

Comments on proposed guidance on abstract ideas and laws of nature

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Introduction

This comment is in regards to a request for comments in the Federal Register (Docket number PTO-P-2018-0053) regarding new proposed guidance for examiners with regards to abstract ideas and laws of nature.

The *technical effect doctrine* has its origins at the European Patent Office (EPO). Their short definition of the doctrine is that for an abstract idea, “the control of a technical process or of the internal functioning of the computer itself or its interfaces” will “confer technical character to a computer program” and therefore put it in the realm of patentability.¹

Revising the guidance on examining applications which may be directed toward abstract ideas or laws of nature is certainly worth doing. But as will be discussed in detail below, the proposed USPTO guidelines directly instruct examiners to use the technical effect doctrine—it almost directly recites the above definition—even though it is not at all settled law in the United States. In so doing the USPTO creates the risk that it will grant possibly tens or hundreds of thousands of patents that will eventually become invalidated. The stability of the patent system is essential, and this proposal stands to weaken it. The stated goal of the proposal is to simplify application of the Mayo/Alice test for patentable subject matter, but

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¹https://www.epo.org/law-practice/legal-texts/html/guidelines/e/g_ii_3_6.htm

imposing the technical effects doctrine is done by adding complication and exceptions to the extant version of the test. By adding these complications, the guidelines break a long-standing convention that no field of endeavor is given special privileges over others.

I will offer two recommendations below, corresponding to the two parts of the Mayo/Alice test:

1. In the definition of what is an abstract idea or law of nature, information processing should be explicitly included.
2. In the specification of what needs to be combined with an abstract idea to make it patentable, the statement of the technical effect doctrine should be removed.

The Federal Circuit is itself split between doctrines

A number of Federal Circuit opinions have allowed patents claiming a technical effect to stand, with a rationale in previous Federal Circuit opinions discussed below. They will not be reprinted here because they already appear in the notes of the proposed guidance.

At the same time, one can find Federal Circuit opinions that rely on a doctrine that information processing is abstract, to reject processes that improve the functioning of a computer even though the technical effect doctrine would consider these patents not abstract. These opinions have equal legal standing to the Federal Circuit ruling that first stated the technical effect doctrine, yet they are not discussed in the proposed guidance, and the proposal therefore makes no effort to reconcile its guidance with them.

- The Federal Circuit opinion in *Clarilogic v. FormFree Holdings* states that the given context does not make the given algorithm non-abstract: “Data are still data.”²
- In *Intellectual Ventures v. Capital One*, a claim is made on management of sets of XML documents.³ The Federal Circuit opinion invalidates the claim on abstract idea grounds that are not saved by XML documents being inherently in the realm of computing: “the patent

²<http://www.cafc.uscourts.gov/sites/default/files/opinions-orders/16-1781.Opinion.3-13-2017.1.PDF>

³<http://www.cafc.uscourts.gov/sites/default/files/opinions-orders/16-1077.Opinion.3-3-2017.1.PDF>

claims are, at their core, directed to the abstract idea of collecting, displaying, and manipulating data.”

- In *Content Extraction & Transmission Llc v. Wells Fargo Bank*, the Federal Circuit again finds that a process involving a stock computer configured with a stock scanner was collecting and recognizing data, which falls under the category of abstract idea.⁴

Even within the panel of judges of the Federal Circuit itself, there is legal risk that the technical effects doctrine would lose prevalence relative to other opinions that follow an information processing doctrine. In such a case, the USPTO’s strong proposed position of accepting the technical effect doctrine as correct will lead to more invalidations, weakening the reputation and reliability of *all* granted patents.

Adopting the technical effect doctrine creates uncertainty and economic risk

It is reasonable to count *Enfish v Microsoft* as the introduction of the technical effects doctrine because it has been cited to extensively, and cites virtually no precedent in the section introducing the doctrine.⁵

The *Enfish* opinion supports the technical effect doctrine by stating that “The Supreme Court has suggested that claims ‘purport[ing] to improve the functioning of the computer itself,’ or ‘improv[ing] an existing technological process’ might not succumb to the abstract idea exception.” Followed by a brief exposition with no citations at all, the remainder of the *Enfish* opinion on §101 (primarily regarding step one of the Mayo/Alice test) relies on these assertions. One would expect that if there were stronger support from the Supreme Court, Federal Circuit, or Congressional records, it would have been cited to.

Subsequent Federal Circuit opinions making use of the technical effect doctrine have depended heavily on *Enfish*.

In the oral arguments for *Carlsbad Technology v. HIF Bio*, Justice Roberts joked about the courts, “They can’t say, I don’t like the Supreme Court rule so I’m not going to apply it, other than the Federal Circuit.” The

⁴<http://www.cafc.uscourts.gov/sites/default/files/opinions-orders/13-1588.Opinion.12-19-2014.1.PDF>

⁵<http://www.cafc.uscourts.gov/sites/default/files/opinions-orders/15-1244.Opinion.5-10-2016.1.PDF>

transcript records laughter after this comment, but it reveals a serious risk for the USPTO.

If the Chief Justice of the Supreme Court believes that the Federal Circuit feels comfortable overreaching in its opinions, how much weight should the USPTO place on a Federal Circuit opinion that takes a bold step based on only a sentence of “suggested” support from Supreme Court opinions?

Although it is speculation to guess whether the Supreme Court would overturn the technical effect doctrine in the near future, it is not speculation to say that this is a real possibility which the USPTO needs to consider before endorsing the technical effect doctrine in the MPEP.

Even if the Supreme Court remains uninvolved, the Federal Circuit is itself split between the technical effect doctrine and a broader doctrine that information processing is abstract, as demonstrated by the examples above.

The technical effect doctrine follows the fact pattern of the widespread granting of business method patents

The judicial rationale for the business method patent is typically traced to *State Street Bank v. Signature Financial Group*, another Federal Circuit ruling. Without guidance from Congress or the Supreme Court, the Federal Circuit added a new category of patentable subject matter, and the USPTO granted such patents en masse.

We know in hindsight that the USPTO made a mistake in choosing to write procedures that laxly allowed business method patents, as a broad set of business method patents were invalidated by *Bilski* and *Alice*. During the period of liberal granting of these patents, op-eds and articles asking whether the entire patent system is broken appeared with increasing frequency, citing as evidence the USPTO’s support for business methods and other patents with limited judicial and legislative support. Academics searched for evidence that patents on methods of making money were necessary for innovation in business, and far more evidence in the negative was found.

This groundswell of opposition reached Congress, which added sections to the America Invents Act to establish a USPTO office dedicated to facilitated reinspection of business method patents in light of their definitive loss of judicial support.

The stability of the patent system is essential, and the business method patent episode clearly went in the opposite direction. Every time somebody

questions the overall patent system, *every* patent loses a little value. Reversing a patent grant has economic effects, as business owners may chart entirely different courses given an early patent rejection versus given a granted patent that is later shown to be invalid. For example, a patent reveals information that could have been retained as a trade secret.

The technical effect doctrine follows the same fact pattern: with only “suggested” support, the Federal Circuit introduced a new doctrine into U.S. patent law, with even less support than that given in *State Street*. In this proposed guidance, the USPTO chooses to adopt the Federal Circuit’s doctrine, with limited consideration of more moderate alternatives. Given the same setup as the business method storyline, the USPTO risks reliving the unfortunate sequence of events it suffered with business methods.

The proposed MPEP revision takes a strong position in favor of the technical effect doctrine

Prong one

Step one of the Mayo/Alice test asks whether the claim relies on an abstract idea. The proposal lists three exclusions, including human activities such as business methods, mental processes, and “Mathematical concepts—mathematical relationships, mathematical formulas or equations, mathematical calculations.”

The proposal clarifies that “Claims that do not recite matter that falls within these enumerated groupings of abstract ideas should not be treated as reciting abstract ideas [save for rare exceptions].”

Whether this description fits the case law depends vitally on how the word “mathematical” is interpreted. Donald Knuth, a well-regarded computer scientist, wrote in a 2003 letter to the USPTO: “All data are numbers, and all numbers are data. Mathematicians work much more with symbolic entities than with numbers.” The examples above of Federal Circuit invalidations of patents on abstract idea grounds are about collecting, selecting, displaying, or manipulating informational documents.

Conversely, a narrow reading of the word “mathematical” would include only mathematics in the style of high school algebra textbooks, where all data is numeric. First, such a narrow reading fails to accommodate the judicial rulings where document and information processing is deemed to be abstract, beginning with the three examples above where “data is data.”

Second, a narrow reading would give the proposed rule a perverse concept

of the word “abstract.” Consider an algorithm for finding identical data files via SHA-256 hashes, and selling dog food on the Internet. Reading the proposed MPEP text narrowly, only the second is an abstract idea. This is a departure from the dictionary and common sense definition of the term. No Supreme Court opinion (including *Alice*) indicates that it is converting the dictionary phrase used since the mid-1800s to a term of art.

Recommendation 1 *Explicitly state that a pure information processing algorithm is an abstract idea for the purposes of the first of the two prongs in the Mayo/Alice test.*

Every ruling by the Supreme Court on the subject of patents on intangibles is easily consistent with the information processing doctrine, and could be used for citations to support this interpretation. For example, the *Bilski* and *Alice* patents were for information processing, albeit in a business context. The Federal Circuit rulings listed above also follow this doctrine.

Prong two

Step two of the Mayo/Alice test asks whether an abstract idea is sufficiently well-tied to an inventive concept that the whole is patentable. The proposed revision includes a statement of the technical effect doctrine which almost exactly matches the EPO’s definition above: a claim with an abstract idea may nonetheless be patentable if “an additional element reflects an improvement in the functioning of a computer, or an improvement to other technology or technical field.”

Recommendation 2 *Remove this codification of the still-nascent technical effect doctrine.*

This does not obviate prong two of the Mayo/Alice test, but restores it to the previous understanding that a claim for an abstract idea may be patentable when in combination with more than a stock computer, or the addition of a further inventive concept.

Patent law should not favor one field of invention over others

Until the introduction of the technical effects doctrine less than three years ago, there was a movement toward a consistent understanding that information processing by itself is not patentable, embodied in the two-step

Mayo/Alice test. Any line between the patentable and unpatentable must have grey areas, but the information processing doctrine in the sequence of Supreme Court rulings is at least consistent and has fewer exceptions: the test had no “field of invention” component, as an information processing algorithm would be equally abstract whether applied to financial trading, measuring characteristics of a computer’s file system, or taking inventories of dog food. An abstract algorithm could become patentable via integration to a larger bona fide invention such as a rubber mold, but there was no stipulation that the full invention be in one field or another.

Patent law should disfavor rules that favor one field. Beyond the obvious favoritism, any patent could be drafted to imply it is in that field, meaning that the primary effect of such a rule may be obfuscated patent claims and more legal disputes. The technical effect doctrine is exactly such a carve-out: as per over 150 years of judicial rulings, abstract ideas are unpatentable—except for the computing field, which step two of the proposed Mayo/Alice guidance gives free reign.

Codifying the technical effect doctrine sows confusion.

The introduction of the technical effects doctrine has complicated this simpler statement of the Mayo/Alice test immensely. To accommodate it in the first prong of the Mayo/Alice test, information processing needs to be dissected into concepts more technical than typical information processing operations (number-and-equation mathematics) and concepts less technical (human systems), to allow a middle category. Accommodating it in the second step requires granting some fields of invention special rights with respect to the implementation of abstract ideas.

Using the example of management of XML documents above, the proposed guidance requires an examiner to consider whether processing XML documents falls in the middle ground between mathematics narrowly defined and business methods. Following the recommendation in this comment that “mathematical” be interpreted to include information processing, the examiner would easily conform with the Federal Circuit ruling above that disallowed this patent as abstract.

To give another example, the Supreme Court’s 1972 Benson ruling (ostensibly not overturned by the Federal Circuit) made little allusion to whether the mathematical algorithm was an abstract idea, but rejected it because it had primary application to improvement in the functioning of a computer

and limited application elsewhere. Working with prong two of the proposed guidance, an examiner may observe that the algorithm is an “improvement in the functioning of a computer,” and make a decision opposite the Supreme Court and deem the Benson patent to not be excluded under the technical effects doctrine. An examiner working under a version of the MPEP following the information processing doctrine recommended in this comment would easily exclude the Benson patent.

Are there technical minutiae that would allow the examiner to arrive at the correct ruling? For example, one may argue that the Benson patent recited a computing platform that was too general, and would only have been saved by a competent draftsman adding more details to the recitation of a stock computing configuration. This is exactly what it means for the proposal to add complications: under the information processing doctrine, the examiner could easily arrive at the decision consistent with existing rulings, while the proposed technical effect doctrine require the examiner to risk misinterpreting a fine point.

Conclusion

The USPTO imposes the information processing doctrine at its peril. It has added complication to both steps of the Mayo/Alice test to make it more permissive, meaning that we can expect examiners to arrive at *less* consistent decisions. This is done by adding a still-controversial judicial exception first introduced less than three years ago, which the Supreme Court has at best failed to reject, and which the Federal Circuit is itself still debating. The USPTO has taken the most permissive route before, in granting business method patents, and that choice was reversed first by a Supreme Court ruling, then, after massive pressure by businesses and individuals, by Congressional action establishing processes dedicated to dealing with reviewing business method patents. Codifying the technical effect doctrine takes an identical legal and policy risk, threatening to weaken the stability of the patent system and thus weaken the value of every patent regardless of field.

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Dear USPTO,

Attached is a comment on proposed guidance for PTO examiners published in the Federal Register on 7 January 2019.

Regards,

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