Initial thoughts on Mayo v. Prometheus and software patents

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Abstract

In the aftermath of an important decision by the Supreme Court of the United States, the first impressions on the significance of the Mayo Collaborative Services v. Prometheus Laboratories, Inc. over the software patents debate in the United States.[1]

Keywords

Law; information technology; Free and Open Source Software; Software Patent; Supreme Court; Mayo v. Prometheus

The U.S. Supreme Court's recent decision in *Mayo Collaborative Services v. Prometheus Laboratories, Inc*.[2] is an important development in the law of patent eligibility. Although the dispute before the Court did not involve software, it will certainly be cited as a precedent in future software cases, and it may ultimately be used to invalidate many bad software patents. The opinion shows that the Court is increasingly mindful of the risks that patents can hold for innovation.

Supreme Court cases are decided by a majority of nine justices, and it is common for the ideologically diverse Court to issue one or more dissenting or concurring opinions in a case. This can sometimes leave doubt as to a holding's future significance. However, Justice Breyer's opinion in *Mayo* was joined by all the justices. This unanimity on what many viewed as a difficult question makes the decision a particularly strong precedent worth analyzing.

The *Mayo* case concerned the validity of patents of Prometheus relating to diagnostic testing for autoimmune diseases such as Crohn's disease and ulcerative colitis. The patents set forth levels of metabolites in the bloodstream that would indicate whether a particular drug dosage should be increased or decreased.

1 The article takes inspiration from a blog post authored by Rob Tiller which appeared on "Opensource.com" at the following URL: http://opensource.com/law/12/3/prometheus-bound-important-precedent-next-software-patent-case

2 http://www.supremecourt.gov/opinions/11pdf/10-1150.pdf

The Court began by noting that 35 U.S.C. Section 101 sets forth a broad area of patent eligibility, but that there is a judicially created exception that makes "laws of nature, natural phenomena, and abstract ideas" ineligible for patenting. The Court ultimately concluded that the Prometheus patent fell within the laws-of-nature exception.

The Court's interpretation of this exception is significant. The Court characterized the ways in which a drug is metabolized in the body as "entirely natural processes," and found that patents describing such processes "set[] forth a natural law." Although a patent may be granted for a process that applies a law of nature, this is possible only when the process involves something more than "well-understood, routine, conventional activity."

The connection between the biological processes at issue in *Mayo* and software patents is clear from the Court's reliance on three of its earlier cases that involved software – *Diehr*, *Flook*, and *Benson*. According to *Mayo*, these cases concerned patents involving "processes that embodied the equivalent of natural laws." *Diehr*[3] concerned a process for transforming uncured rubber into cured, molded products using the Arrhenius equation. Although the *Diehr* process as a whole was patentable, the Court found that, by itself, "the basic mathematical equation, like a law of nature, was not patentable." In *Flook*,[4] the Court found a formula for computing an alarm limit as part of a process for catalytic conversion of hydrocarbons was a basic mathematical equation that, "like a law of nature," was not patentable.

The *Benson*[5] case involved a process for converting binary-coded decimal numerals into pure binary numbers on a general purpose computer. The *Mayo* opinion describes *Benson* as holding "that simply implementing a mathematical principle on a physical machine, namely a computer, was not a patentable application of that principle." The Court viewed this as tantamount to a "claim that just said 'apply the algorithm.'"

These references and the analogy to laws of nature will be important in future software patent cases. It is also interesting to note the Court's application of the machine-or-transfer test of *Bilski*.[6] In response to the argument that the blood of the individual was transformed in the course of the test, the Court said that the machine-or-transformation test was only "an 'important and useful clue' to patentability" which did not "trump the 'law of nature' exclusion." In other words, the *Bilski* test, even if satisfied, does not allow patenting of laws of nature. The *Mayo* opinion indicates the same ought to be true for mathematical algorithms. In a future case, it may be argued, as some computer scientists hold, that software is nothing more or less than mathematical algorithms.

It also seems noteworthy that the *Mayo* Court outlined a balanced view of the patent system that took account of the risks it can pose for innovation. It wrote, "Patent protection is, after all, a two-edged sword. On the one hand, the promise of exclusive rights provides monetary incentives that lead to creation, invention, and discovery. On the other hand, that very exclusivity can impede the flow of information that might permit, indeed spur, invention, by, for example, raising the price of

3 Diamond v. Diehr, 450 U.S. 175 (1981) http://laws.findlaw.com/us/450/175.html
4 Parker v. Flook, 437 U.S. 584 (1978) http://supreme.justia.com/cases/federal/us/437/584/case.html
5 Gottschalk v. Benson, 409 U.S. 63 (1972) http://laws.findlaw.com/us/409/63.html
6 Bilski Et Al. V. Kappos, Under Secretary Of Commerce For Intellectual Property And Director, Patent And Trademark Office , No. 08-964 (2010) http://www.supremecourt.gov/opinions/09pdf/08-964.pdf

using the patented ideas once created, requiring potential users to conduct costly and time-consuming searches of existing patents and pending patent applications, and requiring the negotiation of complex licensing arrangements." The Court also noted that monopolization of abstract intellectual concepts and other basic tools "through the grant of a patent might tend to impede innovation more than it would tend to promote it."

Conclusion

The stance of the Court on the patent system may not sound surprising to FOSS community members who are knowledgeable about the problems of software patents. But Americans are taught from an early age to venerate the patent system. Many end up with an unshakeable belief that it always fosters progress, and cannot conceive that it sometimes hinders innovation. In *Mayo*, all nine Justices recognized that the reality is more complicated. The Court may not be ready yet to take on the software patent problem, but its practical, empirical approach could be a harbinger of progress to come.

About the author

Rob Tiller *is vice president and assistant general counsel for Red Hat, where he manages patent, trademark, and copyright matters. He is a frequent speaker and writer on open source legal issues. Before coming to Red Hat, he was a partner with the law firm of Helms, Mulliss & Wicker, PLLC, where he specialized in commercial and IP litigation. He is a graduate of the University of Virginia School of Law, and a former clerk for Justice Antonin Scalia of the U.S. Supreme Court, and Judge Stephen Williams of the D.C. Circuit. For non-left-brain activity, he enjoys playing the piano.*