August 20, 2018

The Honorable Andre Iancu
Under Secretary of Commerce for Intellectual Property and
Director of the U.S. Patent and Trademark Office
600 Dulany Street
Alexandria, VA 22314
Attn: Carolyn Kosowski, Senior Legal Advisor
Via email: eligibility2018@uspto.gov

Re: Comments on Determining Whether a Claim Element is Well-Understood, Routine, Conventional for Purposes of Subject Matter Eligibility, Federal Register Notice Vol. 83, No. 77, pp. 17536-38 (Apr. 20, 2018)

Dear Under Secretary Iancu,

I claim:

A method of determining the correct solution to a problem, comprising:
a. compiling a plurality of possible solutions,
b. assigning values to the simplicity of each of said possible solutions, and
c. selecting that solution with the highest value of simplicity.

That, roughly, is Occam's razor. I hope we can all agree that William of Ockham would not have been granted a patent on that claim in the 14th century had patents been available then. I hope we can all agree that no claim to patenting that clearly abstract idea would be granted if it hadn't been proposed until today, and I was the first to claim invention of it. And I hope we can all agree that it would not be granted because it fails to claim eligible subject matter, completely independent of whether it is novel and nonobvious.

The Supreme Court and the Federal Circuit have burdened the U.S. Patent and Trademark Office with determining the circumstances under which a claim on that same method, using the art of computing, can become patent-eligible. It is undoubtedly a difficult task, but I believe the USPTO has violated Occam's razor by not choosing the simplest solution.

I suggest below a procedure that should be simpler. It relies on "exceptions" cited in *Alice Corp. v. CLS Bank Int'l* that the Federal Circuit has mentioned at points but otherwise not given determinative weight. With those exceptions, the USPTO can bypass the examination procedure's Step 2B analysis for certain application claims. It also relies on an interpretation of "well-understood" and "routine" that should require less work by the examiner in Step 2B to search for proof of what was "well-known" at the time of the application.

I have considerable practical experience in computing and so have provided this analysis and the suggested procedure solely in the context of the computing art. I have no reason to believe they

wouldn't apply equally to other "useful arts," but I leave it to persons competent in those arts to fill in the blanks.

The Effect of Timing

Alice Corp. v. CLS Bank Int'l, 134 S. Ct. 2347, 2359 (2014), clearly established the need – once a claim is determined to be directed to an abstract idea – to consider whether it merely uses "well-understood, routine, conventional" computer functions. *Berkheimer v HP Inc.*, 881 F.3d 1360, 1369 (Fed. Cir. 2018), clearly established that those functions must have met those characteristics in the eyes of "a skilled artisan at the time of the patent."

The USPTO's approach to examination procedure asks the examiner to consider whether the functions were "widely prevalent or in common use" at the time of the patent application, or "so well-known that they do not need to be described in detail." These are reasonable questions, but they are not exhaustive. They address the *Berkheimer* timing concern primarily with respect to *Alice*'s concern for "conventional" use of computing resources. But they give short shrift to computing functions that are "well-understood" or "routine," in the broadest sense of those terms ("sufficiently comprehended" as to the former; "usual or regular method of procedure" for the latter) and ignore which skilled artisan must have that understanding or follow that routine.

Consider my method claim above. Suppose I had added Step (b)(1): "store said values in a computer database." And suppose I – a philosopher – had submitted that claim one minute after databases were first known outside the computing industry. The added element was neither widely prevalent, in common use, or sufficiently detailed when I filed my application. Would the USPTO have granted my revised claim? I hope not.

Alice made clear that the non-eligibility-creating computing functions of interest had to be "previously known to the industry." 134 S. Ct. at 2359. The industry in question in that statement was computing, not *Alice*'s industry (banking). The skilled artisans in the computing industry almost invariably "well understand" a new development in computing earlier than wide prevalence or common use.

The skilled artisans in the computing industry well understood the functioning of a database in the early 1960s. At some point thereafter, the artisans made public commercial databases and/or instructions on how to develop a proprietary database. The functionality of databases would have been embedded in the marketing literature for the former or the description of the latter. At that time, well prior to the prevalence or common use of databases, database functionality was – in *Alice*'s terms – well-understood. It didn't take a minute after the marketing literature or instructions were published for database functionality to be "well-understood" (and, arguably, "routine"). It already was.

I submit that the above is true of all instances of aspects of computing at the level of base functionality. When an applicant adds a computing-related step to a claim *directed* to an improvement in a non-computing art, the "default" position for review of said claim is that the applicant is *applying* (not *improving*) "well-understood" or "routine" computing functionality to the abstract idea identified in the USPTO's Step 1 analysis. (Consequently, I disagree with the statement made by the USPTO in the Federal

Register notice, under Section III.A.1, last sentence, that "A finding that an element is well-understood, routine, or conventional cannot be based only on the fact that the specification is silent with respect to describing such element.").

The burden should be on the applicant to show otherwise. The USPTO's procedure instead asks the examiner to assume the applicant merely forgot to describe or claim the improvement.

***Alice*'s Exceptions**

Alice gave the applicant two options, providing two exceptions whereby method claims that use a generic computer might be patent-eligible. 134 S. Ct. at 2359-60.

Exception 1: Claims that "improve the functioning of the computer itself." *Berkheimer* acknowledged as much in its conclusions about patent's claims 4-7, without specifically using the term "exception." 881 F.3d at 1370.

> My claim Step (b)(1) above did not meet the first exception because it made no change to database functionality, or that of any other computing function. This is not to say that a philosopher can't be the first inventor of an enabled approach to record-keeping that creates database functionality. But that was not my hypothetical. It also is possible, and also not my hypothetical, that a philosopher's requirements for database functionality exceed what is then currently available.
>
> But if I was creating or improving database functionality, my claim would not be enabled (or alternatively, under 35 U.S.C. §112 and *Ariad*, I didn't "possess" the inventive functionality) without support in the specification (or another claim) directed to *creating* or *improving* database functionality. An examiner who merely understood the basics of database functionality would be able to identify whether this enabled creation or improvement was present in the specification or not. Asking the examiner to look around for proof that existing database functionality captures my *use* of it is unnecessary.
>
> The USPTO's examination procedure sends the examiner on an unnecessary chase for evidence because of the faulty requirement for prevalence or common use. The patent applicant's failure to mention the base functionality of a specific computing function is an acknowledgment that the applicant is not claiming to "improve the functioning of the computer itself." Options 3 and 4 in Section III.A of the April 20, 2018, Federal Register notice are unnecessary.
>
> On the other hand, suppose the specification did, in fact, mention that it was creating or improving the functioning of the computer itself. Unfortunately, 46-year-old precedent of the Supreme Court doesn't end the examiner's query. *Gottschalk v. Benson,* 409 U.S. 63 (1972). The *Alice* court summarized *Benson* saying that "simply implementing a mathematical principle on a physical machine, namely a computer, [i]s not a patentable application of that principle." 134 S. Ct. at 2357-58. With this exception to the exception, the USPTO must define "mathematical principle" and give examiners instructions on how to identify one. But this does not invoke a need to conduct the analysis in Options 3 and 4 of Section III.A. either.

Exception 2: Claims that "effect an improvement in any other technology or technical field." The applicant can admit that its use of computing technology does not affect computing itself, but the claim should be granted anyway because it improves, e.g., the rubber-curing process. *Diamond v. Diehr*, 450 U.S. 175 (1981).

> My hypothetical claim to Occam's razor again fails. Use of existing database functionality to improve a philosophical theorem does not meet the latter exception.
>
> Of course, philosophy exists, by definition, in the realm of abstract ideas. No one would argue that philosophy is another "technology or technical field." Rubber-curing, on the other hand, obviously was one such field.
>
> Importantly, note the effect of this exception and its variation from Exception 1. The claim determined to satisfy 35 U.S.C. §101 in *Diehr* used "a well-known mathematical [Arrhenius] equation" enabled on "a programmed digital computer." Therefore, the question of whether the claim used "well-understood, routine, conventional" computer functions was irrelevant. If the examiner is assessing a claim directed to "any other technology or technical field," the query of Section III.A of the Federal Register notice is moot.
>
> The problem, of course, is how to determine "other technology or technical fields." The Supreme Court has failed to define either "technology" or "technical." The Federal Circuit has been unable to illuminate.
>
> The USPTO can continue on its current path of letting the courts lead the way in identifying exceptions to the technical or technological arts via assignment of the term "abstract" to other fields listed in MPEP §2106.04(a)(2) (e.g., "fundamental economic practices" in *In re Smith*, 815 F.3d 816 (Fed. Cir. 2016), or "methods of organizing human activity" in *buySAFE, Inc. v. Google, Inc.,* 765 F.3d. 1350 (Fed. Cir. 2014)).
>
> I make a side proposal here that the USPTO would do better to take the initiative and help the Federal Circuit and Supreme Court arrive at more meaningful definitions of "technology" or "technical." I refer to an amicus brief I filed in the *Alice* case (available at https://www.americanbar.org/content/dam/aba/publications/supreme_court_preview/briefs-v3/13-298_resp_amcu_td.authcheckdam.pdf.), which argues that the term "useful arts," U.S. Const. Art. I, Sec. 8, Cl. 8, was significant in making the proper definitional distinction of patent-eligible subject matter. I will not press that approach here, however, for fear that it would detract from my commentary about the main concern of the Federal Register notice.

The Proper Application of *Alice*'s Exceptions and *Berkheimer*'s Concern for Timing

The above creates the potential for a streamlined examination of Section 101 for computing-related claims under *Alice* and *Berkheimer*.

Preliminarily, I must address the fact that I have twice used the term "base functionality" above. I have assumed that examiners of any patent application would understand "basically" the functions of a database, for example. While I hope that is true, I wouldn't necessarily expect examiners to know exactly when such functions became part of "the functioning of the computer itself."

I therefore believe it would be of value for senior leaders at the USPTO to develop a "History of Computing Functions" at a high level of base functionality. The timeline of this history would meet *Berkheimer*'s concern for timing without burdening the examiner with having to make an extensive search (at least, not in conducting the Section 101 query).

I propose then that the following procedure simplifies the Step 2B analysis of Section 101, for a claim to a method that has been determined (at Step 2A) to be directed to an abstract idea and relies on computing-related elements to overcome an abstract-idea rejection.

In this proposal, Step 2B begins with a preliminary question: Identify the field (a/k/a art) that the applicant says the claim is directed to.

Scenario 1. The claim is directed solely to (a) the creation of a new computing functionality or (b) an improvement in computing functionality (i.e., no direction to any other field, technological or not). *Alice* Exception 1 applies, but the examiner must consider whether *Benson* prohibits its grant. If so, the claim should be rejected on that basis.

Note: The examiner could look at the History of Computing Functions to determine whether the base functionality claim did not already exist at the time of the application. But that would be a part of the Section 102/103 query, and theoretically, at least, the applicant will be claiming something more esoteric than "base functionality," so more prior art would come into play.

Scenario 2. The claim is directed solely to a non-computing field that has been definitively determined to be technological (e.g., *Diehr*) or is not among the fields that has definitively determined to be abstract (e.g., *Smith* or *buySAFE*). If so, *Alice* Exception 2 applies, and the Section 101 query ends, per *Diehr*.

Note: I suggest that the Step 2A analysis might have failed in the majority of those cases. But that is not the subject of the Federal Register notice.

Scenario 3. The claim is directed to any other field that isn't included in Scenario 1 or 2. Given the result of the Step 2A determination of an abstract idea, the default assumption should be that the claim is directed to an abstract *field*. The applicant must be claiming either that (a) the abstract field becomes non-abstract with the addition of computing functionality or (b) despite being *directed* to a non-computing, abstract field, the claim improves computing.

The examiner could look through the specification for the citations listed in Options 1 and 2 of Section III.A of the Federal Register notice (again, though, the last sentence of Option 1 should be deleted). Such a citation would end the analysis and the claim should be rejected.

Option 4 of Section III.A would then resolve to whether the examiner can make a citation to the History of Computer Functions. Any examiner who is "certain, based upon his or her personal knowledge," that an element is "well-understood, routine, or conventional" should convince USPTO management that the element should be included in the History of Computer Functions first, rather than use a Section 101 rejection to make that argument.

If the claim survives the Section 101 query, the examiner's "personal knowledge" should undoubtedly come into play in his or her Section 102/103 analysis. And it is at that point, and only that point, that the analysis described in Option 3 of Section III.A should be conducted.

Conclusion

Alice and *Berkheimer* take for granted that the Section 101 and Section 102/103 analysis are different. *Alice* explicitly created exceptions that give hints as to how to make the distinction. The exceptions can, as to certain claims of invention, eliminate concerns for where the line is drawn.

Berkheimer explicitly created a timing element to the Section 101 query that, on first blush, appeared to blur the distinction. But *Berkheimer* can't over-ride *Alice*, and it can be interpreted in a manner that limits the blurring.

The *Alice* exceptions give the USPTO a means of streamlining the Section 101 query. The Office should not allow a broad interpretation of *Berkheimer* to make that query even more complex than it was prior to that ruling.

Sincerely,

Antonio (Tony) Dutra
A1S8C8 PLLC

NOTE: The author was a legal editor for Bloomberg BNA's *Patent, Trademark and Copyright Journal* for 10 years before retiring in May to private practice. Prior to entering the legal profession in 2007, he worked for 25 years as a software developer, systems designer, and manager in various computer software fields, most notably database management systems and data networking.