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In Re Bilski: A Midpoint in the Evolution of Business Method Patents?

By R. David Donoghue,* & Michael A. Grill**

I. INTRODUCTION

¶1 As 2008 drew to a close, the patent community anxiously awaited a decision from the Court of Appeals for the Federal Circuit (“CAFC”) in In re Bilski.1 Many expected the court’s opinion to have a profound impact on process patents,2 particularly those relating to business methods or software.3 Bernard Bilski and his fellow applicant, Rand Warsaw, sought to patent a method of hedging risk for those involved in trading commodities and commodity options.4 The method was an example of the purest type of business method in that it was not specifically tied to any computer or other device and did not result in a tangible product.5

¶2 In recent years, similar business method patents have stirred heated debate.6 Some experts and commentators argue that these patents stifle innovation primarily because a patent’s exclusionary incentive is unnecessary for methods that bring efficiency to the

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1 In re Bilski, 545 F.3d 943 (Fed. Cir. 2008), cert. granted sub nom., Bilski v. Doll, 77 U.S.L.W. 3656 (U.S. June 1, 2009) (No. 08-964).
2 35 U.S.C. § 101 (2006) (“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.”).
3 See generally U.S. Patent Application Serial No. 08/833,892.
4 Bilski, 545 F.3d at 949-50.
5 Id.
commercial realm. Yet others are equally convinced that such method patents are a critical engine for commercial innovation in the United States.

The debate has hardly waned in the several months since Bilski’s issuance, with some commentators in both camps either trumpeting or excoriating the decision as the death knell for business method and software patents. These commentators have likewise claimed that Bilski’s “machine-or-transformation” test necessarily excludes business methods and software from the scope of patent eligibility under 35 U.S.C. § 101, though they vociferously disagree about whether the exclusion is a good result. Still others on either side of the debate believe the decision changes little.

But neither the majority nor the concurring opinions in Bilski require the United States Patent and Trademark Office (“PTO”) to close its doors to such patents, and to the extent it has, the PTO reads Bilski too strictly. A careful reading reveals that Bilski, at most, reaffirms that abstract ideas and algorithms are not patentable, and provides guidance in distinguishing such ideas and algorithms from patentable processes. In doing so, Bilski examined and distilled the various and sometimes conflicting standards applied over the past thirty years by courts struggling to make the same distinction. Not surprisingly, Bilski follows the more recent trend away from the relatively lenient patent eligibility threshold set just over a decade ago in State Street Bank & Trust Co. v. Signature Financial Group, Inc. Bilski also left the door open to continued patenting of methods and software tied to machines or transformations of “articles.” Additionally, the Bilski court explicitly conveyed both its openness to further refinement of the machine-or-transformation test and its recognition that some processes or methods may fall outside the test’s scope, yet be patent-eligible nonetheless. Thus, Bilski more accurately represents a midpoint in the debate over business method and software patents, not an endpoint. This is likely to remain true even after the Supreme Court’s eventual decision.

Part I of this article analyzes recent judicial treatment of process patent eligibility standards leading up to the Bilski decision and explains why the Bilski outcome was not surprising. Part II dissects Bilski, noting what the opinion calls for, and more importantly, what it does not. Part III argues that the Bilski court did not shut the door to all business method and software patents – even when one reads between the lines.

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7 E.g., Bilski, 545 F.3d at 1005 (Mayer J., dissenting); Rochelle C. Dreyfuss, Are Business Method Patents Bad for Business?, 16 SANTA CLARA COMPUTER & HIGH TECH. L.J. 263, 274-77 (2000).
8 E.g., Hamilton, supra note 6.
10 See, e.g., Wayne P. Sobon & Erika H. Arner, In re Bilski: 19th Century Thinking for 21st Century Challenges, 1 LANDSLIDE (No. 3) 17, 20 (2009). Sobon and Arner were involved in preparing an amicus brief on behalf of Accenture in Bilski. Id. at 17. Arner was also involved in the certiorari petition granted in Bilski v. Doll. Petition for Writ of Certiorari, Bilski v. Doll, No. 08-964 (U.S. Jan. 28, 2009).
13 149 F.3d 1368 (Fed. Cir. 1998); see Dreyfuss, supra note 7, at 267.
14 In re Bilski, 545 F.3d 943, 954, 961-62 (Fed. Cir. 2008).
15 Id. at 956.
Rather, Bilski (1) fixes the machine-or-transformation test as the starting point for examiners assessing process patent eligibility, (2) clearly indicates that some business methods and software will meet this test, and (3) recognizes that future developments in technology—broadly defined—may demand either augmentation of the machine-or-transformation test or a refinement of its application, thus allowing a route to patentability for those inventions requiring the exclusivity incentive, but not neatly fitting the court’s test.

II. THE TREND AWAY FROM STATE STREET: BILSKI IS NO WATERSHED

The decision in State Street is largely responsible for ushering in an age of business method and software patents. In State Street, the CAFC reversed a finding by the lower court that U.S. Patent No. 5,193,056 (the ‘056 patent) was invalid on § 101 grounds. The ‘056 patent covered a “hub and spoke” data processing system for managing the pooled assets of multiple mutual funds. The system called for a partnership of multiple mutual funds operating a computer system designed to calculate the daily gains or losses of the pooled partnership fund, the “hub,” and to determine the pro rata gains or losses attributable to each “spoke” mutual fund. Within each “spoke” fund, a final share price could be calculated quickly and accurately for sale to the public.

The State Street court began its analysis of the ‘056 patent with the oft-cited guiding principle from the Supreme Court that “anything under the sun that is made by man” is patentable. The CAFC went on to hold first that the process survived the “mathematical algorithm” exclusion to patentability because it practically applied an algorithm to produce a “useful, concrete and tangible result.” In applying this language, the State Street court emphasized “useful” while downplaying “concrete and tangible,” stating, “[f]rom a practical standpoint, this means that to be patentable an algorithm must be applied in a ‘useful’ way.”

Next, State Street unequivocally dispensed with the “judicially-created, so-called ‘business method’ exception to statutory subject matter.” The CAFC explained that at

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16 Id. at 1007 (Mayer, J., dissenting); Allison & Tiller, supra note 6, at 1007; see Lilly He, Legal Update: In Re Bilski En Banc Rehearing on Patentable Subject Matter: Farewell to Business Method Patents?, 14 B.U. J. SCI. & TECH. L. 252, 253 (2008).
17 State Street, 149 F.3d at 1370.
18 Id. at 1371-72.
19 Id.
20 Id.
21 Id. at 1373 (quoting Diamond v. Chakrabarty, 447 U.S. 303, 309 (1980)). But as Judge Mayer explained in his Bilski dissent, State Street was not alone in quoting this principle out of context. Bilski, 545 F.3d at 1000 (Mayer, J., dissenting). In its original context, the legislative history giving rise to this principle read: “A person may have ‘invented’ a machine or 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.” Id. (citations omitted) (emphasis added).
22 State Street, 149 F.3d at 1373. The quoted language is ultimately derived from Diamond v. Diehr, 450 U.S. 175, 185 (1981). Diehr involved the use of an algorithm to produce tangible, if not “concrete,” cured rubber tires. Id.
23 State Street, 149 F.3d at 1375; see also David J. Kappos et al., A Technological Contribution Requirement for Patentable Subject Matter: Supreme Court Precedent and Policy, 6 NW. J. TECH. & INTELL. PROP. 152, 153 (2008) (“In State Street Bank and other opinions, the Federal Circuit has equated patentability to mere usefulness.”)
24 Id. at 1375.
least since 1952, business methods should have been subject to the same standard of patent eligibility as any other process or method.\textsuperscript{25} 

The eradication of the business method exception combined with the seemingly diluted and undefined “useful, concrete, and tangible result” test led to a dramatic spike in process applications associated with business and software.\textsuperscript{26} According to the PTO, it has been deluged since 1995 with an unprecedented number of applications “arguably [not falling] within the traditional rubric of ‘inventions’ in the ‘useful arts.’”\textsuperscript{27} Such inventions have included, for example, “methods for holding conversations.”\textsuperscript{28}

Additionally, the U.S. Supreme Court has never endorsed the holding of \textit{State Street}. Indeed, Justices Breyer, Stevens and Souter have openly questioned the appropriateness of the “useful, concrete and tangible result test.”\textsuperscript{29}

The CAFC’s own recent precedent is even more intriguing. In particular, \textit{In re Comiskey}\textsuperscript{30} and \textit{In re Nuijten},\textsuperscript{31} both decided on September 20, 2007, demonstrate the CAFC’s own retreat from \textit{State Street’s} breadth and arguably foreshadowed the \textit{Bilski} result.

In the first of these decisions, the \textit{Comiskey} court affirmed the Board of Patent Appeals and Interferences’ (“BPAI”) rejection of a claim to a legal arbitration process.\textsuperscript{32} While the examiner and the BPAI had rejected Comiskey’s claims on § 103 obviousness grounds, the CAFC essentially preempted that issue.\textsuperscript{33} Instead, the court rejected claims 1 and 32 (along with most of their dependent claims) as unpatentable subject matter under § 101 and remanded the remaining twenty-nine claims to the PTO to determine whether the mental processes in those claims escaped obviousness limitations via the addition of a general purpose computer or other modern communication devices.\textsuperscript{34} One may wonder, ironically, whether the \textit{Comiskey} application’s effects on the legal industry—specifically within the field of arbitration—somehow triggered the CAFC’s realization of how far-reaching, and potentially stifling, certain business method patents had become in the twelve years since \textit{State Street}.

In deciding that the arbitration claims were ineligible, the court in \textit{Comiskey} spent significant time explaining that an abstract idea or mental process is only patent eligible to the extent “it is embodied in, operates on, transforms, or otherwise involves another class of statutory subject matter, i.e., a machine, manufacture, or composition of matter.”\textsuperscript{35} In doing so, the court drew heavily from \textit{Diamond v. Diehr}\textsuperscript{36} and \textit{In re

\textsuperscript{25} Id.
\textsuperscript{26} Brief for Appellee Director of the United States Patent and Trademark Office at 4, \textit{In re Bilski}, 545 F.3d 943 (Fed. Cir. 2008) (No. 2007-1130).
\textsuperscript{27} Id.
\textsuperscript{28} Id.
\textsuperscript{29} Lab. Corp. of Am. Holdings v. Metabolite Labs., Inc. 548 U.S. 124, 136 (2006) (“\textit{State Street} does say that a process is patentable if it produces a ‘useful, concrete, and tangible result.’” 149 F.3d at 1373. But this Court has never made such a statement and, if taken literally, the statement would cover instances where this Court has held the contrary.”)
\textsuperscript{30} 499 F.3d 1365 (Fed. Cir. 2007).
\textsuperscript{31} 500 F.3d 1346 (Fed. Cir. 2007).
\textsuperscript{32} \textit{Comiskey}, 499 F.3d at 1365.
\textsuperscript{33} Id. at 1368.
\textsuperscript{34} Id. at 1368, 1381.
\textsuperscript{35} Id. at 1376.
\textsuperscript{36} 450 U.S. 175 (1981).
both of which required that processes reliant upon abstract ideas involve some kind of physical machine or transformation of subject matter. Not surprisingly, Bilski would later look to these same cases in its explicit adoption of the “machine-or-transformation test.”

Additionally, certain dicta in Comiskey may have offered as much insight into the CAFC’s evolving views as the holding itself. After explaining that the mental processes in the remanded claims were patentable subject matter when combined with the use of machines, the Comiskey court cautioned that a “routine addition of modern electronics to an otherwise unpatentable invention typically creates a prima facie case of obviousness.” Were this concept to find its way into a future holding, it would have a significantly more profound effect on software patents than Bilski standing alone. For if the Bilski machine-or-transformation test were combined with the Comiskey dicta, software could be patentable subject matter only when linked with a machine, but the link to a general-purpose computer is likely obvious. Such a framework would seemingly require software, then, to either operate on a specialized machine, or work a transformation of an “article,” or both, in order to be eligible.

The CAFC further demonstrated its willingness to reign in the scope of § 101 in Nuijten. The Nuijten court held that transitory, digitally “watermarked” signals fell outside the “process, machine, manufacture, or composition of matter” categories. The court analyzed the signals under each category, spending the bulk of its opinion determining that the signals themselves did not constitute articles of manufacture. The PTO had already granted Nuijten’s process claims for encoding such signals and his machine claims for generating and storing them.

But Nuijten sought to marshal State Street’s emphasis upon an invention’s utility in order to patent the signals themselves. Nuijten argued that if the CAFC found the signals to be practical and useful, then it could, and should, skip the analysis as to whether the signals fell into any of § 101’s four limiting categories. The court was not persuaded, explaining that State Street’s apparent focus on an invention’s usefulness in

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37 22 F.3d 290 (Fed. Cir. 1994) (affirming the PTO’s rejection of a “method for competitively bidding on a plurality of related items, such as contiguous tracts of land or the like”).
38 Comiskey, 499 F.3d at 1376-77.
39 In re Bilski, 545 F.3d 943, 952-59 (Fed. Cir. 2008).
40 Comiskey, 499 F.3d at 1380.
41 Bitlaw.com, http://www.bitlaw.com/source/cases/patent/Comiskey.html (last visited May 1, 2009). Such a result is unlikely, however, because on January 13, 2009, the CAFC vacated and revised the September 20, 2007 Comiskey opinion. In re Comiskey, 554 F.3d 967 (Comiskey II) (Fed. Cir. 2009). The bulk of the September 2007 decision remained in place, and thus claims 1 and 32 remained ineligible subject matter under § 101. But the CAFC withdrew that portion of its opinion, including the quoted language above, holding that the remaining twenty-nine claims were patent-eligible, and remanding for a determination on obviousness grounds. See id. Rather, Comiskey II remanded these claims to the PTO for a § 101 determination of eligibility in the first instance. Id. at 969.
43 In re Nuijten, 500 F.3d 1346, 1353, 1357 (Fed. Cir. 2007).
44 Id. at 1353.
45 Id.
46 Id.
47 Id.
no way diluted the limitations on subject matter eligibility imposed by § 101. In order for an “invention” to be eligible for patent protection, it must fall into one of the four categories. Mere utility is insufficient to render protection. The Bilski court would build on and clarify this concept in adopting the “machine-or-transformation” test, despite not directly discussing Nuijten.

After the autumn of 2007, those with an interest in process and software patents were left with the apparent conflict between Comiskey and State Street while Nuijten further indicated the CAFC’s desire to halt the continued expansion of State Street’s utilitarian test. Comiskey actually applied the “machine-or-transformation” test, but did not hold it to be the sole test for patentable subject matter. Comiskey thus left a muddied standard. Therefore, Bilski’s outcome should have been no surprise; the scope of patentability required clarification, and the CAFC had exhibited a trend towards checking § 101 eligibility standards. Ultimately, Bilski didn’t go as far as it could have—or as far as some say it has. And in comparing Bilski to State Street, it is important to keep in mind that unlike Bilski, State Street involved a machine. In that context “concrete and tangible” still meant more than merely “useful,” even if only nominally.

III. In re Bilski: The Midpoint?

A. Background

The CAFC’s primary goal in ordering en banc review of Bilski was to clarify the standards for identifying patentable processes pursuant to § 101. More specifically, the opinion ventured to establish the governing criteria in distinguishing unpatentable mental processes, abstract ideas, and fundamental principles, from patent-eligible processes. The court’s vehicle for reexamining process eligibility was the Bilski application.

Bilski claimed a method for hedging risk in the field of commodities and commodity options trading. The method calls for an intermediary, such as a commodity broker, to sell a commodity to a consumer at a fixed price, thus insulating the consumer from the risk of a dramatic price increase. The broker must also purchase the commodity

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48 Id.
49 Id.
50 In re Bilski, 545 F.3d 943, 951 n.2 (Fed. Cir. 2008).
51 See State Street Bank & Trust Co. v. Signature Fin. Group, Inc., 149 F.3d 1368, 1371-72 (Fed. Cir. 1998) (holding that the claim at issue was indeed a machine claim, though it was of “little relevance” to the court whether the claim was directed to a machine or a process, so long as it was directed to one of the four § 101 categories).
52 See Bilski, 545 F.3d at 949.
53 See, e.g., Diehr, 450 U.S. at 185; Gottschalk v. Benson, 409 U.S. 63, 67 (1972). These cases establish the principle, that “[p]henomena of nature, . . . mental processes, and abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work.” Benson, 409 U.S. at 67.
54 See Bilski, 545 F.3d at 952.
55 Bilski, 545 F.3d at 949-50 (“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”).

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at a fixed price, insulating the commodity producer from the risk of a price drop. By effecting two such transactions, the broker—or “commodity provider”—hedges his risk.\textsuperscript{56} The same general method could be applied to purchase and sell options contracts for the particular commodity, rather than the commodity itself.\textsuperscript{57} As the CAFC succinctly explained, a middleman providing coal to power plants might sell coal to the plants at a fixed price, while purchasing his requirements from a mining company at another fixed price (preferably lower than the sales price).\textsuperscript{58} In doing so, the broker limits his potential upside, but also hedges against any losses.\textsuperscript{59}

The patent examiner rejected Bilski’s application on § 101 grounds, primarily because the claims “manipulate[d] an abstract idea and solve[d] a purely mathematical problem without limitation to a practical application.”\textsuperscript{60} Since the invention was not limited to a practical application, the examiner also determined that it was not “directed to the technological arts.”\textsuperscript{61} The BPAI ultimately affirmed the examiner’s decision on appeal, but in doing so held that no case law supported a “technological arts” test.\textsuperscript{62} To the extent the examiner relied on such a test, that reliance was misplaced.\textsuperscript{63} The BPAI also held that the lack of a specific apparatus was not itself fatal to effecting a practical application because a transformation of physical subject matter, absent any apparatus, would still satisfy § 101.\textsuperscript{64} But, even under the transformation analysis, Bilski’s claim failed, as the BPAI held that a “transformation” of non-physical financial and legal risks and liabilities is not patent-eligible subject matter.\textsuperscript{65} Asking whether the claims forestalled “any and every possible way of performing the steps” of the process, the BPAI went on to measure Bilski’s claims on the basis of preemption.\textsuperscript{66} It held that the claims indeed preempted all applications of the concept.\textsuperscript{67} Lastly, the BPAI determined that Bilski’s claims could not pass State Street’s “useful, concrete, and tangible result” test because a “concrete and tangible result is interpreted to be the opposite of an abstract idea and requires some sort of physical instantiation.”\textsuperscript{68}

Yet even with the above tests and indicators at its disposal, the BPAI still strained “to define the line between a patentable practical application . . . and an unpatentable abstract idea,”\textsuperscript{69} and it explicitly asked the CAFC to address the question directly.\textsuperscript{70}

Bilski timely appealed the rejection. While the BPAI, as well as advocates and critics of method and software patents, may have hoped for the CAFC to issue the final word on process eligibility, the Bilski application was an imperfect vessel for such a result. As with all cases, the Bilski court faced a limited set of questions framed by a

\begin{itemize}
\item \textsuperscript{56} Id.
\item \textsuperscript{57} Id.
\item \textsuperscript{58} Id.
\item \textsuperscript{59} Id.
\item \textsuperscript{60} Id. at 950.
\item \textsuperscript{61} Id.
\item \textsuperscript{62} Id.
\item \textsuperscript{63} Id.
\item \textsuperscript{64} Id.
\item \textsuperscript{65} Id.
\item \textsuperscript{66} Id.
\item \textsuperscript{67} Id. at *14.\textsuperscript{Ex parte} Bilski, No. 2002-2257, 2006 WL 4080055 at *14 (B.P.A.I. Sept. 26, 2006).
\item \textsuperscript{68} Id. at *15.
\item \textsuperscript{69} Id. at *21.
\item \textsuperscript{70} Id.
\end{itemize}
limited set of facts.\textsuperscript{71} Even the most tantalizing, closely-related questions must be left unanswered when not presented to the court.\textsuperscript{72} Clearly, one of the tantalizing questions in \textit{Bilski} was whether “software instructions implemented on a general purpose computer are deemed ‘tied’ to a ‘particular machine.’”\textsuperscript{73} However, Bilski’s method did not incorporate software. As Judge Michel has noted, the courts cannot deal in hypotheticals; additional questions must properly arise before the court can offer additional answers.\textsuperscript{74}

\section*{B. The Machine-or-Transformation Test}

Against this backdrop, the CAFC did little more than streamline and clarify the BPAI’s decision. The BPAI held that methods not tied to a specific machine can nonetheless satisfy § 101 if a transformation of “physical” subject matter takes place, and that the Bilski claim worked no such transformation.\textsuperscript{75} The CAFC would ratchet down the BPAI’s threshold for physicality, holding that Bilski’s method transformed no articles representative of a physical object or thing.\textsuperscript{76} Despite criticism that the court’s employment of the machine-or-transformation test was arbitrary,\textsuperscript{77} even a cursory review of the BPAI’s opinion demonstrates that the CAFC had a significant case law on which to build. Such criticism also ignores the fact that, as recently as 2007, the \textit{Comiskey} court applied the machine-or-transformation test in essentially the same manner as the \textit{Bilski} court. The \textit{Comiskey} court, however, did not fix the machine-or-transformation test as the sole test for distinguishing abstract ideas from patentable processes.

\textit{Bilski} marshaled the guidance from the Supreme Court decisions of \textit{Diamond v. Diehr},\textsuperscript{78} \textit{Parker v. Flook}\textsuperscript{79} and \textit{Gottschalk v. Benson},\textsuperscript{80} each of which addressed the issue of distinguishing abstract, unpatentable ideas from patentable ones. As an initial matter, \textit{Diehr}, \textit{Flook}, and \textit{Benson} each support the proposition that abstract ideas, laws of nature, and natural phenomena are excluded from patentability.\textsuperscript{81} What distinguishes \textit{Bilski} from these three cases is that while they support the machine-or-transformation test, like

\begin{footnotes}
\item[71] See \textit{In re Bilski}, 264 F. App’x 896 (Fed Cir. 2008) (order granting en banc review and listing questions to be briefed and reviewed).
\item[72] A Conversation with Chief Judge Paul Michel, Intellectual Property Colloquium (January 2009), http://www.ipcolloquium.com/Programs/4.html; see \textit{Bilski}, 545 F.3d at 951 n.2, 960 n.23 (declining to discuss § 101 issues relating to \textit{In re Nuijten}, and patent-eligible and –ineligible software claims, respectively).
\item[73] \textit{In re Bilski}, 545 F.3d 943, 994 (Fed. Cir. 2008) (Newman, J., dissenting); \textit{id.} at 950 (\textit{Bilski} involved neither software nor implementation of a general purpose computer).
\item[74] A Conversation with Chief Judge Paul Michel, \textit{supra} note 73; see also \textit{In re Ferguson}, 558 F.3d 1359, 1367-68 (Fed. Cir. 2009) (Newman, J., concurring in the judgment) (noting that “the potentially complex issues of when computers are Bilski-acceptable machines do not arise in the Ferguson claims” either).
\item[75] \textit{Bilski}, 545 F.3d at 949-50.
\item[76] See \textit{id.} at 960, 962-63. The CAFC also instructed that \textit{Comiskey} did not require claims reciting mental processes to contain significant physical steps; it explained that even transformations of data can pass the “transformation” branch of the machine-or-transformation test so long as the data is representative of tangible things. \textit{Id.} at 960, 962-63.
\item[77] See, e.g., Sobon & Arner, \textit{supra} note 10, at 20 (“Never has so much in a case depended on the meaning of the word ‘the.’”).
\item[78] 450 U.S. 175 (1981).
\item[79] 437 U.S. 584 (1978).
\item[80] 409 U.S. 63 (1972).
\item[81] See \textit{Bilski}, 545 F.3d at 952.
\end{footnotes}
Comiskey, none explicitly establish it as the test.\textsuperscript{82} However, they come closer than some critics acknowledge. For example, beginning with Benson in 1972, the court stated that “[t]ransformation and reduction of an article ‘to a different state or thing’ is the clue to patentability of a process claim that does not include particular machines.”\textsuperscript{83} The Flook court was more direct, observing that “[a]n argument can be made that the Supreme Court has only recognized a process as within the statutory definition when it either was tied to a particular apparatus or operated to change materials to a ‘different state or thing.’”\textsuperscript{84} Finally, in 1981, in evaluating the use of the Arrhenius equation in a mechanized process for curing rubber tires, the Diehr court held that “transforming or reducing an article to a different state or thing” was patentable.\textsuperscript{85} By claiming a method tied to a specific apparatus or by claiming the transformation of new rubber to molded rubber the process, even though relying on the algorithm, protected only a limited identifiable set of processes. It does not preempt any other uses of the principle.\textsuperscript{86}

¶25 Bilski’s “machine-or-transformation” test combines the above precedent, allowing a claimant to meet the § 101 threshold by demonstrating either that the claim is tied to a “particular machine” or that it transforms an “article.”\textsuperscript{87} Corollaries apply to both prongs. First, the specific machine or transformation must “impose meaningful limits” on the claimed process; in other words, the claim cannot preempt all uses of the underlying principle.\textsuperscript{88} Moreover, the claim should not preempt all uses of a principle even within a specific field.\textsuperscript{89} Preemption to either degree indicates a claim is not linked to any particular application.\textsuperscript{90} Second, the link to a particular machine or transformation of an article must not consist of “mere insignificant postsolution activity.”\textsuperscript{91} An example of such activity might be the use of a computer to simply record or gather data somewhere in the process.\textsuperscript{92}

¶26 Because Bilski acknowledged that his claim was not linked to, and thus not limited by, a particular machine, the court chose not to examine the scope of the “machine” prong.\textsuperscript{93} The Court recognized that in doing so, it was leaving unanswered the major question of “whether or when recitation of a computer suffices to tie a process claim to a particular machine.”\textsuperscript{94} In their respective dissents, Judges Newman and Rader chastised the majority for leaving open this and other difficult questions.

¶27 But the Bilski court was in a position to provide guidance only on the “transformation” prong. Specifically, the court focused on what constitutes an “article.”\textsuperscript{95}

\textsuperscript{82} See generally Diehr, 450 U.S. 175; Flook, 437 U.S. 584; Benson, 409 U.S. 63.
\textsuperscript{83} Benson, 409 U.S. at 70; Bilski, 545 F.3d at 954.
\textsuperscript{84} Flook, 437 U.S. at 589; Bilski, 545 F.3d at 954.
\textsuperscript{85} Diehr, 450 U.S. at 192 (the Diehr court also quoted the Benson language that “transformation . . . is the clue to the patentability of a process . . . .”); Bilski, 545 F.3d at 954 (the process in Diehr satisfied both prongs of the machine-or-transformation test as it was tied to a machine and transformed rubber).
\textsuperscript{86} Bilski, 545 F.3d at 954.
\textsuperscript{87} Id. at 961.
\textsuperscript{88} Id. at 957, 961.
\textsuperscript{89} Id. at 957.
\textsuperscript{90} Id.
\textsuperscript{91} Id.
\textsuperscript{92} Bilski, 545 F.3d at 957 n.14.
\textsuperscript{93} Id. at 962; A Conversation with Chief Judge Paul Michel, supra note 72.
\textsuperscript{94} Bilski, 545 F.3d at 962.
\textsuperscript{95} Id.
On one end of the spectrum, actual physical objects and substances qualify as articles. On the other, legal obligations, organizational relationships and business risks do not. In between there exists, *inter alia*, electronic signals and data, some of which are representative of physical and non-physical concepts, some of which are not. *Bilski* held that eligible transformations must incorporate physical objects or substances or be representative of the same. The Court pointed to the result in *In re Abele* to partly illustrate its reasoning. In *Abele*, a process claim for graphically displaying variances in unspecified data was held unpatentable, while a second process claim for visually reproducing X-ray data representative of physical bones and organs was patentable. So, whereas a transformation of medical data into a visual depiction of physical human tissues is patentable, transformations of social obligations or risks, and data representative of such risks, are not.

### C. Cleaning House

In settling upon the “machine-or-transformation” test, the *Bilski* court sought to streamline the process for eliminating abstract ideas. In part, it did so by eliminating the other “purported articulations of § 101 tests.” The BPAI had applied three tests: a version of the “machine-or-transformation” test, a preemption test, and the “useful, concrete, and tangible result” test. The court thus began by almost summarily abrogating the *Freeman-Walter-Abele* test, named after the three cases credited for devising and distilling the test. The test asked two questions: 1) whether the claim asserts an algorithm, and 2) if so, whether the algorithm applied to physical elements or process steps. Noting that a process claim need not contain physical process steps, the court declared this test inadequate. The court spent slightly more time dispensing with *State Street’s* “useful, concrete and tangible result” test. The court briefly recognized the test’s origins in the Supreme Court instruction that abstract ideas must be reduced to a “practical application” in order to be patentable. It also admitted that the test will often

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96 Id.
97 Id. at 962-64.
98 Id. at 962-63 (describing the data transformation at issue in *In re Abele*, 684 F.2d 902, 908-09 (C.C.P.A. 1982), as being representative of physical objects).
99 *In re Nuijten*, 500 F.3d 1346, 1353, 1357 (Fed. Cir. 2007).
100 *Bilski*, 545 F.3d at 963.
102 Id.; *Bilski*, 545 F.3d at 963-64.
103 *Bilski*, 545 F.3d at 963-64.
104 Id. at 949.
105 Id. at 959.
106 See generally *Ex parte Bilski*, No. 2002-2257, 2006 WL 4080055 (B.P.A.I. Sept. 26, 2006); *Bilski*, 545 F.3d at 950. The CAFC likely felt little obligation to spend much time abrogating this test, as *State Street* had implicitly recognized the test’s inapplicability after *Diamond v. Diehr* and *Diamond v. Chakrabarty*. *State Street Bank & Trust Co. v. Signature Fin. Group, Inc.*, 149 F.3d 1368, 1374 (Fed. Cir. 1998).
107 *Bilski*, 545 F.3d at 959.
108 Id.
109 Id.
110 Id. at 959-60.
111 Id. at 959 (citing *In re Alappat*, 33 F.3d 1526, 1543 (Fed. Cir. 1994)).
provide useful indicators for determining patentability for borderline claims. But in the end, the “useful, concrete and tangible result” test was dismissed as insufficient as well. Finally, the Bilski court made clear that, despite the examiner’s apparent application of a “technological arts” test, no such test had ever existed, nor would one be adopted in Bilski. The reason being that “technology” is a term too “ambiguous and ever-changing” to underpin a meaningful test. Thus, what remains is the “machine-or-transformation” test and its two corollaries.

D. Voicing the Debate: The Concurring and Dissenting Opinions

¶29 The In re Bilski concurrence from Judge Dyk, joined by Judge Linn, is a laborious etymological analysis as to whether the Bilski claim would have been eligible at the time of the Patent Act of 1793. The judges fully joined the majority opinion, but wrote separately to counter the charges in Judges Newman’s and Rader’s dissents that the majority usurped the legislature’s role by straying from the statute. The concurring opinion’s most convincing argument, however, is drawn from yet another dissent, that of Judge Mayer, who explained that the reference to “anything under the sun” being patentable is quite misunderstood. In fact, the famous quote from the 1952 House Report reads in full as follows: “A person may have ‘invented’ a machine or manufacture, which may include anything under the sun made by man, but it is not necessarily patentable under section 101 unless the conditions of the title are fulfilled.”

Judges Dyk and Mayer made two important observations about this quote. First, the quote only refers to “machines and manufactures,” and thus offers no support that the 1952 Act intended to broaden “process” eligibility. Second, even with respect to machines and manufactures, anything under the sun will not be patentable under § 101 unless it satisfies the requirements of Title 35. Thus, the use of this partial language to continually broaden patentability for all categories in § 101 is ungrounded.

¶30 Judge Newman’s dissent was no more a surprise than the Majority opinion. In fact, she utilized a similar formula for her dissent in Schrader. In both dissents, Judge Newman cites the assertion in Diamond v. Chakrabarty that “anything under the sun that is made by man” is patentable subject matter. She determined that the majority’s construction of a “process” in both cases was too narrow, and that both Schrader’s auction method and Bilski’s hedging method should fall within the definition. She also put forth a history of “process” patents contra the concurrence, potentially getting the

112 Id.
113 Id. at 959-60.
114 Id. at 950, 960.
115 Id. at 960.
116 Id. at 967 (Dyk, J., concurring).
117 Id. at 976 (Dyk, J., concurring); id. at 1000 (Mayer, J., dissenting).
119 Bilski, 545 F.3d at 1000.
120 Id. at 976 (Dyk, J., concurring); id. at 1000 (Mayer, J., dissenting).
121 22 F.3d 290 (Fed. Cir. 1994).
123 Schrader 22 F.3d at 297; Bilski, 545 F.3d at 980 (Newman, J., dissenting).
124 Schrader 22 F.3d at 296-97.
125 Bilski, 545 F.3d at 997 (Newman, J., dissenting).
better of that argument by, *inter alia*, noting the existence of a 1778 process patent over a “plan for assurances on the lives of persons 10 to 80 years of age.” Ultimately, Judge Newman’s 20-plus page dissent is a tenacious defense of the position that patents drive innovation and economic growth in unforeseeable ways, and any limits imposed by § 101 risk a chilling effect.

¶31 Judge Rader’s dissent was guided largely by the same principle as Judge Newman’s, stating that “as innovators seek the path to the next techno-revolution, this court ties our patent system to dicta from an industrial age decades removed from the bleeding edge.” Rader reached his conclusion rather abruptly, stating that the majority should have affirmed the BPAI in a “single sentence” stating simply that the claim was an abstract idea. But Rader ignored the question the Majority was charged with answering—and the exact question on which the BPAI sought guidance: why is the claim in *Bilski* an abstract idea and not a process? He made no effort to distinguish the two, labeling the hedging method classically abstract, vague, fundamental, and obvious—terms that, without more, provide little guidance to a patent community on the bleeding edge. Rader’s enumeration of unanswered questions in the wake of the machine-or-transformation test is well founded. *Bilski* does not, for example, define the scope of insignificant post-solution activity, the application of specific machines, or the degree of transformation required in any given process. But, as the BPAI rejection demonstrated, each of these questions already existed, implicitly or otherwise, within the confines of process eligibility.

IV. WHAT GUIDEPOSTS HAS *BILSKI* ESTABLISHED?

¶32 *Bilski* leaves the door open to continued patenting of business methods and software. At the least, Judge Mayer, in dissent, emphatically agrees. The question is: how big is the door and how wide open? The *Bilski* court could not answer that question on the facts presented, and given the ever advancing state of “technology,” there may never be a conclusive answer. The court did supply the Patent Bar with two significant guideposts: process claims tied either to 1) a machine or 2) a transformation will be patent eligible, so long as both are accompanied by meaningful limits and do not constitute insignificant post-solution activity. Only time and new cases can provide additional indicators and contours of eligibility. But, at least some practitioners and inventors have commented that *Bilski* may have made it easier to obtain software or

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126 *Id.* at 989 (Newman, J., dissenting).
127 *See id.* at 997-98 (Newman, J., dissenting).
128 *Id.* at 1011 (Rader, J., dissenting).
129 *Id.* at 1011, 1013 (Rader, J., dissenting).
131 *Bilski*, 545 F.3d at 1013 (Rader, J., dissenting).
132 *Id.* at 1015 (Rader, J., dissenting).
133 *Id.* (Rader, J., dissenting).
134 *See generally* *Ex parte* Bilski, 2006 WL 4080055.
135 *Bilski*, 545 F.3d at 998 (Mayer, J., dissenting).
137 See discussion *supra*, Section II.b.
computer-related process patents, in that the decision has provided “a roadmap to allowance for examiners,” who are “requiring only that a computer be included within the claim.”

¶33 If such a trend proves true, it would seem consistent with Bilski’s goals of providing clarity without foreclosing unforeseen technologies from process eligibility. After all, Bilski acknowledged that the “machine-or-transformation” test may not easily capture all patent-eligible inventions, recognizing, as Benson did, that some processes may yet qualify despite failing this test. This acknowledgement, in conjunction with the court’s reaffirmation of State Street’s eradication of the “business method exception” to patentability, makes clear that Bilski did not seek to fully overturn State Street or to return the law to the state in which it existed in Schrader. Whether a process “does business” remains irrelevant to the § 101 analysis after Bilski. Thus, significant portions of State Street remain alive, indicating that the gate to patent eligibility is wider than some may believe.

¶34 Nor does Bilski seek to bar software patents; the opinion specifically explains that it will be of little use in distinguishing eligible software claims. It bears repeating that Bilski’s process was not tied to a particular machine. This fact allowed the CAFC to limit its holding to avoid the trickier issue, hinted at in Comiskey, as to whether adding a general-purpose computer to an abstract idea or mental process makes it patentable pursuant to § 101. Moreover, Bilski left “technology” broadly defined and spurned a “technological arts” test. This may have been done to address Judges Newman and Rader’s view that new and evolving technologies may develop outside the scope of the machine or transformation test, but may not necessarily be unintended under the Constitution, the Patent Act, or prior precedent.

¶35 Indeed, others fear as well that Bilski “pushes the United States patent system back into a nineteenth-century mechanized, industrial past” in disregard of the “plain language

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140 See Bilski, 545 F.3d at 956.
141 See id. at 956.
142 Id. at 960; In re Ferguson, 558 F.3d 1359, 1367 (Fed. Cir. 2009) (Newman, J., concurring in the judgment).
143 Bilski, 545 F.3d at 960 (rejecting calls for an exclusion of business methods, the court relied on State Street’s elimination of such an exclusion, stating explicitly: “We reaffirm this conclusion.”).
144 Id. at 959.
145 Id. at 960 n. 23 (“We also note that the process claim at issue in this appeal is not, in any event, a software claim. Thus, the facts here would be largely unhelpful in illuminating the distinctions between those software claims that are patent-eligible and those that are not.”).
146 Id. at 962.
147 See In re Comiskey, 499 F.3d 1365 (Fed. Cir. 2007) (discussed in Section I, supra).
148 Bilski, 545 F.3d at 960.
149 Id. at 976, 1011 (Newman, J., dissenting, and Rader, J., dissenting, respectively).
of the statute and . . . substantial Supreme Court precedent.” ¹⁵⁰ To the contrary, Benson, Flook, and Diehr, in conjunction with Comiskey, and Nuijten (to some extent) indicate that State Street and AT&T were truly the outlier cases to the extent they emphasized an invention’s usefulness and downplayed tangibility. And, as Bilski points out, the inventions at issue in both State Street and AT&T were tied to machines, namely computers.¹⁵¹ Since the claimed method to hedge commodity risk was not tied to a machine,¹⁵² the Bilski court remained careful to avoid examination of this issue. Thus, Bilski does not present a sea change in which the outcomes of State Street or AT&T have been overturned.

More subtly, Bilski may be drawing the eligibility line at inventions requiring the exclusivity incentive afforded by patents. In doing so, it may not be the most straightforward or enlightening opinion, but it gets closer to achieving the practical necessities of the PTO and the Patent Bar than any of the dissents. The Majority, without addressing this philosophical and policy debate directly, was seemingly conscious of the role of incentives, and wisely refused to impose a blanket prohibition over either business method or software applications.¹⁵³ Judge Mayer’s dissent explored this policy analysis overtly, determining that a blanket prohibition on business method applications is proper because such methods require no patent incentive to drive development; thus, granting such patents stifles innovation.¹⁵⁴ Judges Newman and Rader view the “machine-or-transformation” test in itself to be stifling.¹⁵⁵ The view expressed in their respective dissents, which advocate that a useful invention should be evaluated under the remaining requirements of the Patent Act, would practically dispense with any meaningful § 101 analysis, which is not what the Court intended in Benson, Flook and Diehr.

The en banc debate raises the issue of whether a rational business person would invest in or implement a new process openly and notoriously without the exclusivity incentive.¹⁵⁶ If the answer is “yes,” then perhaps the method may be outside the scope of eligibility for that reason. This is because granting a patent to such a method likely imposes unnecessary costs upon the marketplace by preventing others from using a process that will be disclosed to the public in any event.¹⁵⁷

In this regard, the Bilski claim was a poor test case for advocates of business method patents; the method seemingly makes sense to practice openly, with or without patent protection, requiring none of the encouragement offered by the promise of exclusivity or trade secret protection. It is doubtful that commodity brokers will now

¹⁵⁰ Sobon & Arner, supra note 10, at 17.
¹⁵¹ Id. at 959, 959 n.18.
¹⁵² Id. at 950.
¹⁵³ Id. at 960.
¹⁵⁴ Id. at 1007 (Mayer, dissenting).
¹⁵⁵ Id. at 989, 1011 (Newman, J., dissenting, and Rader, J., dissenting, respectively).
¹⁵⁶ The question presumes that the process is not amenable to trade secret protection. Inventions providing businesses a competitive edge when implemented in secrecy are likely to require additional incentives to encourage disclosure to the public. See, e.g., Jeanne C. Fromer, Patent Disclosure, 94 IOWA L. REV. 539, 541-42 (2009).
¹⁵⁷ See, e.g., Michael Orey, Supreme Court to Review ‘Business Method’ Patents, BUSINESSWEEK, June 1, 2009 (“IBM maintains that the patents are not needed to promote innovation; businesses would come up with the products even without patent protection. ‘You’re creating a new 20-year monopoly for no good reason,’ IBM’s top in-house patent attorney, David Kappos, told BusinessWeek last year.”), available at http://www.businessweek.com/technology/content/jun2009/tc2009061_905686.htm.
exclude creative hedging methods from their arsenals. For-profit businesses, by necessity, seek the most efficient, cost effective methods of operation and will incorporate efficiencies absent patent incentives.\footnote{Bilski, 545 F.3d at 1005-1006 (Mayer, J., dissenting).} Claimants acquiring patents over such processes arguably receive windfalls.\footnote{See Richard A. Posner, The Law & Economics of Intellectual Property, DAEDALUS, Spring 2002, at 5.} Such grants indicate a backsliding towards the English Crown’s hated practice of bestowing industry-wide patents to “Court favorites.” On the other hand, the promise of such exclusivity may spur a race to develop more efficient methods sooner than they might otherwise be developed.\footnote{See Bilski, 545 F.3d at 968 (Dyk and Linn, JJ., concurring).} The CAFC’s analysis ultimately demonstrates its belief that a patent on Bilski’s claim—at least in the form presented – would be antithetical to the constitutional goal of promoting progress.\footnote{See In re Ferguson, 558 F.3d 1359, 1367-68 (Fed. Cir. 2009) (Newman, J., concurring in the judgment) (“[L]et us not forget that today’s ‘knowledge economy’ arose and thrived under the past law of patent eligibility.”). The Ferguson decision reaffirmed the Bilski machine-or-transformation test, upholding the the rejection of a method and paradigm for marketing software products on the grounds that the method did not pass the machine-or-transformation test. \textit{Id.} at 1363-64, 1366. Judge Newman concurred in the judgment only on grounds of obviousness. \textit{Id.} at 1368.} But fact patterns are infinite, and Bilski also recognizes that instances will arise in which the development and the disclosure of new, more effective processes, including business methods and software, will rely upon the promise of a temporary monopoly.\footnote{U.S. CONST. art. 1, § 8.}

V. Conclusion

\textit{Bilski} does not draw a bright line for process patentability, to the chagrin of some, and contrary to the belief of others,\footnote{See, e.g., Boeing Co. v. Sierracin Corp., 738 P.2d 665, 674 (Wash. 1987) (“[T]rade secrets law protects . . . ideas if they possess some novelty and are undisclosed or disclosed only on the basis of confidentiality.”).} yet the exclusionary incentive seemingly remains for processes that require it. Processes that implement machines, or work transformations of articles or matter are likely to require serious investment in practice, and those that pass the machine or transformation test will still be patent-eligible. Further, the CAFC left the door open to refinement or alteration of the test as a whole, indicating that inventions requiring the exclusivity incentive, yet not fitting neatly in the established framework, may still be eligible. Bilski admittedly leaves major questions unanswered, not the least of which is how the entire “machine” branch of the test should be applied. It remains to be seen whether the machine-or-transformation test will itself prove a sufficient tool for drawing consistent, and wise, distinctions at the heart of the process patent eligibility debate. As State Street, Comiskey, and Bilski demonstrate, this distinction is unfortunately an art, not a science. The law induces the development, distribution, and disclosure of new ideas with monopolies, but it also protects undisclosed ideas via trade secrets.\footnote{See Bilski, 545 F.3d at 956, 960.} Perhaps Bilski’s legacy will be an inching towards a distinction
where process eligibility gives way at the point where a method is efficient to implement with or without a monopoly, and where it cannot be hidden when used. In such instances, efficiency incents development and implementation, while the inability to conceal the process obviates the need to incent disclosure to the marketplace. This seems a distinction consistent with the “machine-or-transformation” test, but *Bilski* is merely one step towards that line.