

***Bilski v. Kappos*: The Supreme Court Rejects The Federal Circuit's
"Machine-or-Transformation" Test As The Sole Test In Determining
Whether A Claimed Business Method Is Patent Eligible While Keeping The
Door Open For Business Method Patents Under 35 U.S.C. § 101**

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***Bilski v. Kappos*: The Supreme Court Rejects The Federal Circuit's
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Introduction

In the *Bilski* case,¹ on June 28, 2010, the U.S. Supreme Court ruled that business method patent claims for hedging risk did not define a patentable process under 35 U.S.C. § 101 but rather was an attempt to patent an abstract idea. Prior Supreme Court precedent² provides that such ideas, laws of nature and physical phenomena are specific exceptions to § 101's dynamic and wide scope as to patentable subject matter.³

Despite an extensive concurring opinion authored by Justice Stevens,⁴ who would have held that all business methods are unpatentable, Justice Kennedy, who authored the majority opinion, held that a business method was one kind of "method" that, at least in some circumstances, is eligible for patenting under § 101.⁵ In saying this, the Court rejected the exclusivity of the Federal Circuit's "machine-or-transformation" test in determining patent-eligible subject matter under the statute.

Instead of coming up with a test, the Court looked to the Federal Circuit to come up with "other limiting criteria" in evaluating business method as well as other process patents in the Information Age.⁶ The Court suggested that the Federal Circuit look to the definition of the term "process" in § 101 and the "guideposts" of the *Benson*, *Flook* and *Diehr* Supreme Court cases in coming up with guidelines under the statute.⁷

Part I of this report takes a look at what happened in the Patent Office with respect to the original patent application. Part II of this report looks at Chief Judge Michel's Federal Circuit opinion as well as some of the other opinions including Judge Rader's dissenting opinion. Part III of the report takes an in-depth look at the Court's various opinions including Justice Kennedy's majority opinion, Justice Steven's concurring opinion and Justice Breyer's concurring opinion. Part IV of the report looks at the Patent Office's response to the *Bilski* case.

¹ 130 S.Ct. 3218.

² *Diamond v. Diehr*, 450 U.S. 175, 185 (1981); *Parker v. Flook*, 437 U.S. 584, 589 (1978); and *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972) (these cases are referenced to herein as the patent eligibility "trilogy").

³ See *Bilski*, at 3227.

⁴ *Id.*, at 3231-3257.

⁵ *Id.*, at 3228.

⁶ *Id.*, at 3231.

⁷ *Id.*

I. At The Patent Office

A. In Front Of The Patent Examiner

On April 10, 1997, a patent application was filed in the U.S. Patent and Trademark Office by applicants, Bernard L. Bilski and Rand Warsaw. The application describes and claims a procedure including a series of steps for managing or protecting against the risk amongst buyers and sellers of commodities (*i.e.* hedging risks in commodities trading). Claim 1 of the patent application is "a method for managing the consumption risk costs of a commodity sold by a commodity provider at a fixed price" and comprises 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 consumers;
- (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.⁸

Although the patent application makes clear that the "method can be used for any commodity to manage consumption risk in a fixed bill price product,"⁹ it includes specific applications of the method, particularly in the field of energy, as a means of enabling suppliers and consumers to minimize the risks resulting from fluctuations in demand during specified time periods.¹⁰ Energy suppliers and consumers may use that method to hedge their risks by agreeing upon a fixed series of payments at regular intervals throughout the year instead of charging or paying prices that fluctuate in response to changing weather conditions. The patent application describes a series of steps, including the evaluation of historical costs and weather variables and the use of economic and statistical formulas, to analyze these data and to estimate the likelihood of certain outcomes.¹¹

The patent Examiner rejected petitioners' application on the ground that it "is not directed to the technological arts," insofar as it "is not implemented on a specific apparatus" such as a computer and "merely manipulates [an] abstract idea and solves a purely mathematical problem without any limitation to a practical application."¹²

⁸ *In re Bilski*, 545 F.3d 943, 949 (Fed. Cir. 2008).

⁹ *Id.*

¹⁰ *Id.*

¹¹ *Id.*, at 950.

¹² *Id.*

B. At The Board Of Patent Appeals And Interferences

The Board of Patent Appeals and Interferences ("Board") affirmed the Examiner's decision, but it rejected the position that a patentable process must relate to "technological arts" or be performed on a machine.¹³ Instead, the Board denied petitioners' patent on two alternative, although similar, grounds: first, that the patent involves only mental steps that do not transform physical subject matter,¹⁴ and, second, that it is directed to an "abstract idea," and did not produce a "useful, concrete and tangible result."¹⁵

II. At The Court Of Appeals For The Federal Circuit

Petitioners appealed to the United States Court of Appeals for the Federal Circuit. After briefing and argument before a three-judge panel, the Court *sua sponte* decided to hear the case *en banc*. The *en banc* Court of Appeals affirmed the Board's decision in a 9-3 decision. The case produced five different opinions. Eleven of the twelve judges agreed that petitioners' claims do not describe a patentable "process" under § 101. Summaries of some of the opinions are provided here as Justice Kennedy stated that "students of patent law would be well advised to study these scholarly opinions."¹⁶

A. Chief Judge Michel's Opinion

Chief Judge Michel's opinion, joined by eight other judges, rejected several possible tests for what is a patent-eligible process, including the prior Freeman-Walter-Abele test, the "useful concrete and tangible result" test, and the "technological arts" test, all of which had been proposed as patent eligibility tests since the Supreme Court's trilogy. The Court also refused to adopt a test that barred business methods.¹⁷ Rather, the majority interpreted Supreme Court jurisprudence to "enunciate[] a definitive test to determine whether a process claim is tailored narrowly enough to encompass only a particular application of a fundamental principle rather than to pre-empt the principle itself."¹⁸ The Court concluded that a "claimed process is surely patent-eligible under § 101 if: (1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing."¹⁹ The Court further concluded that this "machine-or-transformation test" is "the *sole* test governing § 101 analyses,"²⁰ and therefore the "test for determining patent eligibility of a process under § 101."²¹ Applying that test, the Court held that petitioners' claim is not a patent-eligible process.²²

¹³ *Id.*

¹⁴ *Id.*

¹⁵ *Id.*

¹⁶ *Bilski v. Kappos*, at 3224.

¹⁷ *In re Bilski*, 545 F.3d 943, 949-960 and n.19.

¹⁸ *Id.*, at 954.

¹⁹ *Id.*, at 954-955.

²⁰ *Id.*, at 955.

²¹ *Id.*, at 956.

²² *Id.*, at 963-966.

B. Judge Dyk's Concurring Opinion

In a separate opinion reaching the same conclusion, Judge Dyk analyzed the history of the English and U.S. patent jurisprudence commencing with the Statute of Monopolies and the Act of 1793, respectively. He concluded that "the history of § 101 fully supports the majority's holding that Bilski's claims did not contain patentable subject matter" and that the majority decision reflected "careful and respectful adherence to the Congressional purpose" in enacting patent legislation. Despite the legitimate questions of applying eighteenth and nineteenth century legal and technological precedents to modern problems, Judge Dyk found that history enlightening.²³

C. Judge Mayer's Dissenting Opinion

Three judges wrote dissenting opinions, although two of those judges agreed that petitioners' claim is not patent-eligible. In one of these opinions, Judge Mayer would have held that petitioners' claim "is not eligible for patent protection because it is directed to a method of conducting business."²⁴ He argued the adoption of a "technological standard for patentability."²⁵

D. Judge Rader's Dissenting Opinion

Judge Rader (now Chief Judge Rader) would have rejected petitioners' claim on the ground that it seeks to patent merely an abstract idea.²⁶ Judge Rader explained: "This Court labors for page after page, paragraph after paragraph, explanation after explanation to say what could have been said in a single sentence: 'Because Bilski claims merely an abstract idea, this Court affirms the Board's rejection.'"

Judge Rader concluded that the new "machine-or-transformation" test was hopelessly flawed:

In sum, this court today invents several circuitous and unnecessary tests. It should have merely noted that Bilski attempts to patent an abstract idea. Nothing more was needed. Instead this opinion propagates unanswerable questions: What form or amount of "transformation" suffices? When is a "representative" of a physical object sufficiently linked to that object to satisfy the transformation test? (e.g., Does only vital sign data taken directly from a patient qualify, or can population data derived in part from statistics and extrapolation be used?) What link to a machine is sufficient to invoke the "or machine" prong? Are the "specific" machines of *Benson* required, or can a general purpose computer qualify? What constitutes "extra-solution activity?" If a process may

²³ *Id.*, at 972.

²⁴ *Id.*, at 998.

²⁵ *Id.*, at 1010.

²⁶ *Id.*, at 1011.

meet eligibility muster as a "machine," why does the Act "require" a machine link for a "process" to show eligibility?²⁷

III. At The Supreme Court

A. Justice Kennedy's Majority Opinion

Justice Kennedy began by stating that § 101 of the Patent Act defined the subject matter that may be patented:

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.

Justice Kennedy underscored the expansiveness of § 101 by quoting: "In choosing such expansive terms . . . modified by the comprehensive 'any,' Congress plainly contemplated that the patent laws would be given wide scope."²⁸ Congress took this permissive approach to patent eligibility to ensure that "ingenuity should receive a liberal encouragement."²⁹

Justice Kennedy explained that despite such "wide scope" there are exceptions on this scope of patent-eligibility: "laws of nature, physical phenomena, and abstract ideas"³⁰ and that the concepts covered by these exceptions are "part of the storehouse of knowledge of all men . . . free to all men and reserved exclusively to none."³¹

To allay the fears of some, Justice Kennedy stated that § 101 is not the sole tool for determining patentability of a patent claim: "The §101 patent-eligibility inquiry is only a threshold test. Even if an invention qualifies as a process, machine, manufacture, or composition of matter, in order to receive the Patent Act's protection the claimed invention must also satisfy 'the conditions and requirements of this title.'" Those requirements include that the invention be novel, (*see* § 102), nonobvious, (*see* § 103), and be fully and particularly described, (*see* § 112).³²

Justice Kennedy again referred back to the Patent Act in determining whether the "machine-or-transformation" test is the sole test in determining patentability. § 100(b) of the Patent Act defines "process" as:

process, art or method, and includes a new use of a known process, machine, manufacture, composition of matter, or material.

²⁷ *Id.*, at 1015.

²⁸ *Diamond v. Chakrabarty*, 447 U.S. 303, 308 (1980).

²⁹ *Id.*, at 308–309 (quoting 5 Writings of Thomas Jefferson 75-76 (H. Washington ed. 1871)).

³⁰ *Chakrabarty, supra*, at 309.

³¹ *Funk Brothers Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127, 130 (1948).

³² *Bilski*, at 3225.

Justice Kennedy stated that adopting the "machine-or-transformation" test as the sole test for what constitutes a "process" (as opposed to just an important and useful clue) violates the statutory interpretation principle that words a statute are to be interpreted as taking their "ordinary, contemporary, common meaning."³³ The Court was unaware of any "ordinary, contemporary, common meaning,"³⁴ of the definitional terms "process, art or method" that would require these terms to be tied to a machine or to transform an article.

Justice Kennedy faulted the Court of Appeals for incorrectly concluding that the Supreme Court has endorsed the "machine-or-transformation" test as an exclusive test.³⁵ The Court explained that while *Cochrane v. Deener*³⁶ explained that a "process" is "an act, or a series of acts, performed upon the subject-matter to be transformed and reduced to a different state or thing," this was dictum. The Court explained that while *Benson*³⁷ noted that "[t]ransformation and reduction of an article 'to a different state or thing' is the clue to the patentability of a process claim that does not include particular machines," it had explicitly declined to "hold that no process patent could ever qualify if it did not meet [machine or transformation] requirements."³⁸

The Court also distinguished *Flook* which stated "assum[ing] that a valid process patent may issue even if it does not meet [the machine-or-transformation test]."³⁹

Justice Kennedy stated that these Courts' precedents merely established that the "machine-or-transformation" test is a useful and important clue, an investigative tool, for determining whether some claimed inventions are processes under § 101. However, the "machine-or-transformation" test is not the sole test for deciding whether an invention is a patent-eligible "process."⁴⁰

Moving to business methods, Justice Kennedy made it clear that business methods are not categorically outside of § 101's scope stating that "a business method is simply one kind of 'method' that is, at least in some circumstances, eligible for patenting under §101."⁴¹

After distinguishing *Benson* and *Flook*, the Court then took time to explain what its prior decisions in *Benson*, *Flook* and *Diehr* (*i.e.* the trilogy of cases) stood for. These explanations are important since later in the opinion the Court referred to these decisions as "guideposts" in determining patent-eligible subject matter:

³³ *Diehr, supra*, at 182.

³⁴ *Id.*

³⁵ *Bilski, supra*, at 3226.

³⁶ 94 U.S. 780, 788 (1877).

³⁷ 409 U.S. 63, 70 (1972)

³⁸ *Id.*, at 71.

³⁹ *Flook, supra*, at 588, n.9.

⁴⁰ *Bilski, supra*, at 3227.

⁴¹ *Id.*, at 3228.

In *Benson*, the Court considered whether a patent application for an algorithm to convert binary-coded decimal numerals into pure binary code was a "process" under §101. (Citation omitted.) The Court first explained that "[a] principle, in the abstract, is a fundamental truth; an original cause; a motive; these cannot be patented, as no one can claim in either of them an exclusive right." (Citation omitted.) The Court then held the application at issue was not a "process," but an unpatentable abstract idea. "It is conceded that one may not patent an idea. But in practical effect that would be the result if the formula for converting . . . numerals to pure binary numerals were patented in this case." (Citation omitted.) A contrary holding "would wholly pre-empt the mathematical formula and in practical effect would be a patent on the algorithm itself." (Citation omitted.)⁴²

In *Flook*, the Court considered the next logical step after *Benson*. The applicant there attempted to patent a procedure for monitoring the conditions during the catalytic conversion process in the petrochemical and oil-refining industries. The application's only innovation was reliance on a mathematical algorithm. (Citation omitted.) *Flook* held the invention was not a patentable "process." The Court conceded the invention at issue, unlike the algorithm in *Benson*, had been limited so that it could still be freely used outside the petrochemical and oil-refining industries. (Citation omitted.) Nevertheless, *Flook* rejected "[t]he notion that post-solution activity, no matter how conventional or obvious in itself, can transform an unpatentable principle into a patentable process." (Citation omitted.) The Court concluded that the process at issue there was "unpatentable under §101, not because it contain[ed] a mathematical algorithm as one component, but because once that algorithm [wa]s assumed to be within the prior art, the application, considered as a whole, contain[ed] no patentable invention." (Citation omitted.) As the Court later explained, *Flook* stands for the proposition that the prohibition against patenting abstract ideas "cannot be circumvented by attempting to limit the use of the formula to a particular technological environment" or adding "insignificant postsolution activity." (Citation omitted).⁴³

Finally, in *Diehr*, the Court established a limitation on the principles articulated in *Benson* and *Flook*. The application in *Diehr* claimed a previously unknown method for "molding raw, uncured synthetic rubber into cured precision products," using a mathematical formula to complete some of its several steps by way of a computer. (Citation omitted.) *Diehr* explained that while an abstract idea, law of nature, or mathematical formula could not be patented, "an *application* of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection." (Citation omitted.) *Diehr* emphasized the need to consider the invention as a whole, rather than "dissect[ing] the claims into old and new elements and then . . . ignor[ing] the

⁴² *Id.*, at 3230.

⁴³ *Id.*

presence of the old elements in the analysis." (Citation omitted.) Finally, the Court concluded that because the claim was not "an attempt to patent a mathematical formula, but rather [was] an industrial process for the molding of rubber products," it fell within §101's patentable subject matter. (Citation omitted.)⁴⁴

Consistent with the trilogy of precedents the Court found that:

The concept of hedging, described in claim 1 and reduced to a mathematical formula in claim 4, is an unpatentable abstract idea, just like the algorithms at issue in *Benson* and *Flook*. Allowing petitioners to patent risk hedging would preempt use of this approach in all fields, and would effectively grant a monopoly over an abstract idea.⁴⁵

Finally, Justice Kennedy emphasized the importance of the patent statute as well as the trilogy of cases as follows: "The Court, therefore, need not define further what constitutes a patentable "process," beyond pointing to the definition of that term provided in § 100(b) and looking to the guideposts in *Benson*, *Flook*, and *Diehr*."

Rather than proposing a test to be employed instead of the exclusive "machine-or-transformation" test, the Court suggested that the Federal Circuit develop guidelines in determining patent-eligible subject matter under the statute: ". . . we by no means foreclose the Federal Circuit's development of other limiting criteria that further the purposes of the Patent Act and are not inconsistent with its text."⁴⁶

B. Justice Steven's Concurring Opinion

Justice Steven's concurrence argues that the majority interpret the term "process" too broadly.⁴⁷ He would have categorically excluded business methods from patentability, as they have not traditionally been patentable in the U.S.⁴⁸

C. Justice Breyer's Concurring Opinion

Justice Breyer's concurrence began by agreeing with Justice Stevens "that a 'general method of engaging in business transactions' is not a patentable 'process'" ⁴⁹ In a second part of his opinion, joined by Justice Scalia, Breyer highlighted four points which he felt were consistent with both the opinion of the Court and Justice Stevens' concurring opinion:⁵⁰

⁴⁴ *Id.*

⁴⁵ *Id.*, at 3231.

⁴⁶ *Id.*

⁴⁷ *Id.*, at 3232.

⁴⁸ *Id.*, at 3257.

⁴⁹ *Id.*

⁵⁰ *Id.*, at 3258-3259.

First, although the law's description of what is patentable under § 101 "is broad, it is not without limit."

Second, the Court has repeatedly stated that "transformation and reduction of an article to a different state or thing is *the clue* to the patentability of a process claim that does not include particular machines."

Third, while the machine-or transformation test has always been a "useful and important clue," it has never been the "sole test" for determining patentability.

Fourth, although the machine-or-transformation test is not the only test for patentability, this by no means indicates that anything which produces a "useful, concrete, and tangible result," [as held in *State Street Bank v. Signature Financial Group*] is patentable.

IV. Back To The Patent Office Post-Bilski

Four weeks after the U.S. Supreme Court's *Bilski* decision, the Patent and Trademark Office (*i.e.* PTO) issued guidance to patent Examiners in the form of a multi-factor reference list, with each factor weighed separately and no single factor determinative as to whether a process claim is patent-eligible under §101 of the Patent Act.⁵¹

A summary of the reference list is as follows:

Factors Weighing Toward Eligibility

- Recitation of a machine or transformation (either express or inherent).
 - Machine or transformation is particular.
 - Machine or transformation meaningfully limits the execution of the steps.
 - Machine implements the claimed steps.
 - The article being transformed is particular.
 - The article undergoes a change in state or thing (*e.g.* objectively different function or use).
 - The article being transformed is an object or substance.
- The claim is directed toward applying a law of nature.
 - Law of nature is practically applied.
 - The application of the law of nature meaningfully limits the execution of the steps.

⁵¹ 75 Fed. Reg. 43, 922.

- The claim is more than a mere statement of a concept.
 - The claim describes a particular solution to a problem to be solved.
 - The claim implements a concept in some tangible way.
 - The performance of the steps is observable and verifiable.

Factors Weighing Against Eligibility

- No recitation of a machine or transformation (either express or inherent).
- Insufficient recitation of a machine or transformation.
 - Involvement of machine or transformation with the steps is merely nominally, insignificantly, or tangentially related to the performance of the steps, *e.g.* data gathering, or merely recites a field in which the method is intended to be applied.
 - Machine is generically recited such that it covers any machine capable of performing the claimed step(s).
 - Machine is merely an object on which the method operates.
 - Transformation involves only a change in position or location of article.
 - "Article" is merely a general concept.
- The claim is not directed to an application of a law of nature.
 - The claim would monopolize a natural force or patent a scientific fact, *e.g.* by claiming every mode of producing an effect of that law of nature.
 - Law of nature is applied in a merely subjective determination.
 - Law of nature is merely nominally, insignificantly, or tangentially related to the performance of the steps.
- The claim is a mere statement of a general concept.
 - Use of the concept, as expressed in the method, would effectively grant a monopoly over the concept.
 - Both known and unknown uses of the concept are covered, and can be performed through any existing or future-devised machinery, or even without any apparatus.
 - The claim only states a problem to be solved.
 - The general concept is disembodied.
 - The mechanism(s) by which the steps are implemented is subjective or imperceptible.

The Patent Office stated that the factors included inquiries from the "machine-or-transformation" test as well as inquiries from Supreme Court precedent. While such a reference list may provide some guidance in some cases, the reference list calls to mind the unanswerable questions posed in Judge Radar's dissenting opinion at the Federal Circuit.