



published: **Journal of Intellectual Property Law and Practice**, January 27, 2009

Processes must be tied to machine or transform matter to be patent-eligible in the United States

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In re Bilski, 545 F.3d 943, Federal Circuit, 30 October 2008 (en banc).

'Machine-or-transformation' is the only governing test for determining the patent eligibility of processes in the United States.

Legal context

Since *State Street Bank & Trust Co. v Signature Financial Group, Inc.*, 149 F.3d 1368, 1373 (Fed. Cir. 1998) the US patent system has applied a broad standard to determine patent-eligibility. Many so-called 'business method' patents have been granted; more are pending. Numerous objections have been raised that some business method patents which have issued are of dubious quality. Several Supreme Court Justices criticized the 'useful, concrete and tangible results' test applied in *State Street*. A series of seemingly contradictory decisions has issued from the Board of Patent Appeals and Interferences on the scope of patentability. The Federal Circuit took *Bilski*, on its own motion, to address the standard for determining when a process is patent-eligible. As the Federal Circuit explained, whether a claim is drawn to patent-eligible subject matter under §101 is a threshold inquiry, and any claim of an application failing the requirements of §101 must be rejected even if it meets all of the other legal requirements of patentability. In *Bilski*, the Federal Circuit took a hard look at centuries of jurisprudence on what types of processes have been and should be the subject of patent protection, concluding that the 'governing' test should be 'machine-or-transformation test'.

Facts

The patent application at issue had been pending since the mid-1990s, even before the *State Street* decision originally issued.

The specific representative claim in Bilski's patent application reads as follows:

'1. A method for managing the consumption risk costs of a commodity sold by a commodity provider at a fixed price comprising the steps of:

- (a) initiating a series of transactions between said commodity provider and consumers of said commodity wherein said consumers purchase said commodity at a fixed rate based upon historical averages, said fixed rate corresponding to a risk position of said consumer;
- (b) identifying market participants for said commodity having a counter-risk position to said consumers; and
- (c) initiating a series of transactions between said commodity provider and said market participants at a second fixed rate such that said series of market participant transactions balances the risk position of said series of consumer transactions.'

The Board of Patent Appeals and Interferences issued a lengthy, informative decision which rejected the *Bilski* claim as being unpatentable subject matter.

On appeal to the Federal Circuit, after oral argument the Court took the case *en banc* to be heard by the full court, identifying five issues:

1. whether claim 1 of the 08/833,892 patent application claims patentable subject matter under 35 USC §101;
2. what standard should govern when determining whether a process is patent-eligible subject matter under §101;
3. whether the claimed subject matter is not patent-eligible because it constitutes an abstract idea or mental process; when does a claim that contains both mental and physical steps create patent-eligible subject matter;
4. whether a method or process must result in a physical transformation of an article or be tied to a machine to be patent-eligible subject matter under section 101;
5. whether it is appropriate to reconsider *State Street Bank & Trust Co. v Signature Financial Group, Inc.*, 149 F.3d 1368 (Fed. Cir. 1998), and *AT&T Corp. v Excel Communications, Inc.*, 172 F.3d 1352 (Fed. Cir. 1999) in this case and, if so, whether those cases should be overruled in any respect.

The Court's Order also set a schedule for *amici curiae* to submit briefs. Participants in a wide range of industries submitted dozens of briefs and took widely divergent views on what is and should be patent-eligible processes. In addition to the applicant and the government, two *amici* from the financial services community were also invited by the Court to participate in the oral argument (for a summary of the positions taken and by whom in the briefing on *In re Bilski*, see Charles R. Macedo, *In re Bilski Roll Call and Score Card*, IP Law 360, 23 April 2008, <http://www.arelaw.com/articles/articles.html>).

Analysis

The majority opinion in *Bilski* rejected prior formulations of what should constitute a patent-eligible process in favour of the so-called 'machine-or-transformation' test. This majority found that the 'machine-or-transformation' test is the only 'governing' test on this issue (at 545 F.3d at 955–56). It also rejected all other attempts to create 'shortcut' tests, including the previously rejected *Freeman-Walter-Abele* test and 'technological arts' test, and the previously relied-upon 'useful, concrete, and tangible results' test (at 545 F.3d at 958–60).

In particular, as the majority opinion explained, the 'machine-or-transformation' test, as taken from historical Supreme Court decisions, provides that:

'[A]n applicant may show that a process claim satisfies §101' by either

1. 'showing that his claim is tied to a particular machine' or
2. 'showing that his claim transforms an article'. (545 F.3d at 961)

The purpose of the 'machine-or-transformation' test is to preclude processes that pre-empt so-called 'fundamental principles' (ie laws of nature, natural phenomena, and abstract ideas) from being patentable. (545 F.3d at 952).

The majority further explained that under either branch of the 'machine-or-transformation' test, the analysis should consider that:

1. the use of specific machine or transformation of an article must impose meaningful limits on the claim's scope to impart patent-eligibility; and
2. the involvement of the machine or transformation in the claimed process must not merely be insignificant extra-solution activity (at 545 F.3d at 961–62).

Significantly, the majority dispelled some misconceptions and confirmed that 'whether a claimed process is novel or non-obvious is irrelevant to the §101 analysis' (at 545 F.3d at 958), recognizing that the analyses under §§102 (novelty), 103 (obviousness), etc, should not be commingled with the §101 analysis. Issues regarding utility remain an appropriate subject of discussion under §101. (545 F.3d at 958 n 15).

Similarly, the majority 'made clear that it is inappropriate to determine the patent-eligibility of a claim as a whole based on whether selected limitations constitute patent-eligible subject matter. After all, even though a fundamental principle itself is not patent-eligible, processes incorporating a fundamental principle may be patent-eligible. *Thus, it is irrelevant that any individual step or limitation of such processes by itself would be unpatentable under §101*'. (545 F.3d at 958 (emphasis added; citations omitted)).

Applying these principles to the *Bilski* claim, the majority found that it failed both parts of the test.

With respect to the 'machine implementation' branch of the inquiry, the applicant admitted the claim was not so limited, so the majority 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' (545 F.3d at 962).

With respect to the 'transformation' branch of the inquiry, the majority explained that '[a] claimed process is patent-eligible if it transforms an article into a different state or thing. This transformation must be central to the purpose of the claimed process' (id.), it being 'self evident' that such a transformation would include, for example, 'a process for a chemical or physical transformation of *physical object or substances*' (at 545 F.3d at 962).

The majority opinion noted that today's 'raw materials' are 'electronic signals' and 'electronically-manipulated data'. It found difficult the question of whether 'abstract constructs such as legal obligations, organizational relationships and business risks' should also fall within this exception (id.). Nonetheless, 'case law has taken a measured approach to this question, and we see no reason here to expand the boundaries of what constitutes patent-eligible transformations of articles' (id.).

Thus, the majority held 'that the Applicants' process as claimed does not transform any article to a different state or thing:

'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. Applicants' process at most incorporates only such ineligible transformations'. (545 F.3d at 963-64, emphasis added).

The majority's analysis was based on the reasoning that 'Applicants here seek to claim a non-transformative process that encompasses a purely mental process of performing requisite mathematical calculations without the aid of a computer or any other device, mentally identifying those transactions that the calculations have revealed would hedge each other's risks, and performing the post-solution step of consummating those transactions. *Therefore, claim 1 would effectively pre-empt any application of the fundamental concept of hedging and mathematical calculations inherent in hedging (not even limited to any particular mathematical formula)*. And while Applicants argue that the scope of this

preemption is limited to hedging as applied in the area of consumable commodities, the Supreme Court's reasoning has made clear that effective pre-emption of all applications of hedging even just within the area of consumable commodities is impermissible. Moreover, while the claimed process contains physical steps (initiating, identifying), it does not involve transforming an article into a different state or thing. Therefore, Applicants' claim is not drawn to patent-eligible subject matter under §101'. (545 F.3d at 965-66; emphasis added; citation omitted).

In addition to the majority opinion authored by Chief Judge Michel, four additional opinions were filed. Circuit Judge Mayer wrote a concurring opinion agreeing in the results, but offering a differing rationale. Circuit Judges Newman and Rader each dissented, with their own dissenting opinions. Circuit Judge Dyk, who was joined by Circuit Judge Linn, joined in a concurring opinion to respond to the dissenting opinions of Circuit Judges Newman and Rader.

Practical Significance

Patentability has been an important issue in many industries lately, including the financial services industry, the computer software and internet industries, and the life science industry, each of which was represented in the briefing in *Bilski*, with different members of each industry offering divergent views on the subject. In the majority opinion, the Court has offered some stability to this debate by rejecting prior failed formulations and stating the governing 'machine-or-transformation' test. This test, to the relief of the patent owners of over 200,000 issued patents and many more pending patent applications, continues to provide for the patentability of computer-implemented processes (at least if drafted properly). However, because there are so many qualifiers and unanswered questions contained in the opinion, the full implications are yet to be understood. For now, careful claim drafting of claimed processes has become even more important in the United States.

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doi:10.1093/jiplp