



2020 Engineering & Technology Year in Review

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2020 saw some notable developments relating to the patentability of software and computer-related inventions. Here, we review some of the key highlights: 1) the Federal Court of Canada's decision regarding the proper test for patentable subject matter; 2) the subsequent updates to the Canadian Intellectual Property Office's (CIPO) examination guidelines; and 3) related updates in the United States.

Subject Matter Eligibility in Canada

To be patentable in Canada, an invention must meet four main criteria: it must be new, it cannot be obvious, it must be useful and, crucially, it must fall within the definition of "invention" (as defined in the *Patent Act*). The last criteria can be a sticking point for some types of inventions, particularly those involving computer software (including AI) or business methods. Section 27(8) of the Canadian *Patent Act* specifically prohibits patents for "any mere scientific principle or abstract theorem." Software and business method inventions often are alleged to fall within one of those categories.

CIPO's approach to the question of patentable subject matter – what can be patented – was much-criticized in recent years as departing from that which was required in law. In upholding an appeal by Amazon.com in 2011, the Federal Court of Appeal ruled that CIPO's attempts to use a "substance of the invention" test of its own creation was "incorrect in law." Rather, the Court made clear that "determination of subject matter must be based on a purposive construction of the patent claims." Nevertheless, CIPO in the intervening years directed its patent examiners to use yet another, novel "problem-solution" approach to claim construction when considering the issue of patentable subject matter. This approach, while couched in the language of purposive construction, differed markedly from that test as defined by the Supreme Court of Canada in two landmark decisions.

On August 21, 2020, the Federal Court of Canada handed down its ruling in the appeal of Yves Choueifaty against the rejection of his application by the Commissioner of Patents (*Yves Choueifaty v Attorney General of Canada*, 2020 FC 837, [*Choueifaty*]). Choueifaty had argued that CIPO was wrong to use the problem-solution approach in construing patent claims. Ruling in Choueifaty's favour, the Court found that the Commissioner of Patents had indeed "erred in determining the essential elements of Choueifaty's claimed invention by using the problem-solution approach," rather than the approach the Supreme Court has directed to be used, in particular, one that considers the inventor's intention and the words of the claim. It remanded the application to CIPO, to perform a fresh assessment of the claims in view of the decision.

As noted above, the Supreme Court of Canada has set out the principles of purposive construction to be used when construing patent claims. Among other steps, purposive construction involves establishing whether particular claim elements should be considered essential or non-essential to the invention. CIPO's previous problem-solution approach interpreted this as a directive to exclude elements from consideration, unless they are deemed essential *to solving the problem* faced by the applicant. CIPO's approach thus allowed a patent examiner to disregard certain claim elements even in cases where the applicant insisted that they were indeed essential to the invention. It justified this departure by relying on a 2008 Federal Court decision, which it argued held that the Supreme Court's direction regarding purposive construction applied only to court proceedings involving issued patents, and not the examination of patent applications. The decision in *Choueifaty* firmly rebukes this position.

Although the ruling in *Choueifaty* has implications in all cases where purposive construction is to be used during examination, it has particular importance with respect to the question of patentable subject matter. CIPO's problem-solution approach created great difficulty for computer-based and medical diagnostic inventions. For example, in computer-related



cases, patent examiners often characterized the alleged “problem” in such a manner that any computer elements recited in a claim were deemed non-essential and thus disregarded. Once the computer elements were disregarded, what remained was easily classified as an abstract idea or mere scheme and thus the entire invention excluded from patentability.

The decision in *Choueifaty* rests solely on the issue of claim construction, and the Court was careful to steer clear of the thorny issue of what constitutes patentable subject matter. Nevertheless, both topics are inextricably linked. Therefore, this case has had and will have an immediate impact on patent prosecution, particularly in the computer-related fields.

CIPO Updates Subject Matter Guidelines for Examiners

In response to *Choueifaty*, CIPO published a practice notice – a guidance document for patent examiners – to aid in correctly applying purposive construction. While *Choueifaty* did not specifically delve into what constitutes patentable subject matter, the practice notice does also provide guidance on this topic. Therefore, the notice undoubtedly will have significant implications for patentable subject matter, particularly in the fields of artificial intelligence and other computer-implemented inventions.

The practice notice reaffirms that the previous “problem-solution” approach in the identification of essential elements during purposive construction (for identification of patentable subject matter) should no longer be applied. CIPO examiners are directed to apply the purposive construction test as set out in *Free World Trust*. That is examiners must consider the entirety of the specification and determine what a person skilled in the art would have determined the nature of the invention to be. All claim elements are to be presumed essential, until shown otherwise.

Additionally, the practice notice categorically states that any claim construction that looks only at the so-called “substance of the invention” is incorrect. Despite this, the notice attempts to distinguish between elements deemed essential for establishing the boundaries of a patent monopoly, and those involved in the patentable subject matter analysis. For example, according to the practice notice, an element may be an essential element of a claim only because the applicant intended to limit the scope of the monopoly being claimed to less than what the applicant actually invented. An element may thus be an essential element of the claim because the applicant intended it to be essential even though it has no material effect on the working of the invention. Such an element “*would not form part of the actual invention because the fact that it has no material effect on the working of the invention means it does not cooperate with other elements of the claimed invention*” (emphasis added). Keen readers may inquire as to the difference between this new “actual invention” test and the now-discredited “substance of the invention” test. This remains to be seen, but it may be hoped that the emphasis on “cooperating” with other elements of the invention will lead to more predictable results.

The notice further adds that there may not necessarily be patentable subject matter even if a computer is necessary to put a disembodied idea, scientific principle or abstract theorem into practice, and even if the computer cooperates together with other elements of the claimed invention. Citing the Federal Court of Appeal’s 1982 decision in *Schlumberger v Canada (Commissioner of Patents)*, [1982] 1 FC 845 (FCA), the notice states that “if a computer is merely used in a well-known manner, the use of the computer will not be sufficient to render the disembodied idea, scientific principle or abstract theorem patentable subject-matter.” Further, the practice notice asserts that an abstract idea “must cooperate with other elements of the claimed invention so as to become part of a combination of elements making up an actual invention.”

CIPO’s new approach bears a resemblance to that used in the United States, where examiners are directed to consider whether an abstract idea is sufficiently “integrated into a practical application” and where additional elements – such as a computer – must be meaningful limitations that provide more than “extra-solution activity.” The notice also provides examples of patentable subject matter analysis for computer-implemented method and system claims.

Taken at face value, the new guidance is a welcome development. For examiners, it provides a reasonably clear roadmap for assessing patentable subject matter. For applicants, the new guidance gives hope that computer-implemented inventions will be considered more holistically. Specifically, all computer elements of an invention should now be considered for the purposes of assessing subject matter, so long as they “cooperate with other elements” to form the “actual invention.” There remains a risk, however, that under the new guidance examiners will continue to disregard computer elements of claims that they deem insufficiently connected to the “actual invention.” It remains to be seen how the guidance will be implemented in the coming months.

Subject Matter Eligibility in the United States – USPTO Revises Examination Manual



On June 30, 2020, the United States Patent and Trademark Office (USPTO) revised the Manual of Patent Examining Procedure (MPEP) Ninth Edition and updated it to reflect current USPTO patent practice and relevant case law as of October 31, 2019. In particular, these changes updated the MPEP to reflect current USPTO practice regarding the patent subject matter eligibility of high tech and life sciences inventions.

The MPEP is a guidance document regarding patent prosecution practices and procedures used extensively by U.S. patent examiners, patent agents and the public. While the MPEP does not have the force and effect of law, USPTO patent examiners routinely follow the guidance it contains. An up-to-date MPEP increases the predictability of patent examination and consequently reduces the cost of patent prosecution.

The June 2020 MPEP revision was the first such revision in over two years and, as a result, included significant substantive and administrative updates.

One of the most significant updates pertained to Subject Matter Eligibility guidance. Since the 2013 decision of the U.S. Supreme Court in *Alice Corp v CLS Bank International* (“*Alice*”), which itself built on the Court’s decision in *Mayo Collaborative Services v Prometheus Laboratories, Inc.* (“*Mayo*”), the USPTO has released numerous guidance documents in order to clarify this area of law. The latest MPEP revision incorporated the USPTO’s two most recent documents on this topic: the *October 2019 Patent Eligibility Guidance Update*, 84 FR 55941 (October 18, 2019) (“the October Guidance”) and the *2019 Revised Patent Subject Matter Eligibility Guidance*, 84 FR 50 (January 7, 2019) (“the 2019 PEG”). Previously, the October Guidance and the 2019 PEG had been separate documents that superseded the sections of MPEP concerning subject matter eligibility. With this revision, MPEP was updated and may be relied on to reflect current practices.

***Alice/Mayo* Test**

The *Alice* decision confirmed the two-step test that should be used by USPTO patent examiners for determining whether the subject matter of patent claims is patentable under U.S. law. The first step of the test calls for examiners to determine if the claims of a patent application fall within one of the four statutory categories: a process, machine, manufacture, or composition of matter. If yes, the examiners should determine if the claims are directed to a judicial exception, such as a law of nature, a natural phenomenon, or an abstract idea. If no, the claims qualify as eligible subject matter. Otherwise, if it is believed that the claims are directed to a judicial exception, examiners assess whether the claim recites additional elements that amount to significantly more than the judicial exception.

The Revisions: The 2019 PEG and the October Guidance

In the aftermath of the *Alice* decision, the USPTO identified that there was ambiguity with respect to what constituted a claim “directed to a judicial exception.” The 2019 PEG was intended to provide guidance in two areas. First, the 2019 PEG enumerated three groups of abstract ideas, a category of judicial exception that had previously lacked well-defined boundaries. Second, the 2019 PEG provided a more consistent approach for determining whether a claim is “directed to” a judicial exception. These changes are reviewed in [an earlier article](#).

The October Guidance was released in response to public commentary regarding the 2019 PEG and contained additional guidance. Specifically, the October Guidance provided additional guidance for evaluating whether a claim “recites” a judicial exception and, if so, whether the judicial exception is “integrated into a practical application” such that the claim as a whole is not “directed to” the judicial exception.

Both the 2019 PEG and the October Guidance set out that the three enumerated groups of abstract ideas are mathematical concepts, mental processes, and certain methods of organizing human activity. The other judicial exceptions include laws of nature and natural phenomena.

MPEP Revisions Concerning Engineering and Technology Patents

The June 2020 MPEP revision updates guidance concerning abstract ideas, but not for laws of nature or natural phenomena. For laws of nature and natural phenomena, examiners are directed to follow previous guidance.

With regard to abstract ideas, examiners are now directed to: (a) identify the specific limitation(s) in the claim under examination (individually or in combination) that the examiner believes recites an abstract idea; and (b) determine whether the identified limitation(s) falls within the subject matter groupings of abstract ideas enumerated in the 2019 PEG and, now, MPEP (see section 2106.04(a)(2)).



The subject matter groupings enumerated in the 2019 PEG reflect the USPTO's movement away from the case-comparison approach. The three enumerated groupings are rooted in U.S. Supreme Court precedent and Federal Circuit decisions. While the previous MPEP revision had identified some of these groupings, the June 2020 revision now contains all relevant categories and sub-categories previously found only in the 2019 PEG and October Guidance.

Notably, the guidance issued under the new "Mental Processes" group provides clarity for software inventions which was somewhat lacking in the previous MPEP edition. In particular, the June 2020 revision clarifies that "a claim with limitation(s) that cannot practically be performed in the human mind does not recite a mental process". However, it should be noted "a claim that requires a computer may still recite a mental process". In order to evaluate whether a claim that requires a computer recites a mental process, an examiner should, "review the specification to determine if the claimed invention is described as a concept that is performed in the human mind and applicant is merely claiming that concept performed 1) on a generic computer, or 2) in a computer environment, or 3) is merely using a computer as a tool to perform the concept".

The updated MPEP also includes updated guidance for determining whether a claim integrates a judicial exception into a practical application. For example, whether the invention effects "an improvement in the functioning of a computer, or an improvement to other technology or technical field" is now set out as a consideration. This consideration was present in the previous MPEP edition, but at a later step of the analysis. The updated MPEP places this consideration in earlier stages of the *Alice* analysis, where the examiner is directed to exclude consideration of whether the additional elements represent well-understood, routine, conventional activity. This may serve to improve the chances of claims for software-related inventions to qualify as eligible subject matter.

Impact of the Revisions

The 2019 PEG was issued in accordance with judicial precedent and was to increase consistency and predictability in examination practice. In "Adjusting to *Alice*: USPTO patent examination outcomes after *Alice Corp. v. CLS Bank International*", the USPTO's Office of the Chief Economist reported a 25% decrease in the likelihood of *Alice*-affected technologies receiving a first Office Action rejection in the year following the *Alice* decision. Furthermore, in that same one-year period, "uncertainty in patent examination for *Alice*-affected technologies decreased by 44%". The USPTO clearly believes that its guidance updates and the recent MPEP revision serve to increase clarity and predictability.

¹ *Free World Trust v Électro Santé Inc*, 2000 SCC 66 [*Free World Trust*] and *Whirlpool Corp v Camco Inc*, 2000 SCC 67 [*Whirlpool*].

² *Genencor International Inc v Canada (Commissioner of Patents)*, 2008 FC 608.

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