

## Federal Circuit in *Bilski* Adopts a Narrower Test for Determining Patent Eligibility of Financial Methods and Other Processes

In its long-awaited, *en banc* decision issued on October 30, 2008, the Federal Circuit articulated a new and narrower test for patent eligibility of processes. The decision has significant implications for the patentability of a diverse range of processes – including, in particular, financial processes and business methods, computer software and medical diagnostic methods. The nine-judge majority in *In re Bilski* rejected a broader test that the court had adopted ten years earlier in its *State Street* decision, holding that to qualify as “patentable subject matter” – that is, to be eligible for patenting – a process must either (a) be “tied to a particular machine” or (b) “transform a particular article to a different state or thing.”

The patent at issue in *Bilski* related to a method for hedging risk in commodities transactions, without the use of a computer or any other apparatus. In ruling that this patent did not qualify as patentable subject matter under the “machine-or-transformation test,” the majority opinion sets some clear bright lines, including expressly rejecting both the “business methods exception” and “technological arts test,” tests which had been urged by those seeking to outlaw outright most or all business methods patents; and ruling that a process is not eligible for patenting if it comprises solely the transformation or manipulation of legal obligations or relationships or business risks and does not involve the use of a computer or other apparatus.

However, the decision provided only limited direction on how to apply the “machine-or-transformation” test over the wide range of innovative processes that companies currently view as critical assets. Thus, practitioners are

left with unanswered questions about the extent to which processes such as financial methods, computer software or medical diagnostics will be eligible for patenting under the new test.

### Relevant Statutory Framework

Section 101 of the Patent Law, provides that “any new and useful process, machine, manufacturer or composition of matter” is patentable subject matter and thus eligible for patenting. In a series of decisions interpreting this statute, the U.S. Supreme Court established three categories of inventions that are excluded from patentability, namely: laws of nature, natural phenomena, and abstract ideas. See, e.g., *Diamond v. Diehr*, 450 U.S. 175 (1981).

The current debate in the Federal Circuit Court centers on the appropriate scope and interpretation of the term “any new and useful process.” Ten years ago, in its 1998 *State Street*

decision, the Federal Circuit held that a method of doing business should not be viewed as abstract *per se*; rather the patentability of the method or process would depend on whether it produces a “useful, concrete and tangible result.” *State St. Bank & Trust Co. v. Signature Fin. Group, Inc.*, 149 F.3d 1368 (Fed. Cir. 1998) (emphasis added); see also *AT&T Corp. v. Excel Commc’ns, Inc.*, 172 F.3d 1352 (Fed. Cir. 1999).

Following *State Street*, the number of business method patents applied for and issued, particularly in the financial services industry, increased exponentially. For example, according to Judge Mayer’s dissent in *Bilski*, the annual number of business method patent applications increased from fewer than 1,000 in 1997, the year prior to the *State Street* decision, to greater than 11,000 in 2007. *Bilski*, Mayer dissent at 12. This dramatic increase in business method patenting reflected a fundamental change in the way that many financial services and other companies protected intellectual property relating to business operations. Critical internal processes and systems, traditionally maintained as confidential trade secrets, now were the subject of public patent applications and, in many cases, issued patents.

The U.S. Patent & Trademark Office, the agency responsible for enforcing these standards in examining applications for patents, faced the challenge of applying the new standard for patent eligibility articulated in *State Street*. In general, the “useful, concrete and tangible” test could be readily applied to an invention involving data transformed by a machine, as in the case of a trading system or hedging method that manipulates a complicated set of data and uses complex calculations. In such circumstances, the method would be found patentable where it “constituted a practical application of an abstract idea (a mathematical algorithm, formula, or calculation) because it produced ‘a useful, concrete and tangible result.’” *In re Alappat*, 33 F.3d 1526 (Fed. Cir. 1994). On the other hand, it proved relatively more difficult to apply the *State Street* test to inventions that could be performed entirely by mental process or human action, without the use of any machine or technology. *Ex parte Lundgren*, 76 USPQ2d 1385 (Bd. Pat. App. & Int. 2005).

At the same time, there were indications that at least some judges on the U.S. Supreme Court viewed the *State Street* test as overbroad or possibly even wrong. In 2006, in his dissent in the *Lab. Corp.* case – which involved a medical diagnostic method performed without the use of any medical tool or technology – Judge Breyer noted that *State Street*’s “useful, concrete

and tangible result” test had never been uttered or embraced by the Supreme Court, and expressed concern that the application of this test had resulted in finding patentability in situations that Judge Breyer deemed undeserving. *Lab. Corp. of Am. Holdings v. Metabolite Lab., Inc.*, 548 U.S. 124 (2006). The Supreme Court sent the *Lab. Corp.* case back to the district court on procedural grounds and never reached the merits of the appeal. Judge Breyer dissented, suggesting that the court should have taken the opportunity to address the patentability of business methods, and Judge Stevens and Souter joined in the dissent.

## ***In re Bilski***

### **The *Bilski* Appeal**

Against this background, both the USPTO and the Board of Patent Appeals and Interferences (BPAI) had found that the *Bilski* patent did not meet the “useful, concrete and tangible” test because it could be practiced entirely by human action and without any machine or technology. *Bilski*’s appeal originally was heard by a three-judge panel in October 2007, at a time when the issue of patentable subject matter under Section 101 already was receiving considerable attention as just days earlier, the Federal Circuit had handed down decisions in two other cases in which patentability was declined to be found under Section 101: *Comiskey* (which involved a method for conducting an arbitration) and *Nuijten* (which involved signals containing watermarks). *In re Comiskey*, 499 F.3d 1365 (Fed. Cir. 2007)); *In re Nuijten*, 500 F.3d 1346 (Fed. Cir. 2007). After a full briefing and oral argument of the *Bilski* appeal before the three-judge panel, the Federal Circuit *sua sponte* took the unusual step of ordering the case to be reheard *en banc* by the full 12-judge panel. The court sought further briefing on a variety of issues, including whether it should overrule its prior decisions in *State Street* and *AT&T*.

The May 8 *Bilski* oral argument received broad attention. In addition to receiving the requested supplemental briefs from the parties, the court received over 30 *amicus curiae* briefs. These “friend of court” briefs came from a wide range of companies in the financial services, electronics (hardware and software), and pharmaceutical industries, as well as from various patent law associations and academia.

## The Majority Decision

In its October 30 decision, the Federal Circuit affirmed the decision below that *Bilski*'s claims are directed to non-statutory subject matter. The court also sought to clarify the standards applicable in determining whether a claimed method constitutes a statutory "process" under Section 101. After reviewing Supreme Court precedent, in particular the court's decisions in three leading cases – *Benson*, *Flook* and *Diehr* – the court concluded that an applicant may show that a process claim satisfies § 101 either by showing that his claim is tied to a particular machine, or by showing that his claim transforms an article. *Bilski* majority at 24. In adopting this "machine-or-transformation test", the court also expressly rejected further use of the "useful, concrete and tangible test" that had been articulated in *State Street*, stating that this test is "insufficient to determine whether a claim is patent-eligible under Section 101." *Bilski* majority at 20.

At the same time, the court expressly declined to reverse the principal ruling in *State Street* which set the stage for the patentability of business methods, namely that there is no "business method exception" to Section 101. It also unequivocally rejected the "technological arts" test which had been urged by some of the *amici*. In so doing, the court took a clear stand against any categorical exclusions beyond the three previously adopted by the Supreme Court, noting that any outright judicial ban of business method patents would be "improper" and "unlawful." *Bilski* majority at 21.

Other than these few bright lines, the court's lengthy opinion provided only limited guidance on how the "machine-or-transformation" test should be applied. Nevertheless, the following points of discussion by the *Bilski* majority may provide some guidance on the patent-eligibility of processes going forward:

- Claims that seek to pre-empt the use of a fundamental principle (*i.e.*, law of nature, natural phenomenon or abstract idea), even in a specific field of use, are unpatentable under Section 101, while those that seek to foreclose only an application of the principle are in principle patentable. *Bilski* at 8, 15-16.
- Neither novelty nor obviousness have any relevance to the subject matter eligibility inquiry; thus, the Section 101 inquiry is made without reference to novelty or non-obviousness. *Bilski* at 17.
- Subject matter eligibility is considered while examining the claim as a whole. Thus, a claim

may be patentable even though an individual element or step of the claim, standing alone, would be patent ineligible under Section 101. *Bilski* at 17-18.

- Applying the "machine-or-transformation" analysis requires a determination that (1) the use of a particular machine or transformation of an article imposes meaningful limits on claims scope, and (2) the involvement of the machine or transformation is not merely insignificant extra-solution activity. Thus, for example, adding a data gathering or recording step to a patent claim would be insufficient to make an otherwise abstract claim patent-eligible. *Bilski* at 24, 26.
- The "transformation" branch requires "transformation of an article to a different state or thing;" but a method that transforms or manipulates only data without the use of a machine can nonetheless meet the "transformation" branch if the data being transformed is representative of physical objects or substances (as in *Abele*, where a process for graphically displaying X-ray data was found patent-eligible, which data was representative of physical and tangible objects such as bones, organs and body tissues). *Bilski* at 24, 26.

## The Dissents

Judges Newman, Mayer and Rader dissented. Judges Newman and Rader argued that the "machine-or-transformation" test is narrower than intended by Congress and the Supreme Court, and would hamper innovation by limiting inventions of the information age with a test fashioned in the industrial age. Judge Newman also noted the limited guidance provided by the majority with respect to the application of the "machine or transformation" test, taking the majority to task for uprooting years of precedent and creating a black box of uncertainty, including "for the thousands of inventors who obtained patents under the court's now-discarded criteria, their property rights are now vulnerable." *Bilski*, Newman dissent at 32-36.

Judge Mayer, on the other hand, took a different approach, arguing that the Constitution allows Congress to promulgate laws that reward inventors for innovations in the useful arts, *i.e.*, technology, as opposed to the liberal arts. Accordingly, Judge Mayer would impose a technological test for patent-eligible processes under Section 101, under which test methods of doing business would not be at all patentable, since business is traditionally considered a liberal art. *Bilski*, Mayer dissent at 12-13.

## Open Questions After *Bilski*

### Is Use of a General Purpose Computer “Tied to a Particular Machine”?

Since the claimed method in *Bilski* did not involve any machine, the *Bilski* court explained that it left “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.” *Bilski*, majority at 24. Some guidance can be found in the court’s earlier decision in *Comiskey*, where the court explained the method in *State Street* was patentable because the use of a “computer or equivalent device” was a “virtual necessity” to the claimed method for monitoring, processing and calculating certain financial information. In contrast, the court explained, the mere use of a computer to collect data necessary for the application of a mental process may not make the claim patentable subject matter. *Comiskey* at 23.

Whether computer-implementation is sufficient to meet the “machine” branch is a critical issue for financial methods, many or most of which involve processing or calculation on a general-purpose computer. In view of the *Bilski* court’s holding that the transformation of legal obligations or business risks is not sufficient to meet the “transformation” branch, applicants seeking protection for financial methods likely will be placing the greater reliance on the “machine” branch for patent-eligibility.

Similarly, some or many of the patents that have been issued for computer software also would seem to be at risk of not meeting the “machine” branch of the test where the only claimed nexus to a machine is the fact that the software is implemented on a general purpose computer.

### Methods Comprising Solely Mental Steps and/or Human Activity

For methods that comprise solely mental steps and/or human activity, patent eligibility appears to turn on whether the transformation of information or other “intangible” transforming activity at issue would preempt fundamental principles. Drawing from Supreme Court’s *Abele* case which involved the graphic depiction of certain X-Ray data, the court offered an example how the transformation branch could be met – namely where the claimed method “is limited to a practical application of a fundamental principle to

transform specific data, and the claim is limited to a visual depiction that represents specific physical objects or substances.” But it is difficult to readily extrapolate this example to the range of financial or business methods that currently are the subject of patent claims. The court found that the hedging method in *Bilski* was not patent-eligible because the claimed method related solely to manipulation or transformation of options contracts which are “legal obligations” and “business risks, and not “physical articles or substances.” Similarly, although the arbitration method in *Comiskey* necessarily involved some physical activity, the claims were based on mental processes that solely manipulated or transformed legal and contractual relationships. *Bilski* at 28-30. It is unclear if applicants seeking patent protection for financial or business methods that do not involve any machine or article will be able to draw a sufficient nexus between the claimed business activities and something physical in order to meet the “transformation” branch.

### Medical Diagnostic Methods

As noted above, the U.S. Supreme Court came close to addressing the patentability of a medical diagnostic method in the *Lab. Corp.* case. The claim at issue entailed “[a] method for detecting a deficiency of cobalamin or folate in warm-blooded animals” comprising the steps of “assaying a body fluid for an elevated level of total homocysteine” and “correlating an elevated level of total homocysteine in said body fluid with a deficiency of cobalamin or folate.” Although methods of assaying a body fluid for homocysteine were known in the prior art, the correlating step, which consists “simply of a physician’s recognizing that a test that shows an elevated homocysteine level – by that very fact – shows the patient likely has a cobalamin or folate deficiency” was said to impart patentability on the claim. In his dissent from the dismissal of certiorari, Judge Breyer expressed concern that a medical practitioner would infringe the claim “merely by thinking about the relationship after looking at a test result.”

It appears that under the test articulated in *Bilski*, the claim at issue in *Lab. Corp.* likely would be invalid: looking at the claim at a whole, it encompasses both patent eligible steps (assaying for homocysteine levels, for which tests were known in the art) and patent ineligible steps (correlating the levels of homocysteine with a cobalamin or folate deficiency); thus, as a whole, it is in principle patentable. However, the correlating step is ineligible because it is neither transformative nor machine implemented, and the assaying step can be viewed as a data-collecting insignificant “extra-solution”

activity, which was in this case known in the art. Thus, the claim is directed to patent ineligible subject matter, consistent with the portion of *Flook* cited on p. 5 of Judge Rader's dissent: "[T]he discovery of such a [natural] phenomenon cannot support a patent unless there is some other inventive concept in its application." *Flook*, 437 U.S. 584, 591-94.

However, if the "assaying" step in *Lab. Corp.* had been novel and non-obvious, then the claim should be patentable under *Bilski*. In such circumstances, the assaying and determining steps would not simply be "extra-solution" activity, but rather would form the basis for patentability.

### Next Step: Supreme Court?

The prospect remains that the Supreme Court may take up the issue in turn, but it is not likely to grant certiorari in *Bilski* in view of the Federal Circuit's careful reliance on Supreme Court precedent. The Federal Circuit left open the possibility that "future developments in technology and the sciences may present difficult

challenges to the machine-or-transformation test ... Thus, we recognize that the Supreme Court may ultimately decide to alter or perhaps even set aside this test to accommodate emerging technologies." *Bilski* at pp. 14-15. Notably, the Supreme Court recently had an opportunity to visit this issue in an appeal from the Federal Circuit's *In re Nuijten* decision, but denied certiorari. This suggests that, for the time being, it will be up to the district courts and Federal Circuit appellate rulings to flesh out the contours of application of the "machine-or-transformation" test to business and diagnostic methods.

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