



PATENT ELIGIBLE SUBJECT MATTER: REPORT ON VIEWS AND RECOMMENDATIONS FROM THE PUBLIC

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1. The Supreme Court's *Bilski*, *Mayo*, *Myriad*, and *Alice* Decisions

Over the past seven years, the Supreme Court has issued a series of decisions—*Bilski*, *Mayo*, *Myriad*, and *Alice*—that have significantly impacted patent eligibility law and continues to generate substantial public debate.

Bilski, decided in 2010, involved a business method for hedging risk. In analyzing patent eligibility, the Supreme Court recognized that § 101 specifies four independent categories of inventions or discoveries that are eligible for patent protection (processes, machines, manufactures, and compositions of matter), but judicial precedent provides three specific exceptions to patent eligibility for laws of nature, physical phenomena, and abstract ideas. The Court rejected the view of the U.S. Court of Appeals for the Federal Circuit that the so-called “machine or transformation test” is the exclusive test for assessing patent eligibility of a process. Under that test, a process claim is patent eligible provided it is (1) tied to a particular machine or apparatus, or (2) transforms a particular article into a different state or thing. The Court explained that although the machine-or-transformation test “is a useful and important clue,” it is “not the sole test for deciding whether an invention is a patent-eligible ‘process.’” The Court held that the claims at issue were invalid because they were directed to the

unpatentable abstract idea of hedging risk in the energy market and added only token post-solution components, namely, use of well-known random analysis techniques to establish inputs. The Court observed that hedging is a long prevalent fundamental economic practice, and that allowing the patent claims “would pre-empt use of [risk hedging] in all fields” and “effectively grant a monopoly over an abstract idea.” The Court, however, left open the possibility that at least some business methods are patent eligible.

Following *Bilski*, the Supreme Court in *Mayo* addressed a method for optimizing drug dosages for treatment of autoimmune diseases in humans. The inventors discovered the relationship between the concentration of a metabolite in the blood following administration of the drug and the likelihood that the administered dosage would be ineffective or produce harmful side effects. The inventors obtained a patent claiming a method of determining whether a given dosage level is too low or too high based on the metabolite level. The Court held the claims to be patent ineligible. In analyzing the claims, the Court introduced a two-step framework for distinguishing patent ineligible concepts from patent eligible applications of those concepts. The first step is to consider whether the claims are directed to a judicially recognized exception to patentability, i.e., abstract ideas, laws of nature, or natural phenomena. If so, then the second question is “whether the claims do significantly more than simply describe these natural relations,” i.e., whether additional elements considered separately or as an ordered combination “transform the nature of the claim” into “a patent-eligible application” of the judicial exception. Applying the first step of this framework to the claims at issue, the Court found that the claims were directed to a law of nature: the relationship between the concentration of a particular metabolite in the blood and the likelihood that a dosage of a drug will be ineffective or harmful. Assessing the second step, the Court determined that the claims did not do “significantly more” than describe this natural relationship, i.e., the additional elements considered separately and as an ordered combination did not “transform the nature of the claim” into “a patent-eligible application” of the judicial exception.

At issue in *Myriad* was the patent eligibility of claims to isolated DNA (genes) associated with an increased risk of breast cancer, and synthetic DNA created from RNA known as complementary DNA (cDNA). The Supreme Court held that the isolated genes “fell squarely within the law of nature exception.” The Court explained that discovering the location of the genes does not render the genes patent eligible, nor does the act of separating them from their surrounding genetic material. While acknowledging that claims to a product “with markedly different characteristics from any found in nature” may be patent eligible, the Court explained that *Myriad*’s claims to isolated genes lacked such characteristics because they do not rely on any chemical changes resulting from isolation, and are not even expressed in terms of chemical composition. The Court did, however, rule that the claimed cDNAs were patent eligible because they differed from naturally occurring DNA by the absence of intron regions (i.e., non-coding nucleotide sequences).

Finally, in *Alice*, the Court reaffirmed the *Mayo* two-step framework and applied it to claims reciting a computer-implemented process, computer system, and computer readable medium for mitigating settlement risk. Under step one of the framework, the Court concluded that the claims were directed to the abstract idea of intermediated settlement. In assessing step two, the Court considered whether the claim elements, individually or as an ordered combination, “transform the nature of the claim” into a patent-eligible application.” The Court

referred to the second step as “a search for an inventive concept—i.e., an element or combination of elements that is sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the ineligible concept itself.” Looking at the claims at issue, the Court concluded that mere generic computer implementation does not transform the abstract idea into a patent-eligible invention. Thus, the court held the process claims, as well as the claims to the computer system and computer-readable medium, to be patent ineligible.

a. Computer-Related Technologies

In a large majority of cases pertaining to computer-related inventions, many of which involve business methods, the Federal Circuit has applied the framework to find claims to be ineligible. In several cases, however, the Federal Circuit has held claims involving computer technology to be patent eligible. As discussed further below, often eligibility turns on the presence of a technological solution to a technological problem in the claimed invention.

First, shortly after *Bilski* and prior to *Mayo* and *Alice*, the Federal Circuit considered the eligibility of patents directed to a method for rendering half-tone images of a digital image. The court noted that *Bilski* “refocused this court’s inquiry into processes on the question of whether the subject matter of the invention is abstract.” The court found “nothing abstract” in the claimed processes “for rendering a halftone image of a digital image by comparing, pixel by pixel, the digital image against a blue noise mask.” Instead, the court found that “[t]he invention presents functional and palpable applications in the field of computer technology.” While acknowledging that algorithms and formulas play a “significant part” in the claimed methods, the court found that they did “not bring th[e] invention even close to abstractness.” Accordingly, the court found the claims to be patent eligible.

Following the establishment of the two-step test in *Mayo/Alice*, the Federal Circuit applied that framework in *DDR Holdings*. At issue was a system for generating a composite webpage by combining certain elements of a “host” website with content of a third-party merchant. Specifically, the claimed system provided that when a user clicks on an advertisement for a third-party product displayed on a host website, the user is directed to a hybrid web page that combines the “look and feel” of the host website and product information from the third-party website. Beginning with step one of the two-step analysis, the court found that the claims did not “merely recite the performance of some business practice known from the pre-Internet world along with the requirement to perform it on the Internet.” Instead, the court found that “the claimed solution is necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks.” The court further observed that “the claims at issue do not attempt to preempt every application of the idea of increasing sales by making two web pages look the same.” Thus, the court concluded that the claimed system was patent eligible.

Similarly, in *Enfish*, the Federal Circuit determined that claims to a data storage and retrieval system for a computer memory are not directed to an abstract idea. The system at issue incorporated a self-referential logical model, which allowed faster searching and more effective storage of data. As an initial matter, the court declined to “read *Alice* to broadly hold that all

improvements in computer-related technology are inherently abstract and, therefore, must be considered at step two.” Analyzing the claimed invention under the first step of the *Alice* inquiry, the court found that the claims “are not directed to an abstract idea within the meaning of *Alice*,” but rather “to a specific improvement to the way computers operate, embodied in the self-referential table.” The court distinguished from situations in which “general-purpose computer components are added post-hoc to a fundamental economic practice or mathematical equation,” finding instead that “the claims are directed to a specific implementation of a solution to a problem in the software arts.” Because the claims were not directed to an abstract idea under step one, the court did not proceed to step two of the analysis and concluded that the claims were patent-eligible.

In the same year as *Enfish*, the Federal Circuit issued three more decisions finding computer-based inventions to be patent eligible under § 101. In *Bascom*, the court considered the patent eligibility of a system for filtering Internet content. Under step one, the court found the claims to be directed to an abstract idea because “filtering content is . . . a longstanding, well-known method of organizing human behavior, similar to concepts previously found to be abstract.” Thus, unlike in *Enfish*, the court proceeded to step two of *Alice*. While agreeing with the district court that “the limitations of the claims, taken individually, recite [a] generic computer, network and Internet components,” the court found that “the ordered combination of limitations” recites something more—“the installation of a filtering tool at a specific location, remote from the end-users, with customizable filtering features specific to each end user.” The court further noted that the claims do not “preempt all ways of filtering content on the Internet; rather, they recite a specific, discrete implementation of the abstract idea of filtering content.” Therefore, the court concluded that “the claims pass step two of *Alice*’s two-part framework.”

Shortly thereafter, the Federal Circuit determined that a method for automatically animating lip synchronization and facial expression of 3D characters was patent eligible subject matter. The court concluded that the claimed invention was not drawn to an abstract idea, explaining that “[w]hether at step one or step two of the *Alice* test . . . a court must look to the claims as an ordered combination, without ignoring the requirements of the individual steps.” The court viewed the claimed invention to be an improvement that “allow[s] computers to produce ‘accurate and realistic lip synchronization and facial expressions in animated characters’ that previously could only be produced by human animators.” Thus, according to the court, “[t]he claimed process uses a combined order of specific rules that renders information into a specific format that is then used and applied to create desired results: a sequence of synchronized, animated characters.” The court further observed that the claim “does not preempt approaches that use rules of a different structure or different techniques.”

Finally, in November 2016, the court issued its decision in *Amdocs*, determining that a computer readable medium and method for collecting and processing network accounting records over a network is patent eligible. The court first observed that prior decisions had found facially-similar claims to be eligible either under step one or step two. The court then explained that even if the claimed invention “is directed to an ineligible abstract idea under step one, [it] is eligible under step two because it contains a sufficient ‘inventive concept’” by “require[ing] ‘computer code for using the accounting information with which the first

network accounting record is correlated to enhance the first network accounting record.” In other words, in the court’s view, the claims “recite[] a series of limitations that, when considered individually and as an ordered combination, provide an inventive concept sufficient to confer eligibility.” The court further explained that the claimed invention “is narrowly drawn to not preempt any and all generic enhancement of data in a similar system, and does not merely combine the components in a generic manner, but instead purposefully arranges the components in a distributed architecture to achieve a technological solution to a technological problem specific to computer networks.”

Since the roundtable, the Federal Circuit has continued to issue decisions interpreting the Supreme Court’s recent jurisprudence.