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Guidance in Protecting Software-Based Inventions After *Alice*

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We live in a software-centric world. Look around – software is used to control virtually all types of electronics, including Internet of Things (IoT) devices. In fact, by 2020, it is predicted that the number of IoT devices is expected to grow from 6 billion to 21 billion. Hence, it is likely that software-based inventions will continue to accelerate advancements in technology for the remainder of this decade.

Two years ago, the United States Supreme Court issued its decision in *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 134 S.Ct. 2347, 2355 (2014), where the Court laid out a two-step framework (“*Alice* analysis”) for determining whether or not a patent claim is directed to patent-ineligible subject matter. For claims directed to software-based inventions, the first step of the *Alice* analysis involves a determination as to whether the claim at issue is directed to an abstract idea. Current case law suggests that an “abstract idea” is based on (1) whether the software-based invention is directed to a task for which a computer is used instead of an improvement in computer functionality, and/or (2) whether the claim is broadly directed to an entire technical field. Upon finding that the claim is directed to an abstract idea, the second step of the *Alice* analysis involves determining whether elements of the claim transform its nature into a patent-eligible application. If a claim is construed as an abstract idea, a court will invalidate, or the USPTO will reject, the claim.

As a result, some companies have witnessed the loss of valuable patent assets. Furthermore, these companies often fail to formulate strategies directed toward mitigating future patent-eligible subject matter challenges, including what requisite content should be inserted into patent applications seeking to protect software-based inventions (hereinafter, “software-based applications”). Based on recent decisions by the United States Court of Appeals for the Federal Circuit (“Federal Circuit”), slight changes in the content and organization of software-based applications may prove useful in successfully defending a patent-eligible subject matter challenge.

I. Specification: Identify Advantages

First, current case law suggests that it may be prudent to include, within the specification of a software-based

application, certain advantages offered by the software-based invention over conventional technology. *Enfish, LLC. v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016).

In *Enfish*, the Federal Circuit concluded that the claimed invention, directed to a self-referential database, constituted patent-eligible subject matter. When considering the first step of the *Alice* analysis, the court held that the claimed invention was not directed to an abstract idea. In its reasoning, the Federal Circuit focused on advantages of a self-referential database, which includes “increased flexibility, faster search times, and smaller memory requirements.” These advantages were directed to “an improvement to computer functionality versus being directed to an abstract idea,” namely the advantages of the software-based invention were focused on improved capabilities of the computer.

Hence, the presence of these advantages as content within the patent application is important in avoiding or overcoming a patent-eligible subject matter challenge. However, such advantages should be presented in the application in a manner that avoids these advantages from being construed

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as “essential” features, which must be present in the independent claims to avoid noncompliance with the written description requirement set forth in 35 U.S.C. §112(a). See *Gentry Gallery, Inc. v. Berkline Corp.*, 134 F.3d 1473 (Fed. Cir. 1998). In other words, how these advantages are characterized to avoid software-based inventions from being categorized as an “abstract idea” is as important as their placement into the patent application itself.

II. Specification: Highlight Embodiments

Second, current case law further suggests that it may be prudent for software-based applications to identify multiple embodiments of the software-based invention including those embodiments where coverage is not currently desirable. These embodiments may be used as a reference to identify the specificity of a claim set, which may arguably transform an abstract idea into a patent-eligible invention. *Bascom Global Internet Services, Inc. v. AT&T Mobility Corp.*, 827 F.3d 1341 (Fed. Cir. 2016).

On June 27, 2016, in *Bascom*, the Federal Circuit concluded that the claimed invention, directed to a filtering system “located on a remote ISP server that associates each network account with (1) one or more filtering schemes and (2) at least one set of filtering elements from a plurality of sets of filtering elements,” constituted patent-eligible subject matter. Although agreeing with the District Court that filtering content constitutes an abstract idea, the Federal Circuit focused on the second step of the *Alice* analysis and held that the patent claims contained an inventive concept as the claims “carve out a specific location for the filtering system (at a remote ISP server) and require the filtering system to give users the ability to customize filtering for their individual network accounts.”

Thus, based on *Bascom*, companies may defend against a patent-eligible subject matter challenge by mapping the pending claims to certain embodiments of the software-based invention. By showing that a particular claim being challenged is directed to a particular inventive aspect found in some (but not all) of the identified embodiments, a persuasive argument may be made that the specificity provided in the particular claim set creates a technological advantage over other techniques, and hence, the claim set does not constitute an “abstract idea.”

III. Claims: Avoid Preemption

Lastly, instead of utilizing a robust specification to counter a

patent-eligible subject matter challenge as described above, current case law suggests that it may be prudent to organize each claim set within a software-based application to cover a particular embodiment of the software-based invention without any claim set preempting all processes for achieving the technological advancement. As suggested in *McRO, Inc. v. Bandai Namco Games America*, 120 USPQ2d 1091 (Fed. Cir. 2016), preemption is one of the primary factors in the first step of the *Alice* analysis.

On September 13, 2016, in *McRO*, the Federal Circuit concluded that the claimed invention, directed to an automated three-dimensional (3D) animation process, constituted patent-eligible subject matter. The 3D animation is accomplished through “rule sets aim[ed] to produce more realistic speech by tak[ing] into consideration the difference in mouth positions for similar phonemes based on context.” The Federal Circuit reversed the District Court’s finding of patent-ineligible subject matter by focusing on the lack of preemption, and determining “whether the claimed genus of rules preempts all techniques for automating 3-D animation that rely on rules.” The Federal Circuit found that “[t]here has been no showing that any rule-based lip-synchronization process must use rules with the specifically claimed characteristics,” and “[b]y incorporating the specific features of the rules as claim limitations, [the claimed invention] is limited to a specific process for automatically animating characters using particular information and techniques and does not preempt approaches that use rules of a different structure or different technique.” In a general sense, the Federal Circuit appears to be outlining public policy by favoring software-based patents that are narrowed to a particular concrete solution to a problem and discouraging attempts to patent the abstract idea of a solution to the problem in general. See *Electric Power Grp., LLC v. Alstom*, 830 F.3d 1350 (Fed. Cir. 2016).

Thus, based on the decisions in *McRO* and *Electric Power*, companies may find success by seeking expansive coverage of software-based inventions by including multiple claim sets, where each claim set is directed to a specific embodiment (solution). Albeit there is a risk that this claim structure will cause the USPTO to issue a restriction, requiring an applicant to elect a particular embodiment (and require the filing of divisional patent applications to pursue other embodiments), your chances of successfully defending against any patent-eligible subject matter challenge may be greatly increased.