V viewpoints

Pamela Samuelson

Legally Speaking
Only Technological Processes Are Patentable

The U.S. Supreme Court will narrow the universe of process innovations that can be patented to those that are "technological," but what will that mean for software?
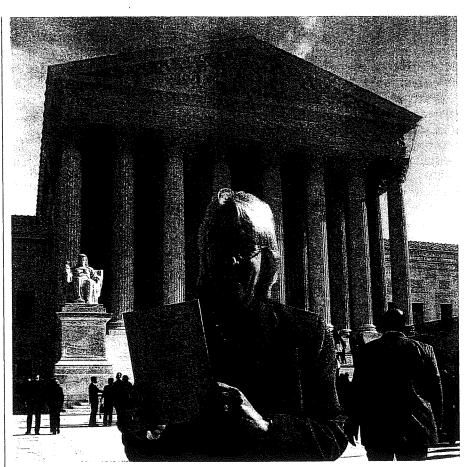
O N NOVEMBER 9, 2009, the U.S. Supreme Court heard oral argument in the *Bilski v. Kappos* case. The question is whether a method for hedging risks of price fluctuations of commodities is eligible for patent protection.

My most recent *Communications* Legally Speaking column, "Are Business Methods Patentable?" (November 2009), suggested the Court's ruling in *Bilski* would have implications for the patentability of computer programs. After attending the oral argument in the case, I am now less sure of that.

One thing I am sure of, though, is that Bilski is not going to get his patent. The Court made mincemeat out of Bilski's main arguments in favor of the patentability of his method. The Justices peppered him with questions and made comments indicating that they thought his arguments were preposterous.

Hearing the oral argument also convinced me that the Court is unlikely to proclaim that business methods, as such, are ineligible for patenting. The Court instead seems likely to rule that Bilski's method is unpatentable because it is a nontechnological process.

To implement this standard, the Court is likely to adopt a "machine or transformation" test so that the Patent and and Trademark Office (PTO) and the courts can distinguish between technological and nontechnological processes. Under this test, Bilski's method is unpatentable because it is

Pamela Samuelson holding the Bilski brief in front of the U.S. Supreme Court building.

neither tied to a specific machine, nor does it transform anything from one state to another.

The main reason *Bilski* is unlikely to address software patent issues is that dozens of software companies and organizations filed amicus curiae (friend of the court) briefs explaining that a broad patent subject matter ruling in *Bilski* could sweep away patents in this field. (Some amici wanted software patents to be swept away, while others sought to preserve software patents.) The Court will likely leave questions about the patentability of software innovations to future cases.

Alphabets, Horse Whispering, and Speed Dating

Most Justices came to the oral argument with their favorite examples of innovations they thought were unpatentable and tested them out on Bilski's lawyer, Michael Jakes. Justices Kennedy and Roberts, for instance, quizzed Jakes about whether a new alphabet could be patented. Dutifully sticking to his script, Jakes said yes insofar as it was a practical application of knowledge that could be expressed in a series of steps.

Under Bilski's theory of patent subject matter, Justice Scalia suggested that innovations in horse-training techniques, such as horse whispering, would be patentable. Yet, no such patents have issued for them. Scalia asked Jakes to explain why. When Jakes answered that the U.S. economy in the 19th century was based on industrial processes, Scalia derisively commented that the economy back then was based more on horses.

Scalia also asked Jakes if an improved method for winning friends and influencing people was patent-eligible, conveying by the tone of his voice that he thought the very idea was absurd.

The patentability of speed-dating methods was raised by Justice Sotomayor, who worried that without some sort of technology limitation patents would extend too far and impose too many costs on society.

That Bilski's theory would also allow patents on estate planning, tax avoidance, and jury selection methods was of concern to Justice Ginsburg who plainly regarded these methods as beyond the patent pale.

Justice Breyer asked Jakes if a professor could patent an improved method of teaching antitrust law. After Jakes affirmed this, Breyer asked him to suppose the Court was not willing to go that far; did Jakes have anything to offer as an alternative formulation of patent subject matter? Jakes did not.

What Test to Use?

That Bilski will lose his appeal is certain. But the Justices were plainly struggling during the oral argument about what test should be used to distinguish between patentable and unpatentable processes.

The test will certainly not be the patent subject matter rule that the Court of Appeals for the Federal Circuit (CAFC) used between 1998 and 2008. It focused on whether a claimed method produced a "useful, concrete, and tangible result."

In the decade after the CAFC announced this test, the PTO was flooded with applications for patents on a wide range of methods in many fields of human endeavor, including sports moves, business methods, arbitration procedures, charitable giving techniques, and dating methods.

After the Supreme Court in 2006 expressed dissatisfaction with the CAFC's views of patent subject matter (see my July 2008 column "Revisiting Patentable Subject Matter"), the CAFC decided to revisit patent subject matter. It heard Bilski's appeal en banc (with all 12 judges on the court, not just the usual three-judge panel) and articulated the machine-or-transformation test mentioned previously, under which Bilski's method was unpatentable.

As formulated by the CAFC, the machine-or-transformation test has been criticized for being too formalistic, failing to articulate a normative or policy-based grounding, and too easily subverted by a simple mention of technology (for example, a computer) in the claims.

Yet, the PTO has defended this test as practicable for conducting examinations. In its brief to the Court, the Solicitor General explained why the PTO believed this test was consistent with the Court's prior rulings and why it would be workable in making subject matter determinations.

During the oral argument, three other bases for resolving the patent subject matter question posed by Bilski's application came up.

Justice Alito wondered whether the Court should reject Bilski's claims on the ground that they were too abstract to warrant a patent. Malcolm Stewart, the government lawyer who defended the PTO's rejection of Bilski's claims, said such a ruling would undermine the "limited clarity" that the machine-or-transformation test had provided and would leave unresolved the question as to whether nontechnological processes, such as antitrust teaching methods, were or were not patentable.

Justice Sotomayor asked whether the Court should resolve the case by ruling that business methods were unpatentable. Stewart argued against this because the PTO thought that some technological implementations of business methods might qualify for patents.

Justice Ginsburg was attracted to the idea of saying that technological processes are patentable, but nontechnological processes aren't. Stewart characterized the machine-or-transformation" test as a "shorthand version" of that standard.

As the oral argument proceeded, the Justices became more comfortable with the machine-or-transformation test. Yet, they were plainly concerned about the risk that adoption of this test might foreclose patentability as to a new technology that did not satisfy this test.

To address this concern, Stewart recommended that the Court "acknowledge that there has never been a case up to this point that didn't involve a machine or transformation," but it "could leave open the possibility that some new and as yet unforeseen technology could require the creation of an exception." This seemed to satisfy the Court's concerns.

Difficult Questions Ahead Involving Computers

Bilski is an easy case under the machine-or-transformation test because Bilski didn't mention any technology in his application: no telephone, no fax machine, no computer.

Several Justices were skeptical of the view that merely mentioning a conventional technology in a patent claim could suffice to convert an unpatentable process into a patentable one. A method of calculating historical averages of prices, for instance, should not

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become patentable just because the claim mentions the use of a calculator in carrying out the method.

Justice Roberts stated his view that "tangential and insignificant" uses of machines in a claimed process should not render the process patentable. Stewart agreed that the use of a conventional piece of technology for its conventional functionality should not change the patent calculus for claims mentioning them.

A much more difficult set of questions arises, however, with respect to computers. Arguing for the PTO, Stewart asserted that a programmed computer to carry out a claimed method would satisfy the machine-or-transformation test. Several Justices did not find this argument persuasive.

Justice Breyer, for instance, expressed concern that if the Court accepted this view, then business methods such as Bilski's could be easily become patentable by mentioning use of computers to carry out the methods. This would undermine the Court's clear intention that such methods not be patentable.

Justice Stevens contested the view that a programmed computer was a new machine, given that the only new thing about the computer was a software process being run on it.

Also unclear is what kinds of transformations will satisfy the test. Back in 1972, the Court called into question the patentability of processes that transform data in *Gottschalk v. Benson*. That case upheld the PTO's denial of a patent for an algorithm for converting binary coded decimals into pure binary form. The only software-related process that the Court has ever deemed patentable—and that only by a 5-4 decision—was *Diamond v. Diehr* in 1981. *Diehr* involved a rubber-curing process that transformed matter from one physical state to another, which utilized a computer program in conjunction with it.

By the end of the oral argument, Stewart seemed to have convinced the Court that *Bilski* was not the appropriate vehicle for addressing the complex issues that computers raise. They will likely be left for another day.

Conclusion
Normally I would wait until the Court published its decision before writing a "Legally Speaking" column about it and its implications for computing professionals. *Bilski* was a rare instance in which the oral argument illuminated the Court's views on the merits and clearly signaled the direction of the Court's thinking about the reasoning it would use to justify its ruling.

(I should confess, however, that one reason I decided to write about *Bilski* now is because it was a case in which I submitted an amicus brief in support of the PTO, and it was the first oral argument before the U.S. Supreme Court I ever attended. It was such a thrill.)

The *Bilski* ruling will likely be unanimous. The only question is whether there will be one opinion or two or three. In some recent intellectual property cases, the unanimous opinion for the Court has been fairly short and straightforward, supplemented by concurring opinions that express some Justices' views about issues not addressed in the main opinion for the Court.

It would not surprise me if the Justices did a little (unpatentable) horse trading in their post-argument conference on *Bilski* under which they agreed to issue only one opinion in this case and to take a software-related patent subject matter case when the opportunity arose, as it almost certainly will very soon.

The patentability of software-related inventions has been hotly debated since the mid-1960s. There is still no resolution in sight. But the Court is focused on software-related patent issues again. So we can expect some significant developments in the next two or three years.

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Calendar of Events

March 15–19
Eighth International
Conference on Aspect-Oriented
Software Development
Rennes and Saint Malo France,
Contact: Jean-Marc Jezequel,
Phone: 33299847192,
Email: jeqzequel@irisa.fr

March 16–18
3rd International Conference
on Simulation Tools and
Techniques
Malaga, Spain,
Contact: Luiz Felipe Perrone,
Phone: 570-577-1687,
Email: perrone@bucknell.edu

March 18–19
ACM International Workshop
on Timing Issues in
the Specification and
Synthesis of Digital Systems
TBA, CA,
Sponsored: SIGDA,
Contact: Peng Li,
Email: pli@tamu.edu

March 22–24
Eye Tracking Research
and Applications
Austin, TX,
Sponsored: SIGCHI and
SIGGRAPH,
Contact: Carlos Hitoshi
Morimoto,
Phone: 55-11-3091-6499,
Email: chmorimoto@gmail.com

March 22–26
The 2010 ACM Symposium
on Applied Computing
Sierre, Switzerland,
Sponsored: SIGAPP,
Contact: Sung Y. Shin,
Phone: 605-688-6235,
Email: sung.shin@sdstate.edu

March 26–27
Consortium for
Computing Sciences
in Colleges (CCSC) Midsouth
Searcy, AR,
Contact: Dr William M Mitchell,
Phone: 317-392-3038,
Email: willmitchell@
lightbound.com

March 29–31
International Conference
on Multimedia
Information Retrieval
Philadelphia, PA,
Sponsored: SIGMM,
Contact: James Ze Wang,
Phone: 814-865-7889,
Email: jwang@ist.psu.edu