Finding the Point of Novelty in Software Patents

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FINDING THE POINT OF NOVELTY
IN SOFTWARE PATENTS

Bernard Chao*

INTRODUCTION

Earlier this year in *Mayo v. Prometheus*, the Supreme Court made another attempt to define the scope of patentable subject matter.1 A unanimous Supreme Court held that the personalized medicine dosing process invented by Prometheus was not eligible for patent protection because the process was effectively an unpatentable law of nature. Although the decision did not directly address software patents, it set forth a confusing framework for subject matter patent eligibility that software patents will have to satisfy.

In the wake of *Mayo*, the Federal Circuit has already issued two conflicting decisions on the eligibility of software patents.2 Although patents in both cases involved business concepts implemented on software, the two decisions applied different approaches and arrived at different outcomes. On July 9, 2012, in *CLS Bank Int’l v. Alice*, the Federal Circuit found that patents covering a trading system platform for exchanging obligations were patent eligible subject matter.3 Less than a month later, in *Bancorp v. Sun Life*, a different panel found that patents covering a system for administering and tracking life insurance values were invalid because they covered an unpatentable abstract idea.4 Not surprisingly, the Federal Circuit just granted a petition for an en banc rehearing in *CLS Bank Int’l* and asked the parties to address “what test should the court adopt to determine whether a computer-implemented invention is a patent ineligible ‘abstract idea.’”5

Building on earlier work, this Essay explains how to determine when software patents properly cover patent eligible subject matter under § 101 of the patent laws. This does not require any fundamental changes to the law. Rather, this approach provides a coherent framework that sensibly brings

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2 *CLS Bank Int’l et al. v. Alice Corp.*, 685 F.3d 1341 (Fed Cir. 2012); *Bancorp Services v. Sun Life Assurance Co*, 687 F.3d 1266 (Fed. Cir. 2012).

3 *CLS Bank Int’l*, supra at ___.

4 *Bancorp*, supra at ___.

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the doctrine of subject matter patentability as applied to software patents in line with the recent Supreme Court precedent.

Laws of nature, natural phenomena, and abstract ideas are not patentable. But identifying when a patent covers one of these unpatentable concepts (as opposed to an application of such a concept which is patentable) has proven to be quite difficult. The Mayo decision dissected the claims of Prometheus’ personalized medicine patent and found that they did not add “enough” to an unpatentable law of nature. Unfortunately, the Court never explained what “enough” is. Since almost all patents involve unpatentable concepts to some extent, Mayo exposed a host of seemingly uncontroversial patents, including many software patents, to patent eligibility attacks.

I previously suggested that the Mayo decision implicitly adopted a point of novelty approach to determining subject matter patent eligibility. Expanding on that approach, I offered a two part test for determining when a claim adds enough to an otherwise unpatentable concept to make it patent eligible. Courts should first examine the limitation that embodies the point of novelty to determine whether it describes an unpatentable concept (i.e., laws of nature, natural phenomena, and abstract ideas). If it does, the law should then determine whether the other limitations can bring the concept into the realm of patentable subject matter. That occurs when the other limitations are both concrete and strongly connected to the point of novelty.

The point of novelty approach also works well with software patents. The point of novelty of many software patents is an abstract idea. In an attempt to minimize patent eligibility concerns, patent attorneys typically draft software claims so that the idea is connected a physical device. Under the point of novelty approach, that tactic should only work for some kinds of patents. Some of the ideas underlying software patents are bound together with the physical components. For example, when a patent claims a novel algorithm for curing rubber products, both the formula and the physical components are necessary to accomplishing the invention’s

7 Mayo, supra, 132 S. Ct. at 1297.
8 Michael J. Malecek & Kenneth M. Maikish, The Prometheus Effect on Software Patents, 24 No. 6 Intell. Prop. & Tech. L.J. 3, *7 (2012) (saying that the reasoning in Mayo suggests that software patents containing a mental step are not directed at patentable subject matter); Tony Dutra, Computer, Diagnostics, Gene Patents At Risk in Light of Mayo, PATENT, TRADEMARK & COPYRIGHT LAW DAILY (Apr. 4, 2012) (“[Intel’s Tina] Chappell predicted that the court would view the algorithms that are typically cited in software patents in the same [way?] that it analyzed the law of nature in medical diagnostics in Mayo.”)
9 Chao, Moderating Mayo, 107 NW. U. L. REV. COLLOQUIY at 93.
10 Id. at 94.
goals. Without the physical device, the formula could not achieve the goal of the invention. Moreover, it makes no sense to discuss the formula apart from the physical devices used to implement it. Thus, the connection between the idea and the device is sufficiently strong that the subject matter should be patent eligible.

However, in many other cases, the idea underlying the software patent does not have a strong connection to the device. For example, a method for administering life insurance values does not require a computer. The idea of administering life insurance policy values makes perfect sense standing alone. The connection between the physical components and the idea are weak. In these cases, attaching the idea to a machine should not make the concept patentable.

These examples illustrate that the key to determining whether a software patent covers eligible subject matter is assessing the strength of the connection between the patent’s point of novelty and physical devices found in the other claim limitations. Bits and pieces of this theory are scattered throughout both Supreme Court and Federal Circuit precedent, but the point of novelty approach to subject matter patent eligibility has not been fully appreciated. When it is, patent law will finally have a practical tool for distinguishing questionable business method patents from other kinds of more deserving industrial software patents.

I. SOFTWARE PATENTS

Numerous commentators have been critical of software patents. They argue that software patents don’t encourage innovation, have unclear boundaries and are of low quality. A recent empirical study has shown

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11 See infra text accompanying note [23? Diamond v. Diehr]
12 See Diamond v. Diehr, 450 U. S. 175, ___ (1981)
13 Stuart J.H. Graham et al., High Technology Entrepreneurs and the Patent System: Results of the 2008 Berkeley Patent Survey, 24 BERKELEY TECH. L.J. 1255, 1262, 1289–90 (2009) (finding in a survey of start-up companies that (1) the first mover advantage, not patent protection, was the most “important” means to “capture competitive advantage” in the software industry; and (2) the majority of start-up companies in the software industry hold no patents at all); Federal Trade Commission, To Promote Innovation: The Proper Balance of Competition and Patent Law and Policy, ch. 3 at 56 (Oct. 2003), available at http://www.ftc.gov/os/2003/10/innovationrpt.pdf (“Many panelists and participants expressed the view that software and Internet patents are impeding innovation.”)
15 Brian J. Love, Why Patentable Subject Matters for Software, 81 GEO. WASH. L.
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that software patents are some of the most litigated, but least likely to be found valid and infringed.\textsuperscript{16} As the study’s authors suggest, that means that software patents take up disproportionate litigation resources with only a slight benefit.\textsuperscript{17} That may be because software patents are the weapon of choice for non-practicing patent entities.\textsuperscript{18} Patent lawsuits brought by non-practicing entities have been widely criticized for focusing resources on innovation instead of litigation.\textsuperscript{19}

But there are many different kinds of software patents.\textsuperscript{20} The patents in \textit{CLS Bank} and \textit{Bancorp Services} cover a trading system platform for exchanging obligations, and a system for administering and tracking life insurance values respectively. Many of their claims explicitly contain computer based limitations or have been interpreted to require implementation on a computer. These patents have often been referred to as business method patents and are clearly one type of software patent.

But many industrial patents are also software patents. For example, both the patents in \textit{Parker v. Flook}\textsuperscript{21} and \textit{Diamond v. Diehr}\textsuperscript{22} used new algorithms in industrial applications. In \textit{Flook}, the claims involved a formula for calculating an alarm limit for a catalytic chemical conversion of hydrocarbons.\textsuperscript{23} The patent in \textit{Diehr} used a mathematical equation to

\begin{footnotesize}
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\item\textsuperscript{17} Id. at 708.
\item\textsuperscript{19} See e.g. Ted Sichelman, \textit{Commercializing Patents}, 62 STAN. L. REV. 341, 368 (2010)(saying that non-practicing entities stifle commercialization of patented inventions by “exploit[ing] litigation and licensing market defects to extract unwarranted rents.”)
\item\textsuperscript{20} See Allison & Mann, 85 WASH. U.L. REV. at 308-09 (defining a software patent broadly as “one in which at least one claim element covers data processing--that is, the act of manipulating data–regardless of whether the code carrying out that data processing is on a magnetic storage medium or embedded in a chip.”); compare with Stewart J.H. Graham & David C. Mowery, Intellectual Property Protection in the U.S. Software Industry, in Patents in the Knowledge-Based Economy, supra note 4, at 219, 232 (identifying software patents based on the industry characteristics; this results in a narrower set).
\item\textsuperscript{21} 437 U.S. 584 (1978) (link).
\item\textsuperscript{22} 450 U.S. 175 (1981) (link).
\item\textsuperscript{23} Flook, 437 U.S. at 585.
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develop a new process for molding and curing raw rubber into products. Both patents were implemented with software. Thus, any rule the Federal Circuit issues concerning patentable subject matter must be able to address these different types of software patents.

For a variety of reasons, many of the criticisms of software patents don’t apply, or at least not with equal force, to industrial software patents. First, the boundaries of industrial software patents are not as amorphous as those of business method software patents. Second, studies show that the non-practicing entity problem is really greatest with respect to business method patents. Finally, many of critiques of software patents focus on patents held by software companies which typically do not hold industrial software patents.

Moreover, as a practical matter, CLS Bank should not declare that industrial software patents are ineligible. Such a rule would disturb the settled expectations of too many industries that rely on industrial software patents to protect their intellectual property rights. Thus, the only real question on the table for the Federal Circuit in CLS Bank is whether it will issue a rule declaring some software patents ineligible. Any such rule must be careful not to inadvertently encompass industrial software patents.

The point of novelty approach described in part III naturally distinguishes between these two kinds of patents and offers a framework that would suggest that most business method software patents are ineligible for patent protection. The proposal is not intended to be an optimal proposal divorced from reality. Rather, it draws upon existing concepts found in both Supreme Court and Federal Circuit precedent to create a test for patent eligibility that meets the goals of the courts and commentators alike. But before providing the details of this approach, Part II describes how recent case law has addressed subject matter patent eligibility, particularly as applied to software patents.

II.
THE FRACUTURED JURISPRUDENCE

A. Bilski v. Kappos

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24 Diehr, 450 U.S. at 187.
25 See infra note [ ]
The current Federal Circuit split is rooted in the way the Supreme Court treated business method patents in *Bilski v. Kappos*. In *Bilski*, the question was the patent eligibility of a procedure for instructing buyers and sellers on how to protect against the risk of price fluctuations in a discrete section of the economy. Although the Justices unanimously concluded that Bilski’s claims did not cover patent eligible subject matter, there was a significant disagreement about how to reach that conclusion.

The Court considered two proposed limitations under § 101: the machine or-transformation test and the categorical exclusion of business method patents. Writing the opinion of the Court, Justice Kennedy first addressed the machine or transformation test. The underlying Federal Circuit decision had ruled that the machine-or-transformation test was the sole test for determining the patentability of a “process” under § 101. In other words, a process was only patentable if it was tied to a particular machine or transformed an article to another state. The Supreme Court decision modified that holding, finding that the test may be “a useful and important clue or investigative tool,” but it is “not the sole test for deciding whether an invention is a patent-eligible ‘process’ under § 101.”

Speaking for only four justices, Kennedy’s opinion went on to recognize that it was unclear how the machine or transformation test might apply to software patents. On the one hand, “[t]he machine-or-transformation test may well provide a sufficient basis for evaluating processes similar to those in the Industrial Age—for example, inventions grounded in a physical or other tangible form.” At the same time, Kennedy recognized that the test “would create uncertainty as to the patentability of software, advanced diagnostic medicine techniques, and inventions based on linear programming, data compression, and the manipulation of digital signals.”

In fact, the opinion went out of its way to say that it was “not commenting on the patentability of any particular invention, let alone holding that any of the above-mentioned technologies from the Information Age should or should not receive patent protection.”

Unlike the discussion of the machine or transformation test, there was a strong difference of opinion on the eligibility of business method patents. The majority held that § 101 does not categorically exclude business
method patents. Indeed, the opinion questioned whether there was even a common understanding of the term. Four Justices disagreed with this approach. Relying chiefly on a lengthy historical analysis, Justice Stevens, joined by Justices Ginsburg, Breyer and Sotomayor, argued that Bilski’s “method is not a ‘process’ [under § 101] because it describes only a general method of engaging in business transactions—and business methods are not patentable.” Although Stevens did not define what a business method patent was, his opinion provided plenty of examples including ____. After Bilski, it appeared that business method patents had survived, but just barely. Four Justices would have categorically excluded business method patents. Moreover, even Kennedy’s opinion explicitly left the door open for further restrictions on business method patents. Since most business method patents are a category of software patents, it is not surprising that the Federal Circuit has given software patents more scrutiny.

Soon after Bilski, the Federal Circuit issued three inconsistent decisions on the patent eligibility of business method software patents. In Ultramercial v. Hulu, the court was faced with a § 101 challenge to a patent claiming a method for distributing copyrighted products (e.g., songs, movies, books) over the Internet. The decision found that because all the claims connected the underlying concept to a computer or the Internet, they were patent eligible. But two other decisions arrived at very different results. In CyberSource v. Retail Decisions, the Federal Circuit found that a patent related to a method and system for detecting fraud in a credit card

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35 Justices Roberts, Thomas, Alito and Scalia joined Kennedy in this part of the opinion.

36 Id. (“Nor is it clear how far a prohibition on business method patents would reach, and whether it would exclude technologies for conducting a business more efficiently. See, e.g., Hall, Business and Financial Method Patents, Innovation, and Policy, 56 Scottish J. Pol. Econ. 443, 445 (2009) (“There is no precise definition of ... business method patents”))

37 Id. at 3232.

38 Id. at 3231 (“It may be that the Court of Appeals thought it needed to make the machine or-transformation test exclusive precisely because its case law had not adequately identified less extreme means of restricting business method patents, ... In disapproving an exclusive machine-or-transformation test, we by no means foreclose the Federal Circuit’s development of other limiting criteria that further the purposes of the Patent Act and are not inconsistent with its text.”)


41 CyberSource Corp. v. Retail Decisions, Inc., 654 F.3d 1366 (Fed.Cir. 2011).
transaction between a consumer and a merchant was not patent eligible. It reasoned that the ideas underlying the software claims were not sufficiently connected with their computer based limitations to satisfy the machine or transformation test.\textsuperscript{42} The court in \textit{Dealertrack v. Huber}\textsuperscript{43} also suggested that adding computer limitations to a claim would not render every concept patent eligible. In \textit{Dealertrack}, the patents related to a computer aided method and system for processing credit applications over electronic networks. Even though some of the claims explicitly required the Internet, the Federal Circuit found that this recitation was insufficient because “the claims . . . recite only that the method is ‘computer aided’ without specifying any level of involvement or detail.”\textsuperscript{44} Moreover, the court concluded that the claims preempted a fundamental concept.\textsuperscript{45} Thus, \textit{Dealertrack} appeared to expand the potential grounds for rejecting a software patent on subject matter patent eligibility grounds.

\textit{Mayo} was decided immediately on the heels of these three decisions. Ideally, the Supreme Court would have resolved the Federal Circuit split and provided a framework for making subject matter eligibility determinations, particularly in the area of software patents. Unfortunately, \textit{Mayo} just created more confusion.

\subsection*{B. Mayo v. Prometheus}

Although the technology in \textit{Mayo v. Prometheus}\textsuperscript{46} related to medical diagnostic testing, the approach the Court laid out has significant implications for software patents.\textsuperscript{47} The inventors of Prometheus’ patents discovered a specific correlation between the levels of metabolized drug in the body and the optimal drug dosage. Two patents were issued on this discovery; they claimed a method for determining the level of the metabolized drug in a subject and informing a doctor to adjust the dosage within specific parameters. The defendants argued that the claims were not drawn to patent eligible subject matter as required by §101, and this issue eventually made its way to the Supreme Court.

A unanimous Court held that Prometheus claims were not patent eligible. The decision first noted that “Prometheus’ patents set forth laws of

\textsuperscript{42} Id. at 1375.
\textsuperscript{43} Dealertrack Inc. v. Huber et al., 674 F.3d 1315, 1333 (Fed. Cir. 2012).
\textsuperscript{44} Dealertrack, 674 F.3d. at 1334.
\textsuperscript{45} Id. at 1333.
\textsuperscript{47} Indeed, the Supreme Court vacated \textit{Ultramercial} and remanded it to the Federal Circuit in view of \textit{Mayo}. Wildtangent, Inc. v. Ultramercial LLC, 132 S.Ct. 2431 (2012).
nature - namely, relationships between concentrations of certain metabolites in the blood and the likelihood that a dosage of a thiopurine drug will prove ineffective or cause harm.” Accordingly, the Supreme Court framed the question by asking “do the patent claims add enough to their statement of the correlations to allow the processes they describe to qualify as patent-eligible processes that apply natural laws?” Relying on an examination of each of the claimed limitations, the Supreme Court answered its own question by saying “no.” The Court concluded that none of the limitations individually or in combination were sufficient “to transform the nature of the claim.”

Along the way, the Supreme Court determined that three types of limitations do not make an unpatentable idea patent eligible: (1) limiting an unpatentable concept to a particular audience, (2) telling someone about the concept, or (3) adding a conventional or obvious pre-solution activity.

After determining that the claims did not add “enough” to unpatentable idea at the heart of the invention, the Supreme Court pursued three additional lines of analysis that ostensibly corroborated its conclusion. First, the decision used two earlier Supreme Court decisions as guideposts, Parker v. Flook and Diamond v. Diehr, and suggested the Prometheus’ claims were closer to the ineligible claims in Flook than the eligible claims in Diehr. Second, the Court said that simply appending general limitations to a concept, is just like saying “apply it.” That clearly is insufficient to render an unpatentable law of nature patent eligible. Finally, the Court said that Prometheus’ claims were too broad and impermissibly tied up the future use of a law of nature.

Importantly, Mayo did not apply (or reject) the machine or transformation test, which had effectively emerged as the only test for determining patent eligibility after Bilski. Rather, the Supreme Court provided an entirely new approach. By assessing whether a claim’s limitations added “enough” to the law of nature that Prometheus’ inventors had discovered, Mayo had outlined another line of inquiry to examine. But

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48 Id. at 1297.
49 Id. at 1297-98.
50 437 U.S. 584 (1978).
52 Mayo, 132 S. Ct. at __
53 Id. at __
54 Id. at __
55 Mark A. Lemley, Michael Risch, Ted M Sichelman & R. Polk Wagner, Life After Bilski, 63 STAN. L. REV. 1315, 1316 (2011) (“[T]he U.S. Patent and Trademark Office (PTO), patent litigants, and district courts have all continued to rely on the machine-or-transformation test in the wake of Bilski: no longer as the sole rule, but as a presumptive starting point that threatens to become effectively mandatory.”)
that was not all. The three corroborating Justifications provided even more fodder for the lower courts chew upon. Given all these varied ways to assess patent eligibility, it is not surprising that there continued to be disagreement within Federal Circuit.

C. The Post-Mayo Split

CLS Bank Int’l v. Alice\footnote{CLS Bank Int’l et al. v. Alice Corp, 685 F.3d 1341 (Fed Cir. 2012).} was the first Federal Circuit decision addressing the eligibility of software patents after Mayo. The central idea underlying the patents related to exchanging obligations using a third party to eliminate risk. Although the patents contained both method and system claims, they all used a computer and the court said that the “form of the claim” did not change the patent eligibility analysis.\footnote{CLS Bank, 685 F.3d at 1353.}

Although the majority opinion in CLS Bank discussed the recent Supreme Court decision, Mayo had little impact on the rule the majority announced. Judge Linn joined by Judge O’Malley said:

[T]his court holds that when—after taking all of the claim recitations into consideration—it is not \textit{manifestly evident} that a claim is directed to a patent ineligible abstract idea, that claim must not be deemed for that reason to be inadequate under § 101.\footnote{CLS Bank, 685 F.3d at 1352 (emphasis added).}

But, the “manifestly evident” language is not from Mayo, or even from Bilski. It comes from Research Corp. Technologies v. Microsoft\footnote{Research Corp. Technologies, Inc. v. Microsoft Corp., 627 F.3d 859, 868 (Fed. Cir. 2010).} and Ultramercial v. Hulu,\footnote{See infra text accompanying note [39??].} two Federal Circuit decisions that were decided prior to Mayo. The majority in CLS Bank interpreted the “manifestly evident” rule in an even more patent friendly way, stating that a claim is only drawn to unpatentable subject matter if “the single most reasonable understanding is that a claim is directed to nothing more than a fundamental truth or disembodied concept.”\footnote{Id.} Under this standard, it was easy for the Federal Circuit to find that Alice’s patents covered patent eligible subject matter.

CLS Bank does not appear to follow Mayo’s approach and focus on whether certain claim limitations added enough to the unpatentable abstract
To be fair, at the very end of the opinion, the majority gave some lip service to Mayo by characterizing some claims limitations as being “integral” to the method and “playing a significant part in permitting the method to be performed.” Judge Prost’s dissent challenged these statements and argued that the majority did “not explain whether [the additional limitations] should be characterized as such, and what ‘integral’ means in the context of § 101 in the first place.”

Although I also believe that the majority’s statements were conclusory, the dissent’s approach is hardly more illuminating. It provided a simplified description of the claims and said that, “[t]he claim in effect presents an abstract idea and then says ‘apply it.’ That is not enough.” Although this construct is clearly found in Mayo, it is hardly helpful. Both the majority and dissent believe that they know a claim directed at an unpatentable abstract idea when they see it, but they clearly see particular claims differently.

Two weeks after CLS Bank, the Federal Circuit decided Bancorp Services v. Sun Life which only added to the confusion. In Bancorp Services, the patents covered a system for administering and tracking the values of life insurance policies in separate accounts. There were both method claims and system claims. Some of the method claims did not have to be implemented on a computer while all the remaining claims did. Despite these differences, the Federal Circuit treated all the claims as equivalent for purposes of patent eligibility under § 101.

This time the Federal Circuit applied a variation of the Mayo approach that was specifically tailored to software patents. After reviewing the § 101 jurisprudence, Bancorp Services declared,

> To salvage an otherwise patent-ineligible process, a computer must be integral to the claimed invention, facilitating the process in a way that a person making calculations or computations could not.

Applying this test, the Federal Circuit identified an unpatentable abstract idea underlying the claims -- managing a stable value protected life insurance policy and then instructing the use of well-known calculations to

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62 Judge Prost’s dissent also noticed this problem and criticized the majority for failing to follow the Supreme Court’s approach. CLS Bank, 685 F.3d at 1353.
63 Id. at 1355.
64 Id. at 1357.
65 Id. at 1358 citing Mayo, 132 S.Ct. at 1294.
67 Bancorp, 687 F.3d at 1277.
68 Id. at 1278.
help establish some of the inputs into the equation.\textsuperscript{69} Even though many of the claims also required a computer, the court found that “the computer required by Bancorp’s claims is employed only for its most basic function, the performance of repetitive calculations, and as such does not impose meaningful limits on the scope of those claims.”\textsuperscript{70} The court went on to emphasize the limited role computers played in Bancorp’s claim saying that: it is the management of the life insurance policy that is “integral” to each of Bancorp’s claims at issue, “not the computer machinery that may be used to accomplish it.”; and the determination of the values in the claims “is a matter of mere mathematical computation.”\textsuperscript{71}

Notably, Bancorp Services did not explicitly reject, much less discuss, CLS Bank’s “manifestly evident” rule. Rather, Bancorp Services distinguished the outcome in CLS Bank by saying that that the computer limitations in CLS Bank did not play a “significant part” in the performance of that invention and the claims were limited to “very specific applications.”\textsuperscript{72} Even though Bancorp Services attempted to reconcile its holding with CLS Bank, it was clear that these cases took fundamentally different approaches to analyzing the patent eligibility of software patents.\textsuperscript{73}

Under the Bancorp Services approach, a court dissects a claim to determine whether there is an unpatentable abstract idea at its core. If there is, it then determines whether any computer limitations were “integral” to the claimed invention. In contrast, the CLS Bank approach looks at a claim as a whole and seeks to determine whether it is “manifestly evident” that the claim is directed to a patent ineligible abstract idea.

Given this disagreement, it is not surprising that the Federal Circuit decided to rehear CLS Bank en banc. The order granting the petition asked:

What test should the court adopt to determine whether a computer-implemented invention is a patent ineligible “abstract idea”; and when, if ever, does the presence of a computer in a claim lend patent eligibility

\footnotesize{
\textsuperscript{69} Id.  
\textsuperscript{70} Id.  
\textsuperscript{71} Id. at 1280.  
\textsuperscript{72} Id.  
}
to an otherwise patent-ineligible idea? 74

In the following section, I argue that the point of novelty approach answers the question the Federal Circuit presented.

III.

A POINT OF NOVELTY RESOLUTION

Because Mayo only identified categories of claim limitations that failed to render an unpatentable concept patent eligible, many worried that Mayo might radically limit patent eligible subject matter.75 One commentator went so far as to say that the decision “creates a framework for patent eligibility in which almost any method claim can be invalidated.”76 My earlier essay, Moderating Mayo, offered a more restrained interpretation of the Supreme Court decision. I argued that Mayo implicitly adopted a point of novelty approach, and that this approach did not need to radically limit patent eligibility in the way many feared.77

The point of novelty is the claim limitation or limitations that correspond to the heart or gist of the invention. Historically, patent law has refused to consider a patent’s point of novelty in wide ranging number of doctrines.78 Both Mark Lemley and I have separately criticized that jurisprudence. As Lemley said, “[i]t makes little sense for a law focused on invention to pay no attention to what is inventive about the patentee’s technology.”79 More specifically, I argued that the point of novelty “should

74 2011-1301 (Fed. Cir. Oct. 9, 2012) (order granting hearing en banc). The order also asked whether the form of the claim matters (i.e. method, system, or storage medium claims).
75 Gene Quinn, Killing Industry: The Supreme Court Blows Mayo v. Prometheus, IP WATCHDOG (Mar. 20, 2012), http://www.ipwatchdog.com/2012/03/20/supreme-court-mayo-v-prometheus/id=22920/ (last visited ____ ) (“The sky is falling! . . . Those in the biotech, medical diagnostics and pharmaceutical industries have just been taken out behind the woodshed and summarily executed . . . .”) and supra note 9.
77 Chao, Moderating Mayo, 107 NW. U. L. REV. COLLOQUIY at 99.
78 Chao, Breaking Aro’s Commandment, 20 FORDHAM INTELL. PROP. MEDIA & ENT. L.J., at 1192 (explaining that the point of novelty has been rejected in the assessing direct infringement, anticipation, obviousness, the written description requirement, and repair and reconstruction.)
79 Lemley, Point of Novelty, 105 NW. U. L. REV. at 1274-75; see also Kevin Emerson Collins, Getting into the “Spirit” of Innovative Things: Looking to Complementary and Substitute Properties To Shape Patent Protection for Improvement, 26 BERKELEY TECH.
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play an important role” in subject matter patent eligibility determinations. The Mayo court appears to implicitly embrace this view. Mayo’s approach assessed whether a patent’s point of novelty was an unpatentable concept (i.e. law of nature, natural phenomenon, or abstract idea) and then determined if any claim limitations somehow transformed that concept into a patent eligible application.

Unfortunately, the Supreme Court only explained when certain limitations failed to add enough to an unpatentable concept. Mayo did not explain what kind of limitation could be added to an unpatentable concept to render it patent eligible. My proposal in Moderating Mayo attempted to fill in that gap. Relying on concepts already found in existing § 101 jurisprudence, I offered a two part test for determining when patents cover subject matter that should be patent eligible. Courts should first examine the limitation that embodies the point of novelty to determine whether it describes an unpatentable concept (i.e. laws of nature, natural phenomena, and abstract ideas). If it does, the law should then determine whether the other limitations can bring the concept into the realm of patentable subject matter. That occurs when the other limitations are both concrete and strongly connected to the point of novelty.

The point of novelty of many software patents is often an abstract idea. It can be a mathematical formula or a new way of doing business. Understanding that they cannot claim the idea by itself, patent attorneys typically draft claims of software patents to include a concrete physical device like a computer or the internet. They hope that adding these limitations would render an otherwise unpatentable abstract idea patentable. Under the point of novelty approach, that tactic should only work for some kinds of patents.

The key is to test the strength of the connection between the point of novelty and any additional concrete claim limitations. There may be a number ways of characterizing such a test. I suggest that when the unpatentable concept and the additional limitations are bound together and

L.J. 1217, 1237 (2011) (Collins argues this the failure consider the point of novelty is “highly problematic in the context of patent protection for improvements.”)

80 Chao, Breaking Aro’s Commandment, 20 FORDHAM INT’L. PROP. MEDIA & ENT. L.J., at 1220; but see, Lemley , supra note __, at 1278 (expressing concern about relying on the point of novelty when making subject matter eligibility determinations).

81 Chao, Moderating Mayo, 107 NW. U. L. REV. COLLOQUIY at 94.

necessary to achieve the goal of the claimed invention, the connection is sufficiently strong to qualify for patent eligibility. One way to assess whether the concept is bound together with the other limitations is to determine if the concept stands by itself. For example, consider Bilski’s idea of hedging risk in a particular industry. Computer limitations could be added to the concept, but the concept would make sense standing by itself and remain ineligible for patenting. Moreover, just because a computer or other physical device maybe useful or practically necessary does not mean that the claim is patent eligible. This means that a patent’s goal cannot be characterized as merely applying a concept in a manner that is more efficient, faster or saves money.

Although this essay is the first to suggest the “bound together” standard, the idea of testing the connection between the unpatentable concept and other limitations is already scattered throughout existing subject matter patent eligibility jurisprudence. The machine prong of the machine-or-transformation test tests how strong the connection is between the unpatentable concept and other more concrete claim limitations (i.e. machines). More recently, Bancorp Service’s requirement that a computer must be “integral to the claimed invention” tests the same connection.83 The Supreme Court has repeatedly stated that adding insignificant post-solution limitations does not make an abstract idea patentable.84 But this is simply another way of saying that the connection between the unpatentable concept and its other limitations is not sufficiently strong.

If these threads existed by themselves, the law would not be so fractured. It would coalesce around a point of novelty approach. Unfortunately, the courts have also thrown in many other unrelated factors that confuse subject matter eligibility determinations. Cases uniformly suggest that claims that sweep too broadly are less likely to be patent eligible.85 Consequently, they ask if a limitation has placed a meaningful limit on claim scope86 or preempted the entire idea.87 The Supreme Court has also pointed to Diehr and Flook as guideposts suggesting that if a claim

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83 Bancorp Services, 687 F.3d
84 Mayo, 132 S.Ct. at 1301; Bilski, 130 S.Ct. at 3231; Diehr, 450 U.S. at 191-92; Flook, 437 U.S. at 590.
85 Mayo, 132 S.Ct. at 1301; Gottschalk v. Benson, 409 U.S. 63, 67–68 (1972) (The Court said that the claims before it were “so abstract and sweeping as to cover both known and unknown uses of the [mathematical formula].”); see also 130 S. Ct. 3218, 3231 (2010) (“Allowing petitioners to patent risk hedging would pre-empt use of this approach in all fields, and would effectively grant a monopoly over an abstract idea.”).
86 Dealertrack, 674 F.3d at 1333. CLS Bank, 685 F.3d at 1351.
87 See e.g. Bilski, 130 S.Ct. at 3258; Bancorp Services, 687 F.3d at 1280; Dealertracker, 674 F.3d at 1331.
is closer to Diehr it is patent eligible and if it closer to Flook it is not.\textsuperscript{88} I have previously criticized these lines of analysis.\textsuperscript{89} But just as importantly, these inquiries serve to obscure what should be the proper inquiry – assessing the strength of the connection between the unpatentable concept and the other claim limitations. Under the point of novelty approach I advance, these other lines of inquiry would not be used.\textsuperscript{90}

The following examples illustrate how the point of novelty approach works. Consider the patent at issue in Diehr. It claimed a novel algorithm for curing rubber products. Both the formula and the physical components (\textit{i.e.} the rubber molding press) were necessary to accomplishing the invention’s goal, making precision rubber molded products.\textsuperscript{91} Without the physical device, the formula could not achieve the goal of the invention. Moreover, it makes no sense to discuss the formula apart from the physical devices used to implement it. Thus, the connection between the idea and the device is sufficiently strong that the subject matter should be patent eligible.\textsuperscript{92} This same kind analysis would also suggest that Flook was wrongly decided.\textsuperscript{93} The algorithm for updating the alarm limit of a catalytic chemical conversion of hydrocarbons was clearly bound together with industrial equipment and both limitations are necessary to perform the conversion.\textsuperscript{94} Accordingly, under the point of novelty approach, Flook’s invention would have been patent eligible.

However, in many other cases, the idea underlying the software patents does not have a strong connection to the device. Consider the patents in CLS Bank. The claims related to a trading system platform for exchanging obligations. The computer limitations were certainly very useful but were not fundamentally necessary for exchanging obligations. Moreover, the idea of exchanging obligations makes perfect sense standing alone. The connection between the physical components and the underlying concept

\textsuperscript{88} Mayo, 132 S.Ct. at 1298-99. Unfortunately, both the Supreme Court and commentators have had difficulty distinguishing between these cases. See Chao, \textit{Moderating Mayo}, 107 NW. U. L. REV. COLLOQUY at 88-89 and references cited in note 38.

\textsuperscript{89} Chao, \textit{Moderating Mayo}, 107 NW. U. L. REV. COLLOQUY at 88-90.

\textsuperscript{90} \textit{Id.} at 98-99.

\textsuperscript{91} See infra text accompanying note [23? Diamond v. Diehr]

\textsuperscript{92} See Diamond v. Diehr, 450 U. S. 175, ___(1981)

\textsuperscript{93} Many commentators have suggested that Diehr and Flook are irreconcilable. \textit{See e.g.} Kevin Emerson Collins, \textit{Propertizing Thought}, 60 SMU L. REV. 317, 349 (2007) (“Flook and Diehr are difficult to reconcile.”); Lemley, supra note __, at 1278 (characterizing the claims in Diehr and Flook as “exactly parallel”).

\textsuperscript{94} Perhaps, the problem was that claim 1 did not explicitly connect the formula to physical device. But because the claim recited “a catalytic chemical conversion of hydrocarbons”, the Court could have easily interpreted the claim to require such limitation or noted that adding such a limitation would render Flook’
are weak. In *CLS Bank*, attaching the concept to a machine should not make the concept patentable.

The same analysis would apply to the patents in *Ultramercial*, *Cybersource*, and *Dealertrack*. The ideas underlying all these patents are not sufficiently bound together with their computer limitations to render them patent eligible. Ultramercial’s idea of receiving free copyrighted content in exchange for viewing an advertisement clearly does not need the Internet.\(^{95}\) The idea makes sense without any physical devices. Cybersource’s fraud detection patent examined Internet address information and compared it with other transactions utilizing the same credit card.\(^{96}\) Some type of computer may be necessary to obtain the Internet address information. But the idea of comparing addresses did not need to be performed on a computer, much less any physical device. Thus, this idea is not sufficiently connected to any concrete limitations. Finally, Dealertrack’s patents merely automated a method of processing car loans.\(^{97}\) As a practically matter, some computers were undoubtedly necessary to make the system operate efficiently. But that does not satisfy our test. Since the underlying system could operate without computers, albeit inefficiently, the patents do not cover patent eligible subject matter. Accordingly, none of these patents would survive the proposed point of novelty approach described here.\(^{98}\)

In sum, the point of novelty approach simplifies the inquiry for determining the patent eligibility of software patents. The result will be that many business method software patents will be declared ineligible. The connection between the concepts underlying those patents and the computers that they use is not strong. However, most industrial software patents will remain patent eligible because the concepts underlying these inventions are bound together with specific physical devices.

**CONCLUSION**

This Essay helps answer the question the Federal Circuit raised in *CLS Bank* by describing a test for determining when software patents cover patent eligible subject matter. Relying on bits and pieces from existing precedent, the proposed point of novelty approach reins in harmful business method software patents without affecting their more deserving industrial

\(^{95}\) *Ultramercial*, 677 F.3d at 1324.

\(^{96}\) *Cybersource*, 654 F.3d at 1367-68.

\(^{97}\) *Dealertrack*, 674 F.3d at 1317-18.

\(^{98}\) I do not analyze the *Bancorp Services* patents because for the most part, the Federal Circuit took the approach I advocate here.
cousins. Moreover, the theory does so without categorically declaring all business method patents ineligible, a step that the Supreme Court refused to take in *Bilski*.

In addition to answering an important doctrinal question, this Essay also operates on a more theoretical level. It builds on earlier point of novelty works and applies that thinking to one of the most vexing questions facing patent law today -- patent eligibility determinations for software patents. This demonstrates that the proposed patent eligibility test is also rooted in a firm theoretical foundation. Moreover, by providing another example of a point of novelty solution, this Essay hopes to reinforce the case for relying on point of novelty thinking more generally in patent law.