ISSUES TO CONSIDER BEFORE ASSERTING A SOFTWARE PATENT

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Software patents have garnered a lot of attention in recent years due, at least in part, to the proliferation of software-enabled devices, such as smartphones and tablets, and the use of software to control a range of devices from automobiles to kitchen appliances. Enforcement of software patents involves unique legal issues that should be considered before asserting a patent against an accused infringer. A primary issue to consider is whether the patent claims are still patent-eligible under recent changes in the law. Also, certain types of software patents are vulnerable to attack in U.S. Patent Office proceedings, but these proceedings are not available unless the patent owner takes step to provoke them. In addition, software inventions are often implemented as method patents, which have unique requirements and restrictions that should be considered. For example, steps of a method patent must all be performed by an accused infringer in the United States and must all be performed by the same entity (or under the direction or control of that entity). Where a software invention is not implemented as a method patent, pre-suit damages may not be available unless the patentee's own products are properly marked with the patent number, and software has very different requirements for marking than more tangible products. A careful consideration of each of these issues is essential before moving forward with a lawsuit.

Key words: Software patents; Patent eligibility; Divided infringement; Method claims; Marking

INTRODUCTION

Filing a patent infringement lawsuit is an endeavor that should not be attempted without first understanding the many complex issues involved. For software patents in particular, there are additional issues that must also be considered. For example, due to changes in the law in recent years related to the scope of subject matter that is eligible to be patented, many software patents may no longer be valid. In addition, United States Patent and Trademark Office (Patent Office) proceedings provide efficient mechanisms for potential infringers to challenge the validity of patents, with some proceedings specifically directed to certain types of software patents. Moreover, software inventions are often implemented as method patent claims, which carry with them their own unique issues related to who performs the steps of the method and what evidence is required to prove infringement. In this regard, it can be particularly important to carefully choose which products

to accuse and which patent claims to assert. Lastly, where software inventions are not implemented as methods and are covered by a product, notice of the patent is required to collect past damages for infringement. If notice is not properly provided, a patent owner may be surrendering past damages.

CAN SOFTWARE EVEN BE PATENTED?

One issue that comes up in many, if not most, patent lawsuits involving software patents is whether the patent claims are patent-eligible—i.e., whether they are directed to the type of subject matter that Congress allows to be patented. Because the Patent Office issued the patent, one may assume that the invention must be patent-eligible. However, that is not necessarily the case. The law on patent eligibility has evolved substantially over the last few years, and many software patents were issued by the Patent Office when the standard for patent eligibility was more lenient. In any event, an accused infringer is free to challenge the validity of an asserted patent based on lack of patentable subject matter in court or in the Patent Office.

The issue of patent-eligible subject matter is based on section 101 of the patent statute, which states: "Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor . . . ." Congress intended this language to include "anything under the sun that is made by man" (1). Specifically excluded from patentability are "laws of nature," "natural phenomena," and "abstract ideas" (2). Whether software-based inventions are patent-eligible typically turns on whether the invention is directed to this third category of excluded subject matter—the "abstract idea."

During the dot-com boom of the 1990s, a federal appeals court decision confirmed the patent eligibility of "business methods," thereby expanding the scope of software-based inventions that could be patented (3). This decision cleared the way for patents on the various software and systems that gave rise to the dot-com era. When the bubble burst, those same patents were often acquired by entities solely interested in monetizing the patents by asserting them against potential infringers. In 2014, however, in the wake of public backlash against "patent

trolls" and the perceived abundance of weak patents (4), the Supreme Court's decision in *Alice Corp. Pty. Ltd. v. CLS Bank International* (5) all but shut the door on "business method" patents and established a framework for determining the patent eligibility of software-based inventions. While this framework was intended to provide certainty regarding patent eligibility, many believe it has done just the opposite and has led to seemingly inconsistent results.

The Alice framework has two steps. The first step is to determine if the patent claim is directed to an abstract idea. The obvious question is, "How do you do that?" Unfortunately, the Supreme Court framework does not provide a clear answer to this question. Inventions are often abstract ideas if they involve fundamental economic principles, conventional business practices, or mathematical algorithms. One example of an invention that was found to be an abstract idea under step one is "filtering content" on the internet because "it is a longstanding, well-known method of organizing human behavior" (6). Other examples include software for performing intermediated settlement (5), software for managing risk in hedge funds (7), using advertising as a currency on the internet (8), generating insurance-policy-related tasks based on rules to be completed upon the occurrence of an event (9), and using a computer to send and receive information over a network to create a transaction performance guaranty (10).

If the result of the first step is a finding that the claimed invention is not directed to an abstract idea, that is the end of the inquiry, and the claimed invention is confirmed as covering patent-eligible subject matter. If, however, the claimed invention is directed to an abstract idea, the second step is to determine whether the patent claims include "an inventive concept sufficient to transform the claimed abstract idea into a patent-eligible application" (5).

Proving the existence of an "inventive concept" involves showing that the claim includes something more than "well-understood, routine, conventional activities" (5). Simply using a computer to implement an otherwise abstract idea is not sufficient to move the abstract idea into patent eligibility (11). For example, in *Bascom Glob. Internet Servs., Inc. v. AT&T Mobility LLC* (6), the court found the claims directed to the abstract idea of "filtering content" on

the internet but ultimately held the claims to be patent-eligible because they required "the installation of a filtering tool at a specific location, remote from the end-users, with customizable filtering features specific to each end user." In addition, the court in *DDR Holdings, LLC v. Hotels.com, L.P.* (11) held that patent claims directed to internet technology that allows users to click on advertiser links without leaving the original website involved an inventive concept. In doing so, the court found that the claims "address the problem of retaining website visitors that, if adhering to the routine, conventional functioning of Internet hyperlink protocol, would be instantly transported away from a host's website after 'clicking' on an advertisement and activating a hyperlink" (11). In both of these cases, the court based its decision on the fact that the inventive concept solved a problem rooted in technology and did not simply involve using a computer to implement the solution to a pre-computer problem.

Importantly, recent court decisions have made the second step quite important and have made it less likely that patent lawsuits will be thrown out at an early stage based on lack of patent-eligible subject matter (12,13). These decisions confirmed that whether an inventive feature involves "well-understood, routine, conventional activities" is a question of fact and not a question of law, meaning that the court cannot decide the patent eligibility issue against a patent holder prior to trial as long as the patent holder has raised sufficient factual issues (12,13). It is these factual issues that can withstand a motion to dismiss or motion for summary judgment, the motions through which patent eligibility is typically raised.

Therefore, to be in the best position to defend against a challenge based on patent eligibility, it is important that the complaint include as many facts as possible supporting the idea that the claims include inventive features and that these features address technical problems in the prior art. In doing so, the complaint should point to all of the portions of the patent specification that discuss the inventive features and the technical problems that are solved. In addition, the asserted claims should include any claims that have specific language describing the technical problem that is addressed by the claims, as these claims may have the best chance of withstanding a

challenge based on patent eligibility.

CHALLENGES TO SOFTWARE PATENTS AT THE PATENT OFFICE

In 2011, Congress passed the America Invents Act, which established Patent Office proceedings to challenge the validity of patents. For defendants sued for patent infringement in the district court, these proceedings must be filed within one year of the complaint being served. The proceedings are required to be concluded within 18 months, which is often well before the district court case would be concluded.

In addition, the Patent Office proceedings are streamlined and are therefore a significantly lower-cost method of challenging the validity of a patent than doing so in a patent infringement lawsuit in the district court. For example, the proceedings are limited only to certain invalidity issues and involve very little discovery.

Once the proceedings reach an initial milestone referred to as "institution," where the Patent Office has determined that there is a "reasonable likelihood" that at least one of the patent claims will be invalid, district courts are likely to stay (i.e., pause) the related patent infringement lawsuit pending completion of the Patent Office proceeding. As such, patent infringement defendants are able to significantly reduce litigation costs while focusing solely on invalidating the patent, and patent holders may be forced to wait until the Patent Office proceeding is complete before the patent rights can be enforced in court (assuming the patent survives the Patent Office proceeding).

Due to these advantages, the post-grant proceedings have been quite popular with patent infringement defendants.

One type of proceeding is called an inter partes review (IPR). In an IPR, the validity of a patent can be challenged only on the basis of prior patents or publications—i.e., that someone else patented the idea or wrote about it first. IPRs have proven to be hugely successful, invalidating all claims in about 65 percent of completed IPR trials and invalidating at least one claim in about 80 percent of completed IPR trials (14). IPRs can be filed for any type of patent, including software patents.

Another type of Patent Office proceeding is a covered business method patent review (CBM), which was created in response to litigation abuse involving business method patents (15). CBMs are limited to patents that claim "a method or corresponding apparatus for performing data processing or other operations used in the practice, administration, or management of a financial product or service" (16). Due to these limitations, claims involved in CBMs are typically software-related.

Claims directed to inventions that are incidental to or complementary to financial activity are not sufficient to qualify for CBM review. In particular, the patent claims must be specifically directed to a financial product or service and not simply a product or service that can be used in many different areas, including finance. Despite the name ("covered business method"), both method and apparatus claims are eligible for CBM review, as long as the claim meets the financial product or service requirement.

Like in an IPR, patents in a CBM can be challenged based on prior art patents and printed publications. In addition, however, patents in a CBM may also be challenged based on patent eligibility under section 101. CBMs have been reliable patent killers, invalidating all claims in more than 80 percent of completed CBM trials and invalidating at least one claim in more than 95 percent of completed CBM trials (14).

Importantly, CBMs may only be filed by a person who has been sued for patent infringement or "has been charged with patent infringement" (16). Under this standard, a patent holder need not make an express accusation of patent infringement in order to provide the basis for a CBM; an implied accusation is sufficient. For example, simply notifying a potential infringer of the patent number and identifying products that "relate" to the patent may be sufficient to provide that potential infringer with standing to file a CBM (17). In addition, standing to file a CBM may be created even if the patent holder tells the potential infringer that it has no intention to sue and only wants a license, as long as the other circumstances (e.g., providing detailed infringement analysis to the potential infringer) show a preparedness and willingness to enforce its patents (18).

The same behavior that provides a patent holder standing to file a CBM may also (or alternatively) provoke a potential infringer to file a declaratory judgment action in district court seeking a ruling of non-infringement in a court chosen by the potential infringer. Doing so prevents the patent holder from choosing its own forum to litigate the infringement claim.

To avoid providing a basis for a CBM, patent owners with patent claims to financial products or services should approach potential infringers with caution. For at least this reason, an attorney should be consulted before communicating with potential infringers.

ISSUES UNIQUE TO METHOD PATENT CLAIMS

Software inventions are often implemented as method patent claims—i.e., the patents cover a method of performing an act. Method claims involve unique issues that must be understood and considered before being asserted against a potential infringer. For example, where the potential infringer is not the entity that performs the method steps, a plaintiff must prove that the potential infringer induced others to perform the steps and had knowledge of the patent and knowledge that the acts constituted infringement. In addition, steps of a method claim must all be performed by the same entity. Any steps that the entity does not perform must at least be directed and controlled by that entity. Lastly, the steps must all be performed in the United States, which can be problematic for software patents covering large international software systems.

If the Defendant Is Not Performing the Method Steps, Knowledge of the Patent and of Infringement Is Required

There are generally two types of patent infringement: direct and indirect. Direct infringement is performing the actual acts of infringement. Indirect infringement is contributing to or inducing another's acts of infringement. A direct infringer of a method patent is the entity that actually performs the steps of the patented method. An indirect infringer of a method patent is, in the case of induced indirect infringement, the entity that induces the direct infringer to perform the patented method steps (19). Where there are multiple direct infringers, each direct infringer's liability is limited to the infringing acts of

that direct infringer, whereas the indirect infringer is potentially liable for the infringement of all direct infringers. In short, there may be a higher damages ceiling against the indirect infringer than against any individual direct infringer.

There is a rather common scenario, where a patented method is directed to, for example, a method of operating a computer system to perform some function. In such a scenario, the ideal defendant is often the computer system manufacturer and not individual users because the manufacturer has deep pockets and suing every user is impractical and expensive. The entity that is operating the computer system—i.e., the direct infringer—is the consumer or user and not the computer system manufacturer. The computer system manufacturer, however, may still be liable as an indirect infringer by inducing the direct infringers (i.e., the users) to use the computer system in a manner that infringes the patent. Evidence of inducing the direct infringement of others often includes user manuals, marketing materials, and evidence of technical support of the patented feature.

Indirect infringement, however, requires more than proof of inducing the infringing acts. It also requires that the accused indirect infringer knew of the patent and knew that the acts would cause direct infringement of the patent (20). Knowledge of the patent is rather straightforward—the accused either knew of the patent or did not. Evidence of knowledge of the patent prior to the filing of the lawsuit will often come in the form of internal e-mails discussing the patent or a notice letter sent to the accused by the patent holder before the lawsuit was filed. The defendant, of course, knows of the patent at least as of the date of service of the complaint, but this source of knowledge can at best only be relied on for proving infringement after the complaint was filed.

Knowledge that the acts would cause direct infringement is more of a grey area. The best evidence may be internal documents showing that the defendant believed it infringed the patent, but these types of admissions are rare. Evidence of copying paired with knowledge of the patent has also been sufficient (21). Circumstantial evidence is often sufficient, including evidence that the defendant knew of the patent and yet continued to make or sell the accused product (22,23).

In many cases, accused infringers are not aware of the patent until they are served with a complaint for patent infringement, and therefore indirect infringement cannot be proved for the period of time before the lawsuit was filed. The patent statute, however, states that an infringer is liable for up to six years before the complaint is filed, which can be a substantial amount of damages to lose. Thus, to ensure that pre-suit damages for indirect infringement are available, a patent holder should consider notifying potential infringers as early as possible about the patents. To maximize the possibility of also proving pre-suit knowledge of infringement, this notification should specifically identify the accused products and describe in sufficient detail how those products infringe the patent. As discussed, such notice may provide the basis for the accused infringer to file a CBM or a declaratory judgment action. As such, one should seek the advice of an attorney before communicating with a potential infringer.

Who Performs the Patent Steps?

Courts have clarified that direct infringement of a method claim occurs only when all steps of the method "are performed by or attributable to a single entity" (24). Steps performed by one entity may be attributed to another entity to satisfy this "single entity" requirement "(1) where that entity directs or controls the others' performance," or "(2) where the actors form a joint enterprise" (24). Such situations are often referred to as "divided infringement" because the acts constituting direct infringement of the method patent are divided between two or more entities.

A joint enterprise requires four elements: "(1) an agreement, express or implied, among the members of the group; (2) a common purpose to be carried out by the group; (3) a community of pecuniary interest in that purpose, among the members; and (4) an equal right to a voice in the direction of the enterprise, which gives an equal right of control" (24). Where these four elements are met, steps performed by one member of the joint enterprise may be attributed to another member.

A direct infringer can be said to "direct or control" another entity's performance of a step of the patented method where that other entity acts as an

agent of the direct infringer in performing a step of the method (25). For example, if an employee of a company performs the step, the employee's action is attributed to the company because the employee is an agent of the company. Direction or control may also be found where an entity has a contractual obligation to perform a step of the method (25). Direction or control is also found where the direct infringer "conditions participation in an activity or receipt of a benefit upon performance of a step or steps of a patented method and establishes the manner or timing of that performance" (24). Showing that one has the ability to start or limit the ability of another to perform the act may also show direction or control (26).

In the seminal case regarding direction or control, *Akamai Techs., Inc. v. Limelight Networks, Inc.* (24), Akamai accused Limelight of infringing a patent that covers a method for efficient delivery of web content. The claims involved placing content on replicated servers and modifying the web page so that browsers would retrieve that content from those servers. For example, one of the claims recited a "content delivery method" that included the following steps:

> distributing a set of page objects across a network of content servers managed by a domain other than a content provider domain, wherein the network of content servers are organized into a set of regions;
>
> for a given page normally served from the content provider domain, tagging at least some of the embedded objects of the page so that requests for the objects resolve to the domain instead of the content provider domain;
>
> in response to a client request for an embedded object of the page:
>
> resolving the client request as a function of a location of the client machine making the request and current Internet traffic conditions to identify a given region; and
>
> returning to the client an IP address of a given one of the content servers within the given region that is likely to host the embedded object and that is not overloaded.

Limelight maintained a network of servers and, as in the patented method, allowed for efficient content delivery by placing content on its servers and accessing that content by modifying the webpages to include instructions for retrieving content from those servers. Limelight, however, did not modify the webpages itself and, instead, instructed its customers to perform the modification. Thus, Limelight performed every step of the claim except the "tagging" step, which was performed by Limelight's customers.

To prove direction or control, Akamai presented evidence that Limelight required all customers to sign a standard contract, which lists the steps that the customer must perform to use the Limelight service, including tagging. Regarding tagging, the contract provided: "Customer shall be responsible for identifying via the then current [Limelight] process all [URLs] of the Customer Content to enable such Customer Content to be delivered by the [Limelight network]." In addition, the contract required that Limelight's customers "provide [Limelight] with all cooperation and information reasonably necessary for [Limelight] to implement the [Content Delivery Service]" (24). The court found this to be substantial evidence that Limelight conditioned use of its service on its customers' performance of the tagging step.

The court also found substantial evidence that Limelight dictated the timing and performance of the customers' performance of the tagging step. In particular, Akamai presented evidence of a welcome letter that Limelight sent to new customers with instructions for using Limelight's service, including the tagging step, which the court found was necessary to the use of the Limelight service. The welcome letter also stated that Limelight would be assigning a technical account manager to lead the implementation of Limelight's service. Based on this evidence, the court found substantial evidence that Limelight directed or controlled its customers' performance of the tagging step.

If possible, it is best to avoid divided infringement altogether by choosing a combination of claims and accused products that involve a single entity performing each step. If claims and products that raise divided infringement issues must be relied on, it should be understood that the issue will likely be raised during the litigation, providing the defendant

with an additional defense and potentially increasing litigation costs. In this event, it is important to develop arguments for direction or control as early as possible and to begin collecting any necessary evidence. If divided infringement cannot be avoided, both method and system claims should be asserted to provide different options during the litigation.

Where Are the Steps Performed?

Not only must all of the steps of a method claim be performed, or directed and controlled, by a single entity, but all steps must be performed in the United States. In particular, if a potential infringer performs any step of a method claim outside the United States, there can be no infringement.

For example, in *NTP, Inc. v. Research In Motion, Ltd.* (27), NTP accused Research in Motion (RIM) of infringing its patented method claims directed to receiving e-mail over a wireless network. The claims at issue in that case required that certain steps be performed by an "interface switch." For example, one of the asserted claims recited:

> transmitting the originated information originating from the one of the plurality of originating processors to a gateway switch within the electronic mail system;
> transmitting the originated information from the gateway switch to **an interface switch;**
> transmitting the originated information received from the gateway switch from **the interface switch** to a RF [radio frequency] information transmission network;
> transmitting the originated information by using the RF information transmission network to at least one RF receiver which transfers the originated information to the at least one of the plurality of destination processors; and
> transmitting other originated information with the electronic mail system from one of the plurality originating processors in the electronic mail system to at least one of the plurality of destination processors in the electronic mail

system through a wireline without transmission using the RF information transmission network; and wherein

> the originated information is transmitted to the **interface switch** by the gateway switch in response to an address of the **interface switch** which has been added to the originated information at the one of the plurality of originating processors or by the electronic mail system and the originated information is transmitted from the **interface switch** to the RF information transmission network with an address of the at least one of the plurality of destination processors to receive the originated information which has been added at the originating processor or by either the electronic mail system or the **interface switch.**

NTP alleged that the Blackberry Relay component met the "interface switch" limitations of the claims, but this component was located in Canada. The court held that the use of RIM's system could not infringe the claims because all of the steps were not performed in the United States.

Importantly, the NTP case also involved a system claim, which the court found could be infringed despite the fact that the "interface switch" was an element of the claim. Infringing uses, regardless of the type of claim (method, system, etc.), must occur in the United States. For system claims, the court stated that the place of use is "the place at which the system as a whole is put into service, i.e., the place where control of the system is exercised and beneficial use of the system obtained" (27). The court found that RIM's customers in the United States "controlled the transmission of the originated information and also benefited from such an exchange of information," and the fact that the relay was located in Canada did not move the location of use of the system from the United States to Canada.

This issue highlights the importance of asserting different types of patent claims in a complaint and of performing due diligence on the accused products before filing a complaint. Where possible, a complaint

should assert both method and system claims. If only method claims are available, knowing if the potential infringer performs any steps outside the United States before filing the lawsuit will avoid the expense of filing a lawsuit that a judge may be quick to dispose of.

PATENTED SOFTWARE PRODUCTS MUST BE MARKED WITH THE PATENT NUMBER

A patent is generally enforceable beginning the date it issues until 20 years after its filing date. As discussed, pre-lawsuit damages are available up to six years before the lawsuit was filed but generally no earlier than the issue date of the patent. For claims covering an article or "thing," as opposed to a method, the patent statute states that pre-suit damages are recoverable only if any article covered by the patent is marked to provide notice of the patent. This marking requirement is typically satisfied by placing on the patented item the word "patent" or the abbreviation "pat." together with the number of the patent, e.g., "patent no. 9,999,999." Alternatively, and particularly where an article is covered by an evolving list of patents, the article can be marked with a URL, which itself lists the patents that cover the article. Where it is not practical to affix the mark to the article itself, the statute permits affixing the mark to the packaging.

Software, however, is rarely, if ever, sold anymore on a CD or in packaging that would allow for such marking. Indeed, software today is regularly downloaded. With no media and no packaging, how can software be marked to comply with the marking requirement? There is, unfortunately, no clear answer. The best course of action, assuming that the software itself is the article covered by the patent, is to mark as much as possible in the software user interface—for example, the splash screen, the login screen, the about screen, and the help screen. If the patent claims cover specific aspects of the software (e.g., one particular screen), those aspects should also be marked.

The patent statute states that actual notice of the patent can also be provided instead of marking. As such, as with the indirect infringement issues with method claims, a patentee should consider notifying potential infringers of the patent as early as possible to maximize the damages period. Of course, an attorney should be consulted before providing notice to any potential infringers.

This marking requirement, of course, only applies where products are covered by the patent. Where there is a question of whether a product is covered by the patent, a patent holder should consider whether it can take the position that the product is not covered by the patent to avoid losing past damages. Importantly, third-party products that are licensed under the patent must also be marked.

CONCLUSION

There are many other issues to consider before filing a patent infringement lawsuit, but the issues discussed in this article are several of those that relate specifically to software patents. For software patents with method claims, it is important to carefully choose the claims and the defendants to ensure that the steps can all be performed by the same entity, or at least directed and controlled by that entity, and to ensure the steps can all be performed in the United States. For method claims that require a user to perform the steps, and therefore require relying on a theory of indirect infringement against the manufacturer, it is important to notify the manufacturer of the patent and the specific accused product and to provide a detailed theory of infringement to ensure that the elements of induced infringement can be met. If the claims are related to financial products or services, it is important to remember that communication with a potential infringer may provide a basis for filing a CBM, which, statistically speaking, is likely to invalidate the patent. Providing such notice to an accused infringer may also provide the basis for a declaratory judgment action, thereby moving the benefit of the choice of forum from the patent owner to the accused infringer.

For patent owners that have software products, it is also important to ensure that the software is properly marked with the patent number. In addition, once the decision is made to file a lawsuit, when drafting the complaint, it is important to consider including both system and method claims, if possible, and to include a description of how the patented invention addressed a problem rooted in technology. Lastly, it is also important to consult an attorney with regard to any of these decisions to obtain the best results.

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