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THE IMPACT OF THE NEW USPTO ELIGIBILITY GUIDELINES ON ARTIFICIAL INTELLIGENCE-RELATED INVENTIONS

To Our Clients and Friends:

On January 4, 2019, the USPTO announced updated guidance to help clarify the process that examiners should undertake when evaluating whether a pending claim is directed to an abstract idea under the Supreme Court's two-step *Alice* test and thus not eligible for patent protection under 35 U.S.C. § 101. Specifically, for determining whether a claim recites an abstract idea, the USPTO defined three categories by extracting and synthesizing concepts identified by the courts: (1) mathematical concepts, (2) certain methods of organizing human activity, and (3) mental processes. If the examiner determines that the claim falls into one of these three categories, the examiner will continue to step two. If not, the claim should typically not be treated by the examiner as reciting an abstract idea, who should skip step two and instead deem the claim eligible under Section 101 for patenting.^[1]

As to step two, the USPTO split the inquiry into two separate inquiries for the examiner to undertake if the claim is found to recite an abstract idea. First, the examiner should determine whether the abstract idea embodied in the claim is integrated into a practical application? For this inquiry, the examiner looks to whether the claim, as a whole, integrates the abstract idea into a practical application that imposes "meaningful limits," such that the claim is more than trying to monopolize the abstract idea. For example, a claim may be a practical application if an additional element reflects an improvement in the functioning of a computer, or an improvement to other technology.

Second, if the abstract idea underlying the claim is not integrated into a practical application, does the claim provide an inventive concept? The USPTO explained that the Federal Circuit has held claims eligible when the additional elements recited in the claims provide "significantly more" than the abstract idea itself. For example, a claim may be patent eligible if a specific limitation (or combination of limitations) is not well-understood, routine, conventional activity in the field.

In essence, the USPTO's guidance turns the *Alice* test into a three part test:

1. Does the claim recite one of the categories the USPTO considers an abstract idea?
2. If so:
 - a. is the abstract idea integrated into a practical application, or
 - b. does the claim provide an inventive concept?

What is the Impact of the Guidance on AI-related Inventions?

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While it obviously remains to be seen what, if any, impact these new guidelines will have on the issuance of software patents generally, and artificial intelligence patents more specifically, the key question going forward is whether the three categorical exceptions identified by the USPTO will be the exceptions that swallow the rule. On one hand, by stating that rejections of artificial intelligence claims as abstract ideas should typically only arise if the claim falls into one of three enumerated categories, the USPTO does seem to be providing a more defined path for drafting claims that will avoid issues of patent eligibility. If nothing else, at least the new guidelines add clarity into how examiners will apply Section 101 rejections and may give applicants a roadmap to overcoming any such rejection. However, on the other hand, if the categorical exceptions such as the "mathematical concept" or "mental processes" categories are broadly construed by examiners in their application of the guidelines, many AI-related inventions may still be subject to eligibility rejections under *Alice*.

As a result, at least until further experience with the manner in which examiners implement this guidance going forward, the eligibility of a software/AI-related claims likely still will come down to artful claim drafting. However, there are a few additional takeaways from the guidelines that may be helpful to keep in mind specific to AI patents.

Categories of Abstract Ideas

Out of the USPTO's three categories of abstract ideas, the one that, on its face, is most applicable to artificial intelligence is the mathematical concepts grouping. After all, on some level, all software and AI are made up of a series of mathematical equations. The USPTO guidance defines mathematical concepts as "mathematical relationships, mathematical formulas or equations, [and] mathematical calculations." This definition of mathematical concept is actually fairly narrow. It does not seem to encompass algorithms more generally, and focuses instead on the actual formulas and calculations. As a result, while caution is still warranted, by drafting a claim without including formulas and calculations, but instead focusing more on the structure of the algorithm, a patentee may be able to circumvent rejections due to falling into the mathematical concepts category.

Drafting AI claims at too high a level can also cause the claims to implicate the USPTO's other two categories. The USPTO's mental processes category—"concepts performed in the mind (including an observation, evaluation, judgment, opinion)"—may be implicated if AI claims are drafted too broadly. Many of the applications for which we use AI are for concepts that would normally be performed in the human mind, that require observation, evaluation, judgment and opinion. For example, an autonomous vehicle requires AI that observes obstacles, evaluates risks, and judges what to do next. Automating human thought and judgment, such as in a car, may fall into this category if the claims are drafted by focusing too much on the function or result, and not enough on the structure or specifics of operation of the claimed invention.

The third category, methods of organizing human activity, is defined by the guidance as "fundamental economic principles or practices (including hedging, insurance, mitigating risk); commercial or legal interactions(including agreements in the form of contract; legal obligations, advertising, marketing or sales activities or behaviors; business relations); managing personal behavior or relationships or interactions between people (including social activities, teaching, and following rules or

instructions)." Certain applications of AI may also implicate this category. For example, in-home assistants with voice recognition software may follow certain rules or instructions depending on the commands they are given. As such, a broadly drafted claim covering a response to a verbal command may implicate this category.

Step 2A: Practical Application

Even if a claim falls into one of the categories of abstract ideas identified in the guidance, the USPTO explains that practical applications of the abstract idea may still be patentable. For the purposes of AI-related inventions, two examples in the USPTO's guidelines are particularly important.

First, the USPTO discloses that a claim may be eligible if "an additional element reflects an improvement in the functioning of a computer, or an improvement to other technology." The USPTO gives the example of modifying a hyperlink to dynamically produce a dual-source hybrid webpage. Although it is unclear how this consideration will be applied in practice, this seems like an important consideration for AI-related claims. AI-related software that improves the functioning of a computer, such as by optimizing multicore processors or voice recognition, may have a better chance of being eligible, if the claims are drafted in such a way as to highlight the specific steps or structure that provide this benefit and the specification clearly delineates those benefits. It therefore behooves the applicant to specifically claim *improvements* to technology for certain inventions backed up with specification descriptions. In addition, patent applicants should be very careful in describing any feature as conventional, even if that means providing a more robust and detailed description in the application. Often, patent applicants describe components as conventional as a short-cut to avoid longer specifications. The differences between what the AI is doing in the invention as compared to past uses should be described in detail and its impact on how that difference changes computer performance should be clear.

Second, the USPTO explains that a claim may be eligible if "an additional element implements a judicial exception with, or uses a judicial exception in conjunction with, a particular machine or manufacture that is integral to the claim." The USPTO uses the example of a machine that uses gravity to improve speed. This consideration seems to imply that software interacting with, or utilizing, hardware as a key element of the claimed invention will have an easier time being found eligible. As such, applicants may choose to draft claims that tie their AI-related invention to specifically-required hardware to help show eligibility and include robust descriptions of that tie in the patent specification.

Step 2B: Inventive Concept

Finally, the "third" prong of the USPTO's guidelines focuses on the "inventive concept" of the alleged invention. The USPTO explains that the examiner should consider whether the claim "adds a specific limitation or combination of limitations that are not well-understood, routine, conventional activity in the field, which is indicative that an inventive concept may be present." The impact of this inventive concept inquiry on AI-related claims is somewhat less clear because it is highly dependent on what the examiner considers conventional in the field of AI, or perhaps within specific types of AI-related inventions—e.g., there may well be differences based on application, such as facial recognition versus voice recognition versus autonomous vehicles. In some cases, it may be possible to argue that particular

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limitations of the claim are not conventional steps or structures, and claim drafters should keep an eye out for ways to include non-conventional steps and structures in AI-related claims. However, an applicant faced with a rejection based on this third prong may simply want to consider amending the claim to specifically recite an improvement to a technology or use of a machine to show there is a practical application, as many such inventions are often constructed based on otherwise conventional techniques.

In sum, the clarity and specific examples provided in the USPTO's guidelines may arm applicants for AI-related inventions with a roadmap of how to avoid or overcome Section 101 rejections, such as by avoiding mathematical formulas or tying the claim to a specific improvement or hardware. Until we have experience with how examiners interpret the guidelines, however, applicants should continue to exercise caution and thoughtful claim drafting.

[1] The guidance does note that, in rare cases, an examiner may determine that claims that fall outside of the three identified categories nevertheless recite an abstract idea. In such cases, the examiner must further justify and explain the reasons for finding the claim to recite an abstract idea, and such determinations will require approval by the Technology Center Director.



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