

Copyright and Patent Protection for Computer Software: How Has the Landscape Changed?

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It has been established for more than two decades that both patent and copyright laws in the United States provide intellectual property protections for computer software—with the former generally thought to protect the inventive idea or procedure encompassed in the software, and the latter protecting the expression of that idea through a computer program. However, as the prominence of computer software has continued to grow, the scope of patent law software protections—and the corresponding focus on copyright law protections as an alternative measure—appear to have shifted under recent Supreme Court and Federal Circuit precedent.

By the early 1990s, it had become clear that copyright law protected different types of computer software, but only as to expressive elements, such as source code, object code and certain non-literal structural components, and only to the extent one could prove access and substantial similarity of these elements. See *Computer Assocs. Int'l, Inc. v. Altai, Inc.*, 982 F.2d 693 (2d Cir. 1992); *Whelan Assoc., Inc. v. Jaslow Dental Lab., Inc.*, 797 F.2d 1222, 1229 (3d Cir. 1986), cert. denied, 479 U.S. 1031 (1987). By the late 1990s, the scope of eligibility under patent law (which has never required proof of knowledge or actual copying to show infringement) had expanded to include a broad range of computer software, including computerized business methods that applied “a mathematical algorithm, formula, or calculation” to produce “a useful, concrete and tangible result.” *State St. Bank & Trust Co. v. Signature Fin. Group*, 149 F.3d 1368, 1373 (Fed. Cir. 1998). These expansive patent protections often-times resulted in a focus by software developers and the legal industry on patent law, rather than copyright law, as a measure for protecting computer software. There have always, of course, been exceptions—for

example, parties often assert software copyright claims in conjunction with claims for breach of a software license agreement (in such cases, where software has often been delivered by one party to the other, proving access and substantial similarity is usually straightforward and easy). Nonetheless, in non-contract cases, and as a general strategy, companies have, for close to two decades, seen patents as core to the intellectual property protection of software.

Recent developments in patent and copyright law may have altered that landscape to some significant degree. The Supreme Court’s decision in *Alice Corp. Pty. v. CLS Bank International*, 134 S. Ct. 2347 (2014), definitively excluded from patent eligibility “abstract ideas” (such as *Alice Corp.*’s computerized trading method) implemented using a generic computer. *Alice* confirmed that “the mere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention.” *Id.* at 2358. Following that decision, a host of district courts, as well as the Federal Circuit, have invalidated software-related patents for failing to satisfy the Court’s two-part test.

Concurrently, the U.S. Court of Appeals for the Federal Circuit issued a decision in *Oracle Am., Inc. v. Google Inc.* that has reaffirmed the copyright protections available for computer software and provided further clarity regarding what non-literal (*i.e.*, more abstract) elements of software may be copyrightable. 750 F.3d 1339 (Fed. Cir. 2014).

This article will explore these corresponding trends in computer software protections under copyright and patent laws and consider their impact on the options available to software developers and their attorneys for safeguarding intellectual property.

SOFTWARE PATENTS POST-ALICE

In the 1970s, there was some uncertainty whether, and to what extent, software would be eligible for patent protection under the U.S. laws. For example, in *Gottschalk v.*

Benson, the Supreme Court held that a computerized method for converting decimal numbers into binary form was unpatentable because the patent would “wholly pre-empt the mathematical formula and ... would be a patent on the algorithm itself.” 409 U.S. 63, 71-72 (1972). However, by the time of the Supreme Court’s decision in *Diamond v. Diehr*, 450 U.S. 175 (1981), the basic question of whether software may be patented had been answered in the affirmative. In *Diamond*, the Supreme Court upheld a patent on a computer-implemented process for curing rubber. After *Diamond*, the Federal Circuit further affirmed the eligibility of a variety of software-related patents, reaching what was perhaps the high-water mark for patent protection of software in *State St. Bank & Trust Co. v. Signature Fin. Grp., Inc.*, 149 F.3d 1368 (Fed. Cir. 1998) (confirming the validity of computer-implemented business method patents). At this time, software patents enjoyed strong protections, and the United States Patent and Trademark Office regularly issued broadly-worded software claims to encompass a wide range of products.

However, software patents are on more unsteady ground following the Supreme Court’s decisions in *Bilski v. Kappos*, 561 U.S. 593 (2010), and, more recently, in *Alice Corp. Pty. v. CLS Bank International*, 134 S. Ct. 2347 (2014). In *Alice*, the Supreme Court set forth a two-part test for assessing patentability for software-related claims under 35 U.S.C. § 101. It must be determined (i) whether the claims are directed at an abstract idea and, if so, (ii) whether the claims nonetheless include an inventive concept “sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the ineligible concept itself.” *Id.* at 2355 (internal quotation marks and alterations omitted). Important in this analysis is whether the claims preempt use of the abstract idea in all fields so as to foreclose further discovery. Further, limiting the claims to a particular field of use, such as on a generic computer or on the Internet, is insufficient to establish an inventive concept. *Id.* at 2358.

The patent in *Alice* covered the idea of intermediated settlement, *i.e.*, “the use of a third party to mitigate settlement risk.” *Id.* at 2356. The Supreme Court found that this was merely a fundamental business practice that long existed in the field of commerce and, accordingly, the claims were directed at nothing more than an

abstract idea. *Id.* In assessing whether they amounted to something significantly more than just this abstract idea, the Court found the claims required a computer for the conventional task of electronic recordkeeping and, therefore, recited only a “generic computer ... perform[ing] generic computer functions.” *Id.* at 2360. Thus, because the claims did not improve on the functioning of a computer nor represent an improvement in any technical field, they were not directed at patent-eligible subject matter under section 101. *Id.* at 2360.

Under this framework, many software patents have been invalidated as merely claiming the application of a commonplace business method performed on a generic computer. For example, in *Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat. Ass’n*, 776 F.3d 1343 (Fed. Cir. 2014), claims on the digital collection, recognition, and storage of data covered functions that had long been performed by humans and, in particular, by banks in reviewing and recording check deposits. In *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709 (Fed. Cir. 2014), the claims were directed to the abstract idea of “using advertising as an exchange or currency” on the Internet and included only conventional steps in that process, such as updating an activity log and requiring a consumer to request an ad. The claims in *buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350 (Fed. Cir. 2014) recited nothing more than creating a contractual relationship—in the form of a transaction performance guaranty—on a generic computer that required no particular hardware or programming. And in *Planet Bingo, LLC v. VKGS LLC*, 576 F. App’x 1005 (Fed. Cir. 2014), software for managing and playing a game of bingo was ineligible where it required “purely conventional” use of a computer.

Of the eight cases to reach the Federal Circuit on section 101 issues following *Alice* (as of the time of the writing of this article), seven of which were software related, only one satisfied subject-matter eligibility. See *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245 (Fed. Cir. 2014). In district courts, approximately 65% of post-*Alice* section 101 motions have succeeded in rendering the patent invalid. These cases are regularly decided at the pleadings or summary judgment stage. See *Bancorp Servs., L.L.C. v. Sun Life Assur. Co. of Canada (U.S.)*, 687 F.3d 1266, 1273 (Fed. Cir. 2012). It remains to be seen whether the Federal Circuit or Supreme Court will

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provide further guidance regarding when software claims cover only abstract ideas and when they cover something more technological and patent-eligible.

COPYRIGHT AS VIABLE PROTECTION FOR SOFTWARE

While the protections afforded software by patents remain in flux, recent developments indicate that copyright may provide valuable rights to developers. Most notably, the Federal Circuit’s decision in *Oracle Am., Inc. v. Google Inc.*, 750 F.3d 1339 (Fed. Cir. 2014), confirmed that copyright protections may extend to a program’s structure, sequence and organization under 17 U.S.C. § 102.

The Copyright Act explicitly confirms that computer software is eligible for copyright protection. 17 U.S.C. § 101. Further, as far back as 1986, courts have held that copyright can provide protections for software developers that cover more than just the expression of that software in object code. See *Whelan Assocs., Inc. v. Jaslow Dental Lab., Inc.*, 797 F.2d 1222, 1229 (3d Cir. 1986). Copyright can cover both the literal elements of software, e.g., source and object code,¹ and the non-literal elements,

e.g., “inter-modular relationships” and “general flow.” See *Computer Associates Int’l, Inc. v. Altai, Inc.*, 982 F.2d 693, 702-03 (2d Cir. 1992). In *Computer Associates*, the Second Circuit articulated the “abstraction/filtration/comparison” test for determining whether non-literal elements of software have been infringed under copyright laws, which was subsequently adopted by several circuits. See, e.g., *Bateman v. Mnemonics, Inc.*, 79 F.3d 1532, 1545 (11th Cir. 1996); *Gates Rubber Co. v. Bando Chem. Indus., Ltd.*, 9 F.3d 823, 842 (10th Cir. 1993); *Sega Enters. Ltd. v. Accolade, Inc.*, 977 F.2d 1510, 1525 (9th Cir. 1992). Under the first “abstraction” step of the test, the court “should dissect the allegedly copied program’s structure and isolate each level of abstraction contained within it. This process begins with the code and ends with an articulation of the program’s ultimate function.” *Computer Assocs.*, 982 F.2d at 707. Once the allegedly copied program has been properly abstracted, the second step of the process is to “filter” out any non-protectable elements, including ideas and expressions that are “necessarily incidental” to those ideas. *Id.* The third step entails comparison of the prop-

erly abstracted and filtered software to the allegedly infringing software. *Id.* at 710. Because copyright protects only expression of ideas rather than the ideas themselves, the strongest copyright protection is provided for software at the lowest levels of abstraction (*i.e.*, for the object and source code), though protection may be afforded for software at higher levels of abstraction under the three-part test.

In *Oracle Am., Inc. v. Google Inc.*, the Federal Circuit applied the abstraction/filtration/comparison test and further clarified copyright's reach in software at higher levels of abstraction. 750 F.3d 1339. There, Oracle alleged that Google's Android mobile operating system, which incorporates 37 application programming interface packages ("APIs")² from the Oracle-owned Java programming language, literally copied "7,000 lines of declaring source code" and "copied the elaborately organized taxonomy of all the names of methods, classes, interfaces, and packages" of Oracle's copyrighted code. *Id.* at 1350-51, 1356. While the district court held that these elements were not protectable because they did not fit within section 102's subject-matter limitations, the Federal Circuit reversed because of the originality and creativity required in designing the packages. *See id.* at 1361. Because Oracle had "unlimited options as to the selection and arrangement of the 7000 lines Google copied," the method declarations and class names were copyrightable. *Id.*

The structure, sequence, and organization of the APIs were found to be similarly entitled to protection under section 102. *Id.* at 1364-68. Using the rationale that a work is copyrightable if the author had "multiple ways to express the underlying idea," the court concluded that "a set of commands to instruct a computer to carry out desired operations may contain expression" eligible for protection. *Id.* at 1367. Accordingly, under the Federal Circuit's decision in *Oracle*, section 102 covers more than just the exact code as written; it also includes the overall design and architecture of the software and the particular arrangement of methods and classes within. Google has petitioned the Supreme Court to grant certiorari on this case. *See* Petition for a Writ of Certiorari, *Google Inc., v. Oracle America, Inc.*, No. 14-410 (Oct. 6, 2014). As of the time of the writing of this article, the Supreme Court had not determined whether to review the appeal and had issued a memorandum inviting the Solicitor General to file a brief expressing the views of the United States on the matter. *See Order List*, Supreme Court of the United States (Jan. 12, 2015).

SOFTWARE PROTECTIONS MOVING FORWARD

Within just the past year, the software intellectual property landscape has seen dramatic shifts. These shifts will likely require software developers and their law-

yers to adjust their strategies for obtaining intellectual property protection for software and for asserting and defending against software-related complaints. While it may have been prudent just a few years ago to obtain and assert broadly-drawn patents, it may now be advisable to obtain more narrowly-focused patent claims that tie software to specific pieces of hardware and to specific technological advances. In other circumstances, it may be more prudent to assert non-literal infringement of copyrights, rather than patents. As these doctrines further develop, courts will likely provide clarity on what is and is not covered by each form of protection. In the meantime, practitioners should consider the type of software with which they are dealing, along with the current case law for both patents and copyright, in seeking the best type of intellectual property rights for a given program. **IP**

ENDNOTES

1. Source code is "the spelled-out program commands that humans can read," while object code is "the binary language comprised of zeros and ones through which the computer directly receives its instructions." *Oracle*, 750 F.3d 1339, 1355 (Fed. Cir. 2014).
2. APIs represent "ready-to-use [] programs to perform common computer functions." *Oracle*, 750 F.3d at 1348. "Oracle's collection of API packages is like a library, each package is like a bookshelf in the library, each class is like a book on the shelf, and each method is like a how-to chapter in a book." *Id.*

Blue Calypso Announces That Court Lifts Stay and Sets Trial Date in Patent Infringement Case

Blue Calypso, Inc., (OTCBB:BCYP), developer of patented mobile consumer engagement and social advocacy solutions for retailers and product manufacturers, announced that the Court has ruled to lift the stay on the pending patent infringement litigation in the Eastern District of Texas between the Company and Groupon (Nasdaq:GRPN), Yelp (NYSE:YELP), Foursquare and IZEA. PK (OTC:IZEA) (the defendants). A trial date has been set for December 14, 2015.

"As ordered by the judge today, we expect to enter an accelerated schedule now that the stay has been lifted. We should see a claim construction hearing ("Markman") on the court docket very soon," stated Blue Calypso CEO Andrew Levi.

In January 2014 the parties agreed to ask the court to stay the litigation in the Eastern District while the Patent Trial and Appeal Board (PTAB) considered the validity of the patents. The parties agreed that if the PTAB held any of the patents valid, the litigation would be accelerated to make up for lost time. This past December, the PTAB found that twenty-eight (28) claims across four (4) of the patents were indeed valid. Despite the defendants' prior agreement, they opposed lifting the stay. On April 2nd, the Court overruled the defendants, lifted the stay and set an accelerated trial date. There are no further obstacles to the trial at this point.

"We are very pleased that the judge has lifted the stay and that an accelerated trial date has been set," added Levi. "We are eager to have our day in court and look forward to the successful protection and enforcement of our intellectual property."

About Blue Calypso, Inc.

Blue Calypso, Inc. (BCYP) develops and delivers mobile engagement and social advocacy solutions for retailers and product manufacturers using its patented portfolio of products including Mobile ADvantage™, KIOSentrix™, DashTAGG® and SocialECHO™. The Company employs its unique platform to connect consumers to brands, drive store traffic, increase shopper spend and shorten the path-to-purchase. The Blue Calypso platform includes extensive big data analytics, tracking consumer engagement such as the spread of shared content, attribution, geo-location and offer redemption. Brands on this platform have key insight into the performance of their content and the sentiment of their customers in real-time. For more about the Company please visit www.bluecalypso.com.