

Comments in Response to Request for Comments on Examination Instruction and Guidance Pertaining to Patent-Eligible Subject Matter 79 FR 36786 (June 3, 2014)

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Peter K. Trzyna has been a Registered Patent Attorney since 1984 and is a member of the Illinois, New York, D.C., Federal Circuit, and U.S. Supreme Court bars. He has been doing patent prosecution for almost 35 years, including as an attorney at Kenyon & Kenyon; Cadwalader, Wickersham & Taft; and Baker & McKenzie, where he was a partner in the Chicago office, prior to establishing the Peter K. Trzyna Law Office, P.C. Peter K. Trzyna has a B.S., M.A., J.D., and M.S. in Engineering and Applied Physical Science, all from the University of Wisconsin, is a joint inventor in fourteen patents and numerous pending patent applications, and owns and operates several businesses. The views expressed herein are solely those of Peter K. Trzyna, who respectfully submits that the Patent and Trademark Office should adopt and uniformly apply a Guidance Pertaining to Patent-Eligible Subject Matter that draws a clear Sec. 101 line distinguishing between “*patents that merely claim the building blocks of human ingenuity and those that integrate the building blocks into something more*” as set out by the *CLS* decision.

I. The Patent and Trademark Office has applied the Guidance in a way that is "arbitrary, capricious, an abuse of discretion, and not in accordance with the law."

The Supreme Court recognized in [*Alice Corp. Pty. Ltd. v. CLS Bank Int'l*](#), 573 U.S. ___, No. 13-298 (June 19, 2014), citing to *Mayo*, 566 U. S., at ___ (slip op., at 2), that:

“...all inventions . . . embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas.” *Id.*, at ___ (slip op., at 2).”

Instead of this recognition, the PTO has differentially applied the decision and Guidance only in administratively selected work groups, thereby administratively discriminating against PTO-selected industries and favoring others.

A. The PTO applies the Guidance to reject applications based on how the PTO classifies the patent applications in selected computer-related fields

The PTO has applied the Guidance only in the following work groups, according to information taken from uspto.gov:

- 3660 Computerized Vehicle Controls and Navigation, Radio Wave, Optical and Acoustic Wave Communication, Robotics, and Nuclear Systems
- 3680 Business Methods
- 3690 Business Methods - Finance
- 37A Amusement (Computer Gaming, Contests, handicapping, probability determinations) and Education Devices (Educational Demonstrative)

Whereas, the PTO has not applied the Guidance in other computer science-related work groups, such as:

- 2120 Miscellaneous Computer Applications AI, Simulation, Modeling, Emulation, Modeling by Mathematical Expression, CAD, Bill of Materials, Design or Planning, Knowledge Based, Expert Systems
- 2140/2170 Graphical User Interface and Document Processing
- 2150/2160 Data Bases & File Management
- 2190 Interprocess Communication & Software Development, Virtual Machines, Task Management, Interprogram communication, Common Gateways, Event Handlers, Arithmetic Processing and Calculating
- 2440/2450 Computer Networks includes Applications and Internet
- 2610 Computer Graphic Processing, 3D Animation, Display Color Attribute, Object Processing, Hardware and Memory
- 2620 Selective Visual Display Systems
- 2650 Linguistics; Speech Processing & Audio Compression
- 2660 Image Analysis; Applications; Pattern Recognition; Color & compression; Enhancement & Transformation
- 2800 Printing/Measuring & Testing Computer Aided Design and Analysis of Circuits and Semiconductor Masks
- 3660 Computerized Vehicle Controls and Navigation, Radio Wave, Optical and Acoustic Wave Communication, Robotics, and Nuclear Systems

By only applying the Guidance against patent applications in administratively-selected computer science work groups, the PTO is administratively discriminating against PTO-selected industries, while favoring others, by differentially obstructing patent applications of the industries.

1. Example 1

Consider a patent application with claims directed to a computer gaming environment over the Internet, the subject matter can be reasonably classified in at least classes 709 (networking) in workgroup 2140, 703 (Simulation) in workgroup 2190, 715 (Graphical virtual environment) in workgroup 2179, 463 (computer gaming) in workgroup 37A, 705 (business methods) in workgroup 3680. For such subject matter, the PTO areas apply CLS Guidance differently, which axiomatically provides the Applicant with different examinations - depending on how the PTO classifies the particular patent application, resulting in an overall arbitrary and capricious

implementation. If the PTO classifies the application in business methods, the PTO will obstruct patent issuance. If the PTO classifies the application in networking, the PTO will not obstruct patent issuance.

2. Example 2

Consider another example: if one patent application in the family is assigned according to a database class 707, in 2160, or into network, class 709, in workgroup 2140 there apparently would not be a Guidance rejection, but if the patent application is instead assigned to class 3680 because one of the operations may be a financial operation, like charging a fee, there would be a Guidance rejection – even if the patent application claims contain all of these elements. Hypothetically, if one could imagine the “inventive concept” that includes 98% within one area of classification, yet also includes a business practice, charging for the use of gaming system in the over 2% of the claimed invention, the PTO could well classify the patent application to receive a Guidance rejection. In this hypothetical view, “inventive concepts” are usually a spectrum of technologies, environments and applications; if the 2% controls the Guidance rejection, the PTO is “throwing out the baby with the bathwater,” based on PTO administrative classification.

3. Initial classification

Consider the same computing carried out by different devices: a programmed personal computer, analog computer, Turing machine, virtual machine, and Babbage’s analytical engine; or they are implemented on a peer network, distributed network, optical network, and wireless network; or having different but overlapping operations like workflow, task management and business flow, or having overlapping implementations; software intensive, hardware intensive and mixed technologies. Based on how this same computing is classified, these would or would not be made subject to Guidance rejections.

4. Reclassification is irrelevant

While the classifying in theory reflects limitations recited in the claims, the PTO-selected limitations for classification may not even cover the various concepts in the originally filed specification and claims. And claims are usually amended during prosecution, so what might initially appear to be a proper classification may be another classification after the amendment. Because at the start of prosecution it is often difficult for the PTO to identify the ultimate classification, the application is terminally classified only when allowed. Nonetheless, it is the initial classification to a particular work group that appears to be controlling over application of the Guidance.

In sum, how the PTO classifies each of the patent applications is determinative of how patent applications are assigned among different work groups, which in turn is determinative of which of the applications will and will not be obstructed with a Guidance rejection.

B. Once classified to a work group for Guidance rejection, the PTO applies the Guidance without regard to the claimed particulars

The PTO applies the Guidance in a carte blanche rejection. Claim particulars are irrelevant, as illustrated in an example of a Guidance-based rejection issued in Ser. No. 11/825,504.

Claim Rejections - 35 USC § 101

Claims 1-124 are rejected under 35 U.S.C. 101 because based on a recent Supreme Court ruling in the Alice Corporation PTY, LTD v. CLS Bank International et al. decided on June 19, 2014. Here, the representative method claim does no more than simply receiving input data, using some of the data to implement the abstract idea of receiving input data on a generic computer (a processor of a computer system). Taking the claim elements separately, the function performed by the computer at each step- receiving, using some of the input data, and communicating (sending) at least some of the output including the valuation or the price is "[p]urely 'conventional.'" *Mayo*, 566 U.S., at ___. Considered "as an ordered combination," these computer components "ad[d] nothing . . . that is not already present when the steps are considered separately." *Id.*, at ___. Viewed as a whole, these method claims simply recite the concept of receiving, computing, and sending data as performed by a processor of a computer. They do not, for example, purport to improve the functioning of the computer itself or effect an improvement in any other technology or technical field. An instruction to apply the abstract idea of receiving, computing, and sending using some unspecified, processor of a computer system (generic computer system) is not "enough" to transform the abstract idea into a patent-eligible invention.

Because the system claims add nothing of substance to the underlying abstract idea, they too are patent ineligible under §101. The system claims are no different in substance from the method claims. The method claims recite the abstract idea implemented on a a processor of a computer system (generic computer); the system claims recite a handful of generic computer components configured to implement the same idea. This Court has long "warn[ed] . . . against" interpreting §101 "in ways that make patent eligibility 'depend simply on the draftsman's art.'" *Mayo, supra*, at ___. Holding that the system claims are patent eligible would have exactly that result. Pp. 16-17.

(Office Action 6/24/2014, pages 6-7.)

From the rejection, one cannot discern what is contended as the abstract idea beyond involvement of a computer. For example, from the rejection, one cannot determine whether the rejected claims pertain to the particular invention of the Applicant, the same claims as those in *Benson* or *Alice*, the subject matter of a browser or a seat-belt warning buzzer in an automobile,

etc. Once the patent application has been selectively classified, it receives a carte blanche rejection: the claim particulars are irrelevant.

Note that in the rejection, there is no consideration given whatsoever to the dependent claims, and thus no consideration whatsoever to the possibility of “additional features” in the independent or dependent claims. In contrast, the CLS decision states:

A claim that recites an abstract idea must include “additional features” to ensure “that the [claim] is more than a drafting effort designed to monopolize the [abstract idea].”

Therefore, the PTO has applied the Guidance to selectively target patent applications and thus obstruct protecting inventions in PTO-selected industries with carte blanche rejections. The rejections are controlled not by the particulars of what is claimed, but rather, is more generally controlled by the PTO selectively classifying the applications, which as stated above, is determinative of which of the applications will and will not be obstructed with a Guidance rejection.

II. The Patent and Trademark Office must apply the Guidance evenhandedly to “all inventions.”

A. Targeting some or all patent applications in computer science is "arbitrary, capricious, an abuse of discretion, and not in accordance with the law."

The CLS decision noted that

“...all inventions . . . embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas.” *Id.*, at ___ (slip op., at 2).”

Therefore, it is not in accordance with the law to obstruct patent applications in some or even all work groups involved with computer science. As pointed out by Robert Sacks in his article “Alice on Software Patents: Preemption and Abstract Ideas” (*IPWatchdog*, June 29, 2014, provided herewith, below):

What the Supreme Court Did Not Do

To highlight how limited the decision is, I think it is best to quickly point out what the Court *did not* do. I will then go into a more detailed analysis of the decision and its context.

- The Court did not even mention “software” or “computer programs” or discuss the eligibility of software as a general matter. For all of the discussion about software technology by the parties and amici, the Court never goes into a discussion of what software is. This is particularly striking since Justice Thomas,

the author of *Alice*, provided some technical discussion in his opinion in *Association for Molecular Pathology, et al. v. Myriad Genetics, Inc., et al.*, 133 S.Ct. 2107 (2013). As I will discuss in the second part of this essay, the Court's discussion about using a generic computer to implement a concept is not directed to software technology.

- The Court did not hold that all claims, or even all computer-implemented claims, necessarily contain an abstract idea.
- The Court did not mention anything about business methods. Indeed, the absence of any discussion of business methods is striking, given the nature of Alice's invention, so much so that three justices had to file a concurrence to point out their view that business methods are never patent eligible. The need for the concurring opinion suggests that the majority opinion did not narrow eligibility for business methods.
- The Court did not rely upon the *ad hoc* rules against data gathering and pre- and post-solution activity as not contributing to patent eligibility, even though these "rules" are commonly cited by the Federal Circuit and many of the amici.
- The Court did not talk about "disembodied concepts," "mental steps" or other formulations that have been used by the Federal Circuit and urged by amici.

The Court was explicit that *CLS* was not limited to computer program-related inventions, business methods, or the particular PTO-selected work groups - and industries favored or disfavored thereby. Thus the PTO application of the Guidance to selected areas of computer science, or even if it were to be directed at all computer science, would be "arbitrary, capricious, an abuse of discretion, and not in accordance with the law."

B. So as not to apply the Guidance in a way that is "arbitrary, capricious, an abuse of discretion, and not in accordance with the law," the PTO must apply the Guidance to all technical areas with equal zeal

Therefore, rather than applying the Guidance to quite selectively target patent applications for carte blanche rejection based on how the Office assigns the patent application among some computer science work groups, or even to all of the computer science work groups, the PTO must apply the Guidance with equal zeal in all art units and to "all inventions," including pharmaceutical and chemical inventions, as per *Mayo*, mechanical inventions, etc.

For example, at the level of generality used in applying the Guidance in the above-identified rejection, every chemical or composition (or mechanical invention) would appear to be subject scrutiny as doing no more than simply implementing the abstract idea of what the new chemical or composition does. Taking the claim elements separately, the function of each element in the composition would at least arguably be potentially conventional, and there would need to be 'something more' than 'apply it.' Beyond the abstract idea of such a claim, to turn a phrase, "the claimed invention is merely a combination of old elements, and in the combination, each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable."

As the PTO is currently applying the CLS Guideline in the context of gaming, business methods and educational demonstrative, to be fair, the PTO must equally apply the Guideline to all inventions, whether they be business, economic, computer-based, biological, chemical, mechanical, or any combination of them. Anything else is "arbitrary, capricious, an abuse of discretion, and not in accordance with the law."

III. Apply the *CLS* decision to each claim to “distinguish between patents that claim the building blocks of human ingenuity and those that integrate the building blocks into something more” as set out by the *CLS* decision

A. The PTO choices are limited

There are several possibilities.

- A. If the PTO applies the Guidance as nothing more than a *carte blanche* obstruction to patenting inventions in Office-selected industries, it is an "arbitrary, capricious, abuse of discretion that is not in accordance with the law."
- B. If the PTO were to apply the Guidance to all areas of computer science, it would still be an "arbitrary, capricious, abuse of discretion that is not in accordance with the law" because the CLS decision refers to “all inventions.” Likely the vast majority of pending patent applications would be deemed unpatentable subject matter.
- C. If the PTO were to apply the Guidance to all areas of technology with the zeal shown in the above-provided rejection, essentially nothing would be patentable.
- D. Revise the Guidance to conform to the *CLS* decision to “distinguish between patents that claim the building blocks of human ingenuity and those that integrate the building blocks into something more” and apply the Guidance uniformly to “all inventions” based on the claims.

Unlike the possibilities of A, B, and C, D should be the focus of the PTO. Presently, the Guidance does not “distinguish between patents that claim the building blocks of human ingenuity and those that integrate the building blocks into something more.” However, it should, as explained in the article by Robert Sacks, which is submitted below to make of record.

Alice on Software Patents: Preemption and Abstract Ideas



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With apologies to the great humorist, the report of the death of software patents is an exaggeration. Some commentators quite quickly suggested that the Supreme Court’s decision in [Alice Corp. Pty. Ltd. v. CLS Bank Int’l](#), 573 U.S. ___, No. 13-298 (June 19, 2014), will “[invalidate the majority of all software patents in force today](#)” and is “[bad news for software patents](#)”. That interpretation may make good copy, but it is simplistic and overblown. While the Court invalidated Alice’s patents, the decision certainly does not invalidate the majority, or even a large percentage, of software patents, nor does it radically restrict the kinds of inventions that can be patented going forward. The decision is a modest and incremental clarification in the patent law, and a not wholesale revision.

The Court set forth a two-step test grounded in [Bilski v. Kappos](#) and [Mayo v. Prometheus](#). While the Court may not have defined a clear boundary for so called “abstract ideas” specifically, it did squarely place this case within the “outer shell” of the law set forth in *Bilski* and *Mayo*. In doing so it articulated an approach that focuses not on finding the boundary line, but rather on the core properties of an ineligible patent claim. In Part I of this two-part post, I will focus on just the first step of the test, whether a claim recites a patent-ineligible “abstract idea.” In Part II, I’ll address issues regarding preemption, mental steps, and the application of Alice to software patents.

What the Supreme Court Did Not Do

To highlight how limited the decision is, I think it is best to quickly point out what the Court *did not* do. I will then go into a more detailed analysis of the decision and its context.

- The Court did not even mention “software” or “computer programs” or discuss the eligibility of software as a general matter. For all of the discussion about software technology by the parties

and amici, the Court never goes into a discussion of what software is. This is particularly striking since Justice Thomas, the author of *Alice*, provided some technical discussion in his opinion in *Association for Molecular Pathology, et al. v. Myriad Genetics, Inc., et al.*, 133 S.Ct. 2107 (2013). As I will discuss in the second part of this essay, the Court's discussion about using a generic computer to implement a concept is not directed to software technology.

- The Court did not hold that all claims, or even all computer-implemented claims, necessarily contain an abstract idea.
- The Court did not mention anything about business methods. Indeed, the absence of any discussion of business methods is striking, given the nature of *Alice*'s invention, so much so that three justices had to file a concurrence to point out their view that business methods are never patent eligible. The need for the concurring opinion suggests that the majority opinion did not narrow eligibility for business methods.
- The Court did not rely upon the *ad hoc* rules against data gathering and pre- and post-solution activity as not contributing to patent eligibility, even though these "rules" are commonly cited by the Federal Circuit and many of the amici.
- The Court did not talk about "disembodied concepts," "mental steps" or other formulations that have been used by the Federal Circuit and urged by amici.
- The Court did not mention patent trolls, the costs they are believed by some to impose on society, or the need to use Section 101 as a weapon against them.
- The Court did not mention any First Amendment considerations, such as "software is speech" as urged by the ACLU and others.

The Court's opinion is relatively short, focused, and to the point, and avoids addressing issues that are not central to the question before the Court. For that, the patent community can be thankful.

Setting the Stage

To understand why *Alice* is a limited decision, it is necessary to consider the context of the Court's opinion and specifically how the parties positioned and argued the case before the Court. The Court was very much focused on whether they were ruling on the patent eligibility of software in general or on just

Alice's patent claims, and at oral argument various members of the Court questioned the parties as to how they could rule in a way that did not touch upon software patent eligibility.

Alice positioned the case as one about the patent eligibility of computer-implemented patents—software patents—in general. Alice's certiorari petition and merits brief focused on the general question of “Whether claims to computer-implemented inventions” are patent eligible, and argued in detail why computer-implemented inventions are not abstract ideas, providing the Court with a tutorial on software technology. See Brief of Petitioner Alice Corporation Pty. Ltd. at 35-43, *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 573 U.S. ____ (2014) (No. 13-298). Likewise, many of the amicus briefs spent time discussing the nature of software technology and the eligibility of software generally, including the briefs by Microsoft, IBM, IEEE-USA and others. At oral argument, Alice further emphasized that their case was about software patents. Alice's counsel Carter Philips argued that if the Court held software to be ineligible in the absence of making an improvement in the operation of the computer, “[w]hat we know is that this would inherently declare and in one fell swoop hundreds of thousands of patents invalid, and the consequences of that it seems to me are utterly unknowable,” Transcript of Oral Argument at 20, *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 573 U.S. ____ (2014) (No. 13-298) (“Transcript”), borrowing heavily from Judge Moore's concurring opinion that “if all of these claims, including the system claims, are not patent-eligible, this case is the death of hundreds of thousands of patents, including all business method, financial system, and software patents as well as many computer implemented and telecommunications patents.” *CLS Bank Int'l v. Alice Corp. Pty. Ltd.*, 717 F.3d 1269, 1313 (Fed. Cir. 2013) (*en banc*) (Moore, J., dissenting-in-part).

On the other hand, CLS denied that the case was about software patents in general and denied that the patents-in-suit were software patents. In its Responsive Brief, CLS specifically argued that “The patentability of “software” is not presented in this case. Alice's patents are not software patents—they do not explain how to configure a computer to perform the claimed methods.” Brief of Respondent CLS Bank Int'l at 11 n.1, *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 573 U.S. ____ (2014) (No. 13-298). At oral argument CLS counsel Mark Perry told Justice Sotomayor “they have no software, first. They've never written software. They've never programmed a computer.” Transcript at 30. Perry further emphasized that the Alice's invention was a very small part of the overall patent, “It's less than five pages in the printed appendix that actually pertains to this invention. And it contains no disclosure whatever.” *Id.* at 32. Perry

argued that the Court’s decision would not impact a large swath of patents: “We are talking about a group of patents, Justice Kagan, that’s way out at the tail end of distribution. Most patents never have a 101 challenge This is a problem for the most marginal, most dubious, most skeptical patents.” *Id.* at 44. CLS’s argument has very clear implications: not every patent claim reciting the use of a computer is a software patent. Rather, real software patents are a much narrower type, they describe “how to configure a computer to perform” a specific method. This is the key to the Court’s analysis.

Unfortunately, Phillips unintentionally reinforced the view that a software and computer implementation was not that significant for Alice’s patent claims. First, at the beginning of oral argument Justice Kennedy asserted that a second-year college class in engineering could program Alice’s invention over a weekend, “that would be fairly easy to program,” to which Phillips replied “I don’t disagree with it,” *id.* at 5, and then later “Well, that’s absolutely, I’m certain that’s true.” *Id.* at 12. Then later on, Justice Ginsburg picked up on CLS’s argument that Alice’s patents were not really software patents, that they were simply applying a computer to a general idea, asking Phillips “There is no special software that comes with this that’s part of this patent, is it is there?” *Id.* at 13. Philips admitted that there was no code in the patent, only an identification of “the functions that you want to be provided for with the software.”

Justice Kagan also returned to the theme of whether merely using a computer to implement a simple idea was patent eligible, asking Mr. Philips about whether thirty years ago the founders of the Internet could have patented “essentially tak[ing] the process of mail order catalogues and making it electronic.” *Id.* at 25-26. Phillips here replied that he could write claims for such an invention that would satisfy Section 101—and then unnecessarily admitted that “to the extent you’d think those are no different than the ones I have here, then my argument is simply I think I satisfy 101 with the claims we have before us.” *Id.* at 26.

Justice Sotomayor put the question of software eligibility directly to the Solicitor General, asking “Do you think we have to reach the patentability of software to answer this case?” *Id.* at 46. The Solicitor General replied “I think the answer to that question is no, not necessarily,” and then laid out in general terms the same reasoning that the Court ultimately adopted, that “Bilski answers the question whether this is an abstract idea” and “Mayo answers the question of whether the use of a computer in this case adds enough to the abstract idea beyond conventional steps.” *Id.*

Read in this light, the intent and the scope of the Court’s decision is clear. The Justices were looking for a way to invalidate Alice’s patents without ruling that software is *per se* ineligible. They did not accept that Alice’s patents were complex, inherently computer-implemented methods. Instead, they accepted CLS’s framing of the Alice patents—that these were not *really* software patents at all, since a *real* software patent describes how to configure a computer to do something, not merely saying use a computer to do something. They apparently believed that Alice’s patents were outliers, part of “the tail end of distribution” of patents, not part of the “hundreds of thousands” of patents that would be invalidated by a general ruling against software patents. And they accepted the Solicitor General’s argument that they did not need to reach the eligibility of software, as evidenced by their adoption of the government’s overall position, that *Bilski* and *Mayo* entirely answer the question before the Court.

The Decision Deconstructed

I now turn to the *Alice* decision itself. The Court’s primary concern is that a patent should not “preempt” “fundamental concepts,” ideas that are “building blocks” of “human ingenuity” and “modern commerce.” Thus, the judicial exceptions to § 101—restrictions on patenting laws of nature, natural phenomenon, and abstract ideas—are used to prevent patents on these types of ideas. “We have described the concern that drives this exclusionary principle as one of pre-emption,” and “We have repeatedly emphasized this . . . concern that patent law not inhibit further discovery by improperly tying up the future use of these building blocks of human ingenuity.” *Alice*, slip op. at 4-5.

The court emphasizes that role of § 101 is to prevent patents only on “building blocks,” and not on just any application of an abstract idea: “At the same time, we tread carefully in construing this exclusionary principle lest it swallow all of patent law. At some level, ‘all inventions . . . embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas.’ Thus, an invention is not rendered ineligible for patent simply because it involves an abstract concept Accordingly, in applying the §101 exception, we must distinguish between patents that claim the ‘buildin[g] block[s]’ of human ingenuity and those that integrate the building blocks into something more.” *Id.* at 6. This is a key point: The Court recognizes that the presence of an abstract concept is not fatal, precisely because all inventions rely on them. Thus, proper application of § 101 requires a differentiation between the kinds of abstract

ideas that the Court is worried about, and the kinds of abstract ideas that are necessarily part of all invention.

Doing the Two-Step

To implement § 101 to distinguish in this fashion, the Court uses a two step approach. “First, we determine whether the claims at issue are directed to one of those patent-ineligible concepts. If so, we then ask, ‘[w]hat else is there in the claims before us?’” *Id.* at 6. It is important to note here the specific phrasing of the first question. The question is *whether* there is abstract idea in the claim—and not *what is* the abstract idea in the claim. This is a critical distinction, and one that is easily overlooked. Asking whether there is an abstract idea implicated by a claim makes no assumptions and allows for the possibility that there was no abstract idea implicated by the claim at all. In that event, the claim obviously satisfies § 101.

By contrast, asking what is the abstract idea in the claim begs the question and assumes that there is an abstract idea in the claim to begin with, an assumption that easily leads down the path to ineligibility. Arguably, this is error was made in the Federal Circuit’s *en banc* plurality opinion: “As described, the first step in that analysis requires identifying the abstract idea represented in the claim.” *CLS*, 717 F.3d at 1286 (Lourie, J. concurring). Thus, both patent examiners and the courts must be careful not to assume that every claim for a computer-implemented method or system necessarily incorporates an abstract idea, but must instead investigate whether it in fact does.

The Court goes on to find that Alice’s claim did recite an abstract idea of intermediated settlement. Yet, the Court also avoids attempting any definition of “abstract idea”:

In any event, we need not labor to delimit the precise contours of the “abstract ideas” category in this case. It is enough to recognize that there is no meaningful distinction between the concept of risk hedging in *Bilski* and the concept of intermediated settlement at issue here. Both are squarely within the realm of ‘abstract ideas’ *as we have used that term*.

Alice, slip op. at 9 (emphasis added).

At first glance, this appears to be a massive punt, since the definition of an abstract idea has been a central problem in the law since *Gottshalk v Benson*, and is what essentially led to *Bilski* and then eventually this case. But perhaps the Court did not punt. Contrary to the lament that [“no one understands what makes an idea ‘abstract.’”](#), there is a considerable [philosophical literature](#) on the nature of abstract ideas. Our [amicus brief](#) for Advanced Biological Laboratories offered a general description of an abstract idea, and a technology-independent way of determining whether there is an abstract idea in a patent claim, and other amici likewise proposed definitions and explanation.

But the Court did not turn to any of these extra-legal definitions of an abstract idea. Instead, the Court has clearly announced that “abstract ideas” is special legal term—like *willful infringement* or *inducement*—and has nothing to do with the general linguistic, philosophical or common uses of the phrase:

Both [referring to the concepts implicated by the claims in *Bilski* and *Alice*] are squarely within the realm of “abstract ideas” *as we have used that term*.

Putting *abstract ideas* in quotes, and then stating “as we have used that term” indicates that the Court is now and (in a 1984-ish sort of way) always has been, using this term to mean something specific and distinctive from its ordinary dictionary meaning. Let’s call this **Abstract Ideas**, with a capital A and a capital I. This is similar to the “big-C” Creativity, described by the psychologist [Mihaly Csikszentmihalyi](#) as the kinds of activities that change some aspect of the relevant culture itself: “To have any effect, the idea must be couched in terms that are understandable to others, it must pass muster with the experts in the field, and finally it must be included in the cultural domain to which it belongs.” Mihaly Csikszentmihalyi, *Creativity: Flow and the Psychology of Discovery and Invention* 27 (1996).

Like big-C Creativity, which is different from little-c creativity—being a creative person, making a creative floral arrangement or creative limerick, or even inventing a new gadget, machine, or software app—for the Court, Abstract Ideas are necessarily “building blocks” and “fundamental” to the culture or the “modern economy,” are “the basic tools of scientific and technological work.” These are not the ordinary types of abstract ideas that are essential to every invention. Instead, they are what Justice Breyer called the “big ideas,” basic to a given domain in science or commerce. (“Business methods are similarly often closer to “big ideas,” as they are the basic tools of *commercial* work.” *Bilski*, 130 S.Ct. 3218, 3255

(Stevens, J. concurring). The Court’s methodology then is to look for evidence that the claim recites something that is “fundamental” enough to qualify as an Abstract Idea in “as [they] have used the term.” In *Bilski* the claim was plainly on the “fundamental economic practice” of hedging, something “long prevalent in our system of commerce and taught in any introductory finance class”—that is something core to cultural domain of finance. In *Benson*, the Court believed (wrongly it turned about, but that’s beside the point) that the claims covered the basic algorithm for converting binary coded decimal to binary, something that appeared “fundamental” to the domain of computer science and mathematics. Similarly, in *Mayo*, the Court believed (again, wrongly, but again that’s beside the point) that Prometheus’s claim covered a so-called “law of nature,” something “fundamental” to the domain of medicine and biology. (It’s ok that the Court was wrong on the facts in *Benson* and *Mayo*, because what really matters for the future application of § 101 is the methodology and underlying theory, not the specific facts.)

In *Alice*, the Court stated that “on their face” the claims are “drawn to concept of intermediated settlement, *i.e.*, the use of a third party to mitigate settlement risk,” which is also a “fundamental economic practice,” again core to cultural domain of contracts. *Alice*, slip op. at 8. The Court then links the “fundamental” notion to the “building block” notion: “The use of a third-party intermediary (or ‘clearing house’) is also a building block of the modern economy.” *Id.* And as if the explanation of Abstract Ideas as being “fundamental practices” is not plain enough, the Court repeats it just one page later to defeat Alice’s argument that abstract ideas must be “pre-existing, fundamental truths” that exist independently of human action: “Although hedging is a longstanding commercial practice, it is a method of organizing human activity, not a ‘truth’ about the natural world . . . the Court [in *Bilski*] grounded its conclusion that all of the claims at issue were abstract ideas in the understanding that risk hedging was a ‘fundamental economic practice.’” *Id.* at 9 (internal citation omitted).

As I stated as the outset, the key to understanding the Court’s opinion is that it did not view Alice’s patents as software patents at all, but instead as patents on an Abstract Idea itself. Going back to the oral argument, Alice did little to convince the Court that its invention was a true software invention and not an Abstract Idea. Telling the Court (inaccurately, no less) that Alice’s system could be programmed by group of graduate students “sitting around a coffee shop in Silicon Valley . . . over a weekend” was a critical error. By arguing to Justice Kagan that claims to using a computer to order products electronically

over the Internet would be patent eligible, Alice suggested that it needed a rule broad enough to cover an obviously (to Justice Kagan) ineligible “fundamental building block” in order to support its own patent claim—which by logical extension was also an ineligible Abstract Idea. In contrast, CLS offered a much more limited, and reasonable position: that Alice’s patents were not software patents, and that software really was not at issue in this case, a position that I believe the Court implicitly adopted. Justice Sotomayor said it best: “There is no software being patented in this case.” Transcript at 46. The Court’s opinion then is not about software patents, and it never holds up Alice’s patents as exemplary of that class. Rather, the opinion is about patents on the kinds of Abstract Ideas I have described above.

We can return to the beginning of the analysis and revisit preemption. As stated, the Court sees § 101 as protecting the big ideas that are fundamental to commerce, science, and technology, patents that would preempt and “block” innovation. The Court realizes that every patent preempts and blocks in some degree, because that’s what patent claims do. Rather, the risk of preemption must be “disproportionate.” *Alice*, slip op. at 5. This is a definitely a much higher bar than the standard set forth in the *CLS* plurality opinion, “Does the claim pose any risk of preempting an abstract idea?” *CLS*, 717 F.3d at 1282 (Lourie, J., concurring), cited approvingly in *Accenture Global Services, GmbH v. Guidewire Software, Inc.*, 728 F.3d 1336 (Fed. Cir. 2013). This requirement for a high level of preemption risk is necessary because we can never know *a priori* (e.g., when a patent application is filed, when it is reviewed by a patent examiner) exactly what will happen in the future, and how important and preemptive the patent will be in regards to other developments in the same field or in other fields. Most truly fundamental “building block” inventions are not recognized as such for many years after the fact. Thus, we must tolerate preemption in two ways:

1. The kind of preemption that is inherent or recognizable based on the claim language. To borrow a phrase from Donald Rumsefld, this is the “known known” risk of preemption.
2. The “known unknown” preemption that we cannot determine because we cannot know what will happen in the future: whether the technology will be successful in the marketplace, whether others will adopt it, or design around it, or any other myriad factors that influence how “fundamental” an invention will be.

If a patent claim is ineligible if there is “any risk” of preemption, then the “exclusionary principle . . . will swallow all of the patent law.” *Alice*, slip op. at 5. A court or a patent examiner certainly cannot evaluate the level of “known unknown” preemption, and hence should not use speculations (or hand-waving) about this kind of preemption risk to invalidate a patent. The disproportionate risk of preemption only comes from patents that claim Abstract Ideas in the sense of fundamental building blocks, not just run-of-the-mill abstract ideas. It’s only when the known known type of preemption covers an Abstract Idea that the claim is ineligible. The ordinary type of preemption that comes from patent claims is an accepted part of the patent system—that’s the whole point of claims, to define the metes and bounds of the invention so that others are *preempted* from making, using, and selling what’s inside the bounds.

Alice and the Absence of Mental Steps

One of the most notable aspects of the Court’s handling of abstract ideas is that complete avoidance of any discussion of mental steps. Historically, the mental steps doctrine in § 101 jurisprudence excluded claims that directly set forth steps *necessarily* performed in the human mind, given the disclosure of the patent. The doctrine arose before the use of computers in business and industrial applications, and addressed patents that involved mathematical procedures that could only be performed mentally by “head and hand,” or human judgments guided by mathematical or other considerations. That is, in those patents, there was no disclosure of any way to perform the mathematical operations *except* by mental operations. *See In re Bologaro*, 62 F.2d 1059 (C.C.P.A. 1931) (method for setting lines of type using a mathematical procedure to determine average number of spaces per line not patent eligible; no disclosure of any machine for performing claimed method); *Don Lee v. Walker*, 61 F.2d 58 (9th Cir. 1932); *Haliburton Oil Well Cementing Co. v. Walker*, 146 F.2d 817 (9th Cir. 1944); *In re Heritage*, 150 F.2d 554 (C.C.P.A. 1945).

In *Gottschalk v. Benson*, the Court for the first time extended the mental steps doctrine to digital computers. To get to that decision it relied upon the following statement:

A digital computer, as distinguished from an analog computer, is that which operates on data expressed in digits, solving a problem by doing arithmetic as a person would do it by head and hand.

Benson, 409 U.S. 63, 65 n.3 (citing Ronald Benrey, *Understanding Digital Computers* 4 (1964)).

As our [amicus brief for Ronald Benrey](#) detailed at length, this statement was both factually and legally incorrect. This statement by the *Benson* Court has been frequently cited and relied upon by the Federal Circuit[1] and many federal District Courts[2] and has led to much confusion.

The Federal Circuit has frequently relied upon the *Benson* statement and its mental steps analysis as the mechanism for finding a claim to be nothing more than an abstract idea. For example, in *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366 (Fed. Cir. 2011), the court invalidated CyberSource’s patent on a method of verifying credit card transactions on the grounds that all the “method steps can be performed in the human mind, or by a human using a pen and paper.” *Id.* at 1372. Similarly, in *Bancorp Servs., L.L.C. v. Sun Life Assur. Co. of Canada*, 687 F.3d 1266 (Fed. Cir. 2012), the court invalidated a patent on an insurance policy management method saying “claim 3’s steps can all be performed in the human mind. Such a method that can be performed by human thought alone is merely an abstract idea and is not patent-eligible under § 101.” *Id.* at 1373. The *Bancorp* court went so far as to entirely equate computers with human brains based on *Benson*’s statement:

As the Supreme Court has explained, “[a] digital computer . . . operates on data expressed in digits, solving a problem by doing arithmetic as a person would do it by head and hand.” *Benson*, 409 U.S. at 65. Indeed, prior to the information age, a “computer” was not a machine at all; rather, it was a job title: “a person employed to make calculations.” Oxford English Dictionary, *supra*. Those meanings conveniently illustrate the interchangeability of certain mental processes and basic digital computation, and help explain why the use of a computer in an otherwise patent-ineligible process for no more than its most basic function—making calculations or computations—fails to circumvent the prohibition against patenting abstract ideas and mental processes.

Id. at 1277 (Fed. Cir. 2012). The plurality opinion in *CLS* likewise reiterated the view that “[a]t its most basic, a computer is just a calculator capable of performing mental steps faster than a human could.” *CLS*, 717 F.3d at 1286 (Lourie, J. concurring). *See also SmartGene, Inc. v. Advanced Biological Labs., SA*, 555 Fed. Appx. 950 (Fed. Cir. 2014) (claims computerized artificial intelligence system invalid where “every step is a familiar part of the conscious process that doctors can and do perform in their heads”).

Despite the Federal Circuit’s fondness for equating software inventions with mental steps—including as an underlying theme in the plurality opinion below—the Supreme Court made no mention whatsoever of either the doctrine or the concept in *Alice*. The absence is notable, since the Court has typically quoted from *Benson*:

Flook : “Phenomena of nature, though just discovered, mental processes, and abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work.” *Benson*, 409 U.S. at 67.

Bilski: Thus, this Court stated in *Benson* that “[p]henomena of nature . . . , mental processes, and abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work,” *Benson*, 409 U.S. at 67 (Stevens, J. concurring).

Alice: “We have long held that this provision contains an important implicit exception: Laws of nature, natural phenomena, and abstract ideas are not patentable.” *Association for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U. S. ___, (2013) (slip op., at 11) (internal quotation marks and brackets omitted).

Thus, the Court appears to no longer expressly rely on a mental steps framework to evaluate patent claims for Abstract Ideas. This is also a signal that the courts and patent examiners should not too quickly assume that they can apply a mental steps to patent eligibility determinations.

Alice and Software Patents

The impact of *Alice* on software patents is now much clearer, and much more limited. All software technologies rely on the [use of abstraction](#) to describe the entities and objects being manipulated and the operations being performed by the computer. For example, in database design, programmers use basic abstractions such *tables, fields, records, rows, columns, and objects*, and define others such as data structures representing a *bank account* or a *purchase order*. The functions performed on these entities are themselves abstractions: programs read, write, and lock records, sort tables, and delete objects; bank accounts are *credited* or *debited*; purchase orders are *verified* and *approved*. When you *copy a file* on your *desktop*, or *download an electronic book*, or even *close a tab* in a *browser* you are dealing with abstractions of objects and operations. Similarly, advertising on social networks, organizing search

results, managing network traffic, encrypting a file, or hosting an online gaming platform all make use of abstractions. All of these abstractions are the little-*a*, little-*i* type of abstract ideas, tools that are used to define products and services, and to solve various kinds of design or engineering problems. They are not “fundamental” or “building blocks” of commerce, science, or anything else; they are not the Abstract Ideas that the Court is seeking to protect. Even broad claims on these kinds of inventions are unlikely to be “fundamental” in the sense used by the Court.

Judges and patent examiners have to take seriously the instruction of the Court to “distinguish between patents that claim the building blocks of human ingenuity and those that integrate the building blocks into something more.” Recognizing that the use of abstraction is an inherent part of engineering and inventing generally, and in particular in the software field, is an essential step to correctly applying the Court’s analysis. One cannot simply assume that the appearance of software abstractions like the foregoing in a patent claim indicates that the claims recite a prohibited Abstract Idea. Rather, the vast majority of software patent claims simply use the same types of descriptors that engineers always use to articulate their designs. Further, the very nature of patent claims is that [they rely on abstractions](#) to describe the invention. You simply cannot claim a software invention without using abstractions, any more than you can claim a small molecule without using the names or symbols of chemicals and elements. Thus, evaluation of a software patent claim requires much more than simply identifying the abstractions used in the claims, and assuming these are Abstract Ideas. Similarly, it is incorrect to assume that patent claims for software are Abstract Ideas on the grounds that software is essentially mental steps performed by computer.

If the Court really wanted to hold all software patents invalid, we can presume that it would have said that clearly and unambiguously. It did not do that. The Justices were clearly concerned about such a ruling and its impact on the software industry and the economy. By avoiding discussing Alice’s patent as an exemplar of software patents, the Court signaled that this case was not really about software. Similarly, by articulating Abstract Ideas as a special legal concept, it set up a framework so that the exceptions to patent eligibility do not ultimately swallow up existing patents or make future innovations unprotectable.

[1] *In re Sarkar*, 588 F.2d 1330 (C.C.P.A. 1978); *In re De Castelet*, 562 F.2d 1236 (C.C.P.A. 1977); *In re Comiskey*, 554 F.3d 967 (Fed. Cir. 2009); *In re Waldbaum*, 559 F.2d 611 (C.C.P.A. 1977); *In re Christensen*, 478 F.2d 1392 (C.C.P.A. 1973); *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366 (Fed. Cir. 2011); *Ultramercial, Inc. v. Hulu, LLC*, 722 F.3d 1335 (Fed. Cir. 2013); *DealerTrack, Inc. v. Huber*, 674 F.3d 1315 (Fed. Cir. 2012);

[2] *Bancorp Servs., L.L.C. v. Sun Life Assur. Co. of Can.*, 771 F. Supp. 2d 1054 (E.D. Mo. 2011), *aff'd*, *Bancorp Servs., L.L.C. v. Sun Life Assur. Co. of Canada*, 687 F.3d 1266, (Fed. Cir. 2012); *Digitech Info. Sys. v. Bmw Fin. Servs. Na, LLC*, 864 F. Supp. 2d 1289 (M.D. Fla. 2012); *Perfect Web Techs., Inc. v. Infousa, Inc.*, 89 U.S.P.Q.2d (BNA) 2001 (S.D. Fla. Oct. 24, 2008); *Prometheus Labs. v. Mayo Collaborative Servs.*, 86 U.S.P.Q.2d (BNA) 1705 (S.D. Cal. Mar. 28, 2008); *Prometheus Labs., Inc. v. Mayo Collaborative Servs.*, 581 F.3d 1336, (Fed. Cir. 2009); *SmartGene, Inc. v. Advanced Biological Labs., SA*, 852 F. Supp. 2d 42 (D.D.C. 2012); *CLS Bank Int'l v. Alice Corp. Pty, Ltd.*, 768 F. Supp. 2d 221 (D.D.C. 2011); *Big Baboon, Inc. v. Dell, Inc.*, 2011 U.S. Dist. LEXIS 155536 (C.D. Cal. Feb. 8, 2011); *Compression Tech. Solutions LLC v. EMC Corp.*, 2013 U.S. Dist. LEXIS 78338 (N.D. Cal. May 29, 2013); *Digitech Image Techs., LLC v. Konica Minolta Holdings, Inc.*, 2013 U.S. Dist. LEXIS 108010 (C.D. Cal. July 31, 2013); *Digitech Image Techs., LLC v. Electronics for Imaging, Inc.*, 2013 U.S. Dist. LEXIS 108008 (C.D. Cal. July 31, 2013); *Digitech Image Techs., LLC v. Fujifilm Corp.*, 2013 U.S. Dist. LEXIS 108007 (C.D. Cal. July 31, 2013); *Digitech Image Techs., LLC v. Pentax Ricoh Imaging Co., Ltd.*, 2013 U.S. Dist. LEXIS 107900 (C.D. Cal. July 31, 2013); *Digitech Image Techs., LLC v. Sigma Corp.*, 2013 U.S. Dist. LEXIS 107893 (C.D. Cal. July 31, 2013); *Fuzzysharp Techs. Inc. v. Intel Corp.*, 2013 U.S. Dist. LEXIS 160897 (N.D. Cal. Nov. 6, 2013); *Lumen View Tech. LLC v. Findthebest.com, Inc.*, 2013 U.S. Dist. LEXIS 166852 (S.D.N.Y. Nov. 22, 2013)

IV. Conclusion

CLS decision has made a mess out of the patent law by ignoring statutes and their intent set out by Congress, and it will take legislation to straighten out the mess. See, e.g., “Ignorance Is Not Bliss: Alice Corp. v. CLS Bank International” (*IPWatchdog*, Eric W. Gutttag, July 25, 2014)

Meanwhile, PTO application of the *CLS* decision, as with *Mayo*, must be performed uniformly between all areas within the technologies. The Guideline should not be limited in application to administratively favored/disfavored industries, fields of computer science, or even to computer science generally, with carte blanche rejections. Instead, the Guideline should be revised to “distinguish between patents that claim the building blocks of human ingenuity and those that integrate the building blocks into something more,” as stated in the *CLS* decision, and should be applied evenhandedly to “all inventions,” and based thoughtfully on the particulars of what is claimed.

Respectfully Submitted,

A handwritten signature in blue ink, appearing to read 'Peter K. Trzyna', with a horizontal line extending to the right.

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