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Intellectual Property Law

Keywords: **35 U.S.C. § 101; Abstract Idea; Software; Data Storage and Retrieval; General Purpose Computer**

General: **Federal Circuit finds data storage claims subject-matter eligible based on clear divergence from traditional storage model and/or directive to solve computer-related problem**

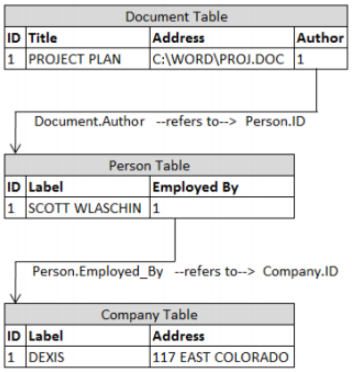
Enfish, LLC v. Microsoft Corporation
No. 2015-1244 (Fed. Cir. May 12, 2016)

I. Facts

Patents 6,151,604 and 6,163,775 ("the patents") issued to Enfish in late 2000. These patents are directed to a logical model for a computer database. A logical model is a model of data for a computer database explaining how the various elements of information are related to one another. These models do not typically describe how the bits and bytes of those tables are arranged in physical memory devices. Contrary to conventional logical models, the patented logical model includes a "self-referential" property where all data entities are in a single table, with column definitions provided by rows in the same table.

In a traditional relational table model, entities are each stored in separate tables and are related to one another via one or more columns of the tables. In contrast, in the self-referential table model, the self-referential model can store all entity types in a single table and can define the table's columns by rows in that same table. Below is a rendering of a traditional relational table model, followed by the self-referential table model of the patents.

Traditional Relational Table Model



Document Table

ID	Title	Address	Author
1	PROJECT PLAN	C:\WORD\PROJ.DOC	1

Document.Author --refers to--> Person.ID

Person Table

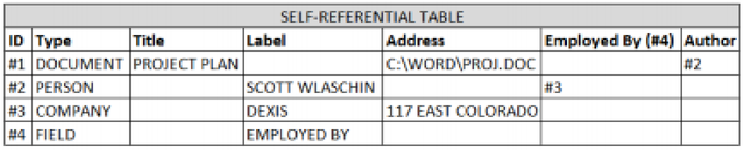
ID	Label	Employed By
1	SCOTT WLASCHIN	1

Person.Employed_By --refers to--> Company.ID

Company Table

ID	Label	Address
1	DEXIS	117 EAST COLORADO

Self-Referential Table Model



SELF-REFERENTIAL TABLE

ID	Type	Title	Label	Address	Employed By (#4)	Author
#1	DOCUMENT	PROJECT PLAN		C:\WORD\PROJ.DOC		#2
#2	PERSON		SCOTT WLASCHIN		#3	
#3	COMPANY		DEXIS	117 EAST COLORADO		
#4	FIELD		EMPLOYED BY			

The patents teach that multiple benefits flow from this design. First, the patents disclose an indexing technique that allows for faster searching of data than possible with the traditional model. Additionally, the self-referential model allows for more flexibility in configuring the database, as traditional relational models often involve extensive modeling and configuration of the various tables and relationships in advance of launching the database. Enfish noted that the self-referential database can be launched without such tasks and instead configured on-the-fly.

District Court Proceedings

In 2012, Enfish filed suit against Microsoft in district court, alleging that Microsoft's ADO.NET product infringes the patents. Enfish alleged that ADO.NET creates and manipulates self-referential tables as part of its operation.

The district court construed "means for configuring" language of the claims as requiring multiple steps, one of which was "3. For each column, store information about that column in one or more rows, rendering the table self-referential, the appending, to the logical table, of new columns that are available for immediate use being possible through the creation of new column definition records."

However, the district court concluded that the claims were directed to the abstract idea of "storing, organizing, and retrieving memory in a logical table" or, more simply, "the concept of organizing information using tabular formats." Thus, the district court entered summary judgment, finding all claims invalid under 35 U.S.C. § 101 as directed to an abstract idea.

II. Issue

Did the district court err in finding invalidity under § 101, when the claims are directed to a specific improvement of a general purpose computer, but are not specifically tied to "physical" components?

III. Discussion

Yes. The Federal Circuit held that the district court erred in finding claims of the patents invalid under 35 U.S.C. § 101. The court noted that, in a § 101 analysis, a first determination is made as to whether the claims at issue are directed to a patent-ineligible concept and, if this threshold determination is met, a second step of considering the elements of each claim both individually and as an ordered combination is undertaken to determine whether additional elements "transform the nature of the claim" into a patent-eligible application.

In determining that the claims of the patents were eligible, the court noted that the inquiry of whether the claims at issue are "directed to" a patent-ineligible concept cannot simply ask whether the claims *involve* a patent-ineligible concept, because essentially every routinely patent-eligible claim involving physical products and actions *involves* a law of nature and/or natural phenomenon. Instead, the court reasoned that the "directed to" inquiry applies a stage-one filter to claims, considered in light of the specification, based on whether "their character as a whole is directed to excluded subject matter."

The court did not read *Alice* as broadly holding that all improvements in computer-related technologies are inherently abstract (thus requiring a step two *Alice* analysis). For example, improvements in computer-related technology when appropriately claimed are undoubtedly not abstract, e.g., a chip architecture, an LED display, and the like. Likewise, software can make non-abstract improvements to computer technology just as hardware improvements can. Accordingly the court found that claims directed to software, as opposed to hardware, are not inherently abstract and do not inherently require analysis under the second step of the *Alice* analysis. Thus the court undertook to determine whether the claims are directed to an improvement to computer functionality versus being directed to an abstract idea in the first step of the *Alice* analysis.

The court took issue with the district court's classification of the claims as simply directed to an abstract idea of "storing, organizing, and retrieving memory in a logical table." Specifically, the court reasoned that "describing the claims at such a high level of abstraction and untethered from the language of the claims all but ensures that the exceptions to § 101 swallow the rule… Here, the claims are not simply directed to *any* form of storing tabular data, but instead are specifically directed to a *self-referential* table for a computer database." Further, the court noted "[t]he specification also teaches that the self-referential table functions differently than conventional database structures" and "our conclusion that the claims are directed to an improvement of an existing technology is bolstered by the specification's teachings that the claimed invention achieves other benefits over conventional databases, such as increased flexibility, faster search times, and smaller memory requirements." The court found that "[i]n finding that the claims were directed simply to 'the concept of organizing information using tabular formats,' the district court oversimplified the self-referential component of the claims and downplayed the invention's benefits."

The court also noted that an invention's ability to run on a general-purpose computer does not doom the claims. Specifically, the court reasoned that "the claims here are directed to an improvement in the functioning of a computer. In contrast, the claims at issue in *Alice* and *Versata* can readily be understood as simply adding conventional computer components to well-known business practices."

The court also noted that the claims were still eligible despite not being defined by reference to "physical" components. The court noted that, to hold otherwise, would risk resurrecting a bright-line machine-or-transformation test or create a categorical ban on software patents. The court noted that "[m]uch of the advancement made in computer technology consists of improvements to software that, by their very nature, may not be defined by particular physical features but rather by logical structures and processes."

In summary, the Federal found that "the self-referential table recited in the claims on appeal is a specific type of data structure designed to improve the way a computer stores and retrieves data in memory. The specification's disparagement of convention data structures, combined with language describing the 'present invention' as including the features that make up a self-referential table, confirm that our characterization of the 'invention' for purposes of the § 101 analysis has not been deceived by the 'draftsman's art.' *Cf. Alice*, 134 S. Ct. at 2360. In other words, we are not faced with a situation where general-purpose computer components are added post-hoc to a fundamental economic practice or mathematical equation. Rather, the claims are directed to a specific implementation of a solution to a problem in the software arts. Accordingly, we find the claims at issue are not directed to an abstract idea."

IV. Conclusion

Software claims that teach functions different from conventional computer techniques in order to improve an existing technology may not be abstract. This is especially true when the claims focus on an improvement to computer functionality itself, rather than an economic or other task for which a computer is used in its ordinary capacity.

V. Practice Tips

When writing software applications, consider discussing "coding efficiencies" that the inventors may have implemented. If such efficiencies exist, it may be beneficial to incorporate the subject matter of these efficiencies in the claims and a discussion of these efficiencies in the specification. It may be particularly beneficial to note any shortfalls of code that does not implement these "coding efficiencies."