
21. Id at 176-177
22. O'Reilly v. Morse, 56 U.S. 62, 112-120 (1853).
23. Ibid at 117
24. Perrin v. United States, 444 U.S. 37, 42 (1979).
25. WEBSTER'S NEW WORLD DICTIONARY 513-14 (4th ed. 2003).
26. 35 U.S.C. § 100(b).
27. ibid
28. For example, in In re Meyer, (the United States Court of Customs and Patent Appeals rejected an inventor's application for a patent describing a process for replacing the thinking processes of a neurologist with a computer. Specifically, the court held that the invention fell into the category of a "mental process," a category that did not fit any of the patent-eligible categories permitted by the statute).
29. 409 U.S. 63 (1972)
30. ibid
31. id
32. 437 U.S. 584 (1978)
33. 450 U.S. 175 (1981)
34. WEBSTER'S NEW WORLD DICTIONARY 90 (4th ed. 2003).
35. Ibid. at 407 (emphasis added)
36. See id. at 90, 407.
37. See id.; 35 U.S.C. § 101 (2006)
38. Ex parte Abraham, 1869 C.D. 59
39. 53 F. 818, 819 (S.D.N.IBID.), aff'd at 59 F. 139 (2nd Cir. 1883).
40. 160 F.147 (2d Cir. 1908)
41. ibid
42. "'Trade secret' means information, including a formula, pattern, compilation, program device, method, technique, or process, that: (i) derives independent economic value, actual or potential, from no being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use, and (ii) is the subject of efforts that are reasonable under the circumstances to maintain its secrecy." Uniform Trade Secrets Act, § 1(4) (National Conference of Commissioners on Uniform State Laws, 1985).
43. In re Schrader, 22 F.3d 290 (Fed. Cir. 1994).
44. ibid

45. Bilski v. Kappos, 130 S. Ct. 3218 (2010).
46. State Street Bank & Trust Co v. Signature Financial Group, Inc., 149 F. 3d 1368, 1373
47. Ibid at 55
48. Bilski v. Kappos, supranote 51
49. ibid
50. id
51. id
52. id
53. Mayo Collaborative Services, DBA Mayo. Medical laboratories, *et al*. V. Prometheus. Laboratories, inc. 132 S. Ct. 1289 (2012)
54. id
55. Parker v. Flook, 437 U. S. 584, 590. Finally, considering the three steps as an ordered combination adds nothing to the laws of nature that is not already present when the steps are considered separately. Pp. 8–11
56. In Diehr 450 U. S., at 187, the overall process was patent eligible because of the way the additional steps of the process integrated the equation into the process as a whole.. These additional steps transformed the process into an inventive application of the formula.
57. But in Flook 437 U. S., at 594, the additional stepsof the process did not limit the claim to a particular application, and the particular chemical processes at issue were all "well known," to the point where, putting the formula to the side, there was no "inventive concept" in the claimed application of the formula.
58. Ibid at pp11-13
59. Flook, supranote 63 at Pp16-19
60. Association for Molecular Pathology v. Myriad Genetics, Inc U.S. 576 (2013)
61. Ibid., Pp10-18.
62. id
63. Funk Brothers Seed Co. v. Kalo Inoculant Co., 333 U. S. 127
64. 447 U. S. 303(is central to the patent-eligibility inquiry whether such action was new "with markedly different characteristics from any found in nature," id., at 310)
65. Ibid Pp. 16–17.
66. Alice Corporation Pvt.Ltd. **v**. CLS Bank. International *et al*., 134 S. Ct. 2347 (2014)
67. Gottschalk v. Benson, 409 U. S. 63, 67, Parker v. Flook, 437 U. S. 584, 594–595; Bilski, 561 U. S, at 599.
68. Ibid., 81
69. Id Pp 7-117
70. Id at Pp. 10–16.
71. Alice case, supranote 72.
72. Alice case, supranote 72.
73. Formalism describes rule-based adjudication without consideration of any other factors. Expressed another way, it is the "adherence to a norm's prescription without regard to the background reasons the norm is meant to serve.
74. Jason B. Portis,Through the Alice Corp. Looking Glass: Using Pragmatic Arguments to Bring Predictability to Patent Law, 14 Nw. J. Tech. & Intell. Prop. 237 (2016). http://scholarlycommons.law.northwestern.edu/njtip/vol14/iss2/5
75. Cass R. Sunstein, Law and Administration After Chevron, 90 COLUM. L. REV. 2071, 2086-87(1990)
76. Daniel Farber. The Inevitability of Practical Reason: Statutes, Formalism, and the Rule of Law, 45 VAND. L. REV. 533, 541 (1992).
77. Ibid.,