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Drafting Arbitration, Mediation, and Negotiation Clauses for Technology Disputes

Gary L. Benton

Introduction

Humankind lives in a sea of microbes constantly irradiated by technology of our own creation. As we slog or, in some cases, sprint through life, we find ourselves interacting more and more with once unheard-of creations. Technology is everywhere, from smartphones in our pockets, to biomedical implants under our skin, to the Internet of Things in just about every device we interact with daily. And this technology is not just beaming out invisible waves; rather, it is transmitting data, according to the experts, at over 1.1 zettabytes (ZB) per second, a number that will double by 2020.

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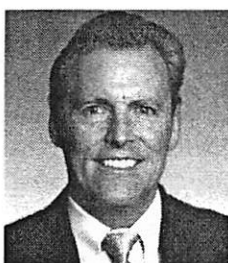
Surviving Patent Ineligibility Post-*Alice* for Software and E-Commerce Business- Related Inventions

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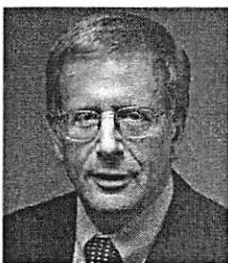
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INTRODUCTION

In *Alice Corp. Pty. Ltd. v CLS Bank Int'l* (2014) ___ US ___, 134 S Ct 2347, the U.S. Supreme Court addressed the two-step patent eligibility test first introduced in *Mayo Collaborative Servs. v Prometheus Labs., Inc.* (2012) 55 US 66, 132 S Ct 1289. Ever since *Alice*, courts have been trying to provide guidelines for determining patent eligibility for software-related inventions. This has proved to be a challenge for the courts, which means that it is even more of a challenge for patent practitioners.

In *Alice*, the Supreme Court held that subject-matter eligibility is based on a two-step inquiry. 134 S Ct at 2355. As a first step, the court asks whether the claim is directed to a law of nature, natural phenomena, or abstract idea. If not, the claim is patent-eligible subject matter and there is no need to proceed to the second step. If the answer is yes, the court considers the elements of the claim, both individually and as an "ordered combination," and asks whether these additional elements "transform the nature of the claim" into a patent-eligible invention. 134 S Ct at 2355. Stated another way, is an "inventive concept" sufficient to

ensure that the claim, in practice, covers “significantly more” than the ineligible concept itself? 134 S Ct at 2355.

This broad two-step rule of analysis from *Alice* is the latest Supreme Court ruling on subject-matter eligibility. Since *Alice*, over 40 cases have been decided using *Alice*’s two-step test. This article reviews the case law that led up to *Alice*, the precedential opinions issued by the Federal Circuit after *Alice*, and the lessons in patent prosecution and litigation for patent practitioners concerning software-related inventions.

BACKGROUND: HOW DID WE GET TO ALICE?

Confusion regarding subject-matter eligibility for software and business-method patents is the result of inconsistent interpretations of 35 USC §101. The confusion can be traced back to the Supreme Court’s first attempt to weigh in on this subject in *Gottschalk v Benson* (1972) 409 US 63. Prior to *Benson*, the U.S. Patent and Trademark Office (USPTO) adhered to the rule that a computer program was not patentable. However, in 1968, the Court of Customs and Patent Appeals began to allow patents for computer programs. See *In re Tarczy-Hornoch* (Ct Cust & Pat App 1968) 397 F2d 856.

The decision in *Tarczy-Hornoch* opened the floodgates for patent applications directed to computer software. The Supreme Court attempted to clarify what type of software could be patented in *Benson*, holding that converting binary-coded decimal (BCD) numerals into pure binary numerals using a general purpose computer was not a patentable process because it was not limited to any particular art or technology, apparatus or machinery, or end use. *Benson*, 409 US at 64. The Court found that the patent would “wholly pre-empt the mathematical formula and in practical effect would be a patent on the algorithm itself.” 409 US at 72. However, the Court clarified that a “patent for any program servicing a computer” would not be precluded. 409 US at 71.

Similarly, in *Parker v Flook* (1978) 437 US 584, the Supreme Court held that when the only novel feature of a patent is an algorithm or formula, it is not patentable subject matter. If, however, the patent goes to the “inventive application” of the underlying phenomenon of nature or mathematical formula, it is patentable. 437 US at 594.

In *Diamond v Diehr* (1981) 450 US 175, the Supreme Court went the other way. The Court held that because the process for curing synthetic rubber at issue in the case was tied to steps such as installing rubber in a press, closing the mold, constantly recalculating the appropriate cure time based on a formula

using a computer, and automatically opening the press at the appropriate time, the claims were not aimed at an algorithm but rather toward the application of the algorithm within the process. The process therefore satisfied the requirements of 35 USC §101.

In *In re Lowry* (Fed Cir 1994) 32 F3d 1579, the Federal Circuit held that computer data structures were patent-eligible subject matter, and in *State St. Bank & Trust Co. v Signature Fin. Group, Inc.* (Fed Cir 1998) 149 F3d 1368, the same court made it clear that inventions involving software as well as business methods were patentable subject matter. The court in *State St.* described the patent at issue (a business method for operating mutual funds) as involving a “transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price.” 149 F3d at 1373. As such, the patent was more than a mere mathematical algorithm; it yielded a useful, concrete, and tangible result that constituted a practical application of a mathematical algorithm. 149 F3d at 1373.

In contrast to *State St.*, however, the Federal Circuit in 2009 held that certain claims describing a method for mandatory arbitration resolution were not patent-eligible subject matter because the claims described “mental processes to resolve a legal dispute between two parties by the decision of a human arbitrator.” *In re Comiskey* (Fed Cir 2009) 554 F3d 967, 981. The claims “do not require a machine, and . . . evidently do not describe a process of manufacture or a process for the alteration of a composition of matter.” 554 F3d at 981. The court found that certain other claims would require use of a machine, *i.e.*, those that provided for “access to the mandatory arbitration . . . through the Internet, . . . or other communications means.” 554 F3d at 981. Those claims were remanded to the USPTO for determination of patentability.

In *In re Bilski* (Fed Cir 2008) 545 F3d 943, the Federal Circuit found that a method for hedging risk in commodities trading that was not tied to a computer or any particular apparatus was not patent-eligible subject matter. The court applied a machine-or-transformation test, which requires that a claimed process either be tied to a particular machine or apparatus or transform a particular article. See 545 F3d at 954. On appeal, in *Bilski v Kappos* (2010) 561 US 593, the Supreme Court agreed that the claim at issue was not patent-eligible because it was an abstract idea, directed to the basic concept of hedging. The Court explained that although the machine-or-transformation test is a useful test, it is not the sole test for determining patent eligibility under 35 USC §101. 561 US at 604. However, the Court did not discuss or set forth another test for determining patent el-

igibility under 35 USC §101. Unfortunately, the Supreme Court in *Bilski* appeared to be adrift.

Following the Supreme Court's holding in *Bilski*, the Federal Circuit held that a method and system that correlated Internet addresses with credit card transactions to detect possible fraud in credit card usage was not patentable subject matter under 35 USC §101. See *Cybersource Corp. v Retail Decisions, Inc.* (Fed Cir 2011) 654 F3d 1366. The court found that the claim did not specify any particular formula or mathematical algorithm for fraud detection or describe how the method would correlate the data obtained. Even if it had, it appeared that the process could be easily performed by the human mind or with pen and paper, without need for any particular algorithm for fraud detection. 654 F3d at 1370. The court emphasized that pairing an unpatentable mental process with a machine does not thereby render the process patent-eligible. 654 F3d at 1374. Further, incidental use of a computer to perform a mental process would not be sufficient to make the otherwise unpatentable process patent-eligible. 654 F3d at 1375.

In *Mayo Collaborative Servs. v Prometheus Labs., Inc.* (2012) 566 US 66, the Supreme Court held that the claimed method of optimizing therapeutic efficacy for treatment of an immune-mediated gastrointestinal disorder, by administering a drug and then determining the 6-MP metabolite levels in the blood, was not patent-eligible subject matter. 566 US at 74. The Court reasoned that because it was already known in the medical art that 6-MP metabolite levels were an indicator of the dosage effectiveness of the drug, it was an impermissible attempt to claim a law of nature. 566 US at 78. The Court nonetheless recognized that "all inventions at some level embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas." 566 US at 71.

In *Ultramercial, Inc. v Hulu, LLC* (Fed Cir 2014) 772 F3d 709, relying on *Mayo*, the Federal Circuit held that a claimed method for requiring consumers to view an advertisement before granting access to certain linked media was simply an abstract idea and not patent-eligible.

ALICE AND ITS OUTCOME

In *Alice Corp. Pty. Ltd. v CLS Bank Int'l* (2014) ___ US ___, 134 S Ct 2347, the Supreme Court attempted to clarify the test for a software patent and what is required to be considered patent-eligible subject matter. The Court unanimously declared that an invention must pass a two-step analysis: (1) whether the invention consists in significant part of a patent-ineligible concept—e.g., a law of nature, natural phenomenon, or abstract idea—and, if so, (2) the remain-

ing parts of the invention must have an "inventive concept," i.e., one or more elements that ensure that the patent in practice "amounts to significantly more than a patent upon the [ineligible concept] itself." 134 S Ct at 2355. The claimed invention at issue was directed toward a method for performing electronic escrow for online transactions. Because there was nothing more than the use of a general-purpose computer for implementing the abstract idea of an escrow, the Court found the claimed invention was patent-ineligible subject matter. 134 S Ct at 2360.

After the two-step inquiry was established in *Alice*, the lower courts have been struggling to apply it consistently, especially with regard to software-related patents. Given the lack of clarity regarding what is an "abstract idea" and what constitutes an "inventive concept" or "significantly more" (see 134 S Ct at 2355), the lower courts face many challenges under 35 USC §101. Until there is a Supreme Court case that clarifies *Alice*, all that practitioners can do is dissect pertinent Federal Circuit cases for guidance concerning how to prosecute and litigate software patents as they pertain to subject-matter eligibility.

FEDERAL CIRCUIT CASES THAT RULED CLAIMS PATENT-ELIGIBLE AFTER ANALYSIS OF FIRST STEP

Since *Alice*, only a handful of precedential Federal Circuit cases have held that the claims at issue were directed to patentable subject matter on the basis of the first step alone, namely, that the claims were not directed to an abstract idea. As noted above, the Supreme Court did not create a bright-line rule for what does or does not constitute an abstract idea under the first prong of *Alice*. As a result, the Federal Circuit has considered it appropriate to "compare claims at issue to those claims already found to be directed to an abstract idea in previous cases." *Enfish, LLC v Microsoft Corp.* (Fed Cir 2016) 822 F3d 1327, 1334. Therefore, the Federal Circuit is applying the first step of the two-prong test of *Alice* on a case-by-case basis.

Enfish, LLC v Microsoft Corp.

In *Enfish, LLC v Microsoft Corp.* (Fed Cir 2016) 822 F3d 1327, the Federal Circuit examined whether a software-related invention directed to a "self-referential" table structure that allowed information to be more quickly searched and more efficiently stored was patentable. The court found "claims directed to software, as opposed to hardware, are [not necessarily] inherently abstract" and refused to "conclude that all claims directed to improvements in computer-related technology, including those directed to soft-

ware, are abstract and necessarily analyzed at the second step of *Alice*.” 822 F3d at 1335. The Federal Circuit decided that for the two-pronged *Alice* test, it was appropriate to “ask whether the claims were directed to an improvement to computer functionality versus being directed to an abstract idea, even at the first step of the *Alice* analysis.” 822 F3d at 1335. If the claims are directed to improving computer functionality rather than merely using a computer to perform a function, then they are less likely to be deemed an abstract idea.

After the two-step inquiry was established in *Alice*, the lower courts have been struggling to apply it consistently, especially with regard to software-related patents.

In its analysis, the court found that the claims were directed to an improvement of an existing technology because “the specification’s teachings [stated] that the claimed invention achieves . . . benefits over conventional databases, such as increased flexibility, faster search times, and smaller memory requirements.” 822 F3d at 1337. Ultimately, the court held that the claims were not abstract and therefore there was no need for an analysis under the second step of *Alice*. 822 F3d at 1336. Essentially, the court created a shortcut for passing the *Alice* test for use when a claimed invention is clearly not abstract, meaning that on its face the patent includes detailed technical disclosures and improves the operation of a computer or technological process.

Practice Tip

The biggest takeaway from *Enfish* is that it is advantageous to describe how the invention constitutes an improvement over the prior art, especially if it involves the improvement of the operation of a computer. The Federal Circuit is essentially compounding an analysis under 35 USC §101 with a novelty/nonobviousness analysis under 35 USC §§102 and 103.

Amdocs (Israel) Ltd. v Openet Telecom, Inc.

In *Amdocs (Israel) Ltd. v Openet Telecom, Inc.* (Fed Cir 2016) 841 F3d 1288, the four patents at issue were generally directed to a system, method, or com-

puter program for accounting and billing that allowed collection and processing of data closer to its source so that it minimized network impact and upkeep of massive record flows. In applying the two-step *Alice* inquiry, the court noted that “there is no such single, succinct, usable definition or test” for determining what is an abstract idea; therefore, “the decisional mechanism courts now apply is to examine earlier cases in which a similar or parallel descriptive nature can be seen.” 841 F3d at 1294. The Federal Circuit was split in this case. The majority looked beyond the plain language of the claims and construed the terms and improvements over the prior art based on the discussions in the specification, which approach was consistent with *Enfish*. The dissent argued that the majority had gone too far in taking into consideration the alleged improvements from a patent’s specification. See 841 F3d at 1307.

Thales Visionix, Inc. v U.S.

In *Thales Visionix, Inc. v U.S.* (Fed Cir 2017) 850 F3d 1343, the Federal Circuit clarified that certain mathematical equation-based systems are not abstract ideas if they use unconventional configurations or they only claim application of particular configurations. The Federal Circuit reversed the Court of Federal Claims’ decision that found that an inertial tracking system was non-patentable subject matter because it was directed to an abstract idea. 850 F3d at 1344. The claims of the patent at issue comprised a first sensor of a tracked object, a second sensor on a moving reference frame, and an element that receives signals from both sensors in order to determine an orientation of the tracked object in relation to the moving reference frame. 850 F3d at 1344.

The prior art focused on measuring inertial changes in relation to the Earth. Because the claimed invention measured changes in relation to the moving reference frame, it resulted in better accuracy. 850 F3d at 1345. The Court of Federal Claims found that the claims were directed to mere laws of physics because they were using “mathematical equations for determining the relative position of a moving object to a moving reference frame.” 850 F3d at 1348. The lower court also found that the claims did not “provide [an] inventive concept beyond the abstract idea.” 850 F3d at 1346.

The Federal Circuit compared the case to *Diamond v Diehr* (1981) 450 US 175, in which the court found that claims that improved prior methods of curing rubber by constantly measuring actual temperature were patentable. In *Thales*, the Federal Circuit found that the claimed subject matter used known equations in conjunction with “unconventional utilization of in-

erial sensors” and also only sought protection for the application of those unconventional configurations of sensors. 850 F3d at 1348. The Federal Circuit thus held the claims were patent-eligible.

Practice Tip

When claiming an invention that may be tied to, or is an application of, physics or laws of nature, one should try to describe the “unconventional configuration” of the known elements (see 850 F3d at 1349) and also focus the claims on the application of a principle based on a particular configuration of elements solving a technical problem. Focusing on solutions to complex problems seems to provide a path to patent eligibility.

FEDERAL CIRCUIT CASES THAT RULED CLAIMS PATENT-ELIGIBLE AFTER ANALYSIS OF SECOND STEP

DDR Holdings, LLC v Hotels.com, L.P

In *DDR Holdings, LLC v Hotels.com, L.P.* (Fed Cir 2014) 773 F3d 1245, the patent at issue was directed to a system and process that involved the storage of data concerning visual effects of a host website that generated a hybrid page consisting of a composite of a third party merchant’s product information with the “look and feel” of the host website. The court held that because “the claimed solution is necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks,” this case stood apart from other “abstract idea” cases. 773 F3d at 1257. The court was given several different ways to characterize the invention as an abstract idea, including “making two web pages look the same,” “syndicat[ing] commerce on the computer using the Internet,” and “making two e-commerce web pages look alike by using licensed trademarks, logos, color schemes, and layout.” 773 F3d at 1257. However, the court did not select one but instead moved on to the second prong of the *Alice* analysis. Unlike the patent specification in *Ultramerical, LLC v Hulu, LLC* (Fed Cir 2014) 772 F3d 709 (discussed below), the patent at issue in *DDR Holdings*, U.S. Patent No. 7,818,399 (the “399 patent”) included extensive technical disclosures that indicated “how interactions with the Internet are manipulated to yield a desired result” and “recite[d] an invention that is not merely the routine or conventional use of the

Internet.” 773 F3d at 1258. The claimed system was therefore patent-eligible.

Practice Tip

DDR Holdings is the first Federal Circuit case that carved a path for software patents to survive post-*Alice*. For a software invention that solves a business method, the more technical disclosure in the specification and claims, the more likely it is that it will survive the two-step *Alice* inquiry.

BASCOM Global Internet Servs., Inc. v AT&T Mobility LLC

In *BASCOM Global Internet Servs., Inc. v AT&T Mobility LLC* (Fed Cir 2016) 827 F3d 1341, the Federal Circuit refined eligibility under the second step of *Alice* so that even if all of the claim elements analyzed under that step are well known, “an inventive concept can be found in the non-conventional and non-generic arrangement of known, conventional pieces.” 827 F3d at 1350. The patent at issue was directed to filtering Internet content to prevent users from accessing websites that had objectionable content. On the question whether the claims were directed to the abstract idea of filtering content, the court held that it was a “close call.” 827 F3d at 1349. The court therefore moved on to analyze the claims under the second step of *Alice*.

The prior art filters described in the specification were susceptible to hacking and also dependent on local software or hardware. The present invention was the first to use customized filters at a remote server such that “it could be adapted to many users’ preferences while also installed remotely in a single location.” 827 F3d at 1350. This improvement was enough to convince the court that the claims were “more than a drafting effort designed to monopolize the” abstract idea. 827 F3d at 1350. Specifically, the court found the inventive concept to be the installation of a filtering tool at a specific location that provided the benefit of a filter at a local computer as well as on the ISP server. 827 F3d at 1345. The court also focused on a public policy factor, noting that the claims did not preempt all ways of filtering on the Internet. Since filtering was already a well-known concept, the particular arrangement of elements in the present invention was the technical improvement.

**McRo, Inc., dba Planet Blue
v Bandai Namco Games Am. Inc.**

In *McRo, Inc., dba Planet Blue v Bandai Namco Games Am. Inc.* (Fed Cir 2016) 837 F3d 1299, the claimed invention was directed to automated lip synchronization and associated facial expressions for 3D animated characters. The prior art used techniques that required manually inserting appropriate vector values associated with various “vertices” or points in certain places on a character’s face to ensure the facial expressions matched the recording. 837 F3d at 1303. The invention used time-aligned phonetic transcripts and rule-based algorithms for applying various vector-value targets to manipulate facial expressions, which resulted in the animated characters having more realistic speech patterns. 837 F3d at 1307.

The lower court found that the claimed invention preempted the abstract idea of “lip synchronization using a rules-based morph target approach” and that the “novel portions of [the] invention are claimed too broadly,” but the Federal Circuit disagreed. 837 F3d at 1309. The court held that “the claimed improvement here is allowing computers to produce accurate and realistic lip synchronization and facial expressions in animated characters that previously could only be produced by human animators.” 837 F3d at 1313. Further, the court clarified that “processes that automate tasks that humans are capable of performing are patent eligible if properly claimed.” 837 F3d at 1313.

The question was whether the claims at issue focused on a specific method of automation rather than preempting the entire field of achieving automated lip synchronization of 3D characters. The Federal Circuit found that the claims did so because “motion capture animation provides an alternative process for automatically animating lip synchronization and facial expressions.” 837 F3d at 1315. Moreover, the claims did not preempt all rule-based techniques for automating 3D animation because the claims required that the rules reflect “a relationship between subsequences of phonemes, timing, and the weight to which each phoneme was expressed visually at a particular timing.” 837 F3d at 1315.

The court’s focus on preemption seems to indicate a strong policy backbone to a 35 USC §101 analysis and further indicates that courts will not overlook critical technical details in the claims when determining the level of abstraction in the first prong of the *Alice* test.

**FEDERAL CIRCUIT CASES THAT RULED
CLAIMS PATENT-INELIGIBLE AFTER
ANALYSIS OF SECOND STEP**

In the following cases, the courts moved on to the second step of the *Alice* analysis but found that the claims at issue failed the test.

Ultramercial, LLC v Hulu, LLC

In *Ultramercial, LLC v Hulu, LLC* (Fed Cir 2014) 772 F3d 709, the court held that an invention for a “method for distributing copyrighted media products over the Internet where the consumer receives a copyrighted media product at no cost in exchange for viewing an advertisement, and the advertiser pays for the copyrighted content” (772 F3d at 712) was an abstract idea. Any added elements constituted routine steps and failed to amount to an inventive step that would pass the second prong of *Alice*’s two-part test.

It appears that if the claims at issue had added more technical details so that the “claimed solution [would be viewed as] necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks” (*DDR Holdings, LLC v Hotels.com, L.P.* (Fed Cir 2014) 773 F3d 1245, 1257), the claims in *Ultramercial* would have passed the second prong of the test. *DDR Holdings* stated that the claims in *Ultramercial* and other post-*Alice* Federal Circuit cases that did not pass the *Alice* test were “recited too broadly and generically to be considered sufficiently specific and meaningful applications of their underlying abstract ideas.” 773 F3d at 1256. In summary, after *Alice*, it appears that a court can look at a claim and conclude, without much supporting evidence, that it is too broad to be patentable.

OIP Technols., Inc. v Amazon.com, Inc.

In *OIP Technols., Inc. v Amazon.com, Inc.* (Fed Cir 2015) 788 F3d 1359, the court held that claims directed to price optimization—specifically, to a method of testing the return of various different price points for a product (e.g., highest number of sales or highest profitability) and then changing the product’s price based on this analysis—was directed to an abstract idea and thus patent-ineligible subject matter. 788 F3d at 1360. The automation of steps, which could have been performed by a merchandiser or vendor to change its price points on the basis of market conditions and past sales, was not enough to transform the claims into patentable subject matter. 788 F3d at 1361. Further, nothing else in the claims constituted an “inventive step” that would have made them patent-eligible, especially given that the specifi-

cation made clear that the “‘programming’ and the related computer hardware refers to any sequence of instructions designed for execution on a computer system.” 788 F3d at 1363.

Practice Tip

Practitioners must avoid stating that programming can refer to “any sequence of instructions.” See 788 F3d at 1363. This language was fatal in *OIP Technols.* and is not recommended for software-related patent applications.

Internet Patents Corp. v Active Network, Inc.

In *Internet Patents Corp. v Active Network, Inc.* (Fed Cir 2015) 790 F3d 1343, the claims at issue were directed to saving a user’s typed response in a web browser’s web-based form even before the user clicks “submit,” so that if the page were refreshed, the user would not need to retype the information. See 790 F3d at 1344. In applying the *Alice* analysis, the court found that the claims failed to describe “how the result is accomplished” and “[t]he mechanism for maintaining the [end result of the] state” despite that being the “most important aspect” of the invention. 790 F3d at 1348. Unlike the patent in *DDR Holdings*, the claims at issue did not have enough technical details that could have been deemed to be the inventive concept and patent-eligible subject matter.

Versata Dev. Group, Inc. v SAP Am., Inc.

In *Versata Dev. Group, Inc. v SAP Am., Inc.* (Fed Cir 2015) 793 F3d 1306, the Federal Circuit held that the claims were directed to an “abstract idea of determining a price, using organizational and product group hierarchies.” 793 F3d at 1331. Versata argued that the invention resulted in “fewer software tables and searches,” which provided improved computer performance and ease of maintenance. 793 F3d at 1335. However, because the claims failed to reflect such an improvement, which Versata also admitted, the desirable result that the invention produced was not a point of consideration regarding whether the claims were patent-eligible subject matter. 793 F3d at 1336.

Practice Tip

The patent claims in *Versata* should have described the technical details that were the cause of any alleged improvement in technology as well as how and why those elements in their unconventional configuration resulted in the improvement.

In re TLI Communications LLC Patent Litig.

In *In re TLI Communications LLC Patent Litig.* (Fed Cir 2016) 823 F3d 607, the patent at issue was directed toward an improvement based on a combination of elements that the specification conceded were well known in the art. 823 F3d at 614. The invention generally related to the recording of a digital image, communicating the image from a recording device to a storage device, and administering the digital image within the storage device. 823 F3d at 609. The claimed improvement in this particular configuration allowed the digital images to be recorded, administered, and archived easily and quickly. 823 F3d at 610. However, the court was not convinced that there was something more in the claims beyond the abstract idea of “taking, organizing, classifying, and storing photographs” that would allow the claims to be considered patentable subject matter. 823 F3d at 610. Under the second prong of *Alice*, the court found that the use of the terms “telephone unit” and “server” as the concrete and tangible components was “insufficient to confer patent eligibility of an otherwise abstract idea.” 823 F3d at 613. The court further explained that the patent failed “to provide the requisite details necessary to carry out that idea.” 823 F3d at 615.

Practice Tip

Inventions that are improvements of prior art based on combinations of elements well known in the art need to specify technical details and should not be described as systems and methods based on purely functional language.

Mortgage Grader, Inc. v First Choice Loan Servs. Inc.

In *Mortgage Grader, Inc. v First Choice Loan Servs. Inc.* (Fed Cir 2016) 811 F3d 1314, the Federal Circuit held that a system and method for “anonymous loan shopping” was directed toward an abstract

idea and therefore patent-ineligible. 811 F3d at 1324. The claims covered a series of steps: (1) having a borrower apply for a loan, (2) having a third party calculate the borrower's credit rating, (3) having lenders provide loan pricing based on the credit rating, and (4) disclosing the identity of the lender to the borrower thereafter. 811 F3d at 1318. These steps were found to be capable of being performed without a computer, and all of the additional elements in the claims were directed toward generic computer components. 811 F3d at 1324. The court reasoned that nothing in the claims purported to improve the functionality of a computer, served as an improvement to any technical field, or solved any problem unique to the Internet. 811 F3d at 1325.

Electric Power Group, LLC v Alstom S.A.

In *Electric Power Group, LLC v Alstom S.A.* (Fed Cir 2016) 830 F3d 1350, the claims were described as "performing real-time performance monitoring of an electric power grid by collecting data from multiple data sources, analyzing the data, and displaying the results." 830 F3d at 1351. In applying the two-step test from *Alice*, the court distilled the claims as being directed to "monitoring and analyzing data from disparate sources." 830 F3d at 1352. After reviewing the "focus" of the claims to view the invention's "character as a whole," the court then proceeded to the second step to determine whether there were any elements in the claims that would transform them into a nonabstract application. 830 F3d at 1353. However, the court found that the only limitation on the scope of the invention was tying the abstract idea to "the particular technological environment of power-grid monitoring." The court found that feature to be insufficient to transform the claims into patent-eligible subject matter. 830 F3d at 1354.

Practice Tip

As in other cases, the Federal Circuit in *Electric Power Group* blurred enablement and obviousness questions when analyzing patentable subject matter. To overcome a potential rejection based on the *Alice* test for software claims, practitioners should consider particular ways of achieving desired results over means-plus-function-type language. Unfortunately for software claims, doing so may result in a narrower scope of protection.

Affinity Labs of Tex. v DIRECTV, LLC

In *Affinity Labs of Tex. v DIRECTV, LLC* (Fed Cir 2016) 838 F3d 1253, the court held that because the claims were directed to the function of broadcasting regional content wirelessly to a recipient out of the original region of broadcast, but failed to specify how this would be accomplished, the claims were directed to the abstract idea of streaming content outside a broadcast region. 838 F3d at 1256. The claims were not directed to solving a technological problem nor to an improvement of a computer or network functionality. 838 F3d at 1260. In applying the second step of the *Alice* test, the court found no "inventive concept" that transformed the abstract idea of out-of-region delivery of regionally broadcasted content into patentable subject matter. 838 F3d at 1262.

Intellectual Ventures I LLC v Symantec Corp.

In *Intellectual Ventures I LLC v Symantec Corp.* (Fed Cir 2016) 838 F3d 1307, the court considered three separate patents and found that all three were directed to abstract ideas with no elements that constituted sufficient inventive concepts for the patents to be considered still patentable subject matter. One patent was directed toward a method for filtering elements, addressing the issue of spam e-mail and e-mails that deliver computer viruses. 838 F3d at 1313. However, unlike the claims in *BASCOM Global Internet Servs., Inc. v AT&T Mobility LLC* (Fed Cir 2016) 827 F3d 1341, there was nothing in the claims that indicated improvement of functionality of the computer itself or improvement of an existing technological process. *Intellectual Ventures*, 838 F3d at 1322

Another patent was directed toward methods of routing e-mails based on specific rules but was deemed patent-ineligible subject matter because its claims were directed to "human-practicable concepts" and only disclosed generic computers performing generic functions. 838 F3d at 1317. A third patent was directed toward using a computer virus screening method through a telephone network. 838 F3d at 1319. The Federal Circuit found that the idea of virus screening was an abstract idea and the only meaningful technical limitations pertained to being "within a telephone network," which was insufficient to transform the claims into something more than an abstract idea. 838 F3d at 1319.

In trying to reconcile *Intellectual Ventures* with the Federal Circuit's subsequent holding in *Thales Visionix Inc. v U.S.* (Fed Cir 2017) 850 F3d 1343, it is interesting that in the dissent, Judge Stoll made an argument that essentially follows the same theory as

Thales. See 838 F3d at 1329. Judge Stoll argued that although network components and virus screening software were conventional, the inventive concept of moving the software from its typical location at one end of users' computers and arranging it instead within the telephone network was a nonconventional and nongeneric arrangement, and as a result it should be considered patentable subject matter.

Apple, Inc. v Ameranth, Inc.

In *Apple, Inc. v Ameranth, Inc.* (Fed Cir 2016) 842 F3d 1229, the three patents at issue were directed to software for displaying restaurant menus with categories and items and were found to be patent-ineligible subject matter. 842 F3d at 1234. In the first step of the *Alice* analysis, the Federal Circuit noted that the question was whether the claims were "directed to a result or effect that itself is the abstract idea and merely invokes generic processes and machinery." 842 F3d at 1241. Because the claims were only directed to the result (*i.e.*, systems for menus with particular features), the court proceeded to the second step of the *Alice* analysis in reviewing the claims. The specification noted that the programming steps to be implemented were commonly known (and there was nothing beyond the typical hardware elements). The court therefore found that the claims were merely using conventional computer components in connection with well-known business practices and were not directed to patent-eligible subject matter. 842 F3d at 1242.

The Patent Trial and Appeal Board (PTAB) had previously found that certain dependent claims satisfied the *Alice* analysis, but the Federal Circuit disagreed. 842 F3d at 1244. The Federal Circuit held that adding a limitation that restaurant orders were linked to specific customers only called for a desired result, rather than the method by which that result would be achieved, which was insufficient to transform the dependent claim into patentable subject matter. 842 F3d at 1244. Other dependent claims involved adding elements of handwriting and voice capture technologies. However, the claims did not indicate how those elements were technologically implemented, and the court was not convinced that appending preexisting technologies was enough to turn those claims into patent-eligible subject matter. 842 F3d at 1244.

Intellectual Ventures I LLC v Erie Indem. Co.

In *Intellectual Ventures I LLC v Erie Indem. Co.* (Fed Cir 2017) 850 F3d 1315, the patents at issue were directed to a method of creating a database consisting of XML data and documents and using tags to identify and search more efficiently through the data-

base as well as to methods for accessing a user's remotely stored data, such as bookmarks. 850 F3d at 1326. The court found that two patents directed to XML document editing were essentially directed to the abstract idea of data manipulation, which previously had been found to be an abstract idea. 850 F3d at 1327. The court further explained that the limitation directed to XML implementation was not enough to pass the second step of *Alice*, especially given the limited technical details provided and the failure to explain how the XML tags would be used to alter the database in a way that would lead to an improvement in the technological field. 850 F3d at 1328. For a patent related to "remotely accessing user specific information," the court found that patent was directed to an age-old practice and that the recited use of a mobile interface and pointers to retrieve user information was merely "generic computer implementation" of the abstract idea and therefore patent-ineligible subject matter. 850 F3d at 1331.

RecogniCorp, LLC v Nintendo Co.

In *RecogniCorp, LLC v Nintendo Co.* (Fed Cir 2017) 855 F3d 1322, the invention was directed to a method and apparatus for creating a composite image by assigning image codes to a user-displayed image and then reproducing the image on the basis of the codes. The problems that the invention was intended to avoid were the inefficiencies resulting from storing facial images in traditional file formats, which take up large files. The federal district court found the claims to be "directed to the abstract idea of encoding and decoding composite facial images using a mathematical formula." 855 F3d at 1325. The Federal Circuit agreed with the lower court in finding that the invention was directed at an abstract idea. Concerning the second step of the *Alice* analysis, the Federal Circuit found that the additional elements were also abstract but that adding abstract elements to an abstract idea does not transform the claimed invention into a nonabstract idea. "The inquiry often is whether the claims are directed to 'a specific means or method' for improving technology or whether they are simply directed to an abstract end-result." 855 F3d at 1326. Although the invention at issue did arguably improve the imaging technology in the sense that it was a more efficient means of creating a composite image, the lack of specificity in the claims regarding exactly how the encoding and decoding was performed may be the reason that the claims failed the *Alice* test.

Practice Tip

Hope is not lost, however, for future image processing and data compression inventions. The patent application should describe specific solutions with a focus on “particularized application[s]” of the improvement in the technology. See 855 F3d at 1328.

SYNTHESIS OF PATENT PROSECUTION APPROACHES WEIGHING TOWARD ELIGIBILITY BASED ON ANALYSIS OF RECENT CASES

On the basis of post-*Alice* case law, there appears to be a sliding scale between what constitutes an absolute abstract idea on one end and what constitutes an absolute “useful and tangible” embodiment of that idea on the other. The point at which patentable subject matter begins and patent-ineligible subject matter ends is blurred. However, given the available case law as precedent for guidance on how a patent application should be drafted or how a patent at issue should be framed during litigation, it is possible to summarize some factors weighing toward eligibility, some concrete tips, and some pitfalls to avoid. The following approaches for prosecuting patent applications should be implemented, if applicable, to decrease the chance of a 35 USC §101 rejection for inventions relating to computers:

- Focus on improving computer capabilities rather than using computers as a tool.
- Direct claims to hardware-based improvements.
- If an invention is rule-based or directed to a method, explain in detail how the rules allow the computer to perform a function not previously performable.
- Write system claims using language different from the method claims so that a patent examiner or court cannot say that the system claim is merely a computer-implemented version of the abstract idea of the method claim.
- Use apparatus claims with a “means for” structure for which the specification includes an algorithm for programming a computer to satisfy enablement under 35 USC §112.

- Exclude algorithms from the claims, but if the claim must recite an algorithm, include an apparatus and also make sure to describe a useful, concrete, tangible result produced without preempting all uses of that algorithm.
- Insert the words “computer-based” before the word “method,” “system,” and “apparatus.”
- Have one claim in “means for” format and another mirroring that claim but substituting specific hardware for the “means for” language.
- If the invention is directed to overcoming a problem specifically arising in the realm of computer networks, focus the specifications and claims on technical disclosures regarding how the invention overcomes the problem.
- If the invention involves conventional elements, focus on how the nonconventional arrangement constitutes an improvement over the prior art.
- Describe how the invention improves the prior art, especially if it involves an improvement of the operation of a computer.
- Think in terms of high-level policy, and make sure the claims are not preempting all of the ways of getting to the desired result.

For more tips and recommendations, see Sheldon, Practising Law Institute, *How to Write a Patent Application* §§7, 15 (3d ed 2017).

CONCLUSION

Patent applications are written for a 20-year life, and the law with regard to patent eligibility will continue to evolve over the years. Fortunately, the law seems to be evolving in a manner that should provide protection for computer-related or software innovations. For now, the Federal Circuit finds it difficult to apply the two-step *Alice* analysis. But the court appears to have no problem taking shortcuts and carving out exceptions. Therefore, it is difficult to predict how the landscape of patent eligibility will look even a few years from now. However, the guidance provided in this article should increase the chances of passing the two-step *Alice* test for the foreseeable future. Software innovation and the need for its protection are here to stay.