



In re Bilski:
The Machine-Or-Transformation Test Stands Alone

I. Introduction

On October 30, 2008, the Federal Circuit decided *In re Bilski*, announcing a definitive test for determining if a "process" involving a "fundamental principle" qualifies for patent protection under the United States patent laws. In that decision, the majority held that fundamental principles (laws of nature, natural phenomena, abstract ideas, and mental processes) are not eligible for protection unless the claimed process utilizes a particular machine or apparatus, or transforms a particular article into a different state or thing. In asserting this machine-or-transformation test,¹ the majority ruled that two previously applied tests, the *Freeman-Walter-Abele* test and the "useful, concrete and tangible result" inquiry, are inadequate and should no longer be relied upon for divining whether a process is eligible for patent protection.²

II. The Issue in *In re Bilski*

Patent law (35 U.S.C. § 101) provides four categories of patent-eligible subject matter: processes, machines, manufactures, and compositions of matter.³ The patent claims in *Bilski* were essentially directed to a method of hedging risk in the field of commodities trading. The claims included the following generalized steps:

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- a. initiating a series of transactions between [a] commodity provider and consumers of [a] 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 rate such that said series of [(c)] transactions balances the risk position of said [(a)] transactions.⁴

As the claims were clearly not directed to a machine, manufacture, or composition of matter, the court only considered the issue of whether the claimed method qualified as a "process" within the meaning of Section 101.

It is common and accepted black letter law⁵ that certain processes are not patent eligible under Section 101. Laws of nature (gravity, $E=mc^2$, etc.), natural phenomena (naturally occurring plants, minerals, etc.), abstract ideas, and mental processes are deemed to be fundamental principles, and are "part of the storehouse of knowledge of all men . . . free to all men and reserved exclusively to none."⁶ As a result, patents may not go so far as to completely pre-empt others from using such fundamental principles. However, generally speaking, a patent may pre-empt others from using a particular application of a fundamental principle.⁷ For example, a claimed process for curing rubber that depends on a specific mathematical equation is patent eligible because it does not pre-empt use of the equation for any purpose other than curing rubber.⁸

The *Bilski* applicant sought to claim a method of hedging risk in the field of commodities trading.⁹ The examiner rejected the *Bilski* claims, asserting "the invention is not implemented on a specific apparatus and merely manipulates [an] abstract idea

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and solves a purely mathematical problem without any limitation to a practical application, therefore, the invention is not directed to the technical arts."¹⁰ The Board of Patent Appeals and Interferences found error in the Examiner's reliance on the "technical arts" test as unsupported by case law.¹¹ The Board also found error in the Examiner's requirement of a "specific apparatus."¹² According to the Board, a claim lacking ties to a specific apparatus may still be directed to patent-eligible subject matter "if there is a transformation of physical subject matter from one state to another."¹³ Nevertheless, the Board affirmed the rejection of the *Bilski* claims, holding the transformation of "non-physical financial risks and legal abilities of the commodity provider, the consumer, and the market participants" is not patent-eligible subject matter.¹⁴ The patentee appealed to the Federal Circuit.

On appeal, the Federal Circuit *sua sponte* ordered *en banc* review. Nearly 40 amicus briefs were filed representing a variety of industries. Ultimately, the Federal Circuit had to decide if the claims presented were narrowly tailored to encompass only a particular application of a fundamental principle and, therefore, eligible for patent protection. To reach this decision, the *Bilski* court necessarily had to settle upon a legal test governing whether a "process" is patent eligible.

III. The Machine-Or-Transformation Test

The *Bilski* majority elected to follow the machine-or-transformation test enunciated by the Supreme Court. The machine-or-transformation test provides two

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means to establish that a process claim involving a fundamental principle is sufficiently narrow to be eligible for patent protection. The first is to establish that the process utilizes a particular machine or apparatus. The other is to show that the process transforms a particular article into a different state or thing.¹⁵ The *Bilski* majority explained that such a claimed process, even though involving a fundamental principle, would nonetheless avoid pre-empting, *inter alia*, use of that principle with other machines or articles.¹⁶

Even a claimed process utilizing a machine or transforming an article must meet two further requirements to be patent eligible.¹⁷ First, the utilization of a machine or transformation of an article "must impose meaningful limits on the claim's scope."¹⁸ In other words, the fundamental principle must have a use other than with the claimed machine or article.¹⁹ Second, the utilization of a machine or transformation of an article "must not merely be insignificant extra-solution activity."²⁰ It must be "central to the purpose of the claimed process."²¹ Although the majority recognized that the Supreme Court may change or the Federal Circuit may refine this test in the future, it declined to depart from the existing machine-or-transformation test as governing the patent eligibility of a process.²²

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IV. The Inadequate Tests

In the process of declaring the exclusive province of the machine-or-transformation test, the majority discussed and dismissed as inadequate two widely applied tests for determining the patent eligibility of a process under Section 101.²³

The first test found to be inadequate is the *Freeman-Walter-Abele* test. This test, named for the three cases from the U.S. Court of Customs and Patent Appeals that formulated it, was used to determine the patent-eligibility of claims involving algorithms.²⁴ Algorithms are considered either abstract ideas or laws of nature.²⁵ The formulated test had two steps: "(1) determining whether the claim recites an 'algorithm' within the meaning of *Benson*,²⁶ and (2) determining whether the algorithm is 'applied in any manner to physical elements or process steps.'"²⁷ The majority concluded the *Freeman-Walter-Abele* test is inadequate, explaining that a claim failing this test may nonetheless be patent eligible under the machine-or-transformation test.²⁸

The second test found to be inadequate is the "useful, concrete and tangible result" inquiry. This inquiry comes from two prior Federal Circuit cases: *State Street* and *Alappat*.²⁹ As the Federal Circuit explained in *Alappat*, the basis for this inquiry was the Supreme Court's directive that "certain types of mathematical subject matter, standing alone, represent nothing more than abstract ideas until reduced to some type of practical application."³⁰ The majority reasoned that even though a process utilizing a

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machine or transforming an article will generally produce a "useful, concrete and tangible result," that inquiry standing alone is inadequate.³¹

Both Judge Newman and Judge Rader dissented. They argued that the test adopted by the majority is too narrow and adds new uncertainties to existing and future patents.³² Judge Newman contended the majority is "mistaken in finding that decisions of the [Supreme] Court require the *per se* limits to patent eligibility that the Federal Circuit today imposes." Arguing that the patent statutes and the Supreme Court's decisions "neither establish nor support the exclusionary criteria now adopted," she asserted that "[n]ot only past expectations, but future hopes, are disrupted by uncertainty as to application of the new restrictions on patent eligibility."³³ Judge Rader voiced concern about the inapplicability of the majority's test to new technologies, explaining "[b]ecause this court, however, links patent eligibility to the age of iron and steel at a time of subatomic particles and terabytes, I must respectfully dissent." While the majority recognized these concerns, it left resolution of such concerns for future cases.³⁴

V. Conclusion

The majority opinion in *Bilski* clarified the test for determining whether a process is patent eligible under Section 101. The *Freeman-Walter-Abele* test and the "useful, concrete and tangible result" inquiry are no longer valid and should not be relied upon.³⁵

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The machine-or-transformation test, for the time being, stands alone when addressing the patent eligibility of process claims under Section 101.

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¹ The machine-or-transformation test was first enunciated in 1972 by the Supreme Court in *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972).

² *Id.* at 18-20.

³ *Id.* at 5 (citing 35 U.S.C. § 101).

⁴ *Id.* at 2-3 (emphasis added).

⁵ *Id.* at 6-7 (quoting *Diamond v. Diehr*, 450 U.S. 175, 185 (1981) and *Benson*, 409 U.S. at 67).

⁶ *Id.* at 7 (citing *Funk Bros. Seed Co. v. Kalo Inoculatn Co.*, 333 U.S. 127, 130 (1948)).

⁷ *Id.* at 8 (citing *Diehr*, 450 U.S. at 187).

⁸ *Id.* at 9 (discussing *Diehr*, 450 U.S. at 187-88).

⁹ *Id.* at 2.

¹⁰ *Id.* at 3 (citing Board Decision, slip op. at 3).

¹¹ *Id.*

¹² *Id.*

¹³ *Id.*

¹⁴ *Id.* at 4.

¹⁵ *Id.* at 10 (citing *Benson*, 409 U.S. at 70).

¹⁶ *Id.* at 11.

¹⁷ *Id.* at 24.

¹⁸ *Id.* at 24 (citing *Benson*, 409 U.S. at 71-71).

¹⁹ *Id.* at 12-13 (discussing *Benson*, 409 U.S. at 71-71).

²⁰ *Id.* at 24 (citing *Parker v. Flook*, 437 U.S. 584, 590 (1978)).

²¹ *Id.*

²² *Id.* at 15.

²³ *Id.* at 18-21.

²⁴ *Id.* at 18-19 (citing *In re Freeman*, 573 F.2d 1237 (CCPA 1978); *In re Walter*, 618 F.2d 758 (CCPA 1980); and *In re Abele*, 684 F.2d 902 (CCPA 1982)).

²⁵ *Id.* at 8 n. 6.

²⁶ According to *Benson*, an "algorithm" is "[a] procedure for solving a given type of mathematical problem." 409 U.S. at 65. In *Benson*, the Supreme Court held that a process of converting data in binary-coded decimal format to pure binary format via an algorithm onto a digital computer was unpatentable subject matter because the algorithm had no other use. *In re Bilski*, 2007-1130 at 9-10.

²⁷ *In re Bilski*, 2007-1130 at 19 (quoting *In re Abele*, 684 F.2d at 905-07).

²⁸ *Id.* at 19.

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²⁹ *Id.* at 19-20 (citing *State St. Bank & Trust Co. v. Signature Fin. Group*, 149 F.3d 1368, 1373 (Fed. Cir. 1998) and *In re Alappat*, 33 F.3d 1526, 1544 (Fed. Cir. 1994)).

³⁰ *Id.* at 20 (quoting *In re Alappat*, 33 F.3d 1543); *In re Alappat*, 33 F.3d 1543 (discussing *Diehr*, 450 U.S. 175; *Flook*, 437 U.S. 584; and *Benson*, 409 U.S. 63).

³¹ *Id.* at 20.

³² See, e.g., *id.* at 2, 40 (J. Newman, dissenting); see, e.g., *id.* at 1 (J. Rader, dissenting).

³³ *Id.* at 33 (J. Newman, dissenting).

³⁴ *Id.* at 15 (majority opinion).

³⁵ *Id.* at 23.

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