

June 2010

The Thin Divide: Business Model, Patentable Process or Unpatentable Principle?, In Re Bilski, 545 F.3d 943 (D.C. Cir. 2008)

Eric Feld

Follow this and additional works at: <https://scholarship.law.ufl.edu/jtlp>

Recommended Citation

Feld, Eric (2010) "The Thin Divide: Business Model, Patentable Process or Unpatentable Principle?, In Re Bilski, 545 F.3d 943 (D.C. Cir. 2008)," *Journal of Technology Law & Policy*. Vol. 15: Iss. 1, Article 5.
Available at: <https://scholarship.law.ufl.edu/jtlp/vol15/iss1/5>

This Comment is brought to you for free and open access by UF Law Scholarship Repository. It has been accepted for inclusion in *Journal of Technology Law & Policy* by an authorized editor of UF Law Scholarship Repository. For more information, please contact kaleita@law.ufl.edu.

CASE COMMENT

THE THIN DIVIDE: BUSINESS MODEL, PATENTABLE PROCESS OR UNPATENTABLE PRINCIPLE?

In Re Bilski, 545 F.3d 943 (D.C. Cir. 2008)

*Eric Feld**

I. FACTS

Applicants Bernard L. Bilski and Rand A. Warsaw filed a patent application to the U.S. Patent and Trademark Office¹ for a new business model which involved hedging the price risk in the sale and purchase of commodities.² The patent office examiner rejected the application³ stating that the proposed model did not satisfy the criteria of the Patent Act,⁴ specifically the business model did not constitute a “process” under 35 U.S.C. § 101.⁵ In rejecting the application, the examiner stated that the process was not patentable because it was not tied to a specific

* Eric Feld is a J.D. Candidate 2011 at the University of Florida Levin College of Law. He would like to thank the *Journal of Technology Law & Policy* for this opportunity.

1. *In re Bilski*, 545 F.3d 943, 949 (D.C. Cir. 2008), *cert. granted sub. nom.* Bilski v. Doll, 129 S. Ct. 2735 (2009).

2. *Id.* The proposed process utilized mathematical models to curb risk between buyers and sellers of a commodity by using an intermediary agent to purchase and sell the commodity at fixed prices to minimize the negative effects of demand spikes. *Id.* at 949-50. For example, when demand for a commodity rises, consequently the price rises, which benefits the seller of a commodity while detrimentally affecting the buyer. *Id.* at 950. Conversely, when demand for the commodity falls, the price drops which benefits the buyer of the commodity while hindering the seller. *Id.* Inconsistent demand patterns can then make it difficult for buyers and sellers to consistently predict cost outlooks. An intermediary which buys the commodity from the seller at one fixed price and then sells it to a buyer at a different fixed price isolates the buyers and sellers from risk by maintaining a consistent price which can be used to ultimately create steady income. The intermediary maintains its own profitability by recovering any profit lost by purchasing the commodity at a disadvantageous price in relation to the market price by selling it at an advantageous price relative to the market price and vice versa. *Bilski*, 545 F.3d at 950.

3. *Ex parte Bilski*, App. No., 2002-2257, 2006 Pat. App. LEXIS 51, at *1 (B.P.A. 1, 2006) [hereinafter *Board Decision*].

4. *Id.* at *2. The Patent Act of 1793 established the guidelines for patent eligibility. *Bilski*, 545 F.3d at 952 n.4. To meet the threshold requirement of patent eligibility, a proposed patent must be considered either a process, machine, manufacture, or composition of matter as codified under 35 U.S.C. § 101. *Id.* at 951.

5. *Board Decision*, 2006 Pat. App. LEXIS 51, at 4-5. 35 U.S.C. § 101 states that “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 therefore, subject to the conditions and requirements of this title.” 35 U.S.C. § 101.

apparatus and merely manipulated an abstract idea.⁶ Applicants appealed to the Board of Patent Appeals and Interferences (Board) which upheld the rejection of the patent application.⁷ Applicants timely appealed to the U.S. Circuit Court of Appeals for the Federal Circuit, which heard the case en banc.⁸ The Court HELD that the applicant's proposed method was not a patent-eligible process under 35 U.S.C. § 101 because it constituted an abstract model which neither transformed an object into a different state or thing nor used a specific machine to carry out its function under the "machine or transformation test" set out by the Supreme Court.⁹

II. HISTORY

In *Gottschalk v. Benson*, an applicant attempted to patent a computer algorithm for converting binary-coded decimal (BCD) format to pure binary format on a computer.¹⁰ In its discussion of patent eligible processes, the Supreme Court made clear that one cannot patent merely an abstract "idea," such as a mathematical algorithm.¹¹ Further expanding on this concept, the Court held that natural scientific phenomena and mental processes cannot be patented.¹² However, the use of the phenomena in a specific application to obtain a new and useful end may be patentable.¹³ The Court in *Benson* explained that the "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."¹⁴ The Court further concluded that a process

6. *Board Decision*, 2006 Pat. App. LEXIS 51, at 3. In rejecting the patent application, the examiner used the "technological arts" test which guides that to be considered a "process" under the meaning of 35 U.S.C. § 101, the model must be tied to a specific physical apparatus, rather than being a model which represents a fundamental idea. *Id.* at *3-4.

7. *Id.* at *80. The Board stated that the patent office examiner incorrectly utilized the "technological arts" test which requires a process be used to develop a machine or improve human efficiency in some respect because the case law does not support such a test. *Id.* at *41-42. The Board labeled the requirement of a specific apparatus erroneous because a process that does not use a specific apparatus can be patent-eligible if it transforms an object into a different state or thing. *Id.* at *41-42. However, the Board said that the applicants' claims do not involve any patent-eligible transformation, holding that transformation of "non-physical financial risks and legal liabilities of the commodity provider, the consumer, and the market participants" is not patent-eligible subject matter. *Id.* at *52-53.

8. *Bilski*, 545 F.3d at 950.

9. *Id.* at 966.

10. *Gottschalk v. Benson*, 409 U.S. 63, 64 (1972).

11. *Id.* at 71.

12. *Id.* at 67.

13. *Id.*

14. *Id.* at 70.

patent's ability to preclude the entire use of a mathematical algorithm was a key indication of its ineligibility under section 101 of the Patent Act.¹⁵ In *Benson*, since the mathematical formula used in the process had no other practical application than for the specific purpose presented, then granting the patent would have the practical effect of precluding the use of the mathematical algorithm itself.¹⁶ Concluding then that ideas and natural mathematical functions are not patent eligible,¹⁷ the Supreme Court rejected the application.¹⁸

In a subsequent case, *Parker v. Flook*, the Supreme Court once again distinguished between patent-eligible "processes" and patent-ineligible "principles."¹⁹ In *Flook*, an individual submitted a patent application for a process using a mathematical algorithm to update "alarm limits" which signaled problems in various oil refining manufacturing settings.²⁰ Utilizing "alarm limits" was not a new idea, and the only novel feature of the applicant's patent was the use of the mathematical algorithm to continuously update the limits.²¹ In attempting to fundamentally distinguish the patent from the process in *Benson*, the applicant Flook stated that the process was not preempting the use of the mathematical algorithm entirely, but only its specific application in oil refining activities.²² While the Supreme Court recognized once again that a process containing a mathematical theorem to achieve a desired purposed could be patented,²³ it stated that "post-solution activities" as Flook demonstrated could not artfully transform an otherwise unpatentable principle into a patent eligible process.²⁴ The Court noted that a competent draftsman could artificially manipulate the patent system by attaching a simple application to a mathematical formula.²⁵

15. *Id.* at 71.

16. *Id.* at 71-72. The applied patent had a preclusive effect because as described, the patent sought to enjoin the use of the algorithm on any computer, when the algorithm was only useful in computer settings. *Id.* at 71.

17. *Id.* at 67.

18. *Id.* at 73.

19. *Parker v. Flook*, 437 U.S. 584, 589 (1978).

20. *Id.* at 585-87.

21. *Id.* at 585-86.

22. *Id.* at 589-90.

23. *Id.* at 591. "While a scientific truth, or the mathematical expression of it, is not patentable invention, a novel and useful structure created with the aid of knowledge of scientific truth may be." *Id.* (quoting *Mackay Radio & Tel. Co. v. Radio Corp. of Am.*, 306 U.S. 86, 94 (1939)).

24. *Id.* at 590. Post solution activities are simple applications of a mathematical principle to assist in solving a problem. These activities are not patent eligible because they merely point out the fundamental given use for the principle. *Id.*

25. *Id.* The Court expressed its concern that an applicant could patent the mathematical Pythagorean Theorem by simply stating that when solved, the theorem is useful in surveying activities. *Id.*

The Court further explained that the proposed patent did not have enough specific limitations or guidelines to suggest exactly how it would be utilized and thus was not reduced to a specific application.²⁶ The Court, in its desire to preserve the limits of patent law,²⁷ denied the applicant's patent.²⁸

Finally in *Diamond v. Diehr*, an individual applied for a patent for a process of curing rubber which heavily relied on mathematical algorithms to achieve the desired result.²⁹ According to the application, the process for properly curing rubber was highly dependent on controlling the temperature while heating the rubber.³⁰ The applicant's process implemented a mathematical algorithm to ensure that the rubber was consistently heated to the correct temperature for an optimal period of time.³¹ In holding that the process was patent eligible, the Supreme Court stated that the procedure, although heavily relying on mathematical formulas, did not seek to patent the formulas themselves.³² Rather, the procedure protected the integration of the algorithms in creating a process as a whole which the patent laws were "designed to protect."³³ The Court in *Diehr* established the "machine or transformation test" by stating that a process is considered patent eligible if it either transforms an object into a different state or thing, or if it operates on a specifically defined machine.³⁴

When analyzed congruently, *Benson*, *Flook*, and *Diehr* establish the "machine or transformation" test which crafts guidelines on which processes are patent eligible under 35 U.S.C. § 101. A mere "idea" or principle is clearly not patentable, but the implementation of the idea into a process as a whole can be patent eligible.

26. *See id.* at 586.

27. *Id.* at 596 ("[W]e must proceed cautiously when we are asked to extend patent rights into areas wholly unforeseen by Congress.").

28. *Id.*

29. *Diamond v. Diehr*, 450 U.S. 175, 177-78 (1981).

30. *Id.* at 177.

31. *Id.* at 178.

32. *Id.* at 193.

33. *Id.* at 192. "Because we do not view respondents' claims as an attempt to patent a mathematical formula, but rather to be drawn to an industrial process for the molding of rubber products, we affirm the judgment of the Court of Customs and Patent Appeals." *Id.* at 192-93. Further, unlike in *Flook*, the applicants were not attempting to preclude the use of the mathematical algorithm in all applications; rather they were trying to protect the use of the algorithm in conjunction with all of these additional necessary steps in curing the rubber. *Id.* at 187.

34. *Id.* at 184.

III. INSTANT CASE

In the instant case, the U.S. Court of Appeals for the Federal Circuit closely followed the precedent set forth by the three primary Supreme Court cases previously discussed. The Court of Appeals utilized the “machine or transformation test” as the primary benchmark for determining whether a process is patent eligible under 35 U.S.C. § 101.³⁵ In its explanation of the “machine or transformation test,” the Court held that an applicant may establish that a process satisfies § 101 by either showing that the claim is tied to a particular machine, or by showing that the claimed process transforms an article into a different object or thing.³⁶

Since the Applicants openly conceded that their process was not tied to a particular machine,³⁷ the Court focused its analysis primarily on determining whether the claimed process necessarily transformed an article into a different state or thing.³⁸ While the Court recognized that activities such as dyeing fabrics, or molding rubber clearly transforms an article, the Court commented that dealing with abstract business models and transformation was more difficult.³⁹ The Court, however, did not put a categorical exclusion on the patentability of business models⁴⁰ and stated that “physical steps” were not necessary to deem a process patentable.⁴¹ Ultimately though, the Court found that the process for hedging risk constituted merely an intangible conceptual exchange of rights and privileges in the purchase and sale of a certain commodity.⁴² Consequently, the Court held that the model for hedging risk did “not

35. *In re Bilski*, 545 F.3d 943, 956 (D.C. Cir. 2008), *cert. granted sub. nom. Bilski v. Doll*, 129 S. Ct. 2733 (2009). “[T]he machine-or-transformation test, properly applied, is the governing test for determining patent eligibility of a process under § 101.” *Id.*

36. *Id.* at 961.

37. *Id.* at 962.

38. *Id.*

39. *Id.* The Court recognizes the changes in technology that have arisen since precedential Supreme Court cases such as computer programs, where the “changes” to an object can be entirely electronic and not necessarily “physical” in the traditional understanding of the word. *Id.*

40. *Id.* at 960. The Court states there is no categorical exclusion beyond that specified in previous Supreme Court cases, and that business model processes are patent eligible under the “machine or transformation test” just like every other process. *Id.* A process is not patent eligible merely because it states physical steps but does not employ a particular machine, nor transfers an article into a different state or thing. *Id.* at 961. On the other hand, a process that states no apparent physical steps, but still transforms an article into a different state or thing or utilizes a particular machine, is patent eligible. *Id.*

41. *Id.* (“Thus, the proper inquiry under § 101 is not whether the process claim recites sufficient physical steps, but rather whether the claim meets the machine-or-transformation test.”).

42. *Id.* at 964.

involve the transformation of any physical object or substance, or an electronic signal representative of any physical object or substance"⁴³ and thus was not patent eligible under 35 U.S.C. § 101.⁴⁴

IV. ANALYSIS

Throughout the Circuit Court's analysis of precedent cases and the recognition of current evolutions in technology, its struggle to define the thin line between patentable "processes" and un-patentable "principles" underscores the aging effectiveness of current tests under the Patent Act. Although the Court ultimately uses the "machine or transformation test,"⁴⁵ this test merely relegates the applicants' business risk model as non-patent eligible, while doing little to describe how courts should rule on the patentability of future innovations, which are largely electronically and conceptually based.

In *Benson*, the Supreme Court held that when a mental principle or mathematical algorithm is implemented into a process where granting a patent would preempt all uses of the principle, a patent cannot be granted because the effect would be granting a limitation on the principle itself.⁴⁶ Recognizing the potential for loopholes in patent applications by associating a simple process with a mental principle, the Supreme Court in *Diehr* held that applying a field of use limitation⁴⁷ to a process would not render an otherwise patent-ineligible process patentable.⁴⁸ The Circuit Court in the instant case attempted to reconcile this apparent conflict⁴⁹ by saying that a patent on a process which preempts the widespread use of a fundamental principle merely illustrates that the patent is reduced to being effective on the principle itself⁵⁰ and conversely a process which passes the "machine or transformation test"

43. *Id.* "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." *Id.* at 963.

44. *Id.* at 966.

45. *Id.* at 956.

46. *Gottschalk v. Benson*, 409 U.S. 63, 71-72 (1972).

47. *Diamond v. Diehr*, 450 U.S. 175, 191-92 (1981). "A mathematical formula does not suddenly become patentable subject matter simply by having the applicant acquiesce to limiting the reach of the patent for the formula to a particular technological use." *Id.*

48. *Id.*

49. *Bilski*, 545 F.3d at 957. The Court wanted to reconcile the apparent conflict that on one hand patent law requires the applicant to limit the patent to protecting the use of the mental principle in a specific application and then on the other hand saying that once implemented into a specific application, the application cannot be a trivial device used to mask an attempt to protect the principle itself. *See id.*

50. *Id.*

does not face this problem.⁵¹ However, this explanation fails to assess a situation where a fundamental principle is first discovered and then subsequently applied to a specific application. Although it may pass the “machine or transformation” test, the patent would still fail eligibility based on the *Benson* pre-emption principle as explained by the instant court.⁵² Because there have been no other discovered uses for the principle, the patent would necessarily prevent all uses of it.

In *Flook*, the Court addressed the risk of allowing patents where an applicant artfully attached a post-solution activity activity to a process.⁵³ However, the Supreme Court, as well as the instant court, fails to address a situation where a process simultaneously uses a mental principle to achieve a legitimate transformation of an object, yet the principle involved has no other useful applications. The “machine or transformation” test as understood with the “field of use limitations” and “post-solution activity” elements would seemingly require at least two known applications of a fundamental principle before a patent eligible process can successfully implement the newly discovered principle in any fashion.

Furthermore, while the Court in the instant case held that a process can satisfy the “machine or transformation” test by implementing a specific machine, it does little to clarify how this definition will apply in the future. Many new patents are based on software which inherently uses the “machine” of an electronic device.⁵⁴ Consequently, the instant court recognizes that the Supreme Court may abandon or modify the “machine or transformation test” in the future.⁵⁵

Additionally, although the instant court relies singularly on the “machine or transformation test” to reach its holding,⁵⁶ it is not clear

51. *Id.*

52. The *Benson* pre-emption principle states that when a process patent pre-empts the use of a fundamental principle, then the patent cannot be granted. *Gottschalk v. Benson*, 409 U.S. 63, 71-72 (1972). The instant court understands that in *Benson*, the patent failed because although limited to its use on a computer, the algorithm could only be implemented on a computer, so the limitation would have been effective in preventing the widespread pre-emption of the algorithm. *See Bilski*, 545 F.3d at 955 n.9.

53. *Parker v. Flook*, 437 U.S. 584, 590 (1978).

54. *See Bilski*, 545 F.3d at 956. “Nevertheless, we agree that future developments in technology and the sciences may present difficult challenges to the machine-or-transformation test, just as the widespread use of computers and the advent of the Internet has begun to challenge it in the past decade.” *Id.* “We 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.” *Id.* at 962.

55. *Id.* at 956. “Thus, we recognize that the Supreme Court may ultimately decide to alter or perhaps even set aside this test to accommodate emerging technologies.” *Id.*

56. *Id.* “[T]he machine-or-transformation test, properly applied, is the governing test for determining patent eligibility of a process under § 101.” *Id.*

that the Supreme Court requires this test in a § 101 threshold analysis.⁵⁷ Rather, the instant court's justification in utilizing the test further underscores the difficulty in crafting a reliable rule for patent eligibility.⁵⁸

In *Benson*, *Flook*, and *Diehr*, the Supreme Court suggested but never expressly stated that a claimed process must either be implemented through a particular machine, or transform a particular object into something else.⁵⁹ Moreover, in *Benson*, the Supreme Court specifically stated that it did not absolutely require that a patent process be tied to a particular machine, or represent a transformation of an object.⁶⁰ Additionally, in *Flook*, the Supreme Court reaffirmed this notion by supporting its holding in *Benson* that a process need not be strictly tied to a machine or represent a transformation.⁶¹ Finally, the Supreme Court in *Diehr* did not expressly apply the "machine or transformation test," focusing instead on analyzing whether the proposed process amounted to an attempt to patent a mathematical formula.⁶² The specific discussion of the "machine or transformation test" was unnecessary to the Supreme Court's discussion because of the relative obviousness of a

57. See *id.* at 979 (Newman, J., dissenting) (commenting that the Court in *Benson* specifically stated that it did not hold that there would be no situation where a patent could not be eligible if it did not pass the machine or transformation test).

58. *Id.* at 956 (majority opinion). The instant court in response to several amicus recognizes that *Benson* specifically states that the Supreme Court does not require that a valid process patent meet the "machine or transformation test." See *id.* at 956. "Applicants and several amicus have argued that the Supreme Court did not intend the machine-or-transformation test to be the sole test governing § 101 analyses." *Id.* at 955.

59. See *Gottschalk v. Benson*, 409 U.S. 63 (1972); *Parker v. Flook*, 437 U.S. at 584, 595 n.18 (1978); *Diamond v. Diehr*, 450 U.S. 175, 184 (1981).

60. *Benson*, 409 U.S. at 71.

It is argued that a process patent must either be tied to a particular machine or apparatus or must operate to change articles or materials to a "different state or thing." *We do not hold* that no process patent could ever qualify if it did not meet the requirements of our prior precedents.

Id. (emphasis added).

61. *Flook*, 437 U.S. at 589 n.9.

The statutory definition of "process" is broad. . . . An argument can be made, however, that this 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." . . . As in *Benson*, we assume that a valid process patent may issue even if it does not meet one of these qualifications of our earlier precedents.

Id.

62. *Diehr*, 450 U.S. at 192-93.

transformation of an object through the manufacture of rubber.⁶³ The *Diehr* Court instead distinguished the case from precedent under the guidance of *Benson* by explaining that the proposed patent would only preclude the use of the mathematical formula in its specific manifestation, rather than the use of the formula in every application.⁶⁴ In the instant case, the Court largely disregarded these caveats by relying on the statement affirmed by the Supreme Court that the 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.⁶⁵ The Circuit Court interestingly relied on the semantic distinction where the Supreme Court utilized the language “the clue” rather than “a clue.”⁶⁶

V. CONCLUSION

Throughout the instant case, it is clear that the “machine or transformation” test has a number of ambiguities and limitations. The difficulty in explaining the difference between patentable processes and un-patentable principles illustrates the likelihood that future innovations will face increasingly complex questions with conceptual concepts. Furthermore, the Court’s holding may have spurred more questions than answers. Although the Circuit Court may have ultimately reached the correct ruling, it is not clear that its strict requirement of the “machine or transformation” test stands in line with Supreme Court precedent which suggests that the test is a useful tool, but not strictly required. It is

63. *Id.* at 184. The Supreme Court in *Diehr* focused on whether the use of the mathematical formula utilized in the process of curing rubber precluded the use of the formula in other applications. *Id.* at 191. Rather than implementing “machine or transformation test,” the *Diehr* Court focused on the applicant’s attempt to patent the process as a whole which constituted the use of the mathematical formula when used in conjunction with all of the other necessary steps to create the rubber. *Id.* at 191-92.

64. *Id.* at 192-93.

65. *Benson*, 409 U.S. at 70.

66. *In re Bilski*, 545 U.S. F.3d 943, 956 n.11 (D.C. Cir. 2008), *cert. granted*, *Bilski v. Doll*, 129 S. Ct. 2735 (2009).

We believe that the Supreme Court spoke of the machine-or-transformation test as the “clue” to patent-eligibility because the test is the tool used to determine whether a claim is drawn to a statutory “process” the statute does not itself explicitly mention machine implementation or transformation. We do not consider the word “clue” to indicate that the machine-or-implementation test is optional or merely advisory. Rather, the Court described it as *the* clue, not merely “a” clue.

probable that future decisions may modify the “machine or transformation” test.

VI. APPEAL TO THE U.S. SUPREME COURT

At the time of this publication, the petitioners have appealed the D.C. Circuit Court’s ruling to the U.S. Supreme Court. On June 1, 2009, the Supreme Court granted certiorari⁶⁷ to the case, *Bilski v. Kappos*, and heard oral arguments on November 9, 2009.⁶⁸ During Oral Arguments, the Court seemed receptive to the idea that the Circuit Courts’ application of the “machine or transformation test” may have been too strict, but nevertheless implied that the machine or transformation test supplies valuable limits in construing what constitutes a patent eligible process.⁶⁹ Although the D.C. Circuit did not wish to put a categorical exclusion on business model patents, the Supreme Court suggested that without the use of a specific machine, business models, regardless of their transformation abilities, may not receive patent protection.⁷⁰ Furthermore, the Court suggested that even if it utilizes the machine or transformation test, it fails to see how the business model would satisfy this test. The model appears to represent an abstract idea which is only loosely tied to physical activities; such as buyers and sellers making phone calls to each other to carry out a transaction.⁷¹

67. *Bilski v. Doll*, 129 S. Ct. 2735 (2009).

68. Transcript of Oral Argument, *Bilski v. Kappos*, No. 08-964, oral arguments, (U.S. Nov. 9, 2009), http://www.supremecourtus.gov/oral_arguments/argument_transcripts/08-964.pdf.

69. *Id.*

70. *Id.* at 7-13 (noting the lack of business model patent protection in other countries).

71. *See id.* at 51-53.