
Paul E Schaafsma
“Hindsight Reasoning: What a Look at Past Innovation
Under the Supreme Court’s new \textit{Alice} Patent Eligibility Standards Reveals.”

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At the birth of the computer era, a trilogy of Supreme Court decisions dropped the ball on an intellectually honest accounting of patent eligible subject matter for innovations related to software, resulting in a future path paved with legal fictions. The recent Supreme Court decision in *CLS Bank Int’l v. Alice Corp. Pty. Ltd.*, 573 U.S. ___, 134 S.Ct. 2347 (2014) not only perpetuates this path, it digresses into pre-1952 judicial subterfuge.

As legal commentators and the courts continue legal gymnastics to reconcile these decisions and draw guidance for future analysis, a deeper look uncovers the relevant cases are simply irreconcilable. For patent practitioners this situation is particularly troublesome because – just as with the Court’s pre-1952 standards – the Court’s newly enumerated standard for patent eligibility is essentially meaningless.

### The Beginning: “Everything under the Sun Made By Man”

The controversy arises from Section 101 of the 1952 Patent Act, which defines the subject matter eligible for patent protection:

> 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 100(b) further informs 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.” 35 U.S.C. § 100(b) (*emphasis added*). In 1952, at the time Congress amended § 101 to include “process”, Webster broadly defined the term as: “[a] series of actions, motions, or operations definitely conducing to an end, whether voluntary or involuntary.” Webster’s New International Dictionary of the English Language (2d ed.1952).

Thus, the statutory construct explicitly provides that a new process on a known machine is patent eligible. Given the breadth of the statutory language and a plethora of evidence of the intent in drafting and passing Section 101, that subject matter eligibility has raised its head in this day and age is surprising.

Initially, inclusion of Section 100(b) ensured that doubts about the scope of a “process” under the pre-1952 version of the Patent Act would not carry into the new Act:

The question 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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S. Rep. No. 1979, 82d Cong., 2d Sess., 17 (1952) (emphasis added). This inclusiveness did not overturn or broaden prior law, but rather made clear that a new process or method on an old machine was patent eligible:

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.

Pasquale Joseph Federico, Commentary on the New Patent Act, 75 J. Pat. & Trademark Off. Soc’y 161, 177 (1993) (emphasis added). See also Hearing before Subcomm. No. 3 of the Comm. on the Judiciary, at 37 (1951) (Chief Examiner Federico testified 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 . . .”).

Indeed, in testimony before Congress Chief Examiner Frederico noted that under the proposed amendment patent eligible subject matter included “anything that is under the sun that is made by man.” 1951 Hearings at 37; see also S. Rep. No. 82-1979, at 5 (as long as the conditions of patentability are met, anything made by man is patentable). In Diamond v. Diehr, 450 U.S. 175, 182 (1981), the Supreme Court quoted and approved this now famous declaration.

Further, in Section 100(a) the new Act added the words “or discovered” to the concept of “invention”: “The term ‘invention’ means invention or discovery.” 35 U.S.C. § 100(a) (emphasis added). Thus, by definition the new Act made it irrelevant whether a new process or method on an old machine was “discovered” rather than “invented.”

Given the overwhelming evidence that the intent in drafting and passing Section 101 was to provide a broad and inclusive scope of subject matter eligibility, the degree of judicial activism in ignoring this Congressional intent in CLS Bank Int’l v. Alice Corp. Pty. Ltd. and its progenitors is hard to understand.

The long recognized exceptions to the broad statutory construct are that “laws of nature”, “natural phenomena”, and “abstract ideas” are not patentable.” Association for Molecular Pathology v. Myriad Genetics, Inc., 569 U.S. ____, 133 S.Ct. 2107, 2116 (2013). The motivation for these exceptions 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.” Mayo Collaborative Servs. v. Prometheus Labs., Inc., 566 U.S. ____, 132 S. Ct. 1289, 1293 (2012) (quoting Diehr, 450 U.S. at 185).


In *CLS Bank Int’l v. Alice Corp. Pty. Ltd.*, 573 U.S. ___, 134 S.Ct. 2347 (2014) the patents were held invalid because the claims were drawn to an “abstract idea”, and implementing that “abstract idea” on a computer was not enough to transform that idea to a patent eligible innovation. 573 U.S. at ___, 134 S.Ct. at 2352. This begs the question: what precisely is an “abstract idea”? The dictionary provides no help: “abstract” is tautologically defined as “thought of apart from concrete realities, specific objects, or actual instances: an abstract idea.”" Indeed, the term is so devoid of meaning that it harkens back to the judicial atmosphere that the 1952 Patent Act addressed.

The Pre-1952 Judicial Atmosphere

Before 1952, courts used various meaningless terms and tests such as “creative work”, “inventive faculty”, and “flash of creative genius”, which compared the existing innovation to some subjective notion of sufficient “inventiveness” as the test for patent eligibility. See Giles S. Rich, *Principles of Patentability*, 28 Geo. Wash. L. Rev. 393, 404 (1960). This created wildly disparate approaches to determine sufficiency for “invention.” Judge Rich observed that with “invention” as the test:

[J]udges 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.


Were there any lingering doubts as to the drafters’ intent in drafting Section 101 of the Patent Act, before turning to *CLS Bank Int’l v. Alice Corp. Pty. Ltd.* the case that reopened the controversy is explored.

*State Street Bank v. Signature Financial Group*

The reemergence of the patent eligibility controversy extends to March 1991, when Signature Financial Group filed a patent application directed to a computerized system for managing a mutual-fund investment. In this “Hub and Spoke” arrangement, mutual fund “Spokes” pooled their assets in an investment-portfolio “Hub.” The “Hub” holding the investment portfolio qualified as a partnership for federal income tax purposes; the mutual-fund “Spokes” invested as partners in the


5 The Supreme Court’s opinion in *Hotchkiss v. Greenwood*, 52 U.S. 248 (1850) recognized the necessity of a non-obviousness requirement in our patent system. Although clearly establishing a non-obviousness requirement, the Court did not set forth a clear standard to determine whether an innovation met the requirement. As a result, subsequent courts struggled to implement this requirement, relying on varying tests, or at worse, no test at all. See Giles S. Rich, *Laying the Ghost of the “Invention” Requirement*, 1 Am. Pat. L. Ass’n Q.J. 26 (1972).

partnership portfolio “Hub.” This “Hub and Spoke” arrangement allowed for the commingling of the assets of multiple mutual funds, creating both economies of scale and favorable “flow-through” tax treatment.

The Bedrock Principle

Remarkably, much of the debate on patent eligibility occurs without regard to the actual language of the claims. This is remarkable because “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.’” Phillips v. AWH Corp., 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc), quoting Innova/Pure Water, Inc. v. Safari Water Filtration Systems, Inc., 381 F.3d 1111,1115 (Fed. Cir. 2004); citing Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996) (“we look to the words of the claims themselves . . . to define the scope of the patented invention”) and Markman v. Westview Instruments, Inc., 52 F.3d 967, 980 (Fed. Cir. 1995) (en banc), aff’d, 517 U.S. 370, 116 S. Ct. 1384 (1996) (“The written description part of the specification itself does not delimit the right to exclude. That is the function and purpose of claims.”).

And the Federal Circuit is not alone in recognizing this: the Supreme Court made clear that the claims are “of primary importance, in the effort to ascertain precisely what it is that is patented.” Merrill v. Yeomans, 94 U.S. 568, 570 (1876). See also Cont’l Paper Bag Co. v. E. Paper Bag Co., 210 U.S. 405, 419, 28 S. Ct. 748, (1908) (“the claims measure the invention”); Aro Mfg. Co. v. Convertible Top Replacement Co., 365 U.S. 336, 339, 81 S. Ct. 599 (1961) (“the claims made in the patent are the sole measure of the grant”).

With this “bedrock principle” in mind, we turn to the Signature Financial claims.

Back to State Street Bank

Signature Financial’s U.S. Patent No. 5,193,056 issued on 9 March 1993 with six claims of which claim 1 was the sole independent claim:

A data processing system for managing a financial services configuration of a portfolio established as a partnership, each partner being one of a plurality of funds, comprising:

(a) computer processor means for processing data;
(b) storage means for storing data on a storage medium;
(c) first means for initializing the storage medium;
(d) second means for processing data regarding assets in the portfolio and each of the funds from a previous day and data regarding increases or decreases in each of the funds, assets and for allocating the percentage share that each fund holds in the portfolio;
(e) third means for processing data regarding daily incremental income, expenses, and net realized gain or loss for the portfolio and for allocating such data among each fund;
(f) fourth means for processing data regarding daily net unrealized gain or loss for the portfolio and for allocating such data among each fund; and
(g) fifth means for processing data regarding aggregate year-end income, expenses, and capital gain or loss for the portfolio and each of the funds.
In addition to utilizing the now disfavored “means plus function” format of 35 U.S.C. § 112, ¶ 6, Signature Financial’s claim followed the then familiar claim construct of claiming software with reference to the computer hardware on which the software ran (“processor”, “storage”, “initializing”, “processing”). Thus, the claims of Signature Financial’s patent explicitly tied the innovation to a computer – which is hard not to recognize as “an old machine”.

After U.S. Patent No. 5,193,056 issued, Signature Financial commenced license negotiations with State Street Bank. After negotiations broke down, State Street brought a declaratory judgment action to invalidate the patent. State Street argued that the financial service data processing system was not an appropriate subject matter category for patent protection, both because it was an algorithm and because it was a “business method”. State St. Bank & Trust Co. v. Signature Fin. Group, Inc., 927 F. Supp. 502 (D. Mass. 1996) (finding U.S. Patent No. 5,193,056 invalid for lack of statutory subject matter), rev’d, 149 F.3d 1368 (Fed. Cir. 1998), cert. denied, 525 U.S. 1093 (1999).

This second argument stemmed from the so-called “business method” exception to patentable subject matter. This exception had its roots in a 1908 decision, Hotel Sec. Checking Co. v. Lorraine Co., 160 F. 467 (2nd Cir. 1908). There, a method of bookkeeping designed to prevent fraud by waiters was ruled patent-ineligible. In so holding, the Second Circuit stated “[a] system of transacting business disconnected from the means for carrying out the system is not [patent eligible subject matter].” Hotel Sec. Checking Co. at 469. In the declaratory judgment action brought against Signature Financial, the District Court ruled in State Street’s favor, finding the patent invalid as a business method. State St. Bank, 927 F. Supp. at 517.

On appeal, the Federal Circuit overturned the District Court. State St. Bank & Trust Co. v. Signature Fin. Group, Inc., 149 F.3d 1368 (Fed. Cir. 1998), cert. denied, 525 U.S. 1093 (1999). Writing for the court, Judge Rich rejected State Street’s argument that the financial service data processing system was merely a “business method” that could not be patented, categorically stating: “We take this opportunity to lay this ill-conceived exception to rest.” Id. at 1375. The court also rejected State Street’s argument that the system was merely a mathematical algorithm.

To be patent eligible, the Court ruled, something must result in a “useful, concrete, and tangible result”, “even if the useful result is expressed in numbers, such as price, profit, percentage, cost, or loss.” Id. at 1373; 1358. See also AT&T Corp. v. Excel Comms., Inc., 172 F. 3d 1352, 1357 (Fed. Cir.), cert. denied, 528 U.S. 946 (1999) (message record for long-distance telephone calls that utilized the Boolean principle to determine the value of a primary interexchange carrier indicator a “useful, concrete, tangible result”). Thus, the Federal Circuit ruled that a financial service innovation that moved electronic funds to take advantage of tax strategies and economies of scale was patent

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7 Claim elements can be expressed “as a means or step for performing a specified function” to be “construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.” 35 U.S.C. § 112, ¶ 6

eligible as having a “useful, concrete, and tangible result”. The Supreme Court, at 525 U.S. 1093 (1999), denied certiorari.

A unanimous judicial opinion authored by one of the “principal authors” of the 1952 Patent Act – where the overwhelming evidence is that the other authors of the Act concurred with that author’s interpretation of Section 101 – did not put the issue “to rest”.

**Still More Congressional Intent**

After *State Street* attempted to “put to rest” the “business method” exception to patent eligibility, in 1999 Congress reacted by passing the First Inventor Defense Act. Pub. L. No. 106-113, 113 Stat. 1536 (1999). The Act established a limited defense to claims of patent infringement regarding certain “method[s] of doing or conducting business”. Under 35 U. S. C. §273(b)(1), if a patent-holder claims infringement based on “a method in [a] patent,” the alleged infringer can assert a defense of prior use; for purposes of that defense, “method” was defined as “a method of doing or conducting business.” 35 U. S. C. §273(a)(3). Thus, Congress could have simply passed a law that “a method of doing or conducting business” was not patent eligible subject matter under Section101 – but did not – further endorsing both Chief Examiner Federico’s *Comments* on the breadth of Section 101 and Judge Rich’s *State Street* construct.

**Bernard Bilski and Rand Warsaw**

No doubt the clarity of the *State Street* decision gave Bernard Bilski and Rand Warsaw the confidence to seek patent protection and invest in their method of hedging risk in weather-related energy prices.9 Bilski worked as the head of the natural gas division and Warsaw was the head of operations at Equitable Resources Inc., a Pittsburgh-area natural gas company.10 Bilski and Warsaw formed WeatherWise USA, Inc., a licensee of the application, which offers products and services to reduce financial risk for energy providers and residential and commercial consumers.11

At issue was the patent eligibility of Bilski and Warsaw’s U.S. Patent Application Serial No. 03/833,892. In the Patent Office – without passing judgment on the merits of the innovation under 35 U.S.C. §§ 102/103 – the Patent Examiner ruled that the claimed method was patent ineligible because it was not directed to the “technological arts”.12 *In re Bilski*, 545 F.3d 943, 950 (Fed. Cir 2008) (*en banc*), aff’d, 561 U. S. 593 (2010). The Board of Patent Appeals and Interferences, an appellate body within the Patent Office, backed off the Examiner’s “technological arts” position, but upheld the rejection because there was no “transformation of physical subject matter from one state to another.” *Id.* According to the Board’s logic, because the “non-physical financial risks and legal liabilities” of the hedge did not produce a “useful, concrete and tangible result”, it was not patent-

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9 As a result of the passage of the First Inventor Defense Act, 35 U. S. C. §273(b)(1), subject to a prior user defense.


11 *Id.*

eligible.\textsuperscript{13} \textit{Id.} Bilski and Warsaw appealed to the U.S. Circuit Court of Appeals for the Federal Circuit.\textsuperscript{14}

\textbf{The Federal Circuit}

The 32-page Federal Circuit \textit{en banc} decision was an exercise in judicial acrobatics. Judge Michel authored majority opinion joined by Judges Lourie, Schall, Bryson, Gajarsa, Linn, Dyk, Prost and Moore. Judge Dyk field a concurring opinion joined by Judge Linn, with Judges Newman, Mayer, and Rader filing dissents. Even the dissenting judges could not agree on the majority decision’s effect on \textit{State Street}: Judge Mayer criticized the decision for not overturning \textit{State Street}, \textit{In re Bilski}, 545 F.3d at 1011 (“The time is ripe to repudiate \textit{State Street} * * * I dissent from the majority’s failure to do so”), while Judge Newman pointed out the decision was inconsistent with \textit{State Street}. \textit{Id.} at 995 (“The court also avoids saying whether the \textit{State Street Bank} . . . inventions would pass the new test.”)

While upholding the rejection of the \textit{Bilski} application, the Federal Circuit dismissed both the Examiner’s “technological arts” and the Board’s “transformation of physical subject matter” tests. As a claimed method, \textit{Bilski} dealt only with the “process” category. Admitting that the definition of process is broad, the Federal Circuit recognized it is limited as excluding “laws of nature, natural phenomena, [or] abstract ideas.” \textit{In re Bilski}, 545 F.3d at 952.

Somehow, this lead the majority to leap to a “fundamental principle” analysis: “The question before us then is whether Applicants’ [hedging method] recites a fundamental principle and, if so, whether it would pre-empt substantially all uses of that fundamental principle if allowed.” \textit{Id.} at 953. For its answer to this question, the court relied on a 1972 Supreme Court decision, \textit{Gottschalk v. Benson}, 409 U.S. 63, 67 (1972). According to the majority, \textit{Benson} held that a 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.” \textit{Id., citing Benson} at 70. The court then concluded this “machine-or-transformation test” is “the sole test governing §101 analyses”. \textit{Id.} at 955. Because in the court’s opinion the \textit{Bilski} application did neither, it was not patent eligible.

\textbf{The Benson, Flook, and Diehr Trilogy}

In addition to \textit{Benson}, the court relied upon \textit{Parker v. Flook}, 437 U.S. 584 (1978) and \textit{Diamond v. Diehr}, 450 U.S. 175 (1981). The \textit{Benson, Flook, and Diehr} trilogy comprise the Supreme Court’s historical precedence on the issue of patent eligibility of computer innovations going back to the inception of the computer era.

In the 1972 \textit{Benson} decision by Justice Douglas, joined by Justices Brennan, Burger, Marshall, Rehnquist, and White, the Court ruled that computer software was not patent eligible by

\textsuperscript{13} The creation of wealth is not “useful, concrete and tangible result”?

equating software to a mathematical algorithm. Similarly, in the 1978 *Flook* decision by Justice Stevens, joined by Justices Blackmun, Brennan, Marshall, Powell, and White, the Court ruled that the addition of “conventional, post-solution applications” did not make computer software patent eligible.

However, in the 1981 *Diamond v. Diehr* decision by Chief Justice Rehnquist, joined by Justices Burger, Powell, Stewart, and White, the Court ruled that a computerized process for curing rubber was patent eligible. The interpretation of each of these cases has evolved in attempts to find reconciliation; however, a deeper look reveals these cases cannot be reconciled and simply conflict. Indeed, all four dissenting justices in the 1981 Diehr opinion (Brennan, Blackmun, Stevens, and Marshall) joined in the majority 1978 Flook decision.

Again, because of the “bedrock principle” that claims define the invention, a reasoned critique of these cases must necessarily involve an examination of the claims. In addition, since Diehr it has been a long-standing rule that claims must be considered as a whole:

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. 450 U.S. at 189. In making this pronouncement, this portion of Diehr explicitly overruled contrary authority in Flook, which considered the patent ineligible subject matter of the claims as part of the prior art. Still further, each claim defines a “separate” invention treated as a separate “patent” into itself. *Jones v. Hardy*, 727 F.2d 1524, 1528 (Fed. Cir. 1984).

In 1972’s *Gottschalk v. Benson*, the application was “converting signals from binary coded decimal form into [pure] binary [numerals]” on a “reentrant shift register”. 409 U.S. at 74. Specifically, claim 8 provided:

8. The method of converting signals from binary coded decimal form into binary, which comprises the steps of
   (1) *storing* the binary coded decimal signals in a *reentrant shift register*,
   (2) *shifting* the signals to the right by at least three places, until there is a binary ‘1’ in the second position of *said register*,
   (3) *masking out* said binary ‘1’ in said second position of *said register*,
   (4) *adding* a binary ‘1’ to the first position of *said register*,
   (5) *shifting* the signals to the left by two positions,
   (7) *shifting* the signals to the right by at least three positions in preparation for a succeeding binary ‘1’ in the second position of *said register*.

*Id.* (emphasis added). Thus, the actual claim contained as an important aspect a specific “machine” – the reentrant shift register – tying the claim into an “old machine”.15 In addition, as the claim specifically “convert[ed] signals from binary coded decimal form into [pure] binary [numerals]”, it is difficult to see how it did not “transform a particular article into a different state or thing” (obviousness under 35 U.S.C. § 102/103 was not at issue).16

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15 A “reentrant shift register” was a particular electronic memory circuit of the day.

16 Binary code represents text or computer processing instructions using the binary number system’s two binary digits (0, 1). As opposed to the American Standard Code for Information
Contrast claim 8 with claim 13:

13. A **data processing method** for converting binary coded decimal number representations into binary number representations, comprising the steps of

1. testing each binary digit position ‘1,’ beginning with the least significant binary digit position, of the most significant decimal digit representation for a binary ‘0’ or a binary ‘1’;
2. if a binary ‘0’ is detected, repeating step (1) for the next least significant binary digit position of said most significant decimal digit representation;
3. if a binary ‘1’ is detected, adding a binary ‘1’ at the (i+1)th and (i+3)th least significant binary digit positions of the next lesser significant decimal digit representation, and repeating step (1) for the next least significant binary digit position of said most significant decimal digit representation;
4. upon exhausting the binary digit positions of said most significant decimal digit representation, repeating steps (1) through (3) for the next lesser significant decimal digit representation as modified by the previous execution of steps (1) through (3); and
5. repeating steps (1) through (4) until the second least significant decimal digit representation has been so processed.

409 U.S. at 74 (*emphasis added*). Thus, claim 13 was an attempt to cover all methods of converting binary coded decimal number representations into binary number representations as a “data processing method”. However, patentability generally “depends on the claimed structure, not on the use or purpose of that structure”, *Catalina Marketing Int’l v. Coolsavings.com, Inc.*, 289 F.3d 801, 809 (Fed. Cir. 2002). Thus, there is a significant distinction between the tie in claim 8 to a computer – an “old machine” – and the “transformation” in claim 8 of “binary coded decimal form into [pure] binary [numerals]” from the math equation of claim 13. The Court ignored this vital distinction – also ignored by subsequent analysis of *Benson* – rendering the *Alice* Court’s characterization of *Benson* true with respect to claim 13, but divorced from the language of claim 8:

In *Benson*, for example, this Court rejected as ineligible patent claims involving an algorithm for converting binary-coded decimal numerals into pure binary form, holding that the claimed patent was “in practical effect . . . a patent on the algorithm itself.” 409 U. S., at 71–7.

*Alice Corp.*, 573 U.S. at ___, 134 S.Ct. at 2355.

In 1978’s *Parker v. Flook*, the application was a method of updating alarm limits on a process variable involved in the “catalytic chemical conversion of hydrocarbons”. 437 U.S. at 590. Specifically, claim 1 provided:

A method for updating the value of at least one **alarm limit** on at least one process variable involved in a process comprising the **catalytic chemical conversion of hydrocarbons** wherein said **alarm limit** has a current value of

\[ Bo + K \]

wherein Bo is the current *alarm* base and K is a predetermined alarm offset which comprises:

1. determining the present value of said process variable, said present value being defined as PVL;
2. determining a new *alarm* base $B_1$, using the following equation:
   \[ B_1 = Bo(1.0 - F) + PVL(F) \]
   where F is a predetermined number greater than zero and less than 1.0;
3. determining an updated *alarm* limit which is defined as $B_1 + K$; and thereafter
4. adjusting said *alarm limit* to said updated *alarm limit* value.

*Id. (emphasis added).* Thus, in *Flook* the claim related to a catalytic chemical conversion of hydrocarbons – a “known process” – tied into a structural event – an updated alarm limit (again, obviousness under 35 U.S.C. § 102/103 was not at issue). Again, the *Alice* Court’s characterization of *Flook* ignores the *claims at issue*:

And in *Parker v. Flook*, 437 U. S. 584, 594–595 (1978), we held that a mathematical formula for computing “alarm limits” in a catalytic conversion process was also a patent-ineligible abstract idea.

*Alice Corp.*, 573 U.S. at ___, 134 S.Ct. at 2355.

Compounding the illusion, three years later in *Diamond v. Diehr* a computerized process that calculated proper rubber curing time was patent eligible. Specifically, claim 1 provided:

1. A method of operating a rubber-molding press for precision molded compounds *with the aid of a digital computer*, comprising:
   - providing said computer with a data base for said press including at least, natural logarithm conversion data (ln),
   - the activation energy constant (C) unique to each batch of said compound being molded, and
   - a constant (x) dependent upon the geometry of the particular mold of the press,
   - initiating an interval timer *in said computer* upon the closure of the press for monitoring the elapsed time of said closure,
   - constantly determining the temperature (Z) of the mold at a location closely adjacent to the mold cavity in the press during molding,
   - constantly providing the computer with the temperature (Z), repetitively *calculating in the computer*, at frequent intervals during each cure, the Arrhenius equation for reaction time during the cure, which is
     \[ \ln v = CZ + x \]
     where $v$ is the total required cure time,
   - repetitively comparing in the computer at said frequent intervals during the cure each said calculation of the total required cure time calculated with the Arrhenius equation and said elapsed time, and
   - opening the press automatically when a said comparison indicates equivalence.

*450 U.S. at 179, fn. 5 (emphasis added).* Thus, in *Diehr* a process that calculated rubber-curing time was patent eligible, and opening a rubber mold was not a “conventional, post-solution application”,


despite the fact that the equation used to calculate the cure time was a well-known “fundamental principle”. That the Diehr "invention" supposedly "used a ‘thermocouple’ to record constant temperature measurements inside the rubber mold", Alice Corp., 573 U.S. at ___, 134 S.Ct. at 2358, is of no moment: the claim language in Diehr is “constantly determining the temperature (Z) of the mold at a location closely adjacent to the mold cavity . . ." (emphasis added).

So a claim related to updating an alarm limit in a catalytic chemical conversion of hydrocarbons is not a patent eligible, but a claim tied into popping open a rubber-molding press by using a well-known algorism “with the aid of a digital computer” is? Updating alarm limits in a chemical transformation is a conventional, post-solution application, but popping open a rubber-molding press is not? Converting signals from binary-coded decimal form into pure binary numerals on a “reentrant shift register” is a patent ineligible but calculating rubber curing time “with the aid of a digital computer” is patent eligible? These false distinctions go beyond simple legal fictions: the more honestly view recognizes a change in view by Justices Powell and White, who joined the majorities in both Flook and, three years later, Diehr.

And as though these false distinctions are not feeble enough, in the granddaddy “business method exception” case itself, Hotel Sec. Checking Co. v. Lorraine Co., 160 F. 467 (2nd Cir. 1908), the claim (written in a now archaic claim language) read:

The herein-described improved means for securing hotel or restaurant proprietors or others from losses by the peculations of waiters, cashiers or other employees [sic], which consists of a sheet provided with separate spaces, having suitable headings, substantially as described, said headings being designatory of the several waiters to whom the several spaces on the sheet are individually appropriated, in conjunction with separate slips, each so marked as to indicate the waiter using it, whereby the selling price of all the articles sold may be entered in duplicate, once upon the slip of the waiter making the sale, and once upon his allotted space upon the main sheet, substantially as and for the purpose specified.

160 F. at 468 (emphasis added). Even in Hotel Sec. Checking Co., the innovation was hardly an “abstract idea” or “fundamental principle” divorced from the concrete world of sheets, separate spaces, headings, and slips!

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When All Else Fails, Consult the Claims!\(^{18}\)

Back to *Bilski* – and its claims, the application contained 13 claims, of which claims 1 and 4 were independent. Specifically, claim 1 provided:

1. A method for managing the consumption risk costs of a commodity sold by a commodity provider at a fixed price comprising the steps of:
   
   (a) initiating a series of transactions between said commodity provider and consumers of said commodity wherein said consumers purchase said commodity at a fixed rate based upon historical averages, said fixed rate corresponding to a risk position of said consumer;
   
   (b) identifying market participants for said commodity having a counter-risk position to said consumers; and
   
   (c) initiating a series of transactions between said commodity provider and said market participants at a second fixed rate such that said series of market participant transactions balances the risk position of said series of consumer transactions.

Fed. Cir. J.A. A-198. Thus, while admittedly utilizing more words than “[a] method for managing the consumption risk costs of a commodity sold by a commodity provider at a fixed price comprising the step of hedging the risk position of said series of consumer transactions”, the claim essentially comes to the same place. For example, compare the above with a deconstructed definition of “hedging”, utilizing the nomenclature of claim 1:

A commodity purchasing strategy in which a consumer having a series of consumer transactions at a fixed rate makes market participant transactions at a second fixed rate to protect against adverse price movement in the consumer transactions at a fixed rate.\(^{19}\)

Significantly, in addition to claim 1 the application included a second independent claim, which added considerable specificity to the description in claim 1. Specifically, claim 4 provided:

4. A method for managing *weather-related energy price risk costs sold by an energy provider* at a fixed price comprising the steps of:

   (a) initiating a series of transactions between said energy provider and energy consumers wherein said energy consumers purchase energy at a fixed rate based upon historical averages, said fixed rate corresponding to a risk position of said consumers, *wherein the fixed price for the consumer transaction is determined by the relationship*:

\[
\text{Fixed Bill Price} = F_i + [(C_i + T_i + LD)(\alpha + \beta E(W_i))]
\]

*Wherein,*

\[
F_i = \text{fixed costs in period } i;
\]


\(^{19}\) Taken from definitions of “hedge”, “investment”, and “holding” at http://www.investorguide.com/definition/hedge.html (accessed 3 October 2014).
$C_i = \text{variable costs in period } i;$

$T_i = \text{variable long distance transportation costs in period } i;$

$LD_i = \text{variable local delivery cost in period } i;$

$E(W_i) = \text{estimated location-specific weather indicator in period } i;$

and

$\alpha$ and $\beta$ are constants;

(b) identifying other energy market participants having a counter-risk position to said consumers; and

c) initiating a series of transactions between said energy provider and said other energy market participants at a second fixed rate such that said series of transactions balances the risk position of said series of consumer transactions.

Fed. Cir. J.A. A-198 to A-199 (emphasis added). Thus, as opposed to “managing the consumption risk costs of a commodity sold by a commodity provider”, claim 4 “managed weather-related energy price risk costs sold by an energy provider”, and added:

wherein the fixed price for the consumer transaction is determined by the relationship:

$$\text{Fixed Bill Price} = F_i + [(C_i + T_i + LD_i) \times (\alpha + \beta E(W_i))]$$

While perhaps fairly said of claim 1, it is difficult to see how claim 4 represents the “abstract idea” or “fundamental principle” of hedging: claim 4 describes the more specific hedging of weather-related energy price risk. To put it in terms of a taxonomic hierarchy (finanomic hierarchy?), if hedging is the order (the domain being economics; the kingdom financing; the phylum any of public finance, corporate finance or personal finance (all of which can utilize hedging); and the class being risk management), hedging of weather-related energy price risk is at most a family.

But claim 4 further specifies how the fixed price for the consumer transaction is determined: “Fixed Bill Price = Fi + [(Ci + Ti + LDi) x (\alpha + \beta E(W_i))]”. As either a genus or a species, it is difficult to see how the specificity detailed in claim 4 qualifies as an “abstract idea” or “fundamental principle”: to be “abstract” should not an “idea” at least be a family or an order? How can an innovation as detailed as a genus or species be a “fundamental principle”?

Nevertheless, in Bilski neither claim 1 nor 4 (nor any of the claims) are tied into a machine. The goal of this “test case” appears to have been to advocate for the inclusion of non-computer necessitated financial innovation as patent eligible subject matter: thus, throughout the adjudication all of the claim stood or fell together. Since no analysis under 35 U.S.C. §§ 102/103 was performed, there is no record of whether utilizing Fixed Bill Price = Fi + [(Ci + Ti + LDi) x (\alpha + \beta E(W_i))] to determine the fixed price for the consumer transaction is novel or non-obvious. And since none of the claims tied into a machine, Bilski v. Kappos, 561 U. S. 593 (2010) stands for a negative to the simple Section 101 proposition: financial innovations not tied to an old machine are not patent eligible subject matter.

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The Baby with the Bathwater

Which brings *Alice Corp. v. CLS Bank International*, 573 U.S. ___, 134 S.Ct. 2347 (2014). In *Alice*, a group of related patents, including U.S. Patent No. 5,970,479, was in issue. Before the Supreme Court, the parties stipulated that claim 33 of U.S. Patent No. 5,970,479 was representative:

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.

573 U.S. at ___, fn 2, 134 S.Ct. at 2352, fn 2 (2014). Again, admittedly utilizing more words than “[a] method of exchanging obligations as between parties comprising utilizing an intermediated settlement”, the claim essentially comes to the same place. Again, compare the above with a deconstructed definition of “clearinghouse”, utilizing the nomenclature of claim 33:

A supervisory institution employed by an exchange institution to act as an institution other than two stakeholder parties involved in a permitted transaction, the supervisory institution making a note of and reporting exchanges of exchange obligations and attending to the end-of-day finalization by the exchange of money of accounts for managing trading activity.

In addition and once again, despite *Alice’s* characterization of claim 33 as directed to “a computerized scheme for mitigating ‘settlement risk’”, 573 U.S. at ___, 134 S.Ct. at 2352, nowhere in the representative claim does any reference to a computer or any components exist.

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22 Indeed, it is difficult to reconcile the attempt to gloss over this inconvenient truth, “[a]lthough claim 33 does not expressly recite any computer-based steps, the parties have agreed that the recited shadow records and transactions require computer implementation”, *CLS Bank Int’l v.*
The Prosecution of U.S. Patent No. 5,970,479

Additionally, unlike Bilski Alice’s claim was contained in an issued patent and thus supposedly underwent 35 U.S.C. § 102/103 scrutiny; however, even a cursory review of this scrutiny uncovers Alice’s patent to be so deeply flawed as to be unworthy for use as a test case under the age-old adage: bad facts make for bad law.23


The goal-directed financial asset management system of Chapman received investor deposits at selected levels of correspondence to established capital markets. A market multiple was established as a measure of correspondence between the account and each market or asset of interest. The operative system periodically entered new account data and adjusted the individual accounts in response. The system determined a net position change, which translated into aggregate purchase/sale orders of various market index futures contracts or other capital instruments. The system automatically adjusted the risk exposure in any asset category to prevent the risk exposure from reaching an excessive level. As a result, an account could not lose more than the amount deposited.

In response, the Alice applicant traversed the rejection, correctly pointed out that Chapman “does not disclose the existence of shadow credit and shadow debit records, or a system of using such records as a method of exchanging obligations”. Indeed, Chapman does not even intermediated settlement.

In response, Claim 32 again was rejected as obvious under 35 U.S.C. § 103, this time in light of U.S. Patent No. 4,766,539 to Fox, titled “Method of Determining the Premium for and Writing a Policy Insuring against Specified Weather Conditions” (“Fox”), in view of Chapman.24

The method of determining the premium for and writing a policy insuring against specified weather conditions of Fox accumulated and stored historical data of weather conditions in a computer memory. When writing a policy, the computer received as input information identifying the amount (“A”) of the policy, the weather condition against which the policy was to insure, the location of interest, and the time of interest. The computer then calculated the policy premium (“P”) in accordance with:

\[ P = (A \times N \div I) + E, \]

where

\[ I \]

was previous time intervals,

\[ P = (A \times N \div I) \times C, \]

23 “Great cases like hard cases make bad law. For great cases are called great, not by reason of their importance . . . but because of some accident of immediate overwhelming interest which appeals to the feelings and distorts the judgment.” Northern Securities Co. v. United States, 193 U.S. 197 (1904) (Oliver Wendell Holmes, Jr., Dissenting).

24 Much ado might well have been avoided had the Bilski examiner had access to the Fox reference!
N was the number of occurrences of the specified weather condition during I previous
time intervals,
E was a factor compensating for overhead expense and profit, and
C was a constant.

When the policy insured over an extended time or at multiple locations, an adjustment to the
premium covered the probability of occurrence of the specified weather condition in any of the
locations.25

The Alice applicant again traversed the rejection, correctly pointed out that “neither Fox nor
Chapman teach the generation of a customized multiparty risk management contract”. Indeed, like
Chapman, Fox does not mention intermediated settlement.

In response, the Examiner indicated that the claims were allowable and, after some clean up
in the Specification, on 9 October 1999 U.S. Patent No. 5,970,479 issued. Thus, with little effort it is
seen that the subject patent of Alice Corp. was deeply flawed from a 35 U.S.C. §§ 102/103
perspective. Indeed, this flaw underscored by the incomprehensible “reasons for allowance” in the
Notice of Allowance:

The prior art of record does not teach of calculating [sic] a counter-consideration
derived from said likelihoods and said entitlements for matching an offered contract
with a counter-party stakeholder.

As deeply flawed from a Section 102/103 perspective, in any rational system a threat to
enforce U.S. Patent No. 5,970,479 should have been precluded by instituting a Reexamination
proceeding in the Patent Office citing (presumably if the Court’s representations are accurate) the
same financial journal articles cited in Alice as “proof” that “intermediated settlement” is an
“abstract idea”:

[S]ee, e.g., [Henry Crosby] Emery, Speculation on the Stock and Produce Exchanges
(1896) (discussing the use of a “clearing-house” as an intermediary to reduce
settlement risk). * * * [Yesha] Yadav, The Problematic Case of Clearinghouses in

573 U.S. at ___, 134 S.Ct. at 2356.

When the Court got it Right: the Birth of the Communications Era

If the Court has dug itself into a legal fairy tale hole as a result of getting it wrong at the
beginning of the computer era, it is perhaps ironic that in so doing the Justices ignored where they
got it right: in the beginning of the communications era. In O’Reilly v. Morse, 56 U.S. (15 How.) 62
(1854) (the Telegraph Case), the Court decided the fate of Samuel Morse’s telegraph patent. Morse’s
claim 8 (also written in archaic claim language), held invalid, stated:

25 Undermining any argument that financial patents are a recent phenomenon, the broadest
claim of Fox, which was filed in 1987 and issued in 1988, broadened out this description to omit any
reference to the algorithm that determined the policy premium!
I do not propose to limit myself to the specific machinery or parts of machinery described in the foregoing specifications and claims, the essence of my invention being the use of the motive power of the electric or galvanic current, which I call electro-magnetism, however developed, for making or printing intelligible characters, letters, or signs, at any distances, being a new application of that power, of which I claim to be the first inventor or discovered.

Morse, 56 U.S. (15 How.) at 86. Thus, the Court rejected Morse’s attempt to patent the use of electricity in any way to communicate “intelligible characters” at a distance; however, lost sight of in much contemporary discussion of the Telegraph Case is that not all was lost to Morse. Upheld Claim 1 stated:

First. Having thus fully described my invention, I wish it to be understood that I do not claim the use of the galvanic current, or current of electricity, for the purpose of telegraphic communications, generally, but what I specially claim as my invention and improvement is making use of the motive power of magnetism, when developed by the action of such current or currents, substantially as set forth in the foregoing description of the first principal part of my invention, 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.

56 U.S. (15 How.) at 85. Thus, the Telegraph Case properly drew a line between an unduly broad attempt to patent all means of using electro-magnetism to communicate at a distance, and the allowed claim to the motive power of magnetism, currents, motion to machinery, and signals upon paper or sounds for telegraphic communications.

Likewise, in Dolbear v. Am. Bell Telegraph Co., 126 U.S. 1 (1888) (the Telephone Case), the claim read:

The method of and apparatus for transmitting vocal or other sounds telegraphically, as herein described, by causing electrical undulations, similar in form to the vibrations of the air accompanying the said vocal or other sounds, substantially as set forth.

126 U.S. at 531 While a much closer call, the Court allowed Alexander Graham Bell to patent a system of causing electrical undulations similar in form to the vibrations of the air accompanying the vocal or other sounds telegraphically. This the Court allowed even though:

It may be that electricity cannot be used at all for the transmission of speech except in the way Bell has discovered it. And that, therefore, practically his patent gives him this exclusive use for that purpose. But that does not make his claim one for the use of electricity distinct from the particular process with which it is connected in his patent. It will, if true, show more clearly the great importance of his discovery, but it will not invalidate his patent.

126 U.S. at 535. But had Bell, like Morse’s claim 8, attempted to claim all means for transmitting vocal or other sounds similar in form to the vibrations of the air accompanying the vocal or other sounds, this claim too would have been properly rejected as unduly broad. See also, Tilghman v. Proctor, 102 U.S. 707, 724 & 726-28 (1881) (discussing the Telegraph Case):
The eighth claim of Morse’s patent was held to be invalid, because it was regarded by the court as being not for a process, but for a mere principle. It amounted to this, namely, a claim of the exclusive right to the use of electro-magnetism as a motive power for making intelligible marks at a distance; that is, a claim to the exclusive use of one of the powers of nature for a particular purpose.

Unfortunately, modern confusion about the Telegraph and Telephone Cases is rampant because, although decided under language implying patent eligibility, the better view is that all these cases would be more properly decided applying the standard of undue breadth under 35 U.S.C. § 112, ¶ 2, not Section 101 patent eligibility. See 3 Chisum, Chisum on Patents §7.03[1] (Matthew Bender).26 Regardless under what statutory construct it is classified, like Morse’s claim 8 and Bilski’s claim 1 Alice’s claim 33 is an unduly broad attempt to patent all means of exchanging obligations between parties utilizing an intermediated settlement. And Bilski’s claim 4, which adds sufficient specificity that it can hardly be construed as an “abstract idea” or “fundamental principle”, should likewise be patent ineligible as try to patent an (albeit narrow) mathematical equation. However correctly the ultimate finding may be in these cases, the perpetuation of Benson, Flook, and Diehr trilogy is dangerous as the current application of Alice is so restrictive that under these patent eligible standards many of the most significant innovations of America’s first century would be patent ineligible!

A Look at Past Innovation Under the Supreme Court’s new Alice Patent Eligible Standards.

Seemingly in contrast to the long-standing rule that the “claims must be considered as a whole”, Diamond v. Diehr, 450 U.S. 175, 189, under the Alice patent eligibility standards a court must first “identif[y] the abstract idea represented in the claim,” and then determine “whether the balance of the claim adds ‘significantly more.’” Alice Corp., 573 U.S. at ___, 134 S.Ct. at 2353; citing Mayo Collaborative Services v. Prometheus Laboratories, Inc., 566 U.S. ___, 132 S.Ct. 1289 (2012). See also “[The Patent Office’s] Preliminary Examination Instructions in view of the Supreme Court Decision in Alice Corporation Pty. Ltd. v. CLS Bank International, et al.” (Step 1: “Patent Office Determine whether the claim is directed to an abstract idea.” Step 2: “If an abstract idea is present in the claim, determine whether any element, or combination of elements, in the claim is sufficient to ensure that the claim amounts to significantly more than the abstract idea itself”).27 With this construct in mind, we turn back to re-examine some of America’s most significant economic innovations over its first century.

The Telegraph and Telephone Cases.

Again, in O’Reilly v. Morse, 56 U.S. (15 How.) 62 (1854), the Court held Morse’s claim 8 too broad, but upheld claim 1:

First. Having thus fully described my invention, I wish it to be understood that I do not claim the use of the galvanic current, or current of electricity, for the purpose

26 A claim can also suffer from undue breadth if it is so broad as to cover inoperative as well as operative subject matter. Graver Tank & Mfg. Co. v. Linde Air Products, 336 U.S. 271, reh’g granted, 337 U.S. 910 (1949), modified, 339 U.S. 605, reh’g denied, 340 U.S. 845 (1950).
of telegraphic communications, generally, but what I specially claim as my invention and improvement is making use of the motive power of magnetism, when developed by the action of such current or currents, substantially as set forth in the foregoing description of the first principal part of my invention, 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.

56 U.S. (15 How.) at 85.

As with claim 8 the abstract idea was the use of electro-magnetism as a motive power for making intelligible marks at a distance. And the current, magnetism, machinery, imprint signals, paper, and sounds of claim 1 certainly were “purely conventional” electro-mechanical components of the day. Thus, under the Alice construct, Morse would not have been entitled to a patent, would not have been incented into developing the telegraph, and the course of history would have changed.

Likewise, in Dolbear v. Am. Bell Telegraph Co., 126 U.S. 1 (1888), the claim read:

The method of and apparatus for transmitting vocal or other sounds telegraphically, as herein described, by causing electrical undulations, similar in form to the vibrations of the air accompanying the said vocal or other sounds, substantially as set forth.

126 U.S. at 531

Here, the abstract idea was again the use of electro-magnetism as a motive power, this time for transmitting vocal or other sounds. And the telegraphically, electrical undulations, and vibrations of the air were certainly “purely conventional” electro-mechanical components of the day.28 Thus, under the Alice construct, Bell would not have been entitled to a patent, would not have been incented into developing the telephone, and the course of history would have changed.

Eli Whitney’s “Cotton [En]gin[e]”, U.S. Patent No. 72X.29

Eli Whitney’s “Cotton [En]gin[e]” was one of the key innovations of the Industrial Revolution.30 Upon graduating Yale as an engineer in 1792, Eli Whitney took a job as a teacher in South Carolina. That job fell through and Katherine Greene, the war widow of General Nathaniel Greene, invited Whitney to work at her Georgia cotton plantation. Whitney noticed that coastal-grown long-staple cotton readily separated from its seed; however, the inland-grown variety of short-

28 “Once again, the formula itself was an abstract idea, see supra, at 8, and the computer implementation was purely conventional.” Alice Corp., 573 U.S. at ____, 134 S.Ct. at 2358 (characterizing Parker v. Flook) (emphasis added).

29 The X Patents were issued by the United States Patent and Trademark Office from July 1790 (when the first U.S. patent was issued) to July 1836. Burned in a fire in December 1836 while in temporary storage, the government maintained no copies at the time, leaving only the inventors’ copies to reconstruct the collection. Wikipedia. “X-Patents (available at http://en.wikipedia.org/wiki/X-Patent (accessed 20 October 2014)).

staple cotton had sticky green seeds that were difficult to separate from the cotton bolls. A person could only clean about a pound of short-staple cotton a day.31

After observing the manual process used for separating the sticky seeds from the cotton bolls, Whitney built his first prototype. The prototype pushed bulk cotton against a wire mesh screen, which held back the seeds while wooden teeth extending from a rotating drum pulled the cotton fibers through the mesh screen. His next version incorporated thin wire hooks to replace the wooden teeth, with the collected fibers cleared away by a moving brush.32 Whitney’s machine was the first to clean short-staple cotton. This made cotton a profitable crop for the first time.33

In 1794, Whitney filed a patent application for the cotton gin. He also gave a demonstration of his model, producing a day’s output of several workers in one hour. The witnesses to this demonstration immediately planted whole fields in short-staple cotton. Before Whitney had a chance to prepare a patent model of his cotton gin (then required at the Patent Office), the short-staple cotton was ready for harvest. Whitney and his partner, Phineas Miller, decided to build cotton gins and lease, not sell, them to the planters. The planters rebelled against this arrangement, as a virtual flood of short-staple cotton was erupting from the Southern soil, and simply pirated Whitney’s innovation. The partners resorted to the courts to enforce their patent rights. In 1801, they opted for grants from several Southern states, and in return, the cotton gin became public property. Within 10 years, the value of the U.S. cotton crop rose from $150,000 to more than $8 million.34

While as with the standard drafting practice of the time Whitney’s X Patent did not include claims, the abstract idea was simply removing seeds from cotton balls. Because for centuries people removed seeds from cotton balls, this was a “fundamental principle”; indeed, similar to computer technology it simply sped up the time it took man to accomplish the same task: Whitney’s Cotton [En]gin[e] could do the work 10 times faster than by hand.35 And the wire mesh screen, rotating drum, thin wire hooks, and brush certainly were “purely conventional” mechanical components of the day. Thus, under the Alice construct, Whitney would not have been entitled to a patent, would


32 To this day debate remains as to whether Whitney, his employer or an African slave was the “inventor” of the key element of the successful cotton gin – the wire hooks. Some maintain the plantation foreman suggested to Greene that wires replace the wooden teeth, and that Greene then told Whitney. Portia James, The Real McCoy: African-American Invention and Innovation, 1619-1930 (Published for the Anacostia Museum of the Smithsonian Institution by the Smithsonian Institution Press, 1989); Angela Lakwete. Inventing the Cotton Gin: Machine and Myth in Antebellum America. Baltimore and London: Johns Hopkins University Press (2003).


35 Id.
not have been incented into developing his Cotton [En]gin[e], and the course of history would have changed.

**Margaret Knight’s “Paper Feeding Machine”, U.S. Patent No. 116,842.**

Known as “the female Edison”, Margaret Knight received some 26 patents for diverse technologies ranging from a window sash to internal combustion engines. Her most significant patent was for machinery that would automatically fold and glue paper bags to create square bottoms, an innovation which dramatically changed shopping habits. Eliminating the time needed to wrap a parcel with paper and twine, Knight’s paper bag machine replaced the work of 30 people.

Knight also needed a working model to apply for a patent. A worker in the machine shop building Knight’s model stole her design and patented the device. Knight filed a successful patent interference lawsuit. With a Massachusetts businessman, in 1870 Knight established the Eastern Paper Bag Co. in Hartford, Connecticut.

U.S. Patent No. 116,842 issued on 11 July 1871. Claim 6 provided:

The combination, with the upper plate V, operating as described, of the oscillating fingers X, united by the elastic band t, and operated by the movements of plate V, to cockle the paper, in the manner and for the purpose specified.

The abstract idea is simply folding and gluing paper bags to create square bottoms. As folding and gluing paper bags to create square bottoms was easily accomplished by hand, this was a “fundamental principle”. And the upper plate, oscillating fingers, and elastic bands certainly were “purely conventional” mechanical components of the day. Thus, under the Alice construct, Knight would not have been entitled to a patent, would not have been incented into developing her square bottom paper bags, and the course of shopping would have changed.

**Thomas Edison’s “Phonograph or Speaking Machine”, U.S. Patent No. 200,521.**

The path from today’s multi-gig thumb drive to the first storage medium occurred over 130 years: Thomas Edison introduced his “Phonograph or Speaking Machine” in 1877 for the mechanical recording and reproduction of sound. The phonograph was one of the few innovations out of Edison’s industrial research facility in Menlo Park, New Jersey, that did not describe an improvement of a prior device. Several inventors devised machines to record sound as visual representations prior to Thomas Edison’s phonograph, but Edison was the first to both record and reproduce sound.

On February 19, 1878, Edison’s U.S. Patent 200,521 issued, claim 1 of which reads:

37 Anne. L. MacDonald Feminine Ingenuity: How Women Inventors Changed America (Ballantine, 1994).
38 Id.
39 Built with the funds from the sale of Edison’s quadruplex telegraph, Menlo Park became one of the first institutions to produce constant technological innovation and improvement. See http://en.wikipedia.org/wiki/Thomas_Edison (accessed 20 October 2014).
The method herein specified of reproducing the human voice or other sounds by causing the sound vibrations to be recorded, substantially as specified, and obtaining motion from that record, substantially as set forth, for the reproduction of the sound vibrations.

Here, the abstract idea was recording vibrations and obtaining motion to reproduce vocal or other sounds. And comparing Edison’s claim 1 with Morse’s claim 8, even under the standards of *O’Reilly v. Morse*, 56 U.S. (15 How.) 62 (1854) claim 1 would appear invalid:

I do not propose to limit myself to the specific machinery or parts of machinery described in the foregoing specifications and claims, the essence of my invention being the use of the motive power of the electric or galvanic current, which I call electro-magnetism, however developed, for making or printing intelligible characters, letters, or signs, at any distances, being a new application of that power, of which I claim to be the first inventor or discovered.

Thus, Edison would not have been entitled to a patent, would not have been incented into developing his phonograph, and the course of recorded data would have changed.

**Jan Ernst Matzeliger’s “Lasting Machine”, U.S. Patent No. 274,207.**

Jan Ernst Matzeliger was an important African-American inventor in the shoe industry. Matzeliger was born in Paramaribo (then Dutch Guyana, now Suriname) to a Dutch engineer and his Surinamese slave. After working as a sailor, he settled in the United States at 19. He went to work in the Harney Brothers Shoes factory in Lynn Massachusetts.  

In the early days of shoe making, shoes were hand made. A foot was duplicated by creating a wooden mold or “last”. The main difficulty in making a shoe was the assembly of the soles to the upper shoe. A skilled “hand laster” could produce 50 pairs in a ten-hour day. Matzeliger’s machine could produce between 150 to 700 pairs of shoes a day, slashing shoe prices across the nation. His innovation was of major importance to the shoe manufacturing economy in New England. In 1992, the U.S. issued a postage stamp in honor of Matzeliger.

On 20 March 1883, U.S. Patent No. 274,207 issued. Claim 5 provided:

In a shoe-lasting machine, the combination, with a movable rack, a feeding spur and a holding spur for automatically moving the last step by step and for holding it in position, of the pinchers and three separate trains of mechanism, substantially as described, for raising and lowering said pinchers, for moving them laterally, and for opening the jaws, whereby the upper is stretched upwardly and carried over the last, all substantially as described.

The abstract idea is simply the assembly of the soles to the upper shoe. As the assembly of soles to an upper shoe occurred for centuries this was a “fundamental principle”; indeed, similar to Whitney’s Cotton [En]gin[e] Matzeliger’s machine improved production from 50 to between 150 to 700 pairs of shoes a day. And the movable rack, feeding spur, holding spur, pinchers, trains of mechanism, and jaws were certainly “purely conventional” mechanical components of the day. Thus, under the *Alice* construct, Matzeliger would not have been entitled to a patent, would not have


42 Id.
been incented into developing the mass produced shoe, and the history of the New England economy as well as the early widespread use of shoes would have been changed.

**Herman Hollerith’s “Art of Compiling Statistics”, U.S. Patent 395,782.**

Ninety years after Whitney’s “Cotton [En]gin[e]”, Herman Hollerith’s “Electric Tabulating System” kicked off the computer revolution. At the urging of John Shaw Billings, the first director of the New York Public Library, Hollerith developed a mechanism using electrical connections to trigger a counter, recording information. The locations of holes in a card encoded data. Hollerith determined that by punching data in specified locations on a card, in the now-familiar rows and columns, the mechanism could mechanically count and sort data. An operator would handle about 50-80 cards per minute. In 1911, four corporations, including Hollerith’s firm, merged to form the Computing Tabulating Recording Company. Under the presidency of Thomas J. Watson, it was renamed International Business Machines Corporation (IBM) in 1924.43

On January 8, 1889, Hollerith’s U.S. Patent 395,782 issued, claim 2 of which reads:

The herein-described method of compiling statistics, which consists in recording separate statistical items pertaining to the individual by holes or combinations of holes punched in sheets of electrically non-conducting material, and bearing a specific relation to each other and to a standard, and then counting or tallying such statistical items separately or in combination by means of mechanical counters operated by electro-magnets the circuits through which are controlled by the perforated sheets, substantially as and for the purpose set forth.

The abstract idea represented in the claim is compiling statistics. Again, because for centuries compiled statistics occurred this could be considered a “fundamental principle”; indeed, Hollerith’s “Art of Compiling Statistics” is a precursor to computers that, again, simply sped up mathematical computations. And the sheets of electrically non-conducting material, holes, mechanical counters, electro-magnets, and circuits were certainly “purely conventional” electro-mechanical components of the day. Indeed, Hollerith’s “recording . . . by holes or combinations of holes punched in sheets of electrically non-conducting material” appears uncannily similar to the “sheet provided with separate spaces, having suitable headings . . . , in conjunction with separate slips,” of Hotel Sec. Checking Co. 160 F. at 468 (emphasis added).

**Hollerith’s “Electric Tabulating System”, U.S. Patent No. 430,804.**

Hollerith’s later 1890 U.S. Patent No. 430,804 directed to an adding machine contained 20 claims of which claim 1 is representative:

The hereinbefore-described improved system for automatically effecting mathematical computations, comprising the following instrumentalities:

a switch mechanism in two sections, each of the latter comprising a series of insulated conductors, with means for connecting any one or more of the conductors of one section with any one or more of the conductors of the opposite section[;]

a series of circuit-wires, each connected to one of the conductors forming one section of the switch and to a generator, and embracing electrical devices controlling a registering mechanism;

a second series of circuit-wires, each connected to one of the series of conductors forming the other section of the switch, and

an integrating mechanism located between the generator and the said second series of circuit-wires and operating to vary the resistance of the circuit leading from the generator to the switch mechanism in a manner to produce in each of the circuit-wires of the second series a predetermined number of electrical impulses;

whereby when any wire of the second series is connected through the switch with one or more of the wires of the first series the registering mechanisms connected to said wires will be actuated or advanced as many points as there are electrical impulses created by the integrator in the particular wire so connected.

The abstract idea represented in the claim is effecting mathematical computations. Again, for centuries mathematical computations occurred this was a “fundamental principle”; indeed, Hollerith’s “Electric Tabulating System” is a precursor to computers that, again, simply sped up mathematical computations. And the switch mechanism, insulated conductors, means for connecting, circuit-wires, generator, registering mechanism, and integrating mechanism operating to vary resistance were certainly “purely conventional” electro-mechanical components of the day. Indeed, Hollerith’s “registering mechanisms connected to said wires [that are] advanced as many points as there are electrical impulses created by the integrator” appears uncannily similar to the “shifting the signals to the right by at least three places” of Gottschalk v. Benson. 409 U.S. at 74 (emphasis added).

Again, under the Alice construct, Hollerith would not have been entitled to patents, would not have been incented into developing the computer, and the course of history would have changed.


Under the new Alice standards of patent eligibility, even the definitive expression of innovation – “that is the greatest invention since sliced bread” – is at risk! Otto Frederick Rohwedder’s first career was as a jeweler, where his work with watches and jewelry lead to his mechanical education. Convinced he could develop a bread-slicing machine, he sold his jewelry stores to fund the development effort and manufacture the machines. In 1927, Rohwedder successfully designed a machine that automatically sliced bread. The Chillicothe Baking Company in Chillicothe, Missouri sold the first loaf of automatically sliced bread on 7 July 1928.

On 12 June 1932, U.S. Patent No. 1,867,377 issued. Claim 1 provided:

In a bread slicing machine having a frame and a series of continuous cutting bands mounted thereon, an adjusting mechanism comprising a plurality of arms pivoted at one end to the frame, a series of guides mounted upon each arm adjacent to and bearing upon the cutting bands, and means for varying the inclination of the arms to the vertical axis of the frame.

The abstract idea represented in the claim is as old as the loaf of bread: slicing that loaf. Again, as loafs have been sliced for centuries this could be considered a “fundamental principle;
indeed, similar to nearly all of the examples Rohwedder’s innovation simply sped up the time it took man to accomplish the same task. And the frame, continuous cutting bands, arms, guides, and means for varying the inclination of the arms to the vertical axis of the frame were certainly “purely conventional” mechanical components of the day.\textsuperscript{44} Thus, under the Alice construct, Rohwedder would not have been entitled to a patent, would not have been incented into developing sliced bread, and our sandwiches and toast would have unequally sliced bread.

Have we really replaced the empty “flash of creative genius” with “abstract idea”? Under public policy, is this really the economic incentive for innovation to have in place? If financial innovations are not to be patent eligible subject matter, cannot Congress simply pass a law? Are judges the proper arbiters of this public policy debate?

**The Policy Debate**

Again, given the overwhelming evidence that the intent in drafting and passing Section 101 was to provide a broad and inclusive scope of subject matter eligibility, the degree to which judges have allowed their personal views about the public policy of patents in the financial industry is frightening.\textsuperscript{45} And a review of the public policy pronouncements of judges advocating against patents in the financial industry exposes just how ill equipped judges are for this task.

For example, in the Federal Circuit In re Bilski decision a judge belittled the efforts involved in financial innovation by making an entirely unsupported factual finding: “Bilski, for example, likely spent only nominal sums to develop his hedging method.” In re Bilski, 545 F.3d 943, 1006 (Fed. Cir 2008) (Judge Mayer dissenting). In the Supreme Court Bilski decision, Justice Stevens picked up this theme:

Although there is certainly disagreement about the need for patents, scholars generally agree that when innovation is expensive, risky, and easily copied, inventors are less likely to undertake the guaranteed costs of innovation in order to obtain the mere possibility of an invention that others can copy.


\textsuperscript{44} Nor would famous chemical patents be immune: German Alfred Nobel’s 1868 dynamite patent, U.S. Patent No. 78,317 titled “Improved Explosive Compound”, was for the simple absorption of nitroglycerin by silicious earth or silicic acid (Nobel’s patent was without a claim); Frenchman Louis Pasteur’s 1873 pasteurization patent, U.S. Patent No. 135,245 titled “Improvements in Brewing Beer and Ales”, comprised a short, two step claim: “Subjecting the wort to a process for the expulsion of air and cooling it off, substantially as and for the purposes set forth.”

\textsuperscript{45} See, for example, *Diamond v. Chakrabarty*, 447 U. S. 303, 317 (1980) (finding a live, human-made micro-organism patentable subject matter under Section 101) (“The choice we are urged to make is a matter of high policy for resolution within the legislative process after the kind of investigation, examination, and study that legislative bodies can provide and courts cannot.”); *Flook*, 437 U.S. at 595 (“Difficult questions of policy concerning the kinds of programs that may be appropriate for patent protection and the form and duration of such protection can be answered by Congress on the basis of current empirical data not equally available to this tribunal.”).
Business innovation, moreover, generally does not entail the same kinds of risk as does more traditional, technological innovation. It generally does not require the same “enormous costs in terms of time, research, and development,” [Kewanee Oil Co. v. Bicron Corp., 416 U. S. 470, 480 (1974)], and thus does not require the same kind of “compensation to [innovators] for their labor, toil, and expense,” Seymour v. Osborne, 11 Wall. 516, 533-544 (1871).

Where is the evidence that commercializing financial innovation is not “expensive, risky [or] easily copied”? Indeed, developing a new financial product involves payments for legal, accounting, regulatory, and tax advice; time spent educating issuers, investors, and traders; investments in computer systems for pricing and trading; and capital and personnel commitments to support market making. In a study 25 years ago, Harvard Business School Professor Peter Tufano found that developing a new financial product then required an investment of “$50,000 to $5 million” – an amount that has certainly grown since then.

Significantly, Professor Tufano also studied 58 financial innovations introduced between 1974 and 1986, when financial patents were uncommon. The innovations were in mortgage-backed securities, asset-backed securities, non-equity-linked debt, equity-linked debt, preferred stock, and equities. According to Professor Tufano, the largest investment banks “almost exclusively” created these innovations, with six banks in particular accounting for over 75% of “pioneering deals”. In addition, “most new [financial] products can be reverse-engineered easily and cheaply”, noted Professor Tufano.

For too long a “culture of copying” permeated the financial community, where larger competitors quickly swallowed up innovations. A real world example is seen in Investors Guaranty Fund, Ltd. v. Morgan Stanley & Co., Inc., 50 U.S.P.Q.2d 1523 (S.D.N.Y. 1998). Investors Guarantee Fund (“IGF”) was a small firm that specialized in securitization concepts. In 1995, the State of California was looking for innovative approaches to securitize risks associated with earthquake losses. IGF’s lawsuit alleged that Morgan Stanley copied its submission to the state from IGF’s “total integrated system” for securitization of insurance risks. Because IGF had no patents, the court properly dismissed the case, concluding that the concepts were in the public domain.

In this “culture of copying”, what incentive does a financial entrepreneur have to incur the costs and risks of financial product innovation when the product falls into the public domain where

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46 Is it for the courts to decide whose investment is worthy of patent protection? To use examples of patents on actual products, did the investment in the board game of Life (U.S. Patent No. 53,561), the Yo-Yo (U.S. Patent No. 59,745), the board game Monopoly (U.S. Patent No. 748,626), Play-Doh (US Patent 3,167,440) or even a “Tear-Apart Stress Relief Doll” (U.S. Patent No. 5,195,917) deserve the protection of the patent system, while investment in financial innovations do not?


48 Id.

49 Id. at 219.

50 Id. at 230.
large competitors can freely abscond it? What venture capitalist would invest in such financial product innovation?⁵¹

According to Judge Mayer, “State Street and its progeny have generated a thundering chorus of criticism”. Bilski, 545 F.3d at 1004. But the application of patents to financial innovations resulted not solely from an opening of the door to the Patent Office by “State Street and its prodigy”; it also results from the infusion of increasingly sophisticated applications of engineering and physics principles to finance. A good example of such a “quant” is the career of Emanuel Derman, the Director of Columbia University’s program in Financial Engineering.⁵² Derman studied at the University of Cape Town, South Africa, and received a Ph.D. in theoretical physics from Columbia in 1973. His thesis proposed a test for a weak-neutral current in electron-hadron scattering.

After a successful career in physics, including research in theoretical particle physics, in 1985 Derman joined Goldman Sachs’ fixed income division, where he was one of the co-inventors of the Black-Derman-Toy interest-rate model. He also co-invented the Derman-Kani local volatility or implied tree model, the first model consistent with the volatility smile.⁵³

These days one is more likely to find recruiters from financial firms in the engineering and physics departments than the business department. Indeed, the Royal Swedish Academy of Sciences, the same body responsible for selecting the Nobel Prizes in chemistry and physics, selects the winners of the Nobel Prize for “economic sciences”.⁵⁴ By contrast, the Swedish Academy selects the Nobel Prize for literature.⁵⁵

**Patents should be an Economic Tool for All Industries**

Given the overwhelming evidence that the intent in drafting and passing Section 101 was to provide a broad and inclusive scope of subject matter eligibility, the better question is whether the

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⁵¹ In a very real sense, financial innovation is just the latest in a long list of technologies where entrenched firms argue against patent eligibility, starting with railroads in the late 1800’s, and most recently software. See Merges, *The Uninvited Guest: Patents on Wall Street*, Fed. Res. Bank of Atlanta Econ. Rev., 4th Quarter 2003 (Discussing the positive effects of patents in the railroad and software industries). Another example is semi-conductors in the 1980’s. See Hall and Ziedonis, *The Patent Paradox Revisited: An Empirical Study of Patenting in the US Semiconductor Industry, 1979-95* 32(1) Rand J. of Econ. 101 (Concluding the use of patents in semiconductors “may have facilitated entry by specialized firms and contributed to vertical disintegration in this industry.”)

⁵² In addition to Columbia, many leading Universities offer degrees in Financial Engineering, including: Carnegie Mellon University; Cornell University; Massachusetts Institute of Technology; Missouri University of Science & Technology (formerly University of Missouri, Rolla); Northwestern University; NYU Polytechnic University; Princeton University, University of California Berkeley; University of California Los Angeles; University of Michigan, to name just a few.

⁵³ Derman, *My Life as a Quant: Reflections on Physics and Finance* (Wiley 2004). This example is to demonstrate the infusion of technology into finance and is not an endorsement by Dr. Derman of financial patents: Dr. Derman’s view on financial patents is unknown.


⁵⁵ See http://www.svenskaakademien.se/en ((accessed 23 October 2014)).
financial industry so different from other industries that patent protection should be denied? In contrast to copyrights – which arose from a distaste of plagiarism – and trademarks and trade dress – which focus on consumer protection – patents are economic tools designed to spur innovation and grow the economy.\textsuperscript{56} In a perfectly competitive market, perfect substitute products exist. Thus, the price elasticity of demand within a perfectly competitive market is infinite. When a patent covers a product – financial or otherwise – perfect substitute products do not exist. Patent holders can therefore gain extra profit.\textsuperscript{57} This “patent profit” incents entrepreneurs to incur the costs and risks of product innovation. What venture capitalist would invest in such product innovation when the product falls into the public domain where large competitors can freely abscond it? See \textit{Aronson v. Quick Point Pencil Co.}, 440 U.S. 257, 262 (1979) (a purpose of the patent system is “to foster and reward invention”).

Even though patents enable a “patent profit”, patents do not necessarily create monopolies. Even in the famous case of \textit{Polaroid Corp. v. Eastman Kodak Co.}, 17 U.S.P.Q.2d 1711 (D. Mass. 1991) – perhaps the instance of one of the broadest patent estate ever – Polaroid certainly could not monopolize photography. Rather, Polaroid was able to preclude Kodak from instant photography, with traditional photography left open. And even with respect to instant photography, Kodak could only be enjoined to the extent that the Kodak’ technology was too close to Polaroid’s patented chemical technology.\textsuperscript{58} Had Kodak (or anyone else, for that matter) achieved instant photography in another way – digital photography, to use a later invented example – Kodak would avoid Polaroid’s patents.

Modern patents have their origin in fifteenth century Italy, where Italian city-states enticed skilled craftsmen to move by granting them a limited monopoly on their craft.\textsuperscript{59} Thus, in a very real sense the origin of patents is tied to \textit{methods} employed by skilled craftsmen. These grants to skilled craftsmen worked so well that the exclusive grants were extended to encourage and reward innovation.\textsuperscript{60} The first example of a broader policy to encourage innovation occurred around 1432,


\textsuperscript{57} Of course, the breadth of this “patent profit” – and applicable the price elasticity of demand – depends on the closeness of the next available noninfringing substitute product. Schaafsma, \textit{An Economic Overview of Patents}.


\textsuperscript{59} An early example of these exclusive rights occurred in 1406 in the city-state of Florence. At the time, the art of mounting steel wire bristles was unknown in Florence. Guerinus de Mera, a resident of Milan where this art was highly developed, responded to an offer of ten years of tax exemption to introduce the art to Florence. After demonstrating his process of mounting steel wire bristles, he entered into a contract with the Woolens Guild of Florence to exercise and teach the art, with the understanding that those he taught would not use it independently for a time. In 1409, the city-state of Florence issued a decree approving this contract. See generally frank D. Prager, \textit{The Early Growth and Influence of Intellectual Property}, 34 J. Pat. & Trademark Off. Soc’y 106, 126-33 (1952) (discussing the early history of patents in the Italian city-states).

\textsuperscript{60} The earliest grant of an exclusive right for an innovation can be traced to 1421, when the city-state of Florence granted the exclusive right to a barge that the architect Filippo Brunelleschi designed. See Frank D. Prager, \textit{Brunelleschi’s Patent}, 28 J. Pat. & Trademark Off. Soc’y 109 (1946).
when the city-state of Venice passed a law that broadly granted exclusivity to the inventor of a machine or process.  

Thus, the purpose of patents is to encourage people to invent by creating a financial incentive for innovation. The potential economic rewards during the period of exclusivity are the carrot that attracts resources into innovations. While the attraction of human resources into innovation is important, the attraction of financial resources to support commercialization of innovation is at least equally as important.

A financial incentive for innovation is easy to justify if an industry without patents is imagined. Competitors freely reverse engineer and copy successful innovative products developed at substantial cost. These competitors not only avoid the research and development costs of the innovator, the competitor avoids the high risk of new product introduction by “cherry picking” successful products. Against this backdrop, what firm would expend research funds? Product innovation would evaporate. Society would lose the benefit of new, innovative products. As detailed above, this is precisely the status of the financial industry when patents were less common.

In addition, “one of the purposes of the patent system is to encourage dissemination of information concerning discoveries and inventions”. Brenner v. Manson, 383 U. S. 519, 533 (1966). See also Pfaff v. Wells Electronics, Inc., 525 U. S. 55, 63 (1998) (“[T]he patent system represents a carefully crafted bargain that encourages both the creation and the public disclosure of new and useful advances in technology”).

A good example of the benefits of making patent protection available can be seen in a “what if” example of the Black-Scholes Option Pricing Model. Because the Model grew out of the academic environment – the late Fisher Black was then at the University of Chicago while Myron S. Scholes and Robert C. Merton were at the Massachusetts Institute of Technology – an academic journal published the Model. Promptly following publication in 1973 in the Journal of Political Economy, the Black-Scholes Option Pricing Model earned a position among the most widely accepted of all financial models and ultimately led to a Nobel Prize. Within six months of publication, Texas Instruments incorporated Black-Scholes model into their latest calculator, announcing the new feature with a half-page advertisement in The Wall Street Journal. Because Black and Scholes had no patent on their Black-Scholes model, TI was under no legal obligation to compensate them.

But what if the model arose from industry instead of publish or perish academia? A commercial enterprise could simply have kept the model as a trade secret to itself solely for its own use, profiting immensely. Would society be better off if publication of the model had not occurred?

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61 Id. at 130-31.
Is not the availability of patent protection with the concomitant publication the better balance?

**Conclusion**

The *Alice* Court gave lip service to the inherent danger of its standard of patent eligibility:

At the same time, we tread carefully in construing this exclusionary principle lest it swallow all of patent law. *Mayo*, 566 U.S., at ___, 132 S.Ct., at 1293-1294. At some level, “all inventions... embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas.” *Id.*, at ___, 132 S.Ct., at 1293. Thus, an invention is not rendered ineligible for patent simply because it involves an abstract concept. *See Diamond v. Diehr*, 450 U.S. 175, 187, 101 S.Ct. 1048, 67 L.Ed.2d 155 (1981). “[A]pplication[s]” of such concepts “‘to a new and useful end,’” we have said, remain eligible for patent protection. *Gottschalk v. Benson*, 409 U.S. 63, 67, 93 S.Ct. 253, 34 L.Ed.2d 273 (1972).

573 U.S. at ___, 132 S.Ct. at 2354. Despite this empty lip service, by rendering a construct for patent eligibility as meaningless as the pre-1952 “flash of creative genius”, the Court effectively invalidated thousands of issued patents. *See Andrew T. O'Connor and Jennifer Furey, Who Is Alice and Why Is She Invalidating Patents? Retail Law Advisor (22 October 2014)* (“With one stroke of the pen, the Supreme Court effectively invalidated thousands of patents . . .”).

Indeed, the current application of *Alice* is so restrictive that under these patent eligible standards many of the United States most significant innovations when the country grew into an economic powerhouse would be patent ineligible as abstract ideas! It is time to end the legal gymnastics and recognize the *Benson, Flook, and Diehr* patent eligibility of computer innovations trilogy are simply irreconcilable. And as in response to the pre-1952 judicial “flash of creative genius” construct, it is again time for Congress to act in response to the *Alice* “abstract idea” construct.

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