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Federal Circuit Changes Test for Patenting of Processes

In 1998, while the Internet was still in its adolescence, the U.S. Court of Appeals for the Federal Circuit issued a watershed decision that greatly impacted patenting in that space. *State Street* rang the death knell for the so-called "business method" exception to patentability, holding that a novel business method could indeed be patentable, so long as it produced a "useful, concrete and tangible result."[1]

Now, a full decade later, the Federal Circuit has taken up the issue again, and in *In re Bilski*[2] has rung the death knell of *State Street's* "useful, concrete and tangible result" test, putting a "machine-or-transformation" test in its stead. Whether and to what extent this shift in tests will have a practical impact on what can be patented is a question that remains to be answered.

Following *State Street*, the U.S. Patent and Trademark Office (PTO) saw a veritable flood of applications on Internet, e-commerce and financial inventions, ranging from auction systems to e-coupons to techniques for managing risk. With the PTO following what it considered to be a mandate from the Federal Circuit, and being in many ways ill-equipped to examine the applications in these nontraditional arts, the ensuing years were marked with wide criticisms. Issued patents were seen by many as being directed to no more than applying known practices to computers and networks, as being inappropriate attempts to own the Internet and, perhaps on the most fundamental level, as being simply too easy to get. The PTO responded to these criticisms by beefing up its capabilities in examining software and business method patents, and gravitating towards applying the test of *State Street* in a somewhat narrower fashion than it had at the outset, all in an effort to improve its gatekeeper function.

'In re Bilski'

Fast-forward 10 years, when in *In re Bilski*, the Federal Circuit once again faced the question of what constitutes patent-eligible subject matter under 35 U.S.C. §101. In *Bilski*, two co-inventors filed for a patent on a method of managing the consumption risk costs associated with selling a commodity at a fixed price. Their application was

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rejected by the PTO on the grounds that their method represented an "abstract idea" that did not involve "a transformation of physical subject matter from one state to another" and did not necessarily require the use of a computer or machine to be carried out. The PTO also found that the "useful, concrete, and tangible result" test of *State Street* did not apply because that test was limited to machines and machine-implemented processes, and the application in *Bilski* was not so limited.

The inventors appealed to the Federal Circuit, and after arguments before a panel in October 2007, the court issued an order granting a hearing en banc. With the clear intention of taking a fresh look at the patentability of business methods and software, the court requested the parties and invited amici to address some five questions, including, perhaps most bluntly, the question of whether *State Street* should be overruled. The *Bilski* side, not surprisingly, argued that the *State Street* precedent should not be altered, and that business methods should remain eligible for patent protection, whether or not they are implemented by computers. It argued that the steps of their financial process—which include entering into first transactions, identifying market participants, and then entering into further transactions—require physical activity and produce a tangible result, satisfying the *State Street* rule.

The PTO, on the other hand, argued that while *State Street* should not be overruled, it should be clarified and narrowed. The PTO noted that since *State Street* it has been "inundated with an unprecedented number of patent applications" directed to things like "methods of holding conversations" and even "a method of swinging on a play ground swing" and expressed a bit of frustration in its ability to offer its examiners guidance for handling such applications. At the heart of its argument, and consistent with the manner in which it rejected the *Bilski* application, the PTO called for a rule which requires that a process perform some type of physical transformation or be carried out by a machine to be patent-eligible. The *Bilski* process of entering into a set of contracts to hedge an investment, according to the PTO, does not meet that standard.

The Opinion

The Federal Circuit issued its opinion Oct. 30, and with Chief Judge Paul R. Michel writing for the majority, found the *Bilski* claims to be unpatentable. Addressing the standard for determining whether a process constitutes patent-eligible subject matter under §101, the court has now adopted a so-called "machine-or-transformation" test, holding that to pass muster a process must either (1) be "tied to a particular machine or apparatus"; or (2) "transform a particular article into a different thing or state."[3] The court expressly abandoned several of its earlier tests, including the decade-old "useful, concrete and tangible result" test of *State Street*, and declined to adopt a "technological arts" requirement that many would have liked to have seen. The court also acknowledged that "future developments in technology and the sciences may present difficult challenges" to its machine-or-transformation test, and left open the possibility that it may in the future refine or augment the test or how it is applied.[4]

Analysis

The court began its analysis by enunciating that the meaning of "process" as used in §101 is narrower than its ordinary meaning, and does not include fundamental principles, abstract ideas or mental processes. Recognizing that the inquiry as to whether a process qualifies is "hardly straightforward," the court went to great lengths to craft a test by relying on Supreme Court precedent, most notably *Benson* (1972),[5] *Flook* (1979),[6] and culminating in *Diehr* (1981).[7] For example, in *Diehr*, the Supreme Court found that a claimed process for molding raw, uncured synthetic rubber, though employing a well-known mathematical equation, was eligible for patent protection because "when 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 requirement of §101."[8] The Supreme Court also noted there that with respect to process claims: "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."[9] The

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Bilski court read *Diehr* as drawing a distinction between patent-ineligible claims that attempt to pre-empt the use of a fundamental principle and claims that seek to cover a particular application of that fundamental principle.

Two-Branched Test

The new test is a two-branched inquiry which may be satisfied by showing either that the claim is tied to a machine or that the claim transforms the article. Because the patent applicants had admitted that their claims were not tied to a machine, the court opted to leave it to future cases to elaborate on "the precise contours of machine implementation," including the very important question of "whether or when recitation of a computer suffices."[10] On the transformation prong, the opinion acknowledges that many modern process inventions operate on electronic signals and data, and sometimes even on things like legal obligations and business risks, and concludes that its prior case law sufficiently illustrates the parameters of what constitutes an appropriate level of transformation.

In analyzing the specific claims before it, the court found them unpatentable because "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."[11] In doing so, the opinion may be implying that the requisite transformation is not limited to physical objects and substances, and might include electronic signals representative of them.

Corollaries

The court articulated a number of corollaries to the machine-or-transformation test. First, field-of-use limitations are generally insufficient to transform an otherwise ineligible process claim into one that is patent eligible. Second, the court noted that "insignificant post-solution activity" will not render an ineligible process claim patent eligible, quoting the Supreme Court in *Flook*: "[T]he Pythagorean theorem would not have been patentable, or partially patentable, because a patent application contained a final step indicating that the formula, when solved, could be usefully applied to existing surveying techniques."[12] Thus, a claim reciting a machine or a particular transformation of a specific article may still be patent ineligible if such recitation constitutes mere "insignificant post-solution activity."

The court revisited its prior tests for patent-eligibility under §101 and disavowed them. Most notably, the Federal Circuit found the "useful, concrete and tangible result" test of *State Street* to be inadequate, holding expressly that that test "should no longer be relied upon."[13] The court also found inadequate the *Freeman-Walter-Abele* test which required an examiner to (1) determine whether the claim recites an "algorithm" within the meaning of *Benson*, then (2) determine whether that algorithm is "applied in any manner to physical elements or process steps."[14] The court further rejected categorical exclusions to patentability, thus reaffirming that portion of *State Street* which rejects the "business method exception to patentability."[15] The opinion similarly rejected the creation of a "technological arts" test, advocated by some amici and by Judge Haldane R. Mayer in his dissent, finding the meaning of the term "technology" to be "ambiguous and ever changing."[16] The court specifically noted that the machine-or-transformation test is not equivalent to a "technological arts" test, characterizing a "technological arts" requirement as a "purported equivalent" or shortcut to the central machine-or-transformation inquiry.[17]

The Dissent

Judges Pauline Newman, Mayer and Randall R. Rader strenuously dissented in three separate opinions. Judge Newman's and Mayer's dissents were on opposite poles, with Judge Newman believing that the majority's decision sets forth a too restrictive test that will preclude many information age inventions from being patented, and Judge Mayer believing that the test is too permissive and that an express technology requirement and business method exception should be part of the standard under §101.

Judge Newman emphasized the importance of certainty in fostering innovation, especially in emerging areas. Characterizing innovations of the "knowledge economy" as being dominant contributors to today's economy and society, Judge Newman argued that the uncertainty resulting from the majority's decision will discourage innovators in the field and upset the expectations of those relying on the law as it existed under *State Street*.[18] Judge Newman argued that the "useful, concrete, and tangible result" test of *State Street* has proved to be easily understood, applicable to a variety of processes of the information and digital age, and faithful to the Supreme Court's distinction between abstract ideas and the application of such ideas. Judge Newman also noted that concerns regarding the overbreadth of process claims were appropriately addressed under §112 rather than §101.

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In direct contrast, Judge Mayer argued that providing patent protection to business methods would hinder rather than promote innovation and lacked both constitutional and statutory support. Finding the majority's opinion both too inclusive and too easily circumvented, Judge Mayer called for a "technological arts" test in which a process claim would be considered technological to the extent that it applies laws of nature to new ends. Judge Mayer also stated his belief that the business method exception to patentability eliminated by *State Street* should be reinstated.

Judge Rader criticized the majority for inventing "circuitous and unnecessary tests" that propagate "unanswerable questions," when all it needed to do was affirm the PTO's rejection that the applicants were trying to patent an abstract idea.[19] Judge Rader argued that the Supreme Court's prior §101 decisions called for courts to rely on the "ordinary, contemporary, common meaning" of the statutory language, emphasizing the expansiveness of the words "any new and useful process…[and] any improvement." Judge Rader believes the Supreme Court precedent stood for the simple proposition that abstract principles and natural laws are precluded from patent eligibility; the test articulated by the majority represents an unnecessary complication of that proposition.

Questions Remain

While the machine-or-transformation test announced by the Federal Circuit for the patent eligibility of process claims is easily articulated, many questions remain regarding its metes and bounds. As noted by Judge Rader in his dissent, the opinion is unclear as to the form or amount of "transformation" required to make a process patent eligible. In addition, because the claim in *Bilski* did not involve a machine, questions as to what kinds of machines are sufficient for patent eligibility and how closely a process must be tied to such a machine will need to be articulated by the court as well. These are questions in which many applicants and practitioners are highly interested, and how they will be answered in future cases will greatly affect the scope of patent eligibility for business methods and information processes. As it stands today, the scope of patent eligibility for business methods appears to be narrower than it was under the law of *State Street*, but how much narrower remains to be seen.

1. *State St. Bank & Trust Co. v. Signature Fin. Group*, 149 F.3d 1368, 1373 (Fed. Cir. 1998).
2. *In re Bilski*, No. 2007-1130, slip op. (Fed. Cir. Oct. 30, 2008).
3. Id. at 11.
4. Id. at 14-15.
5. *Gottschalk v. Benson*, 409 U.S. 63 (1972).
6. *Parker v. Flook*, 437 U.S. 584 (1978).
7. *Diamond v. Diehr*, 450 U.S. 175 (1981).
8. Id. at 192.
9. Id. at 184 (quoting *Cochrane v. Deener*, 94 U.S. 780, 787-788 (1877)).
10. *Bilski* at 24. The opinion does seem to indicate, however, that when the process at issue "has no other utility other than operating on a digital computer," the machine prong of the test may not be satisfied. Id. at 13.
11. Id. at 28.
12. *Flook* at 490.
13. *Bilski* at 20 n.19.
14. Id. at 19.
15. Id. at 21.
16. Id.
17. Id. at 29.
18. See Id. at 30-36 (Newman, J., dissenting).
19. See Id. at 8-9 (Rader, J., dissenting).