



JONES DAY
COMMENTARY

PATENT-ELIGIBLE SUBJECT MATTER REVISITED: *IN RE BILSKI*

On October 30, 2008, the United States Court of Appeals for the Federal Circuit (the “Federal Circuit”) issued its en banc decision in *In re Bilski*, which addressed the standard for determining whether method claims recite patent-eligible subject matter under 35 U.S.C. § 101.¹ At issue were non-machine-implemented claims directed to a business method for managing consumption risk costs of a commodity sold by a commodity provider. The court held that the claimed method did not recite eligible subject matter under Section 101, because the method was neither tied to a particular machine, nor did it transform physical objects or substances, or representations thereof, into a different state or thing. In rendering its decision, the court repudiated as insufficient the “useful, concrete and tangible result” test for subject-matter eligibility but stopped short of explicitly overruling *State Street Bank & Trust v. Signature Financial Group, Inc.*²

BACKGROUND

Section 101 poses a threshold question in patent law: What type of subject matter must an invention comprise in order to be eligible for patent protection? This threshold question must be answered independently of whether the invention is novel or nonobvious, as required by Sections 102 and 103 of the Patent Act. Section 101 allows different types of subject matter to be eligible for patenting: “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

Section 101 lists four categories of subject matter that are patent-eligible: process, machine, manufacture, and composition of matter. With respect to the first

¹ See 2008 WL 4757110 (Fed. Cir. Oct. 30, 2008) (en banc).

² 149 F.3d 1368 (Fed. Cir. 1998) (en banc).

³ 35 U.S.C. § 101 (2007).

category (and the only relevant category in *Bilski*), “[t]he term ‘process’ means process, art or method, and includes a new use of a known process, machine, manufacture, composition of matter, or material.”⁴ However, an invention that on its face fits into one of the four categories is *not* eligible for patenting if it is directed to one of the judicially created exceptions of a law of nature, a natural phenomenon, or an abstract idea.⁵ For example, if a patent claim merely was reciting an abstract idea (e.g., only reciting a mathematical operation), the invention would not have a practical application and thus would not satisfy the statutory subject-matter test of Section 101.⁶ The formulation of a “negative” test, through the judicially created exceptions, to define what constitutes patent-eligible subject matter, arose from the difficulty courts have encountered in articulating what constitutes eligible subject matter.

Determining whether a claim is directed to a law of nature, a natural phenomenon, or an abstract idea, as opposed to a practical application, repeatedly has proved to be thorny for the U.S. Patent Office and the courts. As an illustration, the U.S. Supreme Court in *Gottschalk v. Benson* reversed the appeals court’s determination that the claims contained patent-eligible subject matter.⁷ The claims at issue were directed to a process of converting binary-coded decimal (“BCD”) numerals into pure binary numerals.⁸ Method claim 8 recited, within its steps, actions occurring in a shift register of a computer, while method claim 13 recited no hardware.⁹ The Court indicated that the claims were not limited to any particular technology, any particular apparatus, or any particular end use and purportedly covered any use of the method in any type of general-purpose digital computer.¹⁰ In holding the claims ineligible for patenting, the Court stated:

It is conceded that one may not patent an idea. But in practical effect that would be the result if the formula for converting BCD numerals to pure binary numerals were patented in this case. The mathematical formula involved here has no substantial practical application except in connection with a digital computer, which means that if the judgment below is affirmed, the patent would wholly pre-empt the mathematical formula and in practical effect would be a patent on the algorithm itself.¹¹

The Court likened the claimed method to an idea with no practical application other than converting BCD numerals to pure binary numerals on a general-purpose computer, which would have the effect of entirely preempting use of the mathematical formula involved, as its only practical use was implementation on a computer.

In *Diamond v. Diehr*, however, the Court provided a different result.¹² The claims at issue were directed to a process for molding uncured synthetic rubber into cured rubber products through use of a shaped mold that applied heat and pressure for an optimal cure time.¹³ The process involved taking temperature measurements and feeding those measurements into a computer, which then calculated the optimal cure time using a mathematical equation.¹⁴ The Court held that the claimed process recited subject matter eligible for patenting, noting that the claimed process involved the transformation of an article into a different state or thing, namely, transforming uncured rubber into a cured rubber product.¹⁵ The Court took no issue with the use of a mathematical formula, a computer program, or a digital computer in the claimed process and noted that the inventors were not

4 35 U.S.C. § 100(b) (2007).

5 *Diamond v. Diehr*, 450 U.S. 175, 185 (1981) (citing *Parker v. Flook*, 437 U.S. 584, 589 (1978), and *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)). Mathematical algorithms are also considered to fall under a judicial exception and are not eligible for patenting in and of themselves. See *Diehr*, 450 U.S. at 186.

6 See *In re Alappat*, 33 F.3d 1526, 1553 (Fed. Cir. 1994) (en banc) (Archer, J., concurring).

7 See *Benson*, 409 U.S. at 63.

8 *Id.* at 64.

9 *Id.* at 73–74.

10 *Id.* at 64.

11 *Id.* at 71–72.

12 See 450 U.S. at 177–179.

13 See *id.*

14 *Id.*

15 *Id.* at 184.

seeking to patent the abstract mathematical formula itself so as to generally preempt the formula's use, but rather sought to use the mathematical formula only for the specific and practical application of curing rubber.¹⁶

THE EMERGENCE OF PATENTING BUSINESS METHODS

Identifying whether claims are directed to abstract ideas has been particularly challenging where innovations in business methods (such as the one in *Biilski*) are concerned. To date, no precise legal definition of a “business method” has emerged. Nevertheless, a “business method” is generally viewed as shorthand for an innovative way of doing business, often, though not always, utilizing a computer driven by software. With respect to patenting business method innovations, the evolution and acceptance of software patents during the 1990s to a large extent paved the way for acceptance of business method patents during the last 10 years.

In July 1998, the Federal Circuit solidified the acceptance of business method patents in *State Street*, when it held that the claims of a patent directed to a computer system for managing mutual funds recited subject matter eligible for patenting.¹⁷ The claims at issue in *State Street* recited a data-processing system for implementing a spoke-and-hub investment structure in which mutual funds (spokes) pooled their assets in an investment portfolio (hub) organized as a partnership to facilitate economies of scale and tax advantages.¹⁸ The court found that the claims recited subject matter eligible for patenting as opposed to an abstract idea:

[T]he transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price, constitutes a practical application of a mathematical algorithm, formula, or calculation, because it produces “a useful, concrete and tangible result”—a final share price momentarily fixed for recording and reporting

purposes and even accepted and relied upon by regulatory authorities and in subsequent trades.¹⁹

This passage in *State Street* established the “useful, concrete and tangible result” test as the benchmark for both software patents and business method patents in determining whether they contained patent-eligible subject matter under Section 101. *State Street* also took the opportunity to dispose of what was believed to be a judicially created “business method” exception to statutory subject matter, stating that “business methods have been, and should have been, subject to the same legal requirements for patentability as applied to any other process or method.”²⁰

An immediate result of the *State Street* decision was the perceived creation of a new class of inventors, which included business managers, sales personnel, CEOs, stockbrokers, and others. In addition, *State Street* coincided with the dot-com boom, and internet companies seized upon the decision and filed numerous patent applications. A sizable number of those applications involved combining business method innovations with computer or internet technology. (These types of patent applications, which primarily relied upon their business method innovation for their novelty, were already being filed before *State Street*. This decision, however, removed whatever legal impediments dot-com companies may have thought accompanied such applications.)

THE BUSINESS METHOD PATENT SPECTRUM

Initially, business method patents were mainly hybrids of internet technology and business innovation. The patents of Jay Walker, head of Priceline.com, are a prime example. Walker's patents covered, among other things, a reverse-auction approach for finding an acceptable price for airline tickets via the internet (*i.e.*, the “name your price” ticket-ordering system).

Many patent practitioners, however, believed that *State Street* was broad enough to permit the patenting of business

¹⁶ See *id.* at 187.

¹⁷ See 149 F.3d at 1373.

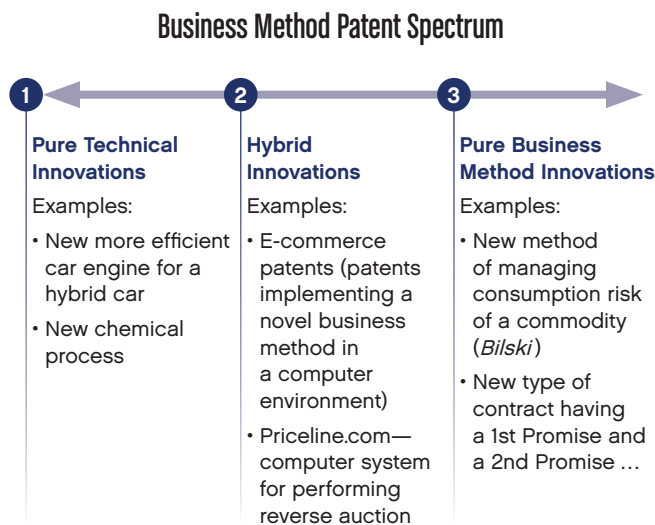
¹⁸ *Id.* at 1370.

¹⁹ *Id.* at 1373 (emphasis added).

²⁰ *Id.* at 1375.

methods that did not require a computer or any type of technological implementation. This belief led to the filing of “pure” business method patent applications. Examples include applications directed to new types of financial contracts as well as the patent application at issue in *In re Bilski*.

Consideration of a spectrum (as shown in the figure below) informs where an innovation may reside with respect to its subject matter. At one end of the spectrum (Category 1) are the traditional technology-laden innovations. Examples in this category would be new automotive engine designs or a new chemical-manufacturing process. The middle of the spectrum contains the hybrid patent category, the exemplar being e-commerce-type patents. At the other end of the spectrum (Category 3) are “pure” business method innovations, which is where the business method of *Bilski* (for managing consumption risk of a commodity sold by a commodity provider) would reside.



THE FEDERAL CIRCUIT’S DECISION IN *IN RE BILSKI*

With the growing filings of “pure” business method patent applications, the Federal Circuit heard *In re Bilski* en banc to address whether the claims of such applications recite patent-eligible subject matter.²¹ The “pure” business method innovation of *Bilski* dealt with managing or hedging the consumption risk costs of a commodity that is sold at a fixed price. The method sought to be patented in *Bilski* comprised steps that did not require implementation with a machine:

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 . . . ;
- 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 rate²²

Bilski's application was rejected by both the patent examiner and the Board of Patent Appeals and Interferences (“BPAP”) because the claimed subject matter was directed to an abstract idea.²³ Human actions alone performing the steps of the claimed method could constitute infringing activity if the claimed method were patented.

²¹ See 2008 WL 4757110.

²² U.S. Patent Application Serial No. 08/833,892 cl. 1 (filed Aug. 10, 1997) quoted in *In re Bilski*, 2008 WL 4757110, at *1.

²³ See *In re Bilski*, 2008 WL 4757110, at *2.

The en banc court held that the claimed method did not recite subject matter eligible for patenting under Section 101. The Federal Circuit framed the issue as whether Bilski's claim recited a fundamental principle, *i.e.*, a law of nature, a natural phenomenon, or an abstract idea, and, if so, whether it would preempt substantially all of the uses of that fundamental principle if the claims were granted.²⁴ Citing *Benson* and *Diehr*, the court stated that the governing test should be a "machine-or-transformation test" for assessing whether a claimed process recites patent-eligible subject matter:

The Supreme Court, however, has enunciated 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. 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.²⁵

As factors applicable to the test, the court stated that "the use of a specific machine or transformation of an article must impose meaningful limits on the claim's scope to impart patent-eligibility," and "the involvement of the machine or transformation in the claimed process must not merely be insignificant extra-solution activity," *e.g.*, data gathering.²⁶ As

for the transformation aspect, the court said that the transformation "must be central to the purpose of the claimed process."²⁷ Mere field-of-use limitations are likely to be insufficient to impart patent eligibility.²⁸

As for what constitutes an "article" under the transformation portion of the test, the Federal Circuit noted that physical objects and substances certainly suffice. Noting further that many Information Age processes manipulate electronic signals and data,²⁹ the court said that electronic signals or data representative of physical objects or substances can also suffice as articles for transformation.³⁰

In addition, the court explicitly considered whether the Supreme Court intended the "machine-or-transformation" test of *Benson* and *Diehr* to be the sole test for patent eligibility of a process under Section 101. Based upon its review of the Supreme Court precedent, the Federal Circuit concluded that the machine-or-transformation test is the governing test for assessing patent eligibility of a process under Section 101 and disposed of various other tests for assessing Section 101 patent eligibility one by one.³¹

24 *Id.* at *3 n. 5, *5.

25 *Id.* at *5.

26 *Id.* at *11, *12.

27 *Id.* at *11.

28 *Id.* at *7.

29 *In re Bilski*, 2008 WL 4757110, at *12.

30 *Id.* at *13 ("We hold that the Applicants' process as claimed does not transform any article to a different state or thing. Purported transformations or manipulations simply of public or private legal obligations or relationships, business risks, or other such abstractions cannot meet the test because they are not physical objects or substances, and they are not representative of physical objects or substances Thus, claim 1 does not involve the transformation of any physical object or substance, or an electronic signal representative of any physical object or substance.").

31 *Id.* at *7.

Test for subject-matter eligibility	Status
Machine-or-transformation test	Governing test
<i>Freeman-Walter-Abele</i> test	Inadequate. Claim failing the test may nonetheless be patent-eligible. ³²
Useful, concrete, and tangible result test	Insufficient. May provide useful indications of whether a claim is directed to law of nature, natural phenomenon, abstract idea, or practical application thereof. Never intended to supplant the Supreme Court's "machine-or-transformation" test. ³³
Technological arts test	Nonexistent. No such test has been explicitly adopted by the Supreme Court. Test would be unclear because the meanings of "technological arts" and "technology" are ambiguous and changing. ³⁴
Categorical exclusion for business methods or categories	No categorical exclusions beyond those articulated by the Supreme Court (laws of nature, natural phenomena, abstract ideas including mathematical algorithms). Categorical exclusion for business methods was explicitly rejected in <i>State Street</i> . ³⁵

Of special note is the court's repudiation of the "useful, concrete and tangible result" test of *State Street* as insufficient for subject-matter eligibility.

After determining which tests were still viable, the court held that the claimed method of *Bilski* did not recite eligible subject matter under Section 101, reasoning that the commodity consumption risk method was neither tied to a particular machine, nor did it transform physical objects or substances, or representations thereof, into a different state or thing.³⁶ By failing both prongs of the disjunctive "machine-or-transformation" test, *Bilski's* claimed method was found unpatentable.

THE *BILSKI* DISSENTS AND CONCURRENCE

Three judges filed dissents from the majority's opinion and its "machine-or-transformation" test. Judge Newman dissented and suggested that the majority's exclusive test for patent eligibility is contrary to the statute and precedent, would exclude many types of inventions applicable to today's electronic and photonic technologies, and will have an unknown impact on future patents as well as thousands of patents already granted.³⁷

Judge Rader also dissented. He commented that the case could have been addressed simply by finding *Bilski's* claim to be directed to an abstract idea, and he expressed concern that the majority's opinion disrupted "settled and wise principles of law."³⁸ In this regard, Judge Rader presented what he considered to be unanswerable questions presented by the majority's opinion:³⁹

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?

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

³² *Id.* at *9.

³³ *Id.*

³⁴ *Id.* at *10.

³⁵ *In re Bilski*, 2008 WL 4757110, at *10.

³⁶ *Id.* at *13.

³⁷ *Id.* at *24 (Newman, J., dissenting).

³⁸ *Id.* at *58 (Rader, J., dissenting).

³⁹ *Id.* at *62.

Does the rule against redundancy itself suggest an inadequacy in this complex spider web of tests supposedly “required” by the language of section 101?

Judge Mayer also dissented, suggesting that business methods should not be eligible for patenting and, further, that *State Street* and *AT&T Corp. v. Excel Communications, Inc.*,⁴⁰ should be overruled.⁴¹ Judge Mayer also advocated for a technological arts test as a better standard than the machine-or-transformation test, which he suggested could be easily circumvented by clever claim drafting.⁴²

Judges Dyk and Linn joined in the majority opinion but wrote separately to respond to assertions in the dissents of Judges Rader and Newman that the majority opinion was not grounded in the statute.⁴³

IMPLICATIONS AND PRACTICAL CONSIDERATIONS

Bilski raises important questions that will need to be answered in future cases. The Federal Circuit acknowledged, for example, that it would “leave to future cases the elaboration of the precise contours of machine implementation, as well as the answers to particular questions, such as whether or when recitation of a computer suffices to tie a process claim to a particular machine.”⁴⁴ Likewise, Judge Rader’s dissent presented important questions regarding the form and amount of “transformation” needed for the machine-or-transformation test. These questions raised by the dissents in *Bilski* have substantial importance not only for business method patents but also for software patents.

In addition, it seems apparent that for business method patents, the Section 101 threshold for patent eligibility has shifted by an unknown amount from pure business method innovations back toward hybrid business method innovations, as illustrated in the following figure:

Bilski Has Shifted The Acceptability Point In The Business Method Patent Spectrum



How much of a shift has occurred remains to be seen.

The court appears not to have foreclosed the patenting of all “pure” business method innovations, however. The majority gave a glimpse as to what possibly could have made the claimed method in *Bilski* acceptable with respect to Section 101: “Importantly, however, the claim is not limited to transactions involving *actual commodities*, and the application discloses that the recited transactions may simply involve options, *i.e.*, rights to purchase or sell the commodity at a particular price within a particular timeframe.”⁴⁵ Accordingly, a claim in *Bilski*’s application that was directed to actual commodities may have been sufficient to pass the threshold question in Section 101.

Bilski will have a wide-ranging impact on practitioners and patentees. From a litigation standpoint, Section 101 challenges to patent validity now appear more viable than they previously were. This may present an interesting dilemma for patentees seeking to challenge competitor patents while trying to defend patents of their own that may have been written under the superseded *State Street* test. Patentees may well begin examining their portfolios to identify candidates for reissue.

From the prosecution standpoint, patent drafters will need to gear their claims and descriptions to accommodate the “machine-or-transformation” test. For example, from the software and business method perspectives, this will likely mean including in process claims more recitations of hardware,

40 *AT&T Corp. v. Excel Communications, Inc.*, 172 F.3d 1352 (Fed. Cir. 1999).

41 *In re Bilski*, 2008 WL 4757110, at *46 (Mayer, J., dissenting).

42 *Id.* at *55.

43 *Id.* at *15 (Dyk, J., concurring).

44 *Id.* at *11 (majority opinion).

45 *Id.* at *1 (emphasis added).

and/or more recitations of signals and data that represent physical objects and/or substances. Patent prosecutors will need to demote their substantial arsenal of arguments relating to what constitutes useful, concrete, and tangible results in favor of new arguments regarding how process limitations are tied to hardware and how sufficient transformations are captured in the claim recitations. These exercises may very well involve chasing a moving target until more guidance is provided in future cases.

LAWYER CONTACTS

For further information, please contact your principal Firm representative or one of the lawyers listed below. General email messages may be sent using our “Contact Us” form, which can be found at www.jonesday.com.

Kenneth R. Adamo

1.216.586.7120

1.214.969.4856

kradamo@jonesday.com

Douglas H. Pearson

1.202.879.3825

dhpearson@jonesday.com

John V. Biernacki

1.216.586.7747

jvbiernacki@jonesday.com