New York Law Journal
SERVING THE BENCH AND BAR SINCE 1888
WWW.NYLJ.COM
An ALM Publication
VOLUME 260—NO. 61
WEDNESDAY, SEPTEMBER 26, 2018

PATENT AND TRADEMARK LAW

Expert Analysis

Are Database Systems Patentable?

By **Rob Maier**

The late 1990s and early 2000s brought the gold rush of software patents in the United States. On the heels of the U.S. Supreme Court's decision in *State Street Bank*, which confirmed that business methods and related software inventions could be patented in the United States, and in the midst of the dot-com boom, thousands flocked to the U.S. Patent & Trademark Office to file new patent applications on software inventions. Many of those patents were related to the ways in which data could be stored and manipulated in computer systems.

In recent years, the pendulum has, by all accounts, swung back in the other direction, as the federal courts and the Patent Office have tightened the reigns on the patentability of software. Database patents, covering systems and methods for arranging and storing data, in particular, have been a lightning rod. The Federal Circuit has repeatedly weighed in on the patentability of such systems; in some instances, finding them to be non-patent eligible, but in other instances upholding the validity of such patents.

Last month, the Federal Circuit in *BSG Tech v. Buyseasons* again weighed in on this issue, finding a patent directed to database functionality invalid as not patent eligible. In the process, the court helped to further define the fuzzy line between good and bad database patents.

Prior Decisions on Patentability Of Database Systems

The Federal Circuit has previously addressed the question of the patentability of database systems, in each case applying the Supreme Court's two-step test for patent eligibility articulated in *Alice Corp. v. CLS Bank Int'l*, 134 S.Ct. 2347, 2355 (2014). Specifically, at step one, the court considers "whether the claims at issue are directed to a patent ineligible concept"—i.e., a law of nature, natural phenomena, or an abstract idea. If so, the court then at step two considers whether the elements of the claim "transform the nature of the claim" such that it is patent eligible. Id. Notably, and as it pertains to databases, the Supreme Court has held unpatentable "methods of organizing human activity" as abstract." *In re TLI Commc'ns LLC Patent Litig.*, 823 F.3d 607, 613 (Fed. Cir. 2016).

> The Federal Circuit in 'BSG Tech v. Buyseasons' found a patent directed to database functionality invalid as not patent eligible.

The Federal Circuit has repeatedly found database-related patents invalid. As one example, in *Intellectual Ventures I v. Capital One Fin.*,

ROB MAIER *is a patent trial lawyer and intellectual property partner in the New York office of Baker Botts.*

850 F.3d 1332 (Fed. Cir. 2017), the court found that inventions covering XML data storage systems were, "at their core, directed to the abstract idea of collecting, displaying, and manipulating data," and that the series of generic computer components used to carry out that idea were "simply not enough under step two." Id. at 1340. In another such case, *ZKey Investments v. Facebook*, 708 Fed.Appx. 681 (Fed. Cir. 2018), the Federal Circuit considered a patent directed to a database management system that stores user profile information, and found it claimed only the abstract idea of "collecting, storing, and sharing information of registered users with other registered and non-registered users," and did not add any inventive concept.

> While 'Enfish' and 'Visual Memory' provided examples of database systems that were found patent-eligible, the Federal Circuit here reconfirmed that, as in the past, some database patents will fall on the other side of the line.

However, in other cases, the Federal Circuit has found databases patent-eligible. For example, in *Enfish v. Microsoft*, 822 F.3d 1327, 1337 (Fed. Cir. 2016), the Federal Circuit concluded that patent claims related to database structure were not abstract because their focus included a new and particular "self-referential table [that] functions differently than conventional database structures." The table enabled programs to construct databases in new ways and more efficiently than they could with prior systems, and the Federal Circuit distinguished this as a technological improvement in computer functionality, which differed from other tasks "for which a computer is used in its ordinary capacity." Id. at 1336. Similarly, in *Visual Memory v. NVIDIA*, 867 F.3d 1253 (Fed. Cir. 2017), the Federal Circuit determined that the claims there were directed to "an improved memory system," which configured operational characteristics of a computer's memory based on the kind of processor it was mated to—again, according to the Federal Circuit, an improvement in the way that computer systems store and access data. Id. at 1256-57, 1259.

The Federal Circuit in 'BSG Tech'

The Federal Circuit has now again weighed in on the patentability of a database system patent. BSG Tech sued Buyseasons for infringement of three patents related to systems and methods for indexing information stored in wide access databases. The patents—U.S. Patent Nos. 6,035,294, 6,243,699, and 6,195,652—are directed to a "self-evolving generic index" for organizing information stored in a database. The claimed indexing software organizes information about various items using classifications, parameters, and values. As an example, information about a car could be organized as a series of classifications such as a first "Automobile" classification, a second "Used Vehicle" classification, and a third "Sports Utility Vehicle" classification.

According to BSG Tech, prior database systems provided similar hierarchical-type classification systems, but suffered from several shortcomings in that they were somewhat rigid and did not allow for classification of wide ranges of products and services, and did not allow users to sort records based upon customized parameters. BSG Tech argued that the asserted patents overcame these shortcomings because they allowed users to add new parameters, guided by the patented system, which would help the users to maintain consistency in how they describe items by providing information about parameters that previous users chose in similar classification systems.

Buyseasons moved to dismiss the suit based on its contention that all asserted patent claims were invalid under §101. Judge Schroeder of the Eastern District of Texas converted the motion to dismiss into a motion

for summary judgment and granted the motion. The court applied the two-step test for patent eligibility provided by the Supreme Court in *Alice v. CLS Bank*, concluding that the asserted patent claims "are directed to the abstract idea of considering historical usage information while inputting data," and furthermore lack any inventive concept sufficient to transform those claims into patent-eligible subject matter. BSG Tech appealed.

In step one of the *Alice* analysis, the Federal Circuit agreed with the district court "that the asserted claims are directed to the abstract idea of considering historical usage information while inputting data." The court found that the patented method is not necessarily rooted in computer technology intended to overcome a specific technological problem in wide access databases; rather, according to the Federal Circuit, the invention amounted to either a "fundamental, long-prevalent practice or a well-established method of organizing activity" and, either way, constitutes an abstract idea.

As to step two, the Federal Circuit then considered whether the elements of the claims beyond the abstract idea transform the nature of the claims into a patent-eligible application. The court explained that those transformative elements must supply an "inventive concept" that ensures the patent amounts to "significantly more" than a patent covering merely the abstract concept itself.

The Federal Circuit determined that the only feature BSG Tech alleged to be unconventional is the requirement that users are guided by comparison usage information or relative historical usage information—which, the court found, "simply restated what we have already determined is an abstract idea." The court therefore concluded that this reformulating of the abstract idea did not add "significantly more," and thus found the district court did not err in determining that the claims lack an inventive concept.

Furthermore, BSG Tech argued that the claims supply an inventive concept because they require a specific database structure that does not preempt the entire abstract concept of employing historical usage information while inputting data into other types of databases. Here, the court relied on its precedent finding "the absence of complete preemption does not demonstrate patent eligibility," and concluded that although BSG narrowed its patent claims to specific database structures, "those structures are well-understood and conventional," and thus cannot support an inventive concept. Ultimately, the Federal Circuit affirmed the finding of invalidity of the patents.

While *Enfish* and *Visual Memory* provided examples of database systems that were found patent-eligible, the Federal Circuit here reconfirmed that, as in the past, some database patents will fall on the other side of the line. In particular, in *BSG Tech*, the Federal Circuit framed the difference as "an improvement to the information stored by a database" (which is not eligible for patenting) versus "an improvement in the database's *function*." The precise contours of this line still remain somewhat unclear, but, as the Federal Circuit continues to provide examples on either side, those examples may continue to provide guidance, both for those drafting patent applications, and those enforcing—or defending against—database patents.