



Business Methods Patents Survive, But Not Bilski's Patent

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Today the U.S. Supreme Court issued its decision^[1] in [Bilski v. Kappos](#).

By a 5-4 vote, the United States Supreme Court has rejected the notion that business methods are categorically unpatentable. By a unanimous vote, however, the Court has affirmed the PTO and Federal Circuit's rulings rejecting Bilski's patent claims on methods of hedging commodity risks. The Court also unanimously agreed that while the "machine or transformation" test adopted by the Federal Circuit is a useful indicator of patentability, it is not the sole test for patentability under Section 101 of the Patent Act. Although many had feared--and some had hoped--that all software patents were in jeopardy, the Court's relatively narrow decision should allay those fears and dash those hopes.

THE CONFUSING MIX OF EARLIER SUPREME COURT AND FEDERAL CIRCUIT DECISIONS

Section 101 of the Patent Act of 1952, 35 U.S.C. § 101, directs the Patent and Trademark Office (PTO) to issue patents to "[w]hoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof." The statute was written in an industrial era in which most inventions were either physical things (machines, manufactured products, chemical compounds, etc.) or methods of manufacturing physical things. Courts in the modern age have struggled to define when inventors may patent less physical inventions such as methods of doing business and inventions involving use of computer software. The law governing the patentability of software-related inventions has been especially complex and confusing because software can be claimed in numerous ways: as a process or method, as part of a machine or apparatus (e.g., a general purpose computer containing software), and as an article of manufacture (e.g., a CD-ROM containing software).

The Supreme Court first considered whether software process claims were patentable in *Gottschalk v. Benson*, 409 U.S. 63 (1972)^[2]. The claims there addressed a mathematical algorithm for converting binary numbers from one encoding scheme to another. Although such a conversion could be used in a variety of practical computer applications, the claims were not limited to any particular practical application. The claims did, however, recite the use of a hardware element: a reentrant shift register.

Nevertheless, the Supreme Court held that claims were directed to an abstract idea and therefore were not patentable. According to the Court, "[t]he mathematical formula involved here has no substantial practical application except in connection with a digital computer, which means that if [patentability] is affirmed, the patent would wholly pre-empt the mathematical formula and in practical effect would be a patent on the algorithm itself."

The next key decision was *Parker v. Flook*, 437 U.S. 584 (1978)^[3]. The process claims there involved a practical application (updating the value of an alarm limit for ending a chemical reaction), but the only novel feature of the process was the specific manner in which the alarm limit was calculated. The Supreme Court found these claims to be unpatentable, characterizing the issue as "whether the identification of a limited category of useful, though conventional, post-solution applications of such a formula makes respondent's method eligible for patent protection." The Court concluded that the claims were not patentable because the post-solution activity of updating an alarm limit for use in regulating a

chemical reaction was not novel. *Flook* thus appeared to hold that a novel use of software as part of a practical application was unpatentable; instead, the practical application itself had to be novel.

In [*Diamond v. Diehr*](#)[4], 450 U.S. 175 (1981), the Supreme Court at last found software claims to be patentable. Like *Flook*, *Diehr* involved method claims directed to calculating a value used to control an industrial process. The calculation used in *Diehr*'s process of curing rubber had been well known in the art, but using a computer to perform the calculation ensured that an accurate, current value was always available. While not explicitly overruling *Benson* and *Flook*, the Court limited both cases' holdings and made pronouncements that undermined their analyses. It indicated that *Benson* and *Flook* merely restated long-settled doctrine that laws of nature, natural phenomena, and abstract ideas are not statutory subject matter and had not created any new doctrine related to mathematical algorithms or software. Moreover, the Court criticized the *Flook* analysis by explaining that it is inappropriate to dissect claims into old and new elements and then ignore the presence of the old elements in the analysis. In addition, the Court stated that the novelty of any element in a process has no bearing on whether the *subject matter* is within the scope of the patent laws. Although the Court reaffirmed that abstract mathematical formulas are not patentable, it also reiterated that software claims can be patentable if they are directed to a practical application:

"[W]hen a claim containing a mathematical formula implements or applies that formula in a structure or process which, when considered as a whole, is performing a function which the patent laws were designed to protect (e.g., transforming or reducing an article to a different state or thing), then the claim satisfies the requirements of § 101."

After *Diehr*, the art of claiming software inventions involved reciting a particular practical application so that the claims would not preempt all uses of a mathematical algorithm. Uncertainty remained, however, as to what applications were sufficiently "practical" to meet this standard. *Diehr* made clear that claims related to industrial processes that transform physical materials could be patented, but merely performing "insignificant post-solution activity," such as storing or modifying a value that had been calculated via software, seemed unlikely to be patentable.

Between 1981 and *Bilski*, the Supreme Court declined to take any cases involving Section 101 and patentable subject matter, effectively leaving development of the law to the Court of Appeals for the Federal Circuit. In one leading decision, *State Street Bank & Trust Co. v. Signature Fin. Group, Inc.*, 149 F.3d 1368 (Fed. Cir. 1998)[5], the Federal Circuit held that it was proper to patent a data processing system for implementing a hub-and-spoke investment structure in which mutual funds pooled their assets in an investment portfolio organized as a partnership in order to achieve economies of scale and certain partnership tax advantages. The panel took a very broad view of statutory subject matter, concluding that patents may cover any invention with practical utility. In so doing, it overruled a long-standing prohibition against patenting methods of doing business.

THE *BILSKI* CASE

In 1997, Bernard Bilski and Rand Warsaw filed a patent application[6] claiming methods for managing risk arising from providing a commodity on a "fixed bill" basis. In such cases, a consumer pays a provider a predetermined amount for a particular period of time regardless of the amount that the customer consumes. For example, a natural gas provider may enter into a fixed bill agreement with a customer to provide all the natural gas needed in a particular calendar year for a fixed price every month. The claimed methods involves entering into both fixed bill supply contracts with customers and "swap" transactions with "counterparties." The counterparties agree to pay the supplier in certain conditions where the customers are likely to consume more, and the supplier agrees to pay the counterparties in other conditions where the customers are likely to consume less. For example, where reported average

winter temperatures are low, customers will tend to consume relatively more natural gas. In such cases, the counterparties pay the supplier, mitigating the losses the supplier must incur by supplying more gas than usual. Conversely, when winter temperatures are warm, customers will consume relatively less gas, and the supplier pays the counterparties using the surplus revenue it enjoys from having to supply less gas.

Each of the claims recited initiates both fixed bill supply contracts and counterparty swap contracts, in some cases in terms of mathematical techniques and formulas. Both the claims and the application as a whole fail to mention any particular machines used to perform the methods or any particular ways in which such machines can be programmed and used to perform them.

The PTO examiner and its Board of Patent Appeals and Interferences rejected the claims as lacking patentable subject matter under Section 101, concluding that the claimed methods neither recited a specific apparatus nor involved transforming physical subject matter to a new state. The Board further found that the claimed methods did not produce a "useful, concrete and tangible result."

The inventors then appealed the rejection to the Federal Circuit, which decided to hear the case en banc. *In re Bilski*, 545 F.3d 943 (Fed. Cir. 2008), cert. granted sub. nom *Bilski v. Doll*, 129 S. Ct. 2735 (2009). By a 9-3 vote, the court of appeals upheld the rejection[7]. The majority, led by then-Chief Judge Michel, distilled a "machine-or-transformation" test from the Supreme Court's earlier decision regarding Section 101 and repudiated some of the broad language of *State Street Bank*. According to the majority, a method or process is eligible for patent protection only if "(1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing." Applying that test, the Federal Circuit found Bilski's claims to be unpatentable. The claims failed to recite performance by particular machine, and the court held that data about financial transactions are neither physical objects or substances themselves nor "representative" of any physical object or substance.

Each of the three dissenting judges authored an opinion. In their dissents, both Judge Rader and Judge Mayer concluded that Bilski's claims failed to satisfy Section 101, with Judge Rader finding them directed to an unpatentable abstract idea and Judge Mayer finding them directed to an unpatentable business method. Judge Rader criticized the court's standard as relying on ambiguous language, including "particular machine," "transformation" and "representative." Judge Mayer advanced similar concerns and also objected to the majority's failure to address more directly the availability of patent protection for business methods and software. Judge Newman alone would have held that Bilski's claims satisfied Section 101, contending that the majority's constraints on the availability of patent protection for processes contradicted the intent of the framers of the Constitution.

Since the Federal Circuit's en banc decision came down in October 2008, the Federal Circuit and the PTO have rigorously applied it and rejected many business method claims under Section 101. The PTO and the lower courts have also struggled to apply the decision to software-related claims, some but not all of which are framed as method claims. Although the en banc court intended to clarify the law, it left open as many questions as it answered.

THE SUPREME COURT'S DECISION

The Supreme Court has affirmed[8] the Federal Circuit's judgment rejecting Bilski's claims as unpatentable subject matter. The Justices have unanimously agreed that while the "machine or transformation" test is a useful indicator of patentability, it is *not* the sole test for patentability under Section 101. By a 5-4 vote, the Court has also rejected the notion that business methods are categorically unpatentable.

By holding that the “machine or transformation test” is not essential for determining the patentability of a process claim and rejecting the proposition that business methods are inherently unpatentable, the Court has avoided any significant disruption of the extension of patent protection to software inventions. In particular, the PTO should continue to allow claims to software inventions in at least some forms. Moreover, the validity of issued patents on software inventions should not be called into question simply because the applications were examined at a time when the PTO was not applying the “machine or transformation” test.

Writing for the Court, Justice Kennedy noted that Section 101 does not expressly adopt a “machine or transformation” test and Supreme Court precedent did not require it either. The “machine or transformation” test, held the Court, is “a useful and important clue, an investigative tool, for determining whether some claimed inventions are [patentable] processes,” but it is “not the sole test for deciding whether an invention is a patent-eligible ‘process.’” The majority went on to hold that patentable “processes” may include methods of doing business. Business methods are methods, noted the Court, and Section 273, which establishes a prior-use defense for business-method patents, confirms that business methods are not inherently unpatentable. The Court specifically declined, however, to approve any particular Federal Circuit precedent in the business method area, including *State Street Bank*.

Turning to *Bilski*’s particular application at issue, the Court held that while *Bilski*’s claims were not categorically outside Section 101, they were nevertheless unpatentable under prior cases, including *Benson*, *Flook* and *Diehr*, which held that abstract ideas are not patentable. According to the Court, *Bilski* merely claimed the abstract concept of hedging risk in commodities markets in a particular mathematical way. The majority opinion provided little guidance about how to decide whether claims in other cases are directed to unpatentable abstract ideas.

Beyond its basic holdings, the Court was fractured. Justice Kennedy’s lead opinion made additional comments regarding the patentability of software and business methods, but those views commanded only four votes. The Kennedy group, which included Chief Justice Roberts and Justices Thomas and Alito, recognized that Section 101 is “a dynamic provision designed to encompass new and unforeseen inventions” and specifically rejected a rule that “unforeseen innovations such as computer programs are always unpatentable.” Justice Kennedy also observed that business method patents may raise “special problems in terms of vagueness and suspect validity,” but concluded that those concerns did not warrant categorically barring the patentability of business methods. Justice Scalia declined to join those portions of Justice Kennedy’s opinion, however.

Justice Stevens, joined by Justices Ginsburg, Breyer and Sotomayor, wrote an opinion that concurred in the judgment that *Bilski*’s claims were unpatentable, but on different grounds. Those four Justices agreed that the “machine or transformation” test was not the sole test for patentability under Section 101, but would have held that business methods are inherently unpatentable. Justice Breyer also wrote a short concurrence highlighting the Court’s unanimous agreement on several issues, including the unpatentability of abstract ideas and the usefulness but non-exclusivity of the “machine or transformation” test. Notably, Justice Scalia joined part of Justice Breyer’s concurrence, including his view that not every process that produces a useful, concrete and tangible result qualifies as patentable subject matter.

Time will tell how the PTO will adapt its examination practices for software inventions following the Supreme Court decision. The PTO’s current practices are based on the “machine or transformation” required by the Federal Circuit’s decision in *Bilski*, but its revised practices may well be more permissive, perhaps returning to its pre-*Bilski* approach.

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- [1] <http://www.supremecourt.gov/opinions/09pdf/08-964.pdf>
 - [2] <http://caselaw.lp.findlaw.com/scripts/getcase.pl?court=us&vol=409&invol=63>
 - [3] <http://supreme.justia.com/us/437/584/case.html>
 - [4] <http://caselaw.lp.findlaw.com/scripts/getcase.pl?court=us&vol=450&invol=175>
 - [5] <http://ftp.resource.org/courts.gov/c/F3/149/149.F3d.1368.96-1327.html>
 - [6] Bilski application
 - [7] <http://www.cafc.uscourts.gov/opinions/07-1130.pdf>
 - [8] <http://www.supremecourt.gov/opinions/09pdf/08-964.pdf>