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The Federal Circuit's recent *Visual Memory* decision effectively offered a ''safe harbor'' for computer-implemented inventions to avoid patent ineligibility charges, Faegre Baker Daniels attorneys say.

The Federal Circuit Cements a Safe Harbor for Patent Eligibility

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While the standards of Section 101 of the Patent Act, 35 U.S.C. § 101, continue to evolve, the U.S. Court of Appeals for the Federal Circuit has cemented a patent eligibility ''safe harbor'' for inventions that provide a technical improvement. This safe harbor, which began to emerge in *Enfish, LLC v. Microsoft Corp.* and *Thales Visionix Inc. v. U.S.*, provides the most clear path to patent eligibility to date.

In its recent split decision in *Visual Memory LLC v. Nvidia Corp.*, the Federal Circuit laid out needed guidance on how to meet the ''safe harbor'' criteria and find the sure ground for patent eligibility.

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Background: Is an Enhanced Computer Memory System Patent Eligible?

The patent at issue in *Visual Memory*, U.S. Patent No. 5,953,740, relates to a computer memory system that can be programmed for optimal use with a variety of computer processors. In a nutshell, the performance of a computer typically improves when the memory system is tailored to a particular type of processor, and the prior art approach would customize each memory system to one particular type of processor. Although those memory systems could work with different types of processors, such a combination would lose the performance enhancements provided by the customization.

To address this issue, the '740 patent describes a ''memory system with programmable operational characteristics that can be tailored for use with multiple different processors without the accompanying reduction in performance.'' More specifically, that memory system incorporates various types of memory, such as cache memory, and is programmed to utilize the cache memory differently depending on the type of processor being used with the memory system.

Importantly, the '740 patent itself identifies how its invention provides ''an advance over the prior art'' approach and ''discusses the advantages offered by the technical improvement.'' The cited advantages stemmed from the patent's ''programmable operational characteristics'' as part of a ''computer memory system'' in which the ''processor is used to self-configure the programmable operational characteristics.'' Thus, the '740 patent itself highlighted ''the multiple benefits flow[ing] from the '740 Patent's improved memory system'' over prior art memory systems as well as ''the advantages offered by the technological improvement.''

After Visual Memory asserted the '740 patent, Nvidia filed a motion to dismiss under Federal Rule of Civil Procedure Rule 12(b)(6), which the district court granted. In doing so, the district court held that the claims were directed to the ''abstract idea of categorical data storage'' under step 1 of the U.S. Supreme Court's *Alice Corp. v. CLS Bank International* analysis. The district court further held that the claims failed step 2 of the *Alice* analysis because the claimed computer components were generic and conventional.

The Federal Circuit's Divided Decision

The Federal Circuit, in a divided decision, reversed the district court, holding that the '740 patent ''claims an improvement to computer memory systems and is not directed to an abstract idea.'' Acknowledging the ''difficulty inherent in delineating the contours of an abstract idea,'' the Federal Circuit tied together several emerging trends in the Section 101 analysis and reaffirmed the safe harbor for patents that provide technical improvements.

The Federal Circuit also addressed other approaches to Section 101, which continues to evolve as the appeals court searches for a unified patent eligibility analysis. Nevertheless, the certainty provided by this safe harbor indicates that identifying a technical improvement will be the safest and quickest way to patent eligibility.

1. The Technical Improvement ''Safe Harbor''

In upholding the claims of the '740 patent, the Federal Circuit focused on the ''technical improvements'' provided by that patent and elaborated on how those types of inventions are patent eligible. In particular, the court cited recent precedential decisions in *Enfish* and *Thales* as patent eligibility ''guideposts'' for inventions that provide an ''improvement in computer capabilities'' or provide ''non-conventional'' uses of technology.

While the Federal Circuit does not use the term ''safe harbor,'' the court treats the concept of a ''technical improvement'' as the opposite of an ''abstract idea,'' indicating that patents that solve a technical problem are safely insulated from the policy concerns driving patent ineligibility under *Alice*. For example, in rejecting the district court's conclusion (as well as the views of the dissenting judge), the majority held that ''the '740 patent claims demonstrate[] that they are directed to an improved computer memory system, not to the abstract idea of data storage.'' Thus, leaning on the analysis developed in *Enfish* and *Thales*, in which the Federal Circuit expanded on a tangential passage from the Supreme Court in *Alice v. CLS Bank*, the Federal Circuit solidifies a safe harbor for patents that provide technical improvements.

In addition, the Federal Circuit relied on this ''safe harbor'' to distinguish other cases in which the claims were held ineligible for patent protection. Specifically, the Federal Circuit focused on the fact that the '740 patent recites a ''technical improvement'' in order to contrast its claims with claims found ineligible in *Content Extraction & Transmission LLC v. Wells Fargo Bank, N.A.* and *TLI Communications LLC v. AV Automotive, LLC,* which did not provide a technical improvement and thus fell outside the safe harbor. In other words, the claims in *Content Extraction* and *TLI Communications* ''were not directed to an improvement in computer functionality, which separates the claims in those cases from the claims in the current case.'' Thus, without the protection offered by this safe harbor, the claims in those cases were exposed to the full brunt of the policy levers pushing towards patent ineligibility.

Despite the Federal Circuit's attempts to provide clarity to the Section 101 analysis, the boundaries of this safe harbor remain unclear. In particular, the Federal Circuit did not define what it meant by ''technological improvement'' or even ''technology.'' While enhancements to ''computer functionality'' (e.g., *Enfish*, *Visual Memory*) or non-conventional configurations of ''inertial sensors'' (*Thales*) appear to meet the qualifications for this safe harbor, what about other types of improvements? One can imagine, for example, a patent that claims a sound system employing a non-conventional arrangement of speakers that, along with a novel algorithm for processing sound signals, improves the performance of music played through those speakers. Such a patent would seem to be patent eligible (at least under *Thales*), even if the speakers and other hardware were conventional. The case may be closer if the only novelty was the algorithm, but such a patent would still seem to be patent eligible.

But what about business methods? Those types of inventions have fared especially poorly under *Alice*, and the Federal Circuit has yet to hold that a business method patent provides a technical improvement. Nevertheless, the Patent Office has provided some guidance on how business methods can become patent eligible. As part of its ''Subject Matter Eligibility Examples,'' the Patent Office provides an example (Example 35) of an improvement to the banking practice of verifying a customer's identity, along with claims that it deems would be patent eligible and claims that it deems would be patent ineligible. The difference? Claims that recite specific interactive steps taken by an ATM and the customer's mobile device make the cut, because those claims recite ''a non-conventional and non-generic way to ensure that the customer's identity is verified in a secure manner that is more than the conventional verification process employed by an ATM alone.'' In contrast, the exemplary claims that fail the Section 101 analysis contained the same core concept but used more generic language that did not require either the ATMs or the customer's mobile device. In other words, claims that recite a non-conventional use of technology (in this example, ATMs and cell phones) are patent eligible, even if the ultimate goal of the claim is a new business method.

In the end, the safe harbor cemented in *Visual Memory* is not the only pathway to patent eligibility, and other doctrines and approaches may develop as the Federal Circuit attempts to provide further clarity. A few of those approaches are discussed in the next section. Nevertheless, at this moment, patents that can quickly tie their claims to a technical improvement like those addressed in *Visual Memory* are the ones most likely to survive a Section 101 challenge.

2. Other Section 101 Approaches

Visual Memory also makes clear that the Federal Circuit has not yet identified a unified approach to the Section 101 analysis, as its decision incorporates other approaches to patent eligibility, such as ''preemption'' and the ''means/ends'' analysis, in which the court asks whether the claims recite only an end goal rather than the means for achieving that end goal.

For example, the court used the absence of preemption to reject the district court's conclusion that the

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claims were directed to the ''abstract idea of categorical data storage.'' Specifically, after analyzing the claims in the '740 patent, the court notes that ''[n]one of the claims recite all types and all forms of categorical data storage,'' providing a clear reference to the role of preemption in the Section 101 analysis. In fact, the court's decision to address preemption is telling, especially since the court's conclusion on preemption does not appear to be the primary driver of its holding. The court's decision reflects the fact that the precise role of preemption, which is ''the concern that drives'' the Section 101 analysis according to the Supreme Court, remains important yet unsettled at the Federal Circuit. As a result, while identifying a lack of preemption may or may not ultimately lead to a conclusion of patent eligibility, the technical improvement ''safe harbor'' stands as the most certain approach to patent eligibility to date.

The court also rejected Nvidia's argument, which the dissenting judge found persuasive, that the claims recited nothing more than a ''black box''—a reference to another Section 101 approach that rejects claims that recite only a desired goal and not the means for achieving that goal (i.e., the ''means/ends'' analysis). In particular, Nvidia argued that the claims sought to cover only ''a desired result or outcome in the context of generic computer components and functionality,'' and Judge Todd M. Hughes, in dissent, concluded that the claims recited a ''purely functional component'' without ''describ[ing] how to implement the 'programmable operational characteristic.' '' In other words, Judge Hughes believed the patent at issue simply sought ''a desired goal without means for achieving that goal,'' i.e., a ''black box.'' In addressing those positions, the majority noted that the '740 patent includes a microfiche appendix with 263 frames of computer code, which suggests that the patent indeed describes ''how'' to achieve the claimed objectives, and that the ''black box'' argument was a question of enablement under Section 112, and not an issue for the Section 101 question at issue.

Conclusion: A Safe Harbor Worth Seeking

Visual Memory—along with the decisions in *Enfish* and *Thales*—appears to solidify a clear path to patent eligibility and establish a ''safe harbor'' for patents that provide technical improvements. *Visual Memory* also establishes the importance of explaining the technical advantages provided by the claimed invention in the patent itself.

While the precise boundaries of the Section 101 analysis are far from clear, *Visual Memory* will remain an important case for future patents seeking a safe harbor from the uncertain storms of Section 101.