

March 16, 2015

Via Electronic Mail
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Attention: Raul Tamayo, Senior Legal Advisor; and
Michael Cygan, Senior Legal Advisor,
Office of Patent Legal Administration

Re: IBM Corporation Comments on "2014 Interim Guidance on Patent Subject Matter Eligibility," 79 Fed. Reg. 74618 (December 16, 2014)

IBM thanks the United States Patent and Trademark Office (Office) for the opportunity to comment on the 2014 Interim Guidance on Patent Subject Matter Eligibility (Interim Guidance) and the Abstract Idea Examples (Examples). Patent-eligibility under 35 USC §101 and in particular the judicially-created "abstract idea" exception are issues of paramount importance to IBM as an innovator and patentee in the field of information technology. The Office's interpretation and application of the Supreme Court's decisions on subject matter eligibility in examining patent applications and reviewing issued patents is critical for promoting innovation and maintaining a balanced patent system.

The Interim Guidance builds on the Preliminary Examination Instructions following the *Alice* decision, as well as last year's *Myriad/Mayo* guidance and the public comments in response thereto. We appreciate the Office's efforts to capture the reasoning of the Supreme Court cases and subsequent interpretations by lower courts, and to expand on them in the Examples. However, we believe more guidance and clarification is needed. A number of aspects of the guidance appear to be in conflict or incomplete. We recognize that the *Alice* Court declined to address the scope of the abstract idea exception beyond analyzing the claims at issue, and that as a consequence, lower courts have struggled to achieve consistency. Nevertheless, we believe the Office, in conjunction with the patent community, can improve the Interim Guidance to provide needed clarity and predictability for examiners and applicants, by addressing inconsistencies and by better delineating and explaining certain aspects of the Office's application of the *Alice* test.

We respectfully offer our views on areas of the Interim Guidance that would benefit from clarification, with particular focus on the identification and treatment of abstract ideas. These comments expand upon IBM's comments in response to the Preliminary Examination Instructions submitted in July of last year, re-submitted herewith (IBM's 2014 Comments). We believe the most significant way to improve examination is through a more disciplined evaluation

of eligibility, by enforcing the requirement that examiners alleging ineligibility must support all aspects of that allegation with evidence and reasoned analysis. Thorough examination, and compact prosecution, will help ensure each and every claimed invention is appropriately examined and will provide applicants with the information needed to effectively respond. We also believe more detail than what is provided in the Interim Guidance is needed to explain the required showings under both steps 2A and 2B as applied to the abstract idea exception, especially in light of inconsistencies in the case law. We urge the Office to continue to work with the patent community as it develops and applies guidance to examiners on eligibility, to ensure that the guidance is workable and reflects the developing law.

Rejections must be supported by reasoning and evidence

Effective patent examination requires an understanding of the invention and how it satisfies – or does not satisfy – the statutory requirements of patentability; and clear communication between the applicant and examiner. Since the *Alice* decision, we have found that the vast majority of eligibility rejections satisfy neither of these goals, because they do not provide any reasoning or evidentiary support.

The Interim Guidance recognizes the importance of a well-reasoned rejection:

In the rejection, identify the exception by referring to where it is recited (*i.e.*, set forth or described) in the claim and explain why it is considered an exception. Then, if the claim includes additional elements, identify the elements in the rejection and explain why they do not add significantly more to the exception. Also see MPEP 2103(VI) and 2106(III) for instructions on making the rejection.

Interim Guidance, p. 74624-5. MPEP 2103(VI) requires examiners to “clearly communicate findings, conclusions, and their bases,” and confirms the requirement to make a *prima facie* case. MPEP 2016(III) specifically requires examiners to review evidence when evaluating a claim for ineligible subject matter: “USPTO personnel should review the totality of the evidence (e.g., the specification, claims, relevant prior art) before reaching a conclusion with regard to whether the claimed invention sets forth patent eligible subject matter;” and further requires the same *prima facie* showing for eligibility rejections as for any other type of rejection: “The examiner bears the initial burden ... of presenting a *prima facie* case of unpatentability. In *re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).” MPEP 2142 confirms the meaning of “*prima facie* case” in the context of obviousness: “[t]he examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness.”

Careful review of the Supreme Court cases, on eligibility and claim construction, shows that eligibility determinations are not to be based on speculation. For example, both in *Bilski* and *Alice*, the Court supported its contention that risk hedging and intermediated escrow were “fundamental economic practices” through citations to references well-known in the pertinent field that disclosed these practices. *Bilski v. Kappos*, 561 U.S. 593, 611-12 (2010); *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2356-57 (2014). In *Teva*, in overruling long-standing precedent of the Federal Circuit, the Supreme Court held that claim construction may involve factual determinations. *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841-42 (2015). These cases set forth some examples of the type of evidence examiners should provide in conjunction with claim construction and identification of an abstract idea. In addition, and as further contemplated by the Interim Guidance, if the claim is directed to an abstract idea, then further evidence must be provided by the examiner to prove an allegation that additional elements recited in the claim do not satisfy the step 2B inquiry as “something more.”

The Interim Guidance reflects the need for reasoned eligibility analysis by examiners, supported by evidence. However, we have observed that in the vast majority of instances where our patent applications are subject to rejections under the Court’s abstract idea exception after the *Alice* decision, there is no reasoning or evidence provided in support of the rejection. We receive form paragraphs that differ little from one application to another. It is of course impossible to effectively respond to such rejections. Unsupported and unexplained rejections invite protracted examination and appeal, neither of which is in the interests of the Office or applicants.

The Office must adjust and expand the Interim Guidance to ensure each rejection is properly supported and explained. The passage cited above appears at the end of the section covering “Flow Chart Step 2B.” The passage should be moved to a more prominent position in the guidance, preferably the introductory section before discussing step 2A, making clear that the evidentiary and explanatory requirements for eligibility rejections are the same as those for establishing a *prima facie* case for other types of rejections. The Interim Guidance should also offer examples of the evidence and explanation required to make a finding under each step of the guidance. Increased focus on these requirements should improve the quality of Office Actions and allow more efficient and effective examination.

Compact prosecution and order of evaluation

As we explained in IBM’s 2014 Comments, we do not agree that the eligibility analysis must be performed before the other statutory requirements for patentability are evaluated. Imposing an “order of examination” conflicts with the objectives of compact prosecution. The Office itself has accordingly extolled the benefits of flexibility in the order of application of the statutory requirements for

patentability.¹ Examiners must have the discretion to evaluate patentability requirements in the order that makes the most sense on a case-by case basis. See IBM's 2014 Comments, section 3.

Step 2A: Is the claim directed to an abstract idea?

The Interim Guidelines clearly states that a claim is “directed to” an exception if the exception is explicitly recited in the claim. However, the fact that a claim may nominally recite ineligible subject matter does not mean the claim as a whole is ineligible, nor that analysis under step 2B “significantly more” is required. In the streamlined eligibility analysis, the Interim Guidance explains: “a claim that may or may not recite a judicial exception but, when viewed as a whole, clearly does not seek to tie up any judicial exception such that others cannot practice it” does ... “not need to proceed through the full analysis herein as ... [its] eligibility will be self-evident.” Interim Guidance, p. 74621. This principle – that the *Mayo/Alice* two-part test is triggered only when ineligible subject matter is the focus of the claim, pre-empting or “tying up” its practical uses – provides a useful framework for analyzing eligibility, and we suggest the Interim Guidelines make this point more prominently, e.g. in the introductory section.

Another important principle reflected in the streamlined eligibility analysis and echoed throughout the Interim Guidance is the requirement to evaluate the claim “as a whole.” Determining that a claim is directed to ineligible subject matter thus requires examination of all elements of a claim, and examiners should be instructed not to “parse” the claim into individual elements that, standing alone, may have little relationship to the claimed invention. Even if the examiner can make a reasoned, supported determination that a claim as a whole is directed to an abstract idea, the examiner must not cleave off pieces of a claim when analyzing step 2B, as stated in the Interim Guidance: “A claim directed to a judicial exception must be analyzed to determine whether the elements of the claim, considered both individually and as an ordered combination, are sufficient to ensure that the claim as a whole amounts to significantly more than the exception itself—this has been termed a search for an ‘inventive concept.’” Interim Guidance, p. 74624.

If the examiner fully supports a determination under step 2A as described above, only moving to step 2B if the abstract idea is the focus of the claimed invention, the step 2B analysis should have the proper focus.

¹ David J Kappos, “Some Thoughts on Patentability,” Director’s Forum: A Blog From USPTO Leadership, July 27, 2012 (http://www.uspto.gov/blog/director/entry/some_thoughts_on_patentability) (last visited March 8, 2015) (“Applications that are presented in the best possible condition for examination with clear and definite claims that are believed to distinguish over the prior art and are supported by a robust disclosure will most likely not encounter rejections based on eligibility. Avoiding issues under § 101 can have a very positive effect on pendency and help examiners focus on finding the closest prior art, leading to strong patent protection.”).

We are also concerned with the Office's identification of examples of abstract ideas. The attempt to fit older cases under the umbrella of recent Supreme Court decisions is confusing. In addition, many of the more recent lower court cases are inconsistent with one another. While we understand the Office is bound to follow the courts, we believe the Office has the ability and the obligation to reconcile these decisions to the extent possible. We also believe the Office must be careful in describing the abstract ideas in these cases, because over-generalizing will encourage examiners to reject many more claims than the reasoning of a specific case might support. For example, both the descriptions of *Smartgene* ("comparing new and stored information and using rules to identify options") and *Cyberfone* ("using categories to organize, store and transmit information") could be seen as describing at least parts of Example 1 "Isolating and Removing Malicious Code from Electronic Messages," which the Office properly described as not directed to an abstract idea. The Office should provide additional explanation of what the abstract idea in these cases really means, and how the presence of information processing elements in a claim (such as Example 1) is not the basis for a finding that a claim is directed to an abstract idea.²

The enumerated categories of abstract ideas also warrant further explanation. For example, "certain methods of organizing human activity" should be described in more detail. Most inventions – particularly process inventions – can be described as involving human activity. Without more explanation and limitation, this category could "swallow" all process inventions. We suggest following the reasoning of *Alice*, which appears to indicate that this description is simply a way to describe the "fundamental economic practices" found ineligible in both *Bilski* and *Alice*. Responding to the patentee's contention that abstract ideas are only "pre-existing fundamental truths," thus excluding *Alice*'s patented inventions from the abstract idea category, the *Alice* Court explained that "[t]he patent in *Bilski* simply involved a 'series of steps instructing how to hedge risk.' Although hedging is a longstanding commercial practice, it is a method of organizing human activity, not a 'truth' about the natural world 'that has always existed.'" *Alice*, 134 S.Ct. at 2356. (citations omitted). If the Office maintains this category, it should explain its meaning more clearly and explain how it differs from "fundamental economic practices."

When an examiner contends that a claim is directed to a "fundamental economic practice," guidance should distinguish between evidence needed to support this finding and evidence relevant to proving obviousness or lack of novelty. Proof of a "fundamental economic practice" should require more than a showing of obviousness, for example. The former should require proof that the practice is indeed fundamental to the field it occupies, something that has been

² Another example similar to Example 1 is an invention involving data structures. See, e.g. *In re Lowry*, 32 F.3d 1579, 1580 (Fed. Cir. 1994) ("Data structures are the physical implementation of a data model's organization of the data.").

widely known and relied on, and thus a subset of situations where any alleged abstract idea could be found obvious or lacking novelty.

With respect to mathematical formulae, we note the example of the robotic arm in the description of streamlined eligibility analysis. We agree that the robotic arm is a good example of an invention that need not be fully evaluated under steps 2A and 2B, but note that the invention specifically contemplates using “mathematical relationships” to operate. The Office should provide a better explanation of when a claimed invention may include a mathematical equation (or any other abstract idea) and nevertheless be subject to streamlined analysis, such as when it is clear the claim does not pre-empt any judicial exception. For example, if an invention including a mathematical formula is clearly directed to a specific application in a technical field, such as the invention in *Diamond v. Diehr*, would it be subject to streamlined analysis? Should an invention including a mathematical formula that clearly improves the operation of a computer system, such as through parallel processing, also be subject to streamlined analysis? We believe it should be the case in both instances, because these types of inventions can easily be identified as eligible without resorting to a detailed and time-consuming two-part analysis. The vast majority of inventions should not implicate eligibility concerns, and a better understanding of the streamlined analysis and when it applies should help focus examiners’ attention on the appropriate cases.

Finally, we suggest omitting “an idea of itself” as a category. The Court in *Alice* did not identify this as a separate category of abstract ideas, but used the phrase to more generally refer to the meaning of an abstract idea: “The ‘abstract ideas’ category embodies ‘the longstanding rule that ‘[a]n idea of itself is not patentable.’” *Alice*, 134 S.Ct. at 2355. (citations omitted). In any event, without more explanation this type of open-ended exception is impossible to apply.

Step 2B: What is “something more”?

In IBM’s 2014 Comments, attached hereto, we provided and explained examples of computer-implemented inventions that satisfy both steps 1 and 2 of the Supreme Court’s eligibility framework (steps 2A and 2B of the Interim Guidance). We strongly urge the Office to develop more specific examples or guidance along these lines to show that:

- System software inventions below the application layer (such as BIOS software and middleware) are not directed to abstract ideas and improve the functioning of the computer and thus satisfy steps 2A and 2B.
- Improvements to system software, such as improvements to an operating system, are similarly not directed to abstract ideas and also improve the functioning of the computer, thus satisfying steps 2A and 2B.
- If application software, or an improvement thereto, is directed to an abstract idea, it nevertheless satisfies step 2B if, e.g., a) its functionality

and operability is limited to a computer environment, b) its claims include meaningful limitations to prevent pre-emption, and/or c) it improves the functioning of the computer. *DDR Holdings, LLC v. Hotels.com, LP*, 773 F.3d 1245, 1257-59, 113 U.S.P.Q.2d 1097, 1105-07 (Fed. Cir. 2014); *Alice*, 134 S. Ct. at 2359 - 60.

Examples such as these would help examiners understand how to distinguish between inventions that may implicate eligibility concerns and those that will not.

As noted above, the Office must do more than merely reference, at a high level, lower court decisions. Many of these decisions are in direct conflict with one another. For example, the Office uses *RCT* as a basis for one example of an eligible claim, and *Digitech* as a basis for an example of an ineligible one. *Research Corp. Techs. v. Microsoft Corp.*, 627 F.3d 859, 97 U.S.P.Q.2d 1097 (Fed. Cir. 2010); *Digitech Image Techs. v. Electronics for Imaging, Inc.*, 758 F.3d 1344, 111 U.S.P.Q.2d 1717 (Fed. Cir. 2014). In describing the *RCT*-based example, the Office states that the presence of a mathematical algorithm in the claim triggers step 2A, but the claim is nevertheless eligible because “additional steps tie the mathematical operation (the blue noise mask) to the processor’s ability to process digital images.” In the example based on *Digitech*, a mathematical algorithm is also recited, but the claim does not satisfy step 2 because “[t]he gathering and combining merely employs mathematical relationships to manipulate existing information to generate additional information in the form of a ‘device profile,’ without limit to any use of the device profile.” Does this mean that the Office is making a distinction similar to that made in *In re Abele*?³

Another area where the Office should provide more guidance is the treatment of mathematical formulae with regard to step 2B. As noted above in the context of identifying an abstract idea, the mere presence of a mathematical equation in a claim does not necessarily mean the claim is directed to an abstract idea, and the robotic arm example shows that the claim may be found eligible using the streamlined analysis. However, in our experience the presence of a mathematical equation often results in a summary ineligibility rejection. We urge the Office to clarify when such claims qualify for the streamlined analysis, or when they should be examined under step 2B – *i.e.* if the focus of the claim is not on the mathematical equation (such as the robotic arm), streamlined analysis should be available. The Office should provide additional examples. Would the invention in *Diamond v Diehr* be subject to the streamlined analysis? Also, the Office should provide additional examples of claims that include mathematical

³ See *In re Abele*, 684 F.2d 902, 907; 214 U.S.P.Q.2d 682 (C.C.P.A. 1982): “Rather, Walter should be read as requiring no more than that the algorithm be ‘applied in any manner to physical elements or process steps,’ provided that its application is circumscribed by more than a field of use limitation or non-essential post-solution activity. Thus, if the claim would be ‘otherwise statutory,’ *id.*, albeit inoperative or less useful without the algorithm, the claim likewise presents statutory subject matter when the algorithm is included.”

equations but still satisfy step 2B since, e.g, the claimed invention improves the functioning of a computer or improves a particular technology. (See Example 3 in IBM's 2014 Comments "Cryptographic communications system and method" to Rivest et al). We know from these examples that the presence of a mathematical equation performed on a computer does not automatically render a claim ineligible, and the Office needs to ensure that examiners analyze these claims carefully and consistently.

Another example of claimed inventions including mathematical equations that should satisfy the test for eligibility are those whose functionality requires use of the computing environment. While merely allowing a calculation to be performed faster than it would be by a person, standing alone, may not be "something more," functionality that requires a computer certainly would be. For example, if it would be impossible to achieve the functionality of the claimed invention in the lifetime of a person without the use of a computer, then the computer is performing an essential function and cannot be discounted in the eligibility analysis. Furthermore, if the process requires particular computer operations that a person would never perform, that also supports the fact that the process does not have an analog outside the computer environment. Often such inventions also involve intermediate data structuring steps which will affect the physical location and structure of a data file (see Example 1). We urge the Office to include additional examples of eligible claims including mathematical equations to illustrate these points.

Step 2B of the eligibility analysis incorporates the concept of pre-emption. If the examiner has shown that a claim recites an abstract idea, then step 2B directs the examiner to determine if any claim element, or combination of elements, provides "something more" than the abstract idea. As noted in the guidelines, the important inquiry is whether the claim "include[s] additional features to ensure that the claim describes a process or product that applies the exception in a meaningful way, such that it is more than a drafting effort designed to monopolize the exception." We do not have examples of detailed analysis of step 2B (see above) to see how examiners are applying this step. This follows from the fact that the Office Actions to date do not explain, prove or properly identify the abstract idea when making an "abstract idea" eligibility rejection. We believe that clear identification of an abstract idea will help the examiner properly to apply step 2B of the test, and only reject claims that truly pre-empt the identified abstract idea.

Examiner training and patent community collaboration

In addition to problems with the content of Office Actions, we have experienced delay in many cases in receiving examiner responses to our amendments and remarks for applications subject to abstract idea eligibility rejections. We believe extensive education is needed to ensure examiners issue supported, and timely, Office Actions. We understand the challenge posed by

changing and unsettled law, but training examiners on the current state of eligibility and providing and explaining examples should prevent the most significant gaps and delays in examination.

The patent community can help the Office improve guidance on eligibility issues. The Office should continue to provide opportunities for the patent community to provide feedback, as it did in the January roundtable. In addition, the Office should continue to solicit feedback as it updates guidance, including development of detailed MPEP provisions, such as the formulation of form paragraphs, and the evidence and explanation required therein for making a *prima facie* showing of ineligibility.

Given what appears to be a widespread increase in ineligibility rejections from the Office, we respectfully request that the Office set up a special applicant 101 hotline, and expedite correction of inappropriate or incomplete 101 rejections. Such rejections should not be counted as proper notifications under 35 USC §132; and as a result, 1) the applicant should be entitled to a patent term adjustment under 35 USC §154(b)(1)(A)(i) for any delay by the Office beyond the statutory time limit (14 months) until receipt of a properly explained and supported Office Action, and 2) a subsequent proper Office Action should be non-final. We believe the Office should pay particular attention to applications where only §101 rejections are made since these Office Actions appear susceptible to faulty analysis. For example, where an examiner alleges that a claimed invention is directed to a “fundamental economic practice,” it is more likely than not that the claim is also susceptible to a prior art rejection. The absence of the latter is an indication that such prior art does not exist or is not being applied properly to the claims.

Conclusion

In conclusion, IBM appreciates the opportunity to comment on the Interim Guidelines. We look forward to working with the Office to improve eligibility guidance for examiners and the public. We strongly encourage the Office to continue its collaboration with the public and obtain feedback on how computer-implemented inventions are being examined as it further improves subject matter eligibility guidelines.

Respectfully submitted,

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