



## The scope of patentable subject matter after 'Bilski'

Two recent decisions provide guidance as to how abstract a patentable invention can be.

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The number of utility patent applications in the United States rose by 55% from 2000 to 2009. This dramatic increase raises questions about striking the right balance between granting patent monopolies for technologies that promote innovation and denying monopolies to those that would hinder innovation. The U.S. Supreme Court once indicated that patentable subject matter "include[s] anything under the sun that is made by man." *Diamond v. Chakrabarty*, 447 U.S. 303, 309 (1980). With the emergence of new technologies, particularly those that relate to the manipulation and analysis of data, courts have recently revisited the issue of what subject matter is patentable.

The scope of what may be protected by a patent is defined by statute. Section 101 of the Patent Act provides that inventors of "any new and useful process, machine,



manufacture, or composition of matter, or any new and useful improvement thereof" may obtain exclusive rights for a limited period.

In June 2010, the Supreme Court addressed the scope of patentable subject matter in *Bilski v. Kappos*, 130 S. Ct. 3218 (2010). Bernard Bilski and his co-inventor sought to patent a general method of hedging risk in the energy market. The Supreme Court affirmed the U.S. Court of Appeals for the Federal Circuit's holding that Bilski's claims were not patentable. But

the Supreme Court overruled the Federal Circuit's "machine-or-transformation" test as the exclusive test for patentability, whereby an invention is a patentable process 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." *Id.* at 3225. Instead of announcing a test for determining whether a process is eligible for a patent, the Supreme Court refocused the inquiry on the language of § 101 with three exceptions based on earlier precedent: Laws of nature, physical phenomena and abstract ideas are not patentable. *Diamond v. Diehr*, 450 U.S. 175, 182 (1981). The patent bar was thus left to determine what this change in the law would mean in practice.

Two recent decisions, *Research Corp. Technologies Inc. v. Microsoft Corp.*, 2010 WL 4971008 (Fed. Cir. Dec. 8, 2010), and *Prometheus Laboratories v. Mayo Collaborative Services*, 2010 WL 5175124 (Fed. Cir. Dec. 17, 2010), addressed the question of pat-

entable subject matter for very different technologies. Together, these decisions provide useful guidance as to how abstract an invention can be and still be patent eligible.

### THE RESEARCH CORP. DECISION

The patents asserted by Research Corp. address the displaying or printing of images in a spectrum of colors or grays when monitors and printers can only use a limited number of primary colors. "Halftoning" techniques place the dots of primary colors in such a way as to simulate a spectrum of colors. The inventors, who worked in the field of medical imaging, developed a "blue noise mask"—typically, a mathematically generated software filter—that creates accurate halftone images more rapidly than earlier methods.

The district court granted summary judgment of invalidity on certain of Research Corp.'s process claims because they failed the machine-or-transformation test. On appeal, the Federal Circuit analyzed whether those claims were unpatentable based on the language of § 101, as directed by *Bilski*. The parties agreed that the claims did not relate to laws of nature or natural phenomena, so the question was whether the inventors' work was an unpatentable abstract idea. The panel found that there was "nothing abstract" in the claimed methods even though it was clear that the methods incorporated mathematical formulas and algorithms. In reversing the district court's grant of summary judgment, the Federal Circuit noted that the inventors did not seek to patent the mathematical formulas themselves, but rather a process of halftoning in computer applications that was "not so manifestly abstract as to override the statutory language of Section 101."

### THE PROMETHEUS LABS DECISION

The patents at issue in *Prometheus Labs* relate to methods of optimizing the dosage of a particular drug to treat autoimmune conditions such as inflammatory bowel disease. The treatment regimen had to consider the toxicity of the drug and nonresponsiveness of the patient in some cases. To address these concerns, the Prometheus Labs patents disclose a method of optimizing the drug dosage by determining the level of the drug in patients treated with the drug and then adjusting the dosage.

The district court invalidated Prometh-

eus Labs' claims because it found that the concentration of the drug in the patient is a natural phenomenon. The Federal Circuit reversed, and Mayo sought review by the Supreme Court. Based on the *Bilski* decision, the Supreme Court vacated the Federal Circuit decision and remanded for further consideration.

On remand, the Federal Circuit noted that the Supreme Court did not bar the use of the machine-or-transformation test; it instead ruled that it was not the sole test for patentable subject matter. Therefore, the Federal Circuit again found that the steps in the Prometheus Labs method were patentable because they were transformative and not merely abstract data-gathering. More important, because there are specific treatment steps, the claims do not pre-empt all uses of the correlations in drug concentration. The Federal Circuit further found that the claims that do not have the treatment step are patentable because the patient's sample is transformed during the testing step.

The message from *Research Corp.* and *Prometheus Labs* is that the courts should not reflexively limit the scope of patentable subject matter. And claims that relate to a specific application and solve a specific problem are much less likely to face questions regarding whether they relate to patentable subject matter. Yet there is something of an eye-of-the-beholder quality to *Research Corp.* and *Prometheus Labs* that creates further uncertainty as to what is patentable.

One could interpret the results in these decisions as reflecting a conclusion about the effect the patent would have on innovation. An overly abstract claim discourages, and may even preclude, innovation in a field, while a claim limited to a specific application that solves a particular problem spurs innovation by encouraging others to solve similar problems. This interpretation is consistent with pre-*Bilski* decisions by the Supreme Court. In *Diehr*, the Supreme Court found that a process that incorporated a well-known equation to optimize conditions for molding raw rubber into precision products was patentable subject matter. In contrast, the Supreme Court found that a claim to a general, computerized process of converting certain numbers to binary format was "so abstract and sweeping as to cover both known and unknown uses" and therefore not patentable. *Gottschalk v. Benson*, 409 U.S. 63, 68 (1972).

The Federal Circuit applied similar reasoning in a decision related to claims having the generalized steps of performing a clinical trial and applying an algorithm to the data from the test to determine the possible cause of the abnormality. *In re Grams*, 888 F.2d 835 (Fed. Cir. 1989). In other words, the claims would have been so broad as to pre-empt the use of the algorithm for any type of diagnosis. The court found that the claim was essentially the algorithm and therefore unpatentable. Had the patent been allowed, only the owners or licensees of the patent would have had any incentive to invent other applications of the algorithm.

*Bilski* also makes it clear that there is no categorical rule prohibiting a patent for a business method. But the question of whether a business method, like *Bilski's*, is an abstract idea may prove a significant hurdle to patentability. For example, in *State Street Bank & Trust Co. v. Signature Financial Group Inc.*, 149 F.3d 1368 (Fed. Cir. 1998), the claim related to a data processing system for optimizing investments for a pooled mutual fund. The Federal Circuit held that there was no business method exception to patentable subject matter. But because the patentee's claims were sufficiently broad to foreclose any other computer-implemented method to manage this type of financial structure, the claims would likely be found unpatentable as an abstract idea.

In conclusion, the Federal Circuit in *Research Corp.* and *Prometheus Labs* provided welcome guidance about the scope of patentable subject matter. The focus will now be on how abstract the invention is and on whether a claim seems to inhibit innovation. Nevertheless, the lack of a clear standard and the ever increasing rate of invention mean that § 101 will remain a hotly contested issue in patent prosecution and patent infringement in the foreseeable future.

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