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Managing Fallout From 'Bilski', 'Mayo' And 'Alice'

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Are software patents dead? The U.S. Supreme Court's decision last June in *Alice v. CLS Bank*, 134 S. Ct. 2347 (2014), left us with that question (among others). Since the court handed down its unanimous decision, software patents have been falling like snow in Buffalo. As a weapon for mowing down frivolous troll patents, the case is a godsend.

Yet, many serious companies have invested (and continue to invest) serious resources in innovative software. Think Google (search), Netflix (streaming video) and Amazon (data mining). Or think digital photography: image processing, photo and video editing, facial recognition. None of these businesses or technologies would exist without significant software innovations. And no patent practitioner or computer scientist would contend that all these developments yielded no important inventions (though they may have political/philosophical disagreements as to whether these—or any—inventions should be protected by patents). Right now, executives and lawyers are weighing the boon of an *Alice*-triggered wave of troll-patent invalidations against the bane of uncertainty over the validity of their own software-related patents. While much remains to be seen, it appears that many weak software patents will perish, but the strong may yet survive.

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'Alice'

Alice was, in many respects, unremarkable. The purported invention was a method of exchanging financial obligations through an intermediary, so as to mitigate the risk of one party's not performing. Id. at 2352. The intermediary starts the day with "shadow" credit and debit records reflecting each party's initial balance. Id. During the day, the intermediary records transactions between the parties, adjusting the shadow credit and debit records and allowing only those transactions that won't put a party into the red. Id. At the end of the day, the intermediary finalizes the permitted transactions. Id.

The Supreme Court affirmed the lower courts' conclusion that the claims recited patent-ineligible subject matter under an exception to 35 U.S.C. §101. The court first found that the claims were "drawn to the abstract idea of intermediated settlement." Id. at 2355.

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Then the court examined the claims to determine whether there was any "inventive concept" in them, beyond the abstract idea, that could "transform the nature of the claim into a patent-eligible application." Id.[1] Finding that the claims merely stated the abstract idea and, in effect, a directive to "apply it with a computer," the court ruled all the claims invalid. Id. at 2358.

This result was unsurprising, given that the Supreme Court had previously found a similar claim patent-ineligible in *Bilski v. Kappos*, 561 U.S. 593, 612-13 (2010). The alleged invention there was a method of hedging risk, "a fundamental economic practice long prevalent in our system of commerce." Id. at 611. Despite divergent majority and concurring opinions, all members of the court agreed that the patent application at issue claimed a patent-ineligible abstract idea. Id. at 609. "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." Id. at 611-12. There is an obvious parallel between the claim in *Bilski* and the claims in *Alice*, as the court in *Alice* noted. See, e.g., *Alice*, 134 S. Ct. at 2356.

Two years after *Bilski* and before *Alice*, the Supreme Court had decided another case turning on patent-eligibility, *Mayo Collaborative Services v. Prometheus Labs.*, 132 S. Ct. 1289 (2012). *Mayo* involved a discovery relating to the use of thiopurine drugs, specifically "the precise correlations between [thiopurine] metabolite levels and likely harm or ineffectiveness." Id. at 1295. The claims at issue sought to capture these correlations in a method for optimizing treatment: administering a thiopurine drug, determining the level of a metabolite in the patient's blood, and observing that a level below (or above) certain thresholds "indicates a need to increase [or decrease]" the dosage. Id. The court found that the claims merely recited relationships between metabolite concentrations and therapeutic outcomes. Id. at 1296-97. The court asked "whether the claims do significantly more than simply describe" laws of nature. Id. at 1297. Concluding that they did not, the court held them invalid. Id.

Alice applied a *Mayo*-style analysis to *Bilski*-like claims. And the court again concluded that an abstract recitation of a long-known business practice is patent-ineligible.

Three things make *Alice* significant. The first is repetition. With the third installment of the *Bilski-Mayo-Alice* trilogy, the Supreme Court sent an unmistakable message reinforcing the doctrine of patent-ineligibility as a means of invalidating patents.

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Second, after *Bilski* and *Mayo*, uncertainty remained as to how the Supreme Court would deal with the issue of ineligibility in the area of computer-related inventions. *Bilski* was a reaction to the Federal Circuit's establishment of the "machine or transformation" test as the exclusive determinant of eligibility. The Supreme Court rejected that approach, but did little to elucidate what it viewed as the proper analysis. It simply found that the claimed hedging method was a patent-ineligible abstract idea. *Mayo* provided some illumination but did not involve computers or software.

Alice's journey through the court system illustrates the lingering uncertainty. *Alice*, 134 S. Ct. at 2353. The district court found all the claims patent-ineligible. Id. A Federal Circuit panel reversed, but upon reconsideration en banc, the circuit issued a fractured set of opinions affirming the judgment of ineligibility. Id.

The Supreme Court's decision in *Alice* provided some clarity by distilling the analysis in *Mayo* to a two-part test. First, determine whether a claim is drawn to one of the exceptions to patentability: "laws of nature, natural phenomena, and abstract ideas." Id. at 2355. Second, "consider the elements of [the] claim both individually and as an ordered combination to determine whether the additional elements transform the nature of the claim into a patent-eligible application." Id. at 2357. Setting this procedure out in one paragraph, the court provided some much-needed guidance on how to apply §101.

The third thing making *Alice* significant is its application of the two-step test to a computer-related invention. The patent holder argued that its method of intermediated settlement was to be performed in a computer, and its patent included not only method claims, but also "computer system" and "computer readable medium" claims. Id. at 2357-58. Notwithstanding that the claimed invention thus involved (use of) a machine, which falls within the explicit scope of §101, the Supreme Court held the claims patent-ineligible. Having found, under *Mayo* step 1, that the claims were directed to the abstract idea of intermediated settlement, the court then turned to *Mayo* step 2. Viewing the claim elements both separately and together, the court found them all "purely conventional." Id. at 2359. The claims neither "purport[ed] to improve the functioning of the computer itself" nor "effect[ed] an improvement in any other technology or technical field." Id. In short, they "amount[ed] to nothing significantly more than an instruction to apply the abstract idea of intermediated settlement using some unspecified

generic computer." Id. at 2360.

This analysis lays to rest some long-cherished notions of the patent bar. For example, it is now clear that merely reciting a computer system configured to carry out some high-level function is not sufficient to push a claim into the realm of patentable subject matter, nor is crafting a claim to a computer readable medium (e.g., a disk) containing a program. In sharp contrast to decades of Federal Circuit precedent, the Supreme Court has now instructed judges to look beyond the words of a claim when evaluating patent-eligibility and decide what they think is "really" being claimed. If the gist thus divined can be said to be an abstract idea expressed in a few words (e.g., "hedging to reduce risk" or "intermediated settlement"), and the court finds nothing else "significant" in the claim, then the claim is ineligible.

While *Alice* provides new guidance, it leaves much room for debate. On the one hand, the Supreme Court acknowledged that "[a]t some level, all inventions embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas," and cautioned against decisions that could "swallow all of patent law." Id. at 2354. Indeed, the direct consequence of the court's ruling was quite narrow, invalidating a set of *Bilski*-like business method claims, in keeping with precedent and widely held sentiment.

On the other hand, a regime in which judges ignore the actual limitations of claims and rely on their own impressions as to whether or not a claim covers an abstract idea portends a risk that virtually any claim could be deemed abstract. Future litigations involving the issue of eligibility may well turn on defense counsel's ability to come up with a single, succinct, compelling summary of the invention and persuade the judge that the claimed invention is "merely [fill in abstract idea here]."

Moreover, some of the Supreme Court's language, if applied too freely in favor of invalidating patents, could be problematic. The Supreme Court reasoned in *Alice* that an abstract idea does not become patent-eligible when it is implemented in a computer in a manner that is "purely conventional." Examples of such "purely conventional" steps include "electronic recordkeeping," "obtain[ing] data," "adjust[ing] account balances" and "issu[ing] automated instructions"; "all of these computer functions are well-understood, routine, conventional activities previously known to the industry." Id. at 2359. But everything that a computer does can be characterized by those terms, or similar terms such as "input and output of data," "storing and transmission of data" and "addition and subtraction," all of which are routine, conventional functions. Is the conclusion that because every program (at some level) is composed of conventional steps, software simply cannot be patented?[2]

Clearly this should not be the result. Indeed, the Supreme Court has stated that it does not intend to lay down a categorical rule excluding all computer-related inventions from the scope of patent-eligibility. See, e.g., *Alice*, 134 S. Ct. at 2354-55; *Gottschalk v. Benson*, 409 U.S. 63, 71 (1972). But the reasoning the court has deployed so far leaves much to be desired.

Cases Post-'*Alice*'

The Federal Circuit has issued several post-*Alice* decisions on business-methods patents. Each time, the claims have been found invalid. *Ultramercial v. Hulu*, 772 F.3d 709 (Fed. Cir. 2014), is particularly noteworthy. The case involved a method for distributing copyrighted material over the Internet, free of charge, in exchange for the user watching one of several advertisements. Id. at 712. The district court dismissed on the ground of patent-ineligibility. Id. at 711. The Federal Circuit reversed. Id. The Supreme Court granted certiorari, vacated the decision in view of *Mayo*, and remanded. Id. The Federal Circuit again reversed, and the Supreme Court again took the case, vacated in view of *Alice* and remanded. Id. Finally, the Federal Circuit, applying the *Mayo*/*Alice* two-step analysis, affirmed the invalidation of the patent. Id. at 711-12. The court held that the patent claimed "only the abstract idea of showing an advertisement before delivering free content." Id. at 715. The steps of the claims added nothing significant, as they "simply instruct[ed] the practitioner to implement the abstract idea with routine, conventional activity." Id. Use of the Internet was "not sufficient to save the patent." Id. at 716.

Ultramercial, with its repeated trips to the Supreme Court, culminating in a Federal Circuit course correction, illustrates the effect of *Alice*. Two additional cases underscore the point. In *Planet Bingo v. VKGS*, 576 Fed. App'x 1005, 1006 (Fed. Cir. 2014), the patent at issue claimed a method for the computer-aided management of bingo games by storing a player's preferred set of bingo numbers, playing that set during games, and tracking a player's performance. In *buySAFE v. Google*, 765 F.3d 1350, 1355 (2014), the patent claims described the "long-familiar" commercial arrangement of transaction performance guaranties. The Federal Circuit, in both cases, readily found the claims to be patent-ineligible under *Alice*. These cases and others demonstrate that, going forward, patents that merely claim computer implementations of long-established human activities (particularly business practices) will likely not survive.

More broadly, in *Digitech Image Techologies v. Electronics for Imaging*,

758 F.3d 1344 (Fed. Cir. 2014), the Federal Circuit invalidated a patent using reasoning that, if applied literally, could call into question the eligibility of many inventions. The case involved generating "device profiles" for image-processing devices, such as digital cameras and printers. Id. at 1347. A device profile is a set of data used to perform software corrections on colors and spatial information, producing improved images. Id. There was no dispute that the claimed method described a process and as such fell within the literal bounds of §101. Id. at 1350. The court, however, held that the method "claims an abstract idea because it describes a process of organizing information through mathematical correlations and is not tied to a specific structure or machine." Id. The court further explained that the claim "recites an ineligible abstract process of gathering and combining data that does not require input from a physical device … . Without additional limitations, a process that employs mathematical algorithms to manipulate existing information to generate additional information is not patent eligible." Id. at 1351. The premise of this holding appears to be that data processing operations are patent-ineligible unless tied to specific input/output devices or other "structures."

But it is far from clear that the approach of *Digitech* will prevail. Standing in contradistinction is *DDR Holdings v. Hotels.com*, LP, __ F.3d ___, 2014 WL 6845152, at *12 (Fed. Cir. Dec. 5, 2014). The patents there claimed systems and methods for producing a composite webpage combining visual elements of a "host" website with content from another website. Id. at *1. This enabled third-party information to be presented with the look and feel of the host site, allowing a website operator to keep customers on its site, rather than sending them to another website via a conventional hyperlink. Id. at *1.

Under *Digitech*, such algorithms, which merely manipulate existing information and generate new information, should have been patent-ineligible. But the panel in *DDR Holdings* reached the opposite conclusion, based on three critical points.

First, the panel characterized the abstract ideas doctrine as focusing on two classes of claims, "mathematical algorithm[s]" and "fundamental economic or longstanding commercial practice[s]." It held that the claims at issue fell into neither category, apparently distinguishing mathematical algorithms from other algorithms. Id. at *10. This distinction may open a path to patent-eligibility for at least some software-based claims.

Second, the court found that, in this case, identifying an abstract idea in the claims was not straightforward. Id. Tellingly, the defendant's presentation of multiple different formulations of the purported abstract idea highlighted the difficulty of extracting a simple characterization of the claims. Id.

Third, the court found that, regardless of the characterization, the claims satisfied *Mayo/Alice* step two. In brief, 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," but rather were "necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks." Id.

Notably, an earlier district court decision similarly upheld a network monitoring patent, finding that the claims at issue had "meaningful limitations" that "sufficiently tie[d] the claimed method to a machine." *Helios Software v. SpectorSoft*, 2014 WL 4796111, at *17 (D. Del. Sept. 18, 2014). Decisions such as these suggest that software-related claims may be patent-eligible if sufficiently "technological" (for lack of a better word).

Conclusion

Several observations can be made about the *Bilski-Mayo-Alice* trilogy and its aftermath (so far). Software-related patent claims are now frequently being held patent-ineligible. Most notably, claims that simply recast commonly practiced human activities as computer-based or Internet-based processes, without more, are vulnerable to invalidation, as are over-broadly drafted claims lacking technological details or ties to specific machines or input/output devices.

But the border between the patent-eligible and the abstract remains indistinct. To better understand where the courts are heading, we will need to see more cases upholding the patent-eligibility of computer-related inventions. *Digitech* and *DDR Holdings* mark two competing views to bear in mind as the case law develops.

1. Internal citations and quotations are omitted throughout this article.

2. The Supreme Court has also "held that simply implementing a mathematical principle on a physical machine, namely a computer, is not a patentable application of that principle." *Alice*, 134 S. Ct. at 2357. But a general-purpose computer itself is nothing more than the implementation of mathematical principles on a physical machine, namely a collection of transistors. Are we to conclude that computers themselves are unpatentable?byline