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PATENTS

Two cases testing the standards of joint patent infringement liability for method claims are awaiting en banc review by the Federal Circuit. Those disputes and other recent case law may have significant implications for ever-expanding cloud-based computing services. Two patent attorneys from Seyfarth Shaw, Washington, D.C., advise practitioners to consider the changing legal landscape in protecting and enforcing such innovations.

Recent Developments in Patent Enforcement in the Cloud

By Richard P. Gilly and Vamsi K. Kakarla

Introduction.

In today's economic environment, businesses are looking away from making long-term and expensive investments in computer infrastructure, software, and hardware solutions, and are instead seeking to meet their technology needs through more cost-effective measures. One such measure getting significant attention in recent years is cloud computing.

Richard Gilly is a partner with the intellectual property practice group of Seyfarth Shaw, Washington, D.C. He can be reached at rgilly@seyfarth.com. Vamsi Kakarla is counsel with the firm's the intellectual property practice group. He can be reached at vkakarla@seyfarth.com.

Cloud computing services may provide savings and alternatives for companies by expanding technological resources on an on-demand basis rather than through long-term investments based on estimated future needs. As the use of cloud computing services becomes more widespread, patent practitioners, as well as cloud service users and providers, should be aware of how recent case law may affect acquisition or enforcement of patent rights in such cloud-based environments.

In particular, the U.S. Court of Appeals for the Federal Circuit on Nov. 18 will rehear two cases with potentially significant implications for cloud-based services: *McKesson Technologies Inc. v. Epic Systems Corp.*, 98 USPQ2d 1281 (Fed. Cir. 2011), en banc rehearing, No. 2010-1291 (Fed. Cir. *briefing completed* Sept. 6, 2011), and *Akamai Technologies Inc. v. Limelight Networks Inc.*, 629 F.3d 1311, 97 USPQ 2d 1321 (Fed. Cir. 2010), en banc rehearing, No. 2009-1372 (Fed. Cir. *briefing completed* Sept. 6, 2011) (82 PTCJ 764, 10/7/11).

The National Institute of Standards and Technology defines cloud computing as a ''model for enabling ubiq-

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uitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.'' NIST, U.S. Department of Commerce, Special Publication 800-145. NIST recognizes that cloud computing is an ''evolving paradigm'' and that bright-line definitions of today may not adequately reflect the scope of cloud computing in the foreseeable future. *Id*.

The advantages of cloud computing include comparatively inexpensive access to technological resources without investing in expensive solutions, such as databases or servers. Further, cloud computing end users may eliminate or significantly reduce the maintenance costs involved in such solutions. Cloud computing has been compared to the model of buying electricity via an on-demand basis with limited exposure to the underlying maintenance.

Three service models are typically associated with cloud computing: (1) cloud software as a service (SaaS); (2) cloud platform as a service; and (3) cloud infrastructure as a service. In each of these models, users of the cloud do not manage the underlying cloud infrastructure but may have variable control over certain features of each of these service models. *See* NIST Draft, p. 2.

Because cloud computing services are scalable, they may present an attractive option for businesses of all sizes.

While there are many advantages to cloud computing, it presents challenges, discussed in this article, for businesses seeking patent protection for innovations that may be dispersed in the cloud, and conversely for companies seeking to operate in a cloud context without risking charges of patent infringement, and, accordingly, for patent counsel retained for such issues.

Infringement in the Multi-Actor Context.

Recent Federal Circuit decisions have addressed patent infringement when a claimed computer process or system requires multiple party involvement in order for the claim to be infringed. This is especially relevant to cloud computing services that may split certain operations or elements between the service provider and the end users.

The issue may likewise arise in older patents having claims which presupposed a less dispersed computing environment than the current environment.

For a method claim, direct infringement only occurs where every step of a method is practiced. *Canton Bio Medical Inc. v. Integrated Liner Technologies Inc.*, 216 F.3d 1367, 1370, 55 USPQ2d 1378 (Fed. Cir. 2000) (60 PTCJ 220, 7/14/00). A party who did not practice all the steps of a claimed method can nonetheless be found liable for direct infringement if the party exercised ''direction or control'' over other parties who perform the missing steps on behalf of the first party. *BMC Resources Inc. v. Paymentech L.P.*, 498 F.3d 1373, 1379, 84 USPQ2d 1545 (Fed. Cir. 2007) (74 PTCJ 644, 9/28/07).

The court in *BMC* based this so-called ''single-entity'' rule on its reading of an earlier case, *Dynacore*, but some argue that neither *Dynacore* nor the case it relied upon contained language that *specifically* requires direction or control by a single entity to be required for direct infringement. *See Dynacore Holdings Corp. v. U.S. Philips Corp.*, 363 F.3d 1263, 1272, 1274, 70 USPQ2d 1369 (Fed. Cir. 2004) (67 PTCJ 546, 4/9/04); *Jansen v. Rexall Sundown Inc.*, 342 F.3d 1329, 1334, 68 USPQ2d 1154 (Fed. Cir. 2003) (66 PTCJ 531, 9/12/03).

The panel holdings in *Akamai* and *McKesson* confirmed the ''direction or control'' or vicarious liability standard, and further provided that an agency relationship or contractual obligation to perform any remaining steps must exist in order for a party to be vicariously liable for patent infringement. *Akamai*, 629 F.3d, at 1320, (81 PTCJ 255, 12/24/10); and *McKesson*, 98 USPQ2d at 1283 (81 PTCJ 786, 4/15/11).

The *McKesson* and *Akamai* cases dealt with method claims performed by multiple actors, and thus did not directly address how infringement of system or apparatus claims would be analyzed when the ''system'' is owned or controlled by different parties. Addressing that issue, another case earlier this year, *Centillion Data Systems LLC v. Qwest Communications International Inc.*, 631 F.3d 1279, 97 USPQ2d 1697 (Fed. Cir. 2011) (81 PTCJ 371, 1/28/11), clarified how infringement will be analyzed for such multi-party system claims.

A system claim is directly infringed by ''use'' when a user puts all the elements of the system into ''service,'' such as by activating or otherwise making the elements work for their intended purpose and obtaining a benefit therefrom. *Centillion*, 631 F.3d at 1284. The Federal Circuit rejected the more stringent requirement that, in order to use a system, the party must exercise physical or direct control over each system element.

Because the users of a patented system or method may not include the software or service provider accused of infringement, a patentee may seek to establish that the accused party induced infringement of the users, which is a species of indirect infringement.

Inducement of infringement requires there to be an underlying direct infringement. *Dynacore*, 363 F.3d at 1272. In *McKesson*, this direct infringement requirement proved elusive, as the court found multiple parties performing the claimed method were unrelated, and so the patent holder failed to show a single entity that practiced all the claimed elements. Further complicating the proofs needed for inducement of infringement, a patent holder is required to show that the inducer had the requisite ''intent'' and ''knowledge'' to cause the direct infringement. *DSU Medical v. JMS Co.,* 471 F.3d 1293, 81 USPQ2d 1238 (Fed. Cir. 2006) (73 PTCJ 206, 12/22/06).

Divided Infringement and Vicarious Liability.

The situation where multiple actors are implicated in patent claims, especially in method claims, is referred to as divided or joint infringement, and is often cast as a ''defense'' which allows a defendant to defeat an infringement claim by arguing that another entity practices certain elements necessary for infringement.

Prior to the advent of cloud computing, divided infringement was seen in cases involving a client-server relationship, where some actions are performed by the server and some by the end users's computer. In *Akamai*, Limelight was accused of infringing a claim directed to content delivery service for web pages that included replicating page objects by tagging embedded objects on a page. *Akamai*, 629 F.3d at 1316. The tagging, however, was performed by customers of Limelight and not Limelight itself.

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Since the defendant did not perform all of the claimed steps, the Federal Circuit affirmed the district court judgment of noninfringement. In doing so, the court held ''as a matter of Federal Circuit law that there can only be joint infringement when there is an agency relationship between the parties who perform the method steps or when one party is contractually obligated to the other to perform the steps.'' *Akamai*, 629 F.3d at 1319. (*See also*, *McKesson* and *Centillion*, 631 F.3d 1279).

The en banc court in *McKesson* and *Akamai* will consider whether direct infringement requires a contractual or agency relationship as part of the required direction or control, or whether actions by multiple, unrelated entities can directly infringe *collectively*, or what other circumstances between these standards could constitute direct infringement when multiple actors are involved.

For cloud computing, then, to the extent the Federal Circuit, in its en banc rehearing, relaxes the requirements under which multiple actors need to be related to or control each other, it may become easier to stitch together the multiple actors in the cloud into a ''silver lining'' amounting to infringement.

Regardless of the Federal Circuit's disposition of these cases, to the extent a cloud service provider forms a contractual relationship with other parties implicated by a patented cloud system, such contracts may be looked to by a patent holder to find the requisite relationship for vicarious liability for infringement. Accordingly, it may be prudent to review contracts for cloud services to avoid appearing to exercise direction or control over the other party's actions or activities in the cloud.

Cloud computing services will likely continue to complicate the issues of divided infringement, as a patent holder may have an invention directed to a software application that involves multiple elements resident within a service provider's cloud, along with elements resident outside the control of the service provider, such as in the computer of the end users. However, a competitor to such service provider may only provide some of the claimed elements, relying on other, unrelated parties or the customer to provide the missing elements.

This could make establishing direct infringement a challenge under current law. The patent holder may bring a suit alleging that the computing service provider infringes because it offers and sells a service that, when end users purchase and use, infringes the patent holder's claims. In such a scenario, the patent holder often advances an infringement theory that the service provider is vicariously liable for patent infringement by virtue of its actions in providing a service to be used by end users.

To defend against such claim, the service provider will likely argue that since a single entity does not practice all the claim elements, there is no infringement under the theory of divided or joint infringement.

Patent Drafting, Enforcement Strategies.

While the facts of any particular case will determine the viability of divided infringement arguments, the language of the patent claims itself will become a factor as well, so thoughtful claim drafting is all the more important. For example, it will remain important for patent attorneys to follow one of the bedrock principles of claims drafting, that is, claims should be written from the perspective of one infringer so as to stop the infringing activity and ultimately compensate the patent holder for past infringement.

Thus, patent lawyers must understand the cloud computing services that may harbor the client's technological innovations and draft claims directed to a single entity. Cloud computing services may present challenges to the patent attorney since some functions and services within the cloud may not be visible or known to those outside of the cloud.

Service providers may also be using other third-party resources for particular features which can complicate the patent attorney's job in drafting claims directed to a single infringer. In these cases, the interactions between the patent attorneys and inventors is essential to understand the landscape of the technology and to ensure that the innovations are not likely to be broken between multiple service providers, thereby raising the divided infringement issue.

Thus, patent attorneys and inventors should work together to identify the innovations and draft claims that are directed to the actions of the service provider or devices resident with the service provider. Moreover, directing claims to specific functions or modules which generally remain inside the cloud, rather than amorphous claims implicating functions both inside and outside the cloud, may decrease the likelihood that multiple entities or an end users is involved in practicing certain claim elements.

Patent practitioners may consider even more carefully the elimination of extraneous subject matter in independent claims. Such subject matter may be more appropriate in dependent claims or simply eliminated altogether, so as to increase the likelihood that claims to particular innovations will apply to only a single accused infringer.

Using both system and method claims remains an advisable approach because, as discussed above, the two types may be regarded differently by the courts, depending on the particular architecture or environment. Having a claim program covering the invention through these different lenses and techniques will assist in avoiding the divided infringement issue.

In the client-server applications that have been the subject of many of the divided infringement cases, the end user is likely to be an individual or small business without significant resources, which would make the patent holder even more hesitant to pursue multiple end users in a cost-effective manner. In the area of cloud computing, however, it is possible that the users of patented system are no longer the smaller ''clients'' of a client-server paradigm, but rather mid-sized to large companies that are significant clients of the cloud computing service provider.

In the case of cloud computing services, pursuing the customers may have the benefit of not only targeting infringers with significant resources, but also targeting customers with the ability and means to apply enough pressure to the service provider to engage the patent holder for a resolution of the dispute.

Furthermore, to the extent large customers of cloud computing service providers are concerned about the risk of infringement, those customers may have the leverage to negotiate contracts with indemnification clauses or put the burden on the service provider to

make efforts to prevent infringement prior to executing any service contract.

Conclusion.

As cloud computing services become further embedded in the everyday activities of businesses and individuals, patent attorneys and businesses are well advised to consider the changing legal landscape in protecting innovations and enforcing resulting patents.

A varied claim program hedges against both technological changes and shifts in the case law, by casting the invention to cover current and future competitors and users, targeting specific features less likely to be divided among multiple actors, and using both systems and method claims in view of different court treatment of these two types of claims.

Enforcement strategies may wish to consider not just competitors, but certain significant customers, and otherwise consider ways of ultimately pressuring service providers to cease infringing activities and compensating patent holder for past damages.

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