



published: Intellectual Property Watch October 16, 2009

## How The “Machine-Or-Transformation” Test In *Bilski* Is Failing

By Charles R. Macedo and Norajean McCaffrey

In 1998, the United States Court of Appeals for the Federal Circuit had the foresight to recognise that the revolution in information technology and availability of the internet would radically change the way that the world does business, and that US patent law would need to adapt to this new technological and commercial reality by confirming the availability of patent protection for so-called “business method” patents.

First, in *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 149 F.3d 1368 (Fed. Cir. 1998), and then later in *AT&T Corp. v. Excel Communications, Inc.*, 172 F.3d 1352, 1355 (Fed. Cir. 1999), the Federal Circuit followed the Supreme Court’s lead in *Diamond v. Chakrabarty*, 447 U.S. 303 (1980), which recognised that patent-eligible subject matter under 35 U.S.C. § 101 should be broadly construed to “include anything under the sun that is made by man.” 447 U.S. 303, 308-09 (1980) (quoting S. Rep. No. 82-1979, at 5 (1952); H.R. Rep. No. 82-1923, at 6 (1952)).

Those decisions, an inevitable evolution in patent law based on the Supreme Court’s binding precedent, fostered a renaissance in patent law. More and more, so-called business-related and computer-related patents were sought, and the US Patent and Trademark Office (“USPTO”) started to become overwhelmed. A number of “dubious quality” patents began to issue and made their way to the courts. Scrutiny from the press, Congress, and the Supreme Court ensued. At the core, the problems caused by these patents were the result of their failure to comply with the Patent Act’s requirements for novelty (35 U.S.C. § 102), non-obviousness (35 U.S.C. § 103) and definiteness (35 U.S.C. § 112) of a claimed invention, and did not stem from any real dispute over whether those patents were patent-eligible subject matter (35 U.S.C. § 101).

Against this backdrop, just over a decade after its *State Street* decision, the Federal Circuit was presented with the specific issue raised in *In re Bilski*, 545 F.3d 943 (Fed. Cir. 2008) (en banc), cert. granted, 129 S.Ct. 2735 (2009) - namely, what types of processes should be eligible for patent protection under 35 U.S.C. § 101.

In a split decision, the majority opinion authored by Chief Judge Michel redefined the “governing” test for patent-eligible processes to be the so-called “machine-or-transformation” test. *In re Bilski*, 545 F.3d at 952, 956. Under this test, a patent-eligible process must either be tied to a particular machine or apparatus or must transform a particular article into a different state or thing. In addition, in order to impart patent eligibility, “the use of a specific machine or transformation of an article must impose meaningful limits on the claim’s scope” and “the involvement of the machine or transformation must not merely be insignificant extra-solution activity.” For a detailed discussion of the Federal Circuit decision in *Bilski*, see Charles R. Macedo and Norajean McCaffrey, “[How The Supreme Court Should Resolve Bilski](#)” [pdf], *IP Law360*, July 20, 2009; Charles R. Macedo, “[Processes must be tied to machine or transform matter to be patent-eligible in the United States](#)” [pdf], *Journal of Intellectual Property Law & Practice*, January 27, 2009 (available at [www.arelaw.com](http://www.arelaw.com)); Charles R. Macedo and David Boag, “[The “Machine-Or-Transformation Test” For Processes](#)” [pdf], *IP Law360*, October 30, 2008. The Supreme Court has now granted certiorari to address this important issue and weigh in on the scope of patent-eligible subject matter.

The briefing to the Supreme Court has brought out more amici who have expressed a wide range of views on the issue of what constitutes patent-eligible subject matter. In this article, we provide a brief summary of our view as to how the Federal Circuit's decision in *Bilski* has departed from Supreme Court precedent, and what the Supreme Court should do to put the law of patent-eligible subject matter back on track.

Supreme Court precedent provides broad guidelines as to what constitutes patent-eligible subject matter:

1. the claimed subject matter must fall within one of the four statutory categories of patent-eligible subject matter - process, machine, manufacture or composition of matter - or any improvement thereof; and
2. the claimed subject matter must not preempt what the *Bilski* majority calls "fundamental principles" (545 F.3d at 952 n.5) - laws of nature, natural phenomena, or abstract ideas.

See *Diamond v. Diehr*, 450 U.S. 175, 185 (1981) (holding that a claim is not a patent-eligible process if it claims "laws of nature, natural phenomena, [or] abstract ideas.") (citing *Parker v. Flook*, 437 U.S. 584, 589 (1978) and *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)).

While the Supreme Court has found certain safe harbours that have met these broad guidelines, it has also repeatedly refused, over centuries of such precedent, to turn such safe harbours into rigid tests:

- *Tilghman v. Proctor*, 102 U.S. 707, 722 (1881) ("The patent law is not confined to new machines and new compositions of matter, but extends to any new and useful art or manufacture. A manufacturing process is clearly an art, within the meaning of the law.") (quoted in *Diamond v. Diehr*, 450 U.S. 175, 184 n.8 (1981));
- *Expanded Metal Co. v. Bradford*, 214 U.S. 366, 384 (1909) ("[T]his court did not intend to limit process patents to those showing chemical action or similar elemental changes");
- *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."); and
- *Flook*, 437 U.S. at 589 n.9 ("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,' [however] . . . we assume that a valid process patent may issue even if it does not meet one of these qualifications of our earlier precedents.") (citations omitted).

Even the Federal Circuit's majority opinion in *Bilski* recognized that other efforts to adopt rigid rules for determining whether a claim is patent-eligible subject matter - like the so-called "technological arts" test, the *Freeman-Walter-Abele* test, and the "useful, concrete and tangible result" test from *State Street* - proved "inadequate" and "insufficient." See *In re Bilski*, 545 F.3d at 958-61. (Curiously, the Government Brief to the Supreme Court seeks to revamp the disgraced "technological arts" test by arguing that "methods of organizing human activity" should not be patent-eligible subject matter.)

While much of the majority decision correctly describes the Supreme Court's binding precedent in this area, the *Bilski* majority (and lower courts and the USPTO interpreting the *Bilski* majority) nonetheless deviates from Supreme Court precedent and errs in the following important respects (which errors we believe the Supreme Court should correct):

(1) “*The Machine-or-Transformation*” Test Should Not Be a Rigid Rule.

In the Federal Circuit’s quest to find a “test or set of criteria” to “govern” the USPTO and courts in determining patent-eligibility, the *Bilski* majority erroneously adopted as the “governing test” a mechanical version of the so-called “machine-or-transformation” test. *In re Bilski*, 545 F.3d at 952, 956. This is exactly the kind of error the Supreme Court found the Federal Circuit to have made with respect to the obviousness analysis in *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398, 419 (2007) (“We begin by rejecting the rigid approach of the Court of Appeals.”).

Adoption of this rigid rule has wreaked havoc on the stability and reliability of hundreds of thousands of issued patents (as evidenced by litigations that raise the issue of patent-eligible subject matter as a defence, which have begun to sprout since the *Bilski* decision) and countless pending applications (as evidenced by the wave of claim rejections under § 101 and the increasingly rigid rules coming out of decisions of the Board of Patent Appeals and Interferences (“BPAI”) at the USPTO).

In attempting to apply this rigid rule, the BPAI and lower courts have ended up adopting even more rigid rules, without making an effort to consider the underlying rationale that guided the Supreme Court’s decisions.

For example, the BPAI recently rejected a claim for synthesizing speech signals, which included “computing” steps and steps in which two sets of signals were transformed to produce speech signals. The BPAI’s analysis failed to directly address whether the claim merely preempts a fundamental principle, as Supreme Court precedent directs. Instead, it applied a wooden analysis of specific prior holdings from *In re Abele*, 684 F.2d 902 (C.C.P.A. 1982), as discussed by the *Bilski* majority, 545 F.3d at 962-63, to reject the patent-eligibility of this claimed process, even though it was not an abstract idea by any means. See *Ex parte Hardwick*, Appeal 2009-002399, slip op. at 6-9 (BPAI June 22, 2009). The test set forth in *Abele* and its prior precedent (the so-called “*Freeman-Walter-Abele test*”) was one of the tests expressly rejected in *Bilski*, 545 F.3d at 958-59.

Similarly, the BPAI has sought to apply the “machine-or-transformation” test as a rigid rule to system claims, despite the Federal Circuit’s warning that “[i]n *State Street*, as is often forgotten, we addressed a claim drawn not to a process but to a machine” *Bilski*, 545 F.3d at 960 n.18. See *Ex parte Atkin*, Appeal 2008-4352, slip. op. at 18 (BPAI Jan. 30, 2009) (broadly applying *Bilski* to reject not only method claims but system claims, finding that the system claims encompassed “any and all structures for performing the recited functions” and therefore the system claims were “at least as broad as method claims ... which we have determined recite patent ineligible subject matter under *Bilski*”; making this determination even though the system claims were more appropriately considered under §112 and also rejected on that ground.).

Rigid application by courts of the “governing” rule from *Bilski* has also resulted in other previously approved claimed methods being found to no longer be patent-eligible. For example, in *Fort Properties, Inc. v. American Master Lease, LLC*, 609 F.Supp.2d 1052 (C.D.Cal. 2009), the district court, based on a wooden analysis of the “governing” test, invalidated various previously issued method claims in a patent relating to real estate transactions in which legal obligations are transformed and evidenced by deed shares. Again, the court did not address whether the claim, which clearly claimed one of the four statutory classes of subject matter – a process – fell into one of the exceptions to patent-eligible subject matter, e.g., was merely preempting an abstract idea.

Regardless of whether these claims have other failings, the adoption of the rigid “machine-or-transformation” test in *Bilski* has resulted in both the courts and the USPTO missing the point and using §101 as a gatekeeper in a manner in which it was never intended to be used by the Patent Act, either as enacted by Congress or as interpreted by the Supreme Court. Cf. *Dann v. Johnston*, 425 U.S. 219, 221 (1976) (avoiding the §101 issue in favour of a §103 analysis).

The Supreme Court should quiet title on meritorious inventions and refocus the inquiry where it belongs, on the issue of whether the claimed invention is novel, non-obvious, useful, and sufficiently well-defined, as contemplated by the Patent Act.

*(2) The Bilski Majority's Definition of a Patent-Eligible Process Is Too Narrow.*

In interpreting what constitutes a patent-eligible process, the *Bilski* majority also departed from Supreme Court precedent and the broad statutory construction of the Patent Act that was intended by Congress. In particular, the *Bilski* majority erroneously discounted, and essentially ignored, the statutory definition of “process” in the Patent Act (35 U.S.C. § 100(b)) and engrafted extra-statutory limitations on patent-eligible processes. Cf. *In re Bilski*, 545 F.3d at 951 n3.

As Judge Newman’s dissent explains, the majority, in characterising the statutory definition of process as “unhelpful,” *In re Bilski*, 545 F.3d at 951 n.3, misses the point of this definition and fails to consider the long history associated with its adoption. See *In re Bilski*, 545 F.3d at 978 (Newman, J. dissenting). The definition was intended to be broad and to make clear that the substitution of the term “process” in the 1952 Patent Act for the term “art,” which was used in prior statutes, was not intended to be limiting and, indeed, was intended to include “any” process. See 35 U.S.C. § 101.

The majority also errs in failing to address Congressional action (and inaction) since the Federal Circuit’s decision in *State Street* in 1998. For example, the Federal Circuit majority failed to consider the effect of Congress’ adoption of 35 U.S.C. § 273, which provided a “prior user right” for patents that are “methods of doing business”. Besides expressly recognising that “methods of doing business” are by definition patent-eligible subject matter, the legislative history of this act illustrates that Congress was fully aware of the Federal Circuit’s decision to broadly construe patent-eligible subject matter as including anything which provides a useful, concrete, and tangible result, including “methods of doing business”, and elected to add a new defence for infringing such patents (i.e., the prior user right in Section 273) rather than to modify the scope of patent-eligible subject matter (e.g., eliminate such patent claims from being patent-eligible subject matter). See, e.g., 145 Cong. Rec. S14717 (daily ed. Nov. 17, 1999); 145 Cong. Rec. H6942 (daily ed. Aug. 3, 1999). Congress’ failure to change Section 101 when it adopted Section 273, or in any of its opportunities since (see, e.g., S. 2369, 110th Cong.; H.R. 1908, 110th Cong. §10; S. 861, 110th Cong. §303; H.R. 2365, 110th Cong.), is probative evidence of Congress’ legislative acquiescence to the standards set forth in *State Street* and its progeny.

*(3) The Bilski Majority's Interpretation of the Transformation Prong Is Too Narrow.*

The *Bilski* majority’s blanket exclusion of “electronic signals and electronically-manipulated data” and “business methods” involving, for example, manipulation of “legal obligations, organizational relationships, and business risks” - today’s “raw materials” of innovation - from the scope of patent-eligible subject matter unless they are tied to a computer or some other machine (see *In re Bilski* 545 F.3d at 962) is the result of an overly rigid analysis that is contrary to the rationale that the Supreme Court used in developing the “transformation” prong of the “machine-or-transformation” test that the *Bilski* majority sought to apply. See *Expanded Metal Co. v. Bradford*, 214 U.S. 366 (1909) (rejecting arguments seeking to limit the transformation prong to chemical transformations in favour of also including mechanical transformations).

While we agree that definiteness requirements may preclude claims directed to purely mental steps from being patent-eligible subject matter, the patent-eligibility determination under 35 U.S. C. § 101 should turn only on whether the claim preempts an abstract idea or fundamental principle, not on what type of transformation occurs.

*(4) Wooden Distinctions Between General-Purpose Computers and Specific-Purpose Computers Should Be Rejected.*

The majority decision, which in some respects helped clarify the Supreme Court’s *Benson* precedent, nonetheless failed to adequately clarify whether a distinction should be drawn between a computer-implemented invention that is

implemented on a general-purpose computer rather than on a specific-purpose computer. Unfortunately, as a result, much confusion has ensued, at least at the BPAI and in the district courts, whereby mechanical distinctions have been drawn that are contrary to the underlying principles set forth in *Benson* and other governing Supreme Court precedent. See *Benson*, 409 U.S. at 71-72. The Supreme Court should clarify that any such distinctions are misplaced.

At the BPAI, this confusion has manifested itself in nonsensical distinctions that the BPAI has drawn between general-purpose computers and specific-purpose computers:

- *Ex parte Gutta*, No. 2008-3000, slip op. at 5-6 (BPAI Jan. 15, 2009) (rejecting under §101 a claim reciting a “computerized method performed by a data processor”);
- *Ex parte Nawathe*, No. 2007-3360, 2009 WL 327520, at \*4 (BPAI Feb. 9, 2009) (rejecting under §101 a claim reciting a “computerized method” of inputting and representing XML documents as insufficiently tied to “a particular computer specifically programmed for executing the steps of the claimed method”); and
- *Ex parte Cornea-Hasegan*, No. 2008-4742, slip op. at 9-10 (BPAI Jan. 13, 2009) (rejecting under §101 a claimed method for predicting results of mathematical operations, finding that “[t]he recitation of a ‘processor’ performing various functions is nothing more than a general purpose computer that has been programmed in an unspecified manner to implement the functional steps recited in the claims”).

This confusion has been further compounded with district court decisions that have used this nonsensical reasoning to hold that claims directed to computer implemented inventions that can operate on any computer, but which must perform specific delineated steps, are nonetheless patent ineligible:

- *E.g., DealerTrack, Inc. v. Huber*, No. CV 06-2335, 2009 U.S. Dist. LEXIS 58125, at \*12-13 (C.D.Cal. July 7, 2009) (finding the patent invalid under *Bilski* based on the court’s findings that the patent did “not specify precisely how the computer hardware and database [were] ‘specially programmed,’ and the claimed central processor [was] nothing more than a general purpose computer that has been programmed in some unspecified manner,” which “[u]nder *Bilski* and the recent decisions interpreting it [could not] constitute a ‘particular machine’”); and
- *Cybersource Corp. v. RetailDecisions, Inc.*, No. C04-03268, 2009 U.S. Dist. LEXIS 26056, at \*20-21 (N.D.Cal. Mar. 26, 2009).

Such confusion, and the resulting uncertainty engendered thereby, would be eliminated if the inquiry for patent-eligibility was appropriately focused on whether the claimed subject matter falls within one of the four statutory classes and whether it preempts a fundamental principle.

## Conclusion

The role of patents - such as those related to financial services, e-commerce, and computers - play a vitally important role in the modern US economy. Such patents, when appropriately awarded, encourage innovation and the disclosure of information, and thus advance the Constitutional goal of “promot[ing] the Progress of Science and useful Arts.” U.S. Const., art. I, § 8, cl. 8. The Supreme Court should resist the temptation to bow to the outspoken minority who would undermine a system that our Founding Fathers thought was so important that they included it in Article I of the US Constitution and enacted it into one of the earliest public laws of this country at its infancy, and which has been maintained ever since. Rather, the Supreme Court should reaffirm its prior precedent, which recognises the broad scope of patent-eligible subject matter under Section 101, and should reject efforts to create any rigid rules or short-cut analyses that seek to narrow the scope of Section 101.

Charles R. Macedo is a Partner, and Norajeane McCaffrey is an Associate at Amster, Rothstein & Ebenstein LLP. They may be reached at [cmacedo@arelaw.com](mailto:cmacedo@arelaw.com) and [nmccaffrey@arelaw.com](mailto:nmccaffrey@arelaw.com). Mr. Macedo is the author of the book *The Corporate Insider's Guide to U.S. Patent Practice* published by Oxford University Press. Mr. Macedo was principal attorney, along with Anthony Lo Cicero and Jung Hahm from his firm, on an [amici curiae submission \[pdf\]](#) to the Federal Circuit in *In re Bilski*.

Messrs. Lo Cicero and Macedo and Ms. McCaffrey submitted an [amici curiae brief \[pdf\]](#) on behalf of various mid-sized and smaller entities in the financial services, e-commerce, and internet industries to the Supreme Court in *Bilski v. Kappos*. The authors would also like to thank Marion Metelski, Michael Kasdan, David Goldberg and Tasha Macedo for their helpful comments.