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Review of Developments in Intellectual Property Law

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Considerations for Software Patent Claims in the United States, Europe, and Canada

Introduction

Over the last twenty years, the media, international telecommunications, and the Internet have broken down geographical and cultural barriers at an ever-increasing rate. Today, software products and services are often architected in one country, developed in another, and then sold and supported worldwide. As a result, multi-jurisdictional patent protection has become a critical business asset for software companies of all sizes.

In most major jurisdictions, software inventions are patentable. However, each jurisdiction has its own twist on the particular extent of protection and the formalities necessary to obtain this protection. For example, the United States Supreme Court's recent decision in *Bilski v. Kappos* reaffirmed that software processes may be patented in the United States, even if they are not tied to a particular machine or do not transform a particular article, so long as the claims are not directed to an abstract idea.[1] The European Patent Office ("EPO") also issues patents on software, as long as the invention "solve[s] a particular technical problem . . . using particular technical means."[2] Recently, Canadian courts have flip-flopped on the patent eligibility of certain types of business methods, which has implications for the patentability of software as well.[3] Clearly, software patent claims must be uniquely crafted for each jurisdiction in order to obtain global protection.

For example, a patent application drafted in a style preferred by the EPO may fail to meet United States statutory requirements for patentability.

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Where (and Even When) Does *KSR* Belong in Obviousness Arguments?

(Or "Did You Learn Everything You Need to Know About § 103 from Dr. Seuss®?")[1]

Introduction

When it comes to combining prior art to arrive at each and every element of a claim, if there is no way that one of skill in the art could have, does it make any sense to argue about whether they would have? We think (usually) not. And it would appear—since *KSR*,[2] not to the exclusion of before—that the Federal Circuit agrees.

In our view, this rhyme-time approach to obviousness is not only relatively easy to understand, remember, and explain, it is also an important construct to help avoid the temptation to argue the "would have" (perhaps relying on *KSR*) when doing so may very well be a walk backwards on the arc of persuasion, implying as being open a question one had already asserted was closed, and simply giving the art at issue too much credit. That is, don't get into the weeds if you are not even in the right garden.

And although the Supreme Court's guidance in *KSR* undeniably bears on the "would have,"[3] it seems just as clear that it does not bear on the "could have."[4] As such, for the most part, applicants and patentees should only invoke *KSR* when there is as little doubt as there was in that case that the cited art (which certainly can but almost never does include something that is cited as simply being within the knowledge of one of ordinary skill) could have been combined into the totality of the claim at issue.

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Similarly, an application drafted to meet United States requirements may be found non-statutory or lacking inventive step (obvious) when undergoing EPO examination. With the law of Canadian statutory subject matter currently in flux, it is difficult to determine whether claims meeting United States or EPO requirements would be viewed favorably in the Canadian Intellectual Property Office ("CIPO").

Software Patents in the United States

"[W]hoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor" in the United States.[4] The term "process" refers to arts and methods, including those providing improvements to the four aforementioned statutory categories.[5]

In 2008, the Federal Circuit changed the landscape of software patents in the United States by holding that a claimed process is patentable only if "(1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing."[6] This ruling had an immediate and dramatic effect on both issued software patents and those under prosecution, as patent applicants and holders had to question whether their claims met the requirements of this proclaimed "machine or transformation test." The financial scope of this decision was enormous, given the large growth in patenting of software in recent decades.[7] All issued patents were potentially subject to retroactive challenge under *Bilski*'s new law. The public's interest in the impact of the "machine or transformation" test was evidenced by, for example, the large number of amicus briefs filed after the Supreme Court agreed to hear the *Bilski* case.[8]

The Supreme Court's subsequent narrow decision overturned the Federal Circuit and clarified the patentability of software in the United States. In particular, the Court wrote that "Congress plainly contemplated that the patent laws would be given wide scope,"[9] and courts "should not read into the patent laws limitations and conditions which the legislature has not expressed."[10] However, the Court also reiterated that inventions directed to laws of nature, physical phenomena, and abstract ideas remain unpatentable.[11]

In rejecting the Federal Circuit's machine or transformation test as the sole test for process claim patentability, the Supreme Court found that the Federal Circuit utilized an improperly narrow interpretation of the statutory term "process."[12] The Supreme Court instead held that the "machine or transformation" test "is a useful and important clue, an investigative tool, for determining whether some claimed inventions are processes [are patent-eligible]," but is not the sole test.[13] Additionally, the Court held that the concept of business method patents is supported by the patent statute itself.[14]

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Each jurisdiction has its own twist on the particular extent of protection for software inventions.

Thus, software and business methods are not *per se* unpatentable in the United States. Under current law, if claims to these types of processes pass the machine or transformation test, they are patent eligible.[15] However, the Court provided little guidance for the evaluation of claims that do not pass the test. As noted by Justice Stevens' concurrence, the *Bilski* court did not provide "a satisfying account of what constitutes an unpatentable abstract idea."[16] In fact, the Court suggested that the Federal Circuit may develop "other limiting criteria that further the purposes of the Patent Act and are not inconsistent with its text."[17]

The Federal Circuit recently had its first opportunity develop such other criteria in *Research Corporation Technologies, Inc. v. Microsoft*.[18] The claims at issue in that case were directed to digital image halftoning, in which computer displays "present many shades and color tones with a limited number of pixel colors . . . [by placing] the dots of primary colors in a formation that gives the viewer the illusion of many more shades of gray or varying colors."[19]

Even though some of the claims did not recite a particular machine or the step of displaying the result of the halftoning, the Federal Circuit found that they were "functional and palpable applications in the field of computer technology."[20] The claims at issue recited utilizing a "pixel-by-pixel comparison" of a digital image.[21] Given the overall goal of the invention as described in the specification,[22] as well as the fact that other claims explicitly recited computer hardware,[23] the Federal Circuit found that the recitation of a pixel-by-pixel comparison was sufficient to place the invention within the scope of patentable subject matter.[24]

While it may not be prudent to make any conclusions about the Federal Circuit's post-*Bilski* approach from this one decision, the court's description of the test for patent eligible subject matter as a "coarse eligibility filter" may indicate that the court intends to take a broad view towards the eligibility of software. In addition, the court qualified this "coarse eligibility filter," stating that a non-abstract claim "may nonetheless be invalid as indefinite because the invention would not provide sufficient particularity and clarity to inform skilled artisans of the bounds of the claim,"[25] suggesting that the Federal Circuit may de-emphasize the patentable subject matter analysis in favor of a written

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description analysis.

Software Patents in Europe

In contrast to the United States, the EPO takes a more limiting approach to software and business method patents. The basis of EPO authority is the European Patent Convention ("EPC"). Article 52(1) of the EPC provides that "European patents shall be granted for any inventions, in all fields of technology, provided that they are new, involve an inventive step and are susceptible of industrial application."[26] However, Article 52(2) explicitly excludes from patentability "(a) discoveries, scientific theories and mathematical methods; (b) aesthetic creations; (c) schemes, rules and methods for performing mental acts, playing games or doing business; and (d) programs for computers, and presentations of information."[27] Article 52(3) emphasizes that Article 52(2) excludes "the patentability of the subject-matter or activities referred to therein only to the extent to which a European patent application or European patent relates to such subject-matter or activities as such."[28] This exception-to-an-exception has permitted the EPO to allow thousands of software patents and software-oriented business method patents, but still avoid granting patents for pure business methods.[29]

Like in the United States, patentable subject matter is just one threshold test that claims must satisfy to pass examination in the EPO. The claims must also be novel,[30] contain an inventive step,[31] and have industrial applicability.[32] It is the inventive step analysis that makes software and business method claims vulnerable. According to the EPO, in order for a claim to have an inventive step, the claimed invention must solve a technical problem using a technical means.[33]

Thus, when performing an inventive step analysis, the EPO splits the features of the claim into those that are considered to be technical and those considered not to be technical. The non-technical features, such as those excluded by EPC Article 52(2), will not be considered as contributing to inventive step.[34]

For example, suppose that a business method claim consists of a series of steps that achieve an economic goal (*e.g.*, conducting an online auction or optimizing an investment portfolio), with each step carried out by a general purpose computer. The EPO would remove the "non-technical" features of the claim, *i.e.*, the method of doing business, leaving only the general purpose computer performing a series of steps as the claim's technical features. The EPO would argue that the general purpose computer does not function to solve a technical problem, but only implements its well-known functions (*i.e.*, it merely executes program instructions). Therefore, under an EPO-style analysis, a person of ordinary skill would be able to program such a general purpose computer to perform the steps of the business method without any inventive skill.[35] Under this analysis, even claims that would clearly meet the United States Federal Circuit's machine or transformation test could be rejected by the EPO.

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As the practice of filing patents in multiple jurisdictions continues to grow in popularity, so does the importance of understanding the laws, regulations, and nuances of each of these jurisdictions.

The EPO's board of appeal, which is an independent judiciary body that reviews EPO decisions,[36] has applied the EPO's inventive step analysis to software methods for calculating pension benefits (not patentable),[37] a computerized auction method (not patentable),[38] enhancing a graphical display in a video game (patentable),[39] and exchanging data between application programs on a computer (patentable).[40] The theme that emerges from the EPO board of appeal decisions is that method claims that interact with a tangible hardware device in an intimate fashion, alter the nature of an operating system, or affect the way a computer operates are more likely to be granted in the EPO than claims directed to pure software applications that execute on a general-purpose computer and that do not affect physical devices or systems.[41]

The EPO typically applies a "problem-and-solution approach" to determine which claim features, if any, to remove from consideration during the inventive step analysis.[42] Specifically, the problem must be a technical problem and the solution must solve the problem defined.[43] All claimed features must be directed to solving this technical problem, and any features not so directed are deemed to have no significance for purposes of assessing inventive step.[44] Accordingly, it is critical for an applicant to properly define the technical problem solved by the claims.

Software Patents in Canada

Recently, Canada moved towards a more restrictive view of software and business method patents, and then swung back again to a less-restrictive view. It is possible that this area of Canadian law may change once more in 2011.

The Canadian Patent Act defines an invention to be "any new and useful art, process, machine, manufacture or composition of matter," or any improvement thereof.[45] However, scientific principles and abstract

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theorems[46] are excluded from patentable subject matter.

As noted, Canadian courts have recently changed course on the patent-eligibility of software. In *Schlumberger v. Commissioner of Patents*, the Federal Court of Appeal found that an invention directed to taking measurements in boreholes and then transmitting those measurements to a computer according to the applicant's defined mathematical calculations was not patentable as a process.[47] The court found that "[i]f those calculations were not to be effected by computers but by men, the subject-matter of the application would clearly be mathematical formulae and a series of purely [unpatentable] mental operations."[48] The court also indicated that merely performing mental operations on a computer would not transform these operations into patentable subject matter.[49]

Late last year, Ottawa's Federal Court handed down a decision on software patents in *Amazon.com v. Canada*.[50] The claims at issue in that case were directed to Amazon.com's "1-click" ordering system that allows a client device to store information such that a purchase can be made from a server in a single action without the client device having to log on to the server.[51] The CIPO's Patent Appeal Board had upheld an initial rejection of the application as being directed to unpatentable subject matter.[52]

In rejecting the application, the board applied a new analysis of subject matter patentability: (i) the claim must, on its face, be in a form that relates to one of the five statutory categories of invention, (ii) the claim must not be in a form related to non-statutory or non-technological subject matter, (iii) the substance of the claim (what the claim adds to human knowledge) must fit into one of the five statutory categories of invention, and (iv) this substance must not be directed to excluded or non-technological subject matter.[53] Ultimately, the board found that "a claim which relies on a particular feature or group of features to render it new and unobvious cannot rely on a different feature or group of features in order to qualify as statutory subject matter."[54]

In addition to applying this EPO-like analysis, the board further argued for a "machine-or-transformation-like" interpretation of patentable subject matter. The board wrote "where the claimed invention, in form or in substance, is neither a physical object . . . nor an act or series of acts performed by some physical agent upon some physical object to produce in that object some change of either character or condition . . . it is not patentable."[55]

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Ideally, an applicant would be able to draft one set of claims for prosecution across all jurisdictions. In practice, this approach occasionally will result in different claim sets issuing in each country.

On review, the Federal Court rejected the board's approach. Instead, the Federal Court held that Canadian Supreme Court precedent prescribed a purposive interpretation of claims, in which each claim is interpreted as a whole, instead of element-by-element.[56] Citing the United States Supreme Court decision in *Bilski*, the Federal Court also found that requiring claims to recite a physical object or a change to a physical object is too restrictive a view of the Canadian Patent Act.[57] Accordingly, the Federal Court quashed the board's rejection of the application, and sent the case back to the CIPO for re-examination in a manner consistent with its decision.[58]

However, the story of this application is not over. On November 15, 2010, the Commissioner of Patents appealed the Federal Court decision to Canada's Federal Court of Appeal.[59] The Commissioner contended that the Federal Court erred in rejecting the board's variation of the machine-or-transformation test, as well as the board's four-step analysis for subject matter patentability.[60] Thus, for the moment, software and business method patentability in Canada is still up in the air.

Drafting Claims for United States, EPO, and Canadian Patent Applications

Ideally, an applicant would be able to draft one set of claims for prosecution across all jurisdictions. In practice, this approach occasionally will result in different claim sets issuing in each country because of amendments made during prosecution. However, it is often the case that claims drafted according to United States best practice will struggle to overcome inventive step objections in the EPO, and claims drafted according to EPO best practice will struggle to overcome patentable subject matter or written description rejections in the United States.

Given the uncertainty of the scope of patentable subject matter in Canada, it is not clear whether either United States best practice, EPO best practice, or some other approach will afford the best patent protection in Canada. Nonetheless, based on the analysis of the previous sections, the following are some basic guidelines for multi-jurisdictional claim drafting:

Draft claims that have tangible impact on a computing device

In the United States, EPO, and Canada, it

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is generally easier to get claims issued if those claims are directed to inventions that are either integrated with physical devices or have an impact on such devices.[61] It is also advisable to avoid methods disembodied from any physical structure and methods that could be viewed as directed to laws of nature or mathematics, as a patent office and/or a court may regard these claims as being too abstract. If broad protection is being sought, provide a tie-in between software and hardware in at least a dependent claim, while focusing on a more "pure" version of the method itself in independent claims. However, do not add steps that interact with hardware just for the sake of interacting with hardware, as these steps might be ignored in a patentability analysis.[62]

Also, avoid drafting claims that could be construed as an application executing on a general purpose computer. In the EPO, and perhaps in Canada as well, claims in such a format could be viewed as a business method, and thus be denied patentability for being non-technical.

Draft multiple sets of claims

Another way of obtaining multi-jurisdictional patent protection is to draft different claim sets for each jurisdiction. Particularly, the claims can be drafted according to both United States and EPO best practice, and copies of both of these claim sets can be included in the specification for purposes of providing support for the claims. If the United States application is filed first, the applicant would file only the United States-style claims, and then could later file an EPO application (claiming priority to the United States application) with the EPO-style claims. If the EPO application is filed first, the applicant would file only the EPO-style claims and then could later file a United States application (claiming priority to the EPO application) with the United States-style claims.

This technique has the advantage of allowing the applicant to address situations in which claims drafted according to United States best practice would be very different from claims drafted according to EPO best practice. For example, as discussed previously, the EPO prefers claims in the problem-solution format. This format is not unlike a United States Jepson claim, which consists of a preamble containing elements and/or steps that are known, a transitional phrase, and then a list of elements and/or steps that are considered to be "the invention."[63] However, without evidence to the contrary, the United States Patent Office will consider the preamble of a Jepson claim to be applicant-admitted prior art.[64] Thus, the preamble may be ignored during examination in the United States, or, in a worst case scenario, used as prior art to reject the claim.

Another reason to avoid the problem-solution claim format in the United States is the uncertainty as to whether the preamble will be viewed as a claim limitation. In general, under United States law "the preamble does not limit the claims."[65] However, claim scope may be limited by a preamble "if it recites essential structure or steps, or if it is 'necessary to give life, meaning, and vitality' to the claim."[66] At least one Federal Circuit judge recently admitted the opacity of this aspect of claim interpretation.[67] As a result, many United States patent practitioners now recommend minimal preambles.[68]

Given the disparity between the United States and EPO claim drafting requirements and form, drafting separate claims for each jurisdiction overcomes some of the difficulties associated with submitting one set of claims in both jurisdictions. Additionally, should Canadian law change once again, having support for both sets of claims in the specification gives the applicant additional options for claim amendments that could satisfy any newly arising requirements in Canada.

Conclusion

As the practice of filing patents in multiple jurisdictions continues to grow in popularity, so does the importance of understanding the laws, regulations, and nuances of each of these jurisdictions. In the case of software and business method claims, the United States and EPO take different approaches when analyzing the patentability and determining the scope of these claims, and Canada may end up following the United States, the EPO, or a different approach. It is important for an applicant to be aware of these differences and to adopt a strategy to maximize patent coverage across these three jurisdictions.

Endnotes

1. *See Bilski v. Kappos*, 130 S. Ct. 3218, 3225-28 (2010).
2. European Patent Office, Patents for Software? European Law and Practice 9 (2009) [hereinafter EPO Software Patents], *available at* http://documents.epo.org/projects/babylon/eponet.nsf/0/a0be115260b5ff71c125746d004c51a5/$FILE/patents_for_software_en.pdf.
3. *Amazon.com v. Canada (Attorney General)*, [2010] F.C.J. No. 1209 at *7-8 (Can.). This topic is the issue of an ongoing appeal in Canada. *See* Notice of Appeal, *Amazon.com v. Canada (Attorney General)*, [2010] F.C.J. No. 1209 (T-1476-09), *available at* http://www.ippractice.ca/files/AmazonFCAAppeal.pdf.
4. 35 U.S.C. § 101.
5. 35 U.S.C. § 100(b).
6. *In re Bilski*, 545 F.3d 943, 954 (Fed. Cir. 2008).
7. Some researchers estimate that the number of granted software patents in the United States increased by sixteen percent per annum from 1987 to 1996. *See* James Bessen & Robert M. Hunt, *An Empirical Look at Software Patents* 16, (Research on Innovation, Working Paper No. 03-17/R, 2004), available at http://www.researchoninnovation.org/swpat.pdf. Other researchers found that the raw number of granted software patents increased from 11,143 in 1998 to 21,224 in 2008. *See* Michael Risch, *Forward to the Past*, 2009-10

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Cato Sup. Ct. Rev. 333, 337 (2009).

8. A total of 68 amicus briefs were filed in the *Bilski* appeal of the Federal Circuit decision. *See* American Bar Association, Preview of United States Supreme Court Cases, *available at* http://www.abanet.org/publiced/preview/briefs/nov09.shtml.
9. *Bilski*, 130 S. Ct. at 3225.
10. *Id.* at 3226 (quoting *Diamond v. Chakrabarty*, 447 U.S. 303, 308 (1980)).
11. *Id.* at 3225 ("While these exceptions are not required by the statutory text, they are consistent with the notion that a patentable process must be 'new and useful.' And, in any case, these exceptions have defined the reach of the statute as a matter of statutory *stare decisis* going back 150 years.").
12. *See id.* at 3226.
13. *Id.* at 3227.
14. *Id.* at 3228-29.
15. Of course, the claims must also meet the other requirements of patentability in the United States, such as novelty and non-obviousness.
16. *Id.* at 3236 (Stevens, J., concurring).
17. *Id.* at 3231.
18. 627 F.3d 859, 869 (Fed. Cir. 2010).
19. *Id.* at 863.
20. *Id.* at 868.
21. *Id.* at 865.
22. *Id.* at 868-69 ("These inventions address 'a need in the art for a method of and apparatus for the halftone rendering of gray scale images in which a digital data processor is utilized in a simple and precise manner to accomplish the halftone rendering.'").
23. *Id.* at 869 ("The fact that some claims . . . require a 'high contrast film,' 'a film printer,' 'a memory,' and 'printer and display devices' also confirm this court's holding that the invention is not abstract.").
24. The Federal Circuit's analysis in the case appears to be somewhat at odds with its own precedents. *See, e.g.*, *Superguide Corp. v. DirecTV Enter., Inc.*, 358 F. 3d 870, 875 (Fed. Cir. 2004) ("Though understanding the claim language may be aided by the explanations contained in the written description, it is important not to import into a claim limitations that are not a part of the claim."); *E-Pass Tech., Inc. v. 3Com Corp.*, 343 F. 3d 1364, 1369 (Fed. Cir. 2003) ("The problem is to interpret claims 'in view of the specification' without unnecessarily importing limitations from the specification into the claims."); *Electro Med. Sys. SA v. Cooper Life Sci., Inc.*, 34 F. 3d 1048, 1054 (Fed. Cir. 1994) ("[C]laims are not to be interpreted by adding limitations appearing only in the specification.").
25. *Research Corp. Tech.*, 627 F.3d at 869.
26. European Patent Convention, art. 52(1), Oct. 5, 1973 [hereinafter EPC].
27. *Id.* art. 52(2).
28. *Id.* art. 52(3).
29. *See, e.g.*, Robert E. Thomas & Larry A. DiMatteo, *Harmonizing the International Law of Business Method and Software Patents: Following Europe's Lead*, 16 Tex. Intell. Prop. L.J. 1, 17 (2007). In practice, one can overcome the exclusions of paragraph 52(2) with a claim that recites a technical aspect of that invention. For instance, a claim that recites a business method that is performed by a computer will not fall within these exclusions.
30. EPC, art. 54.
31. *Id.* art. 56. Inventive step is analogous to the U.S. statutory requirement of non-obviousness.
32. *Id.* art. 57.
33. EPO Software Patents, *supra* note 2, at 9 ("To be patentable, the subject-matter for which protection is sought must therefore have . . . an instruction addressed to a skilled person as to how to solve a particular technical problem (rather than, for example, a purely financial, commercial or mathematical problem) using particular technical means.").
34. U.S. practitioners may be taken aback by the EPO's combining of patentable subject matter analysis with obviousness analysis. However, the EPO's Enlarged Board of Appeal recently acknowledged the potential for confusion with this approach, but indicated that a large number of EPO Board of Appeal cases adopt the approach and that it appears to result in a practicable patent system. *See, e.g.*, Case G 0003/08, Opinion in Relation to a Point of Law Referred by the President of the European Patent Office pursuant to Article 112(1)(b) EPC, http://documents.epo.org/projects/babylon/eponet.nsf/0/DC6171F182D8B65AC125772100426656/$File/G3_08_opinion_en.pdf, at 40 (EPO Enlarged Bd. App. 2010) ("While the Enlarged Board is aware that this rejection for lack of an inventive step rather than exclusion under Article 52(2) EPC is in some way distasteful to many people, it is the approach which has been consistently developed . . . [and] no divergences from that development have been identified . . . .").
35. For examples of this general form of analysis in action, *see, e.g.*, Case T 0258/03 – 3.5.1, Hitachi / Automatic auction method, http://legal.european-patent-office.org/dg3/pdf/t030258ex1.pdf, at 6 (EPO Tech. Bd. App. 2004); Case T 0641/00 – 3.5.1, COMVIK / Two identities, http://legal.european-patent-office.org/dg3/pdf/t000641ex1.pdf, at 6 (EPO Tech. Bd. App. 2002).
36. EPO Software Patents, *supra* note 2, at 10 (2009).
37. Case T 0931/95 – 3.5.1, Pension Benefit Sys. P'ship / Improved pension benefits system, http://legal.european-patent-office.org/dg3/pdf/t950931eu1.pdf, at 11 (EPO Tech. Bd. App. 2000) ("A feature of a method which concerns the use of technical means for a purely non-technical purpose and/or for processing purely non-technical information does not necessarily confer a technical character to such a method.").
38. Case T 0258/03 at 16 ("Method steps consisting of modifications to a business scheme and aimed at circumventing a technical problem rather than solving it by technical means cannot contribute to the technical character of the subject-matter claimed.").
39. Case T 0928/03 – 3.5.1, Konami / Video game system, http://legal.european-patent-office.org/dg3/pdf/t030928eu1.pdf, at 13-14 (EPO Tech. Bd. App. 2006) ("[T]he underlying technical contribution relates to the highlighting of a second point of interest . . . on the display screen in order to draw the user's attention to the second point on the screen. That is a technical contribution to be considered in the inventive step discussion.").
40. Case T 0424/03 – 3.5.1, Microsoft Corp. / Data transfer with expanded clipboard formats, http://legal.european-patent-office.org/dg3/pdf/t030424eu1.pdf, at 10 (EPO Tech. Bd. App. 2006) ("The claimed steps thus provide a general purpose computer with a further functionality: the computer assists the user in transferring non-file data into files.").
41. *See generally* Noam Shemtov, *Software Patents and Open Source Models in Europe: Does the FOSS Community Need to Worry About Current Attitudes at the EPO?*, 2 IFOSS L. Rev. 151, 155 (2010), *available at* http://www.ifosslr.org/ifosslr/article/view/43, at 162.
42. Case T 0641/00 at 6. As described by one of the EPO's boards of appeal,

    > an invention is to be understood as a solution to a technical problem. This approach requires identification of the technical field of the invention (which will also be the field of expertise of the person skilled in the art

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to be considered for the purpose of assessing inventive step), the identification of the closest prior art in this field, the identification of the technical problem which can be regarded as solved in relation to this closest prior art, and then an assessment of whether or not the technical feature(s) which alone or together form the solution claimed, could be derived as a whole by the skilled person in that field in an obvious manner from the state of the art. *Id.* at 6-7.

43. *Id.* at 7.
44. *Id.* at 7-8.
45. Patent Act, R.S.C. 1985, c. P-4, § 2.
46. *Id.* § 27(8). These exclusions include mathematical formulas, natural phenomena, and laws of nature. *See* Canadian Intellectual Property Office, Manual of Patent Office Practice, § 12.05.01 (1998 ed., rev. Dec. 2010).
47. [1981], F.C. 845 (Can.).
48. *Id.* at 847.
49. *Id.*
50. 2010 Fed. C.C. LEXIS 1129 (Can.).
51. *Id.* at *9-10.
52. Canadian Intellectual Prop. Office, Commissioner's Decision Summary C.D. 1290 Application 2,246,933, at ¶ 197, Mar. 4, 2009.
53. *Id.* at ¶ 126.
54. *Id.*
55. *Id.* at ¶ 140.
56. *Amazon.com*, 2010 Fed. C.C. LEXIS 1129, at *30-32 ("[A] return to 'form and substance' language, no matter what the context, is confusing and unnecessary. . . . [and is] a departure from the clear direction of the Supreme Court to apply purposive construction universally.").
57. *Id.* at *45.
58. *Id.* at *56.
59. Notice of Appeal, *Amazon.com v. Canada (Attorney General)*, [2010] F.C.J. No. 1209 (T-1476-09), *available at* http://www.ippractice.ca/files/AmazonFCAAppeal.pdf.
60. *Id.* at 3-4.
61. *See, e.g.*, *Research Corp. Tech.*, 627 F.3d at 869 (claims directed to interaction with a printer, memory, and a display are not abstract); Case T 0928/03 at 6 (claims directed to interaction with highlighting a second point of interest on a display is a technical contribution).
62. *See, e.g.*, *Diamond v. Diehr*, 450 U.S. 175, 191-92 (1981) ("[I]nsignificant post-solution activity will not transform an unpatentable principle into a patentable process."); *In re Grams*, 888 F.2d 835, 840 (Fed. Cir. 1989) ("[D]ata-gathering steps cannot make an otherwise nonstatutory claim statutory.").
63. *See* 37 C.F.R. § 1.75(e).
64. *See* U.S. Patent and Trademark Office, U.S. Dept. of Commerce, Manual of Patent Examining Procedure § 2129(III) (8th ed. 2001, rev. Jul. 2010).
65. *Allen Eng'g Corp. v. Bartell Indus., Inc.*, 299 F.3d 1336, 1346 (Fed. Cir. 2002).
66. *Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002).
67. *Am. Med. Sys., Inc. v. Biolitec, Inc.*, 618 F.3d 1354, 1363 (Fed. Cir. 2010) (Dyk, J., dissenting) ("[W]e have not succeeded in articulating a clear and simple rule" regarding whether the preamble limits the claim).
68. It is becoming common to see claims drafted with a preamble as short as "A method comprising . . . ."

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Where (and Even When) Does *KSR* Belong in Obviousness Arguments?

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Indeed, Federal Circuit case law since *KSR* reinforces the canons of logic in suggesting that applicants and patentees may quite often be well-advised to refrain from invoking *KSR*, and in fact to refrain generally from arguing that there is no way that one of skill in the art "would have" (combined the cited art to arrive at the totality of a claim) when, unlike in *KSR*, a compelling—or even colorable—argument can be made that there is no way that one of skill in the art "could have;" in other words, if all of the pieces just aren't there, who cares whether one of skill in the art (or The Cat in the Hat®[5], or the Easter Bunny, or even a real person) might have had one or more reasons to combine whatever pieces are there into something else?

The Context of *KSR*

In *KSR*, the Supreme Court considered a Teleflex-owned patent that claimed a pedal assembly combined with an electronic pedal-position sensor.[6] The District Court found the patent obvious based on two prior art patents that respectively taught the pedal and the sensor.[7] The District Court applied the teaching-suggestion-motivation ("TSM") test, concluding that a person of ordinary skill would have had sufficient motivation to combine the prior art in the manner claimed.[8] The Federal Circuit then reversed, deciding that the District Court had failed to make sufficiently specific findings as to which principle known in the prior art would have motivated such a hypothetical person to combine the prior art teachings in such a way.[9] The Supreme Court later rejected the Federal Circuit's "rigid" approach to the obviousness inquiry.[10]

Notably, both the Federal Circuit and the Supreme Court accepted *de facto* that the prior art patents could have been combined to arrive at the claimed pedal-and-sensor combination.[11] That is, the only question left was whether they would have been. This seems to suggest that, in contexts where the question of whether prior art elements could have been combined into a claim is not as easily answered in the affirmative as it was in *KSR*, that this decision might not be particularly relevant. Such a suggestion appears to be supported by recent Federal Circuit opinions.

The Federal Circuit's (Limited) Reliance on *KSR*

Despite the seemingly ubiquitous nature of *KSR*, it is unclear to what extent it actually modified the obviousness inquiry.[12] In fact, in a September 1, 2010 Examination Guidelines Update, the USPTO opined that "practitioners should…recognize the significant extent to which the obviousness inquiry has remained constant in the aftermath of *KSR*."[13] Thus, there appears to be no particular reason why, when responding to rejections based on alleged obviousness, applicants should feel compelled to include arguments that incorporate the almighty *KSR*. To the contrary, some Federal Circuit case law suggests that when prior art elements cited by an Examiner could not have been properly combined into a recited claim, the applicant should—without reference to *KSR*—simply argue as much.

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If all of the pieces just aren't there, who cares whether one of skill in the art might have had one or more reasons to combine whatever pieces are there into something else?

For example, in *Honeywell International, Inc. v. United States*, the Federal Circuit explained that, upon finding that the cited prior art references do not contain an element in the recited claim, the obviousness analysis is complete.[14] *Honeywell* involved a claim directed to passive night-vision goggles that are compatible with a full color display that emits perceptible light within the red color band.[15] The court found that the government provided no evidence that the references disclosed the perceptible-red-light element of the claims.[16] The court then explained, without reliance on *KSR*, that such a "failure to prove that the cited references disclose [an] element [of the claim is a failure] to carry [the] burden of proving…that the claimed invention would have been obvious to one of skill in the art."[17]

In other Federal Circuit cases, the court also has first endeavored to determine whether one of skill in the art could have arrived at a given claim before embarking on a separate analysis, under *KSR*, to determine whether such a hypothetical person would have. In *Sundance, Inc. v. Demonte Fabricating Ltd.*, the court first determined that "a combination of [the cited references] satisfies every limitation of the [asserted claim]" and "next turn[ed] to whether the combination would have been obvious at the time of the invention."[18] Similarly, in *Ecolab, Inc. v. FMC Corp.*, the court first established that "[the Plaintiff's] expert admitted that one skilled in the art would [have known]" all of the elements of the disputed claim, before turning to the question of "whether it would have been obvious to combine the [known elements]" to arrive at the claimed invention.[19] And in *Spine Solutions, Inc. v. Medtronic Sofamor Danek USA, Inc.*, the court, after analyzing the cited references, stated that "the combination of the [cited references] discloses every limitation of [the asserted claim]; the question remains whether the combination of those references would have been obvious to a person of skill in the art."[20] In each of these cases, then, the Federal Circuit did not bring *KSR* into the analysis

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Where (and Even When) Does *KSR* Belong in Obviousness Arguments?

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until first determining that the prior art elements at issue could have been combined to arrive at the claim.

The Federal Circuit has further suggested that facts, evidence, and arguments directed to a determination as to whether prior art elements would have been combined in the manner claimed are separate and distinct from those directed to a determination as to whether such prior art elements could have been so combined. In *CSIRO v. Buffalo Tech. (USA), Inc.*, after noting that the invention consisted of "a combination of elements, all of which are found in prior art references," the court then, using *KSR* for guidance, considered arguments regarding whether the references would have been so combined, and ultimately remanded the case for further consideration of that issue.[21] And in *Hearing Components, Inc. v. Shure, Inc.*, the court declared it necessary for a "party to meet its burden of proving obviousness by [the] 'clear and convincing' [standard]" to offer evidence establishing that "the prior art references contained all of the claim limitations," noting that this was independent of that party's further obligation to offer evidence establishing that there was "a motivation to combine."[22] In *Hearing Components*, the court found that, because "the jury heard substantial evidence" that the cited references did not teach all the limitations of the claim, "a finding of nonobviousness was permissible."[23]

A Few Takeaways

Given the Federal Circuit's consideration of the "could have been" and the "would have been" as sequential and independent thresholds for establishing a claim as obvious under § 103, applicants may be well-advised to consider the following recommendations when responding to obviousness rejections:

(1) Insist that the Examiner make a clear explanation on the record as to where each claim element is found in the art that is cited in combination. In particular, do not acquiesce if an Examiner has merely identified some of the claim elements as being in the cited combination, and then concluded that it would have been obvious for one of skill in the art at the time of invention to include a claim element otherwise missing from the cited combination. Too often the "reasons to combine" portion of a § 103 rejection is used by Examiners to fill in substantive gaps between what is recited in a claim and what is taught by the art in combination. If an Examiner is going to take official notice that a claim element was known to those of skill in the art, this should be done as explicitly as *KSR* demands of reasons to combine, and before any such reasons at that. This is a perhaps-subtle-but-crucial distinction between (a) actual claim elements being in the prior art due to being within the knowledge of one of ordinary skill and (b) reasons to combine such prior art elements in the manner claimed being apparent to one of ordinary skill. The former is in the "could have," and can be attacked by *Honeywell* and *Hearing Components*, among other cases; the latter is in the "would have," and can be attacked by *KSR*, among other cases.

(2) Strongly consider refraining from arguing the "would [not] have" after convincingly (at least in your view, of course) arguing the "could [not] have." Doing the opposite may well detract from the convincingness of the first argument, in that it is treating as sensical the Examiner's proposition that one of ordinary skill in the art would have done something that there is no way that one of ordinary skill in the art could have done. In our view, it is perhaps better to say something like "Therefore, based at least on the reasons given above, Applicant respectfully submits that there was no manner in which one of skill in the art at the time of invention could have combined the cited references and arrived at the combination of elements to which claim x is directed, rendering immaterial whether such a hypothetical person may have had one or more reasons to combine these references into something else." (One exception to this recommendation may well be if two or more of the cited references come from such disparate fields that an Examiner would have a hard time establishing that a hypothetical person of ordinary skill in any particular art would have even had all of these references in the first place; this "would have" argument would seem to strengthen rather than chip away at a convincing "could [not] have" argument.)

(3) If an Examiner has convincingly asserted that cited prior art elements could have been combined by one of skill in the art at the time of invention in such a manner as to arrive at the totality of a given claim, then consider amending the claim or, perhaps more precipitously, conceding the "could have" and going to battle (with lowered expectations) on the "would have." As it was under TSM, and as it is after *KSR*, this is usually—but of course not always—a tough spot.

A Conclusion about "Conclusory"

It seems in light of the framework of this article that a final observation is worth making regarding a particular and popular passage from Justice Kennedy's opinion of the unanimous Court in *KSR*. The passage is this one, and it is in our view susceptible to being read out of context and cited as part of a "could [not] have" argument; in other words, this passage could be read as useful in making an argument that at least one element of a given claim is simply missing from the combination of cited references:

> Rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.[24]

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Where (and Even When) Does *KSR* Belong in Obviousness Arguments?

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In light of the preceding review of the context of *KSR*, and thus what issues were really on the table that day, it seems that this language belongs only in arguments as to the "would have," and not in arguments as to the "could have," and can really only fairly be read as "…to support [the necessary-but-not-sufficient 'would have' prong of] the legal conclusion of obviousness."

Endnotes

1. Dr. Seuss is a registered trademark of Dr. Seuss Enterprises.
2. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398 (2007). (The Federal Circuit has thus far cited this opinion in approximately one hundred of its own.)
3. *See id.* at 424 ("The proper question to have asked was whether a pedal designer of ordinary skill, facing the wide range of needs created by developments in the field of endeavor, would have seen a benefit to upgrading Asano with a sensor." (emphasis added)); *see also id.* at 424-425 ("The consequent legal question, then, is whether a pedal designer of ordinary skill starting with Asano would have found it obvious to put the sensor on a fixed pivot point. The prior art discussed above leads us to the conclusion that attaching the sensor where both KSR and Engelgau put it would have been obvious to a person of ordinary skill." (emphasis added)).
4. *See id.* at 422-424, where the Court acknowledged the separateness and sufficiency of the "could [not] have" argument by, after noting that Teleflex had asserted it "in passing," dismissing it due to the lack of clarity as to whether it had been properly raised below where, according to the Court, Teleflex had been "content" to assert only an inadequate flavor of the "would [not] have" argument; as such, the Court agreed—without making its own substantive analysis—with the District Court that one of skill in the art could have combined prior art elements and arrived at the totality of the claim at issue ("The District Court found that combining Asano with a pivot-mounted pedal position sensor fell within the scope of claim 4. Given the significance of that finding to the District Court's judgment, it is apparent that Teleflex would have made clearer challenges to it if it intended to preserve this claim. In light of Teleflex's failure to raise the argument in a clear fashion, and the silence of the Court of Appeals on the issue, we take the District Court's conclusion on the point to be correct." (internal citations omitted)).
5. The Cat in the Hat is a registered trademark of Dr. Seuss Enterprises.
6. *See KSR*, 550 U.S. at 405.
7. *See id.* at 413.
8. *Id.*
9. *See id.* at 413-414.
10. *See id.* at 415.
11. *See, e.g.*, n.4, *supra*; *see also CSIRO v. Buffalo Tech. (USA), Inc.*, 542 F.3d 1363, 1373-1374 (Fed. Cir. 2008) ("The *KSR* case involved the same kind of problem that is presented here—the question of obviousness as applied to an invention that consists of a combination of elements, all of which are found in prior art references.")
12. As noted in the PTO's 10/10/2007 Examination Guidelines, the *KSR* decision heavily relied on its earlier § 103 precedents, and the Supreme Court acknowledged that the Federal Circuit had already adopted a more-flexible version of the TSM test by the time the Supreme Court issued the *KSR* decision. *See* Patent and Trademark Office, Examination Guidelines for Determining Obviousness Under 35 U.S.C. 103 in View of the Supreme Court Decision in *KSR International Co. v. Teleflex Inc.*, 72 Federal Register 195, 57526-57527 (Oct. 10, 2007) (among those cases cited by the Court in *KSR* were *United States v. Adams*, *Anderson's-Black Rock, Inc. v. Pavement Salvage Co.*, and *Sakraida v. AG Pro, Inc.*); *see KSR*, 550 U.S. at 421 ("We note the Court of Appeals has since elaborated a broader conception of the TSM test than was applied in the instant matter.").
13. Patent and Trademark Office, Examination Guidelines Update: Developments in the Obviousness Inquiry After *KSR v. Teleflex*, 75 Federal Register 169, 53643 (Sept. 1, 2010). The 9/1/2010 PTO Guidelines Update also provides that *KSR* "clearly impacted the manner in which Office personnel and practitioners carry out the business of prosecuting patent applications with regard to issues of obviousness." *Id.* at 53645. However, the USPTO was not particularly explicit regarding what that "clear impact" was. Indeed, it may be the case that the only practical impact was that applicants were stripped of the ability to require an Examiner to point to an explicit teaching, suggestion, or motivation in the cited references. This much was noted by the PTO: "Since it is now clear that a strict TSM approach is not the only way to establish a *prima facie* case of obviousness, it is true that practitioners have been required to shift the emphasis of their nonobviousness arguments to a certain degree." *Id.*
14. 609 F.3d 1292 (Fed. Cir. 2010).
15. *Id.* at 1294, 1298.
16. *Id.* at 1299.
17. *Id.* at 1300-1301.
18. 550 F.3d 1356, 1366 (Fed. Cir. 2008) (emphasis added).
19. 569 F.3d 1335, 1350 (Fed. Cir. 2009) (emphasis added). Further, note that the 9/1/2010 PTO Guidelines Update points out that "[i]f [each element of the claim] had not been within the level of ordinary skill in the art, the outcome of the *Ecolab* case may well have been different." 9/1/2010 Examination Guidelines Update at 53648.
20. 620 F.3d 1305, 1312 (Fed. Cir. 2010) (emphasis added).
21. *CSIRO*, 542 F.3d at 1375, 1376.
22. 600 F.3d 1357, 1373 (Fed. Cir. 2010).
23. *Id.* at 1374.
24. *KSR*, 550 U.S. at 418 (*quoting In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

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While Not Right for Every Invention, Trade Secret Protection Has Its Appeal

Patenting has conventionally been the preferred way to protect intellectual property. There are good reasons for this: for example, it provides the most robust protection, enabling a patentee to sue in Federal court and obtain damages, an injunction, or both. And the establishment of the Court of Appeals for the Federal Circuit has stabilized U.S. patent law for a generation and eliminated the uncertainty caused by differing standards and application of the law in the several regional Circuit Courts of Appeal.

Recently, however, Federal Circuit and Supreme Court rulings, proposed and enacted changes to the patent laws, and a number of lower court rulings have upset the calculus favoring patents as the preferred intellectual property guardian. Injunctions are no longer necessarily "automatic," for example, and U.S. patents are now published 18 months after their earliest priority dates (typically many years prior to patent grant). Also, there have been attacks on patent-eligibility for certain subject matter, such as gene sequences, business methods, and diagnostic methods. These developments make it imperative that other forms of protection, specifically trade secrets, be considered before important technology is disclosed to the public in a manner that puts the intellectual property embodied therein at risk.

Trade secret exists as a common law means of protection, but 46 states have adopted some form of the Uniform Trade Secrets Act (the "Act"),[1] which defines a trade secret as something that

> (i) derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use, and (ii) is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.[2]

This definition establishes the hallmark of using this form of protection: the ability for the intellectual property embodied in the technology to be kept secret. This is not a characteristic of mechanical or electrical inventions as these inventions can often be readily reverse-engineered. However, there are many inventions that can be protected by trade secret, almost all of which are in some way sufficiently complex that they cannot be reverse-engineered.

Trade secret misappropriation is defined in the Act as

> (i) acquisition of a trade secret of another by a person who knows or has reason to know that the trade secret was acquired by improper means; or (ii) disclosure or use of a trade secret of another without express or implied consent by a person who (A) used improper means to acquire knowledge of the trade secret; or (B) at the time of disclosure or use knew or had reason to know that his knowledge of the trade secret was (I) derived from or through a person who has utilized improper means to acquire it; (II) acquired under circumstances giving rise to a duty to maintain its secrecy or limit its use; or (III) derived from or through a person who owed a duty to the person seeking relief to maintain its secrecy or limit its use; or (C) before a material change of his position, knew or had reason to know that it was a trade secret ad that knowledge of it had been acquired by accident or mistake.[3]

Remedies for trade secret misappropriation include damages, injunctions, attorney's fees for "willful and malicious" misappropriation or bad faith, and protective orders to prevent disclosure of the secret.[4]

While these track the remedies available for patent infringement, trade secret protection suffers from being limited to state-by-state remedies and adjudication in state court (absent diversity jurisdiction). The burdens on the trade secret holder are also more onerous, since the requirement for "efforts that are reasonable under the circumstances to maintain its secrecy" raise issues of limiting disclosure to employees, heightened awareness of such disclosure and steps to prevent disclosure by former employees, and that companies establish internal procedures to protect trade secrets, particularly at companies actively engaged in research. These procedures can include formalized invention memoranda and policies protecting, *inter alia,* laboratory notebooks (locking them in drawers overnight, or prohibiting employees from taking them from the premises, etc.). The Act also imposes a three-year statute of limitations trade secret misappropriation.[5]

Illustrative of the power of trade secrets to protect important technology is the menopausal drug Premarin®, which, unlike almost all other pharmaceuticals, is not patented. Indeed, this drug has been on the market since 1942, unpatented, and even today is without any generic competition.[6] The situation is the result, in part, of the nature of the drug: while its "key ingredients" are conjugated estrogens extracted from pregnant mares' urine,[7] the "key ingredients" comprise a complex mixture of chemical compounds, any, all, or some combination of which may result in the drug's efficacy. There is no incentive for the drug's producer, Wyeth, to further determine or assess the exact nature of the drug's composition, since it holds as a trade secret the unique extraction process for making the drug. Generic drug companies are equally disincentived, since such a determination would amount to a new drug discovery program without any of the regulatory advantages that are available for other drugs (*i.e.*, there are no safety and efficacy results from the innovator for anything other than the mixture).

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While Not Right for Every Invention, Trade Secret Protection Has Its Appeal

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The scope of trade secret protection for Premarin® was tested in 2003, when Wyeth sued Natural Biologics for trade secret misappropriation regarding the process for producing the drug. Wyeth prevailed, winning a permanent injunction that barred Natural Biologics from producing a generic Premarin®.[8] The Eighth Circuit affirmed both the judgment and the injunction, illustrating how the Act can be applied to protect this type of technology.[9] The district court found, and the appellate court affirmed, that Wyeth took "appropriate steps to maintain the secrecy" of the extraction process, despite evidence that "non-Wyeth employees toured the [facility] without having signed confidentiality agreements; there were no posted signs inside the facility indicating that the [process] information was confidential; unmarked [process] documents were left on the manufacturing floor and unsecured in Wyeth's [facility]; not all Wyeth employees or vendors involved in the [process] signed confidentiality agreements; Wyeth identified chemicals used in the extraction process in two newsletters; unmarked documents were sent to third parties without any confidentiality designations affixed to them; and Wyeth allegedly failed to follow its own security policies."[10] "Absolute secrecy is not required," the appellate court said. Rather, only reasonable efforts to maintain the trade secret need be taken.[11] Using this same approach, the court held that Wyeth had established conduct by the defendant indicating misappropriation, including contact with former Wyeth employees, the similarity of the defendant's process and Wyeth's process, and "the absence of a credible record" of how the defendant independently developed its process.[12] The court also cited with approval the notion that a trade secret can be "so unique that the emergence of a similar, slightly altered product gives rise to an inference of misappropriation."[13]

The lesson from this case is that for certain technologies trade secret protection may be the best way to protect the technology. This question may become critical for diagnostic methods, particularly genetic diagnostic methods that establish genetic changes that have the propensity to develop a disease. After the *Bilski*[14], *Labcorp*[15], *Prometheus*[16] and *AMP v. USPTO*[17] cases, the ability to protect such inventions by patenting is presently at risk. Yet the nature of genetic diagnostic methods, particularly for multigenic diseases characterized by germline and acquired mutations and epigenetic changes in gene expression levels, may be particularly amenable to trade secret protection. For example, the relationships between the several genes that are likely to be involved in developing diseases like diabetes, cardiovascular disease, and many cancers are expected to be complex. This complexity has seriously slowed development of genetic tests expected to be the product of the Human Genome Project.[18] That level of complexity suggests that any genetic test that reliably predicts the likelihood for developing such diseases will be not only complex but almost impossible to reverse-engineer. Under these circumstances, it may be more fruitful to rely on non-disclosure of these relationships, for example by providing oligonucleotide arrays for hybridizing patient samples that are individually encrypted as to the location of the plurality of informative sequences on each array. Since such microarrays can contain tens of thousands of sequences, the informative ones can be "hidden" within the array and only identified by using an encryption code. Such encrypted arrays are unlikely to be easily reverse-engineered and thus are amenable to trade secret protection. Similar avenues for protecting diagnostic methods may be available for biomarkers and other technology relating to providing diagnostic information about complex systems.

Trade secret protection is not for everyone; inventive entities that require or benefit from publication, such as universities, cannot use this form of protection, and inventors whose technology can be reverse-engineered will gain little benefit. But for those companies that can, it is prudent to consider trade secret as a means of protection.

Endnotes

1. Uniform Trade Secrets Act (1985). Massachusetts, New York, New Jersey and Texas are the exceptions.
2. *Id.* at § 1(4).
3. *Id.* at § 1(2).
4. *Id.* at §§ 2-4.
5. *Id.* at § 6.
6. *Wyeth v. Natural Biologics, Inc.*, 395 F.3d 897, 899 (8th Cir. 2005).
7. *Id.* at 899 n.2.
8. *Wyeth v. Natural Biologics, Inc.*, No. Civ. 98-2469 (NJE/JGL), 2003 WL 22282371 (D. Minn. Oct. 2, 2003).
9. *Wyeth*, 395 F.3d at 902-03.
10. *Id.* at 899-900.
11. *Id.* at 900.
12. *Id.* at 900-01.
13. *Id.* at 900 (citing *Pioneer Hi-Bred Int'l v. Holden Found. Seeds, Inc.*, 35 F.3d 1226, 1239-40 (8th Cir.1994)).
14. *Bilski v. Kappos*, 130 S.Ct. 3218 (2010).
15. *Lab. Corp. of Am. Holdings v. Metabolite Labs., Inc.*, 126 S.Ct. 2921 (2006).
16. *Prometheus Labs., Inc. v. Mayo Collaborative Servs.*, 628 F.3d 1347 (Fed. Cir. 2010).
17. *Ass'n of Molecular Pathology v. U.S. Patent and Trademark Office*, 702 F.Supp.2d 181 (S.D.N.Y. 2010).
18. *See* Wade, Nicholas, "A Decade Later, Genetic Map Yields Few New Cures", The New York Times (June 12, 2010), *available* at http://www.nytimes.com/2010/06/13/health/research/13genome.html?_r=1

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Patent Data, Prior Art, and Operational Transparency at the USPTO

Patent Office Director David Kappos and his management team are slowly pushing the Office toward more transparency in both operations and decision making. This article discusses three interrelated USPTO transparency initiatives and considers their impact on the day-to-day practice of patent law.

The Patent Office was once thought of as a bastion of secrecy. Although issued patents were public documents, pending applications – and therefore the day-to-day activities of patent examiners – were kept secret. The statutory mandate for secrecy was largely eliminated ten years ago, but the Office has been slow to provide meaningful data on its internal operations.[1] The delay could be explained by both the internal cultural shift necessary to become a transparent government agency and the lack of available resources necessary for the transition. Of course, with a more than two billion dollar annual budget at its disposal, delays in operational changes can hardly be viewed as anything other than intentional and deliberate.[2] Perhaps more than anything, the USPTO simply did not set operational transparency as an important goal to be achieved.

USPTO Dashboard

In September 2010, the USPTO released a new set of operational information under the glitzy auspices of its Data Visualization Center and Patent Dashboard.[3] The online Patent Dashboard does a good job of providing a visual overview of the current USPTO state-of-affairs in terms of patent backlog, pendency, and allowance rate. Data downloads on the site provide unprecedented public access to USPTO numbers that were previously either uncalculated or largely kept secret. The USPTO management appears motivated to keep the data presented on the dashboard up-to-date on a monthly basis.

Although attorneys are fond of explaining that each patent application is unique, patent applicants still want to know expected timelines and usual approaches to patent prosecution. The Patent Dashboard provides simple calculations of the timing of first office actions (for both original and continuation applications), average total application pendency, average actions per patent application, patent allowance rate, frequency of RCE filings, pendency of appeals to the BPAI, etc. These baseline figures are important both for our basic understanding of the patenting process as well as for inventors making strategic business decisions. Applicants can use the information that 62% of patent applications eventually issue as a patent (up from 57% in 2009); that the average application pendency is 3 ½ years; and that an appeal to the BPAI pushes that timeline out past 6 ½ years in their patenting decision making process. However, as every patent practitioner understands, the USPTO averages can be misleading – if only because the prosecution varies so dramatically according to the technology center and art unit. However, the Patent Dashboard does not yet include this technology-centric breakdown; that development is apparently on hold until the USPTO implements its end-to-end XML data solution that is described below.

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Bit by bit, the USPTO is addressing issues with its transparency initiatives.

Director Kappos recently indicated his belief that the Patent Dashboard provides accountability as the USPTO publicly faces the challenge of reducing patent pendency. Director Kappos wrote that "an important part of the effort to reduce pendency is better understanding the numerous factors that contribute to examination delays and measuring their impact in a way that makes the USPTO more transparent to the public. By looking at the whole picture, we can more effectively develop ways to increase the efficiency of the examination process."[4]

USPTO Bulk Downloads via Google

In a separate initiative, the USPTO has been allowing Google to collect large sets of bulk data from USPTO computers in accordance with an agreement that Google will then make that data publicly accessible.[5] Freely available data sets include images of all patents granted since 1790; PAIR (Patent Application Information Retrieval) electronic application file wrappers for issued patents; patent assignment documents; and petition decisions. The data is currently in a raw, non-searchable format, but over the next year it will be indexed by Google and others. Patent researchers are having a field day with the data, and as the data becomes more searchable, it will serve as a useful tool for patent litigants, patent applicants, and new attorneys learning the trade.

In a 2006 decision, the Court of Appeals for the Federal Circuit held that a publicly available Canadian file wrapper was a "printed publication" and consisted of prior art under 35 U.S.C. § 102(b) because the Canadian prosecution file was open to the public more than a year before the challenged US patent application had been filed.[6] That decision is somewhat questionable because the file wrappers are not well indexed or easily searchable.[7] However, that critique loses its weight once file wrapper documents are freely searchable. Thus, the Google indexing is helping these file wrapper documents to become important sources of prior art – both legally and practically.[8] File wrappers reference a significant amount of important but hard-to-find prior art. In addition, office action rejections can provide evidence for a motivation to combine various prior art

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Patent Data, Prior Art, and Operational Transparency at the USPTO

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references. In the coming year, a search of indexed PAIR files will likely become a common feature of any prior art search.

The searchable file wrapper database will also be useful for patent applicants and patent attorneys looking for model office action responses, petitions, and appeal briefs. Of course, this development is important even for patent applicants and attorneys who do not use the new database, because their own prior filings are found within the system. We have always known that prosecution history files are eventually accessible to the public, but the ease of searching will make them public in a much more real sense.

End-to-End System and Data Availability

While admirable and important, the Patent Dashboard and bulk-data releases are short term patches to an ailing information technology infrastructure at the USPTO. As a medium term solution, Director Kappos and his Chief Information Officer John Owens are moving the Office toward an end-to-end XML-based information delivery system. The new system would almost wholly replace the USPTO's current IT system that is largely piecemeal and highly disjointed. The new system would also move away from the use of TIFF images which has frustrated almost everyone involved in patent prosecution (both within and outside the Patent Office). The USPTO is replacing the image files with a text-based system using XML (Extensible Markup Language) tags to categorize information. This new approach will allow the public to more easily search and categorize patent prosecution documents and hopefully allow both patent applicants and the general public to better monitor in-process patent applications. In addition, the integrated system should allow searchers to more easily drill down on particular patent information. Thus, a searcher could potentially limit a freedom-to-operate search to capture only still-pending applications and in-force patents.

A critical aspect of the development of the system is the identification of information to be "tagged." The USPTO is already tagging patent biographical information and classification information for each patent and published application. New global tags may include an application's current status; whether a previously issued patent is still in force; and current assignee information. New tags relating to prosecution could indicate the type of rejections and prior art found in each office action. This focused tagging would make it easy to identify when a particular reference has been asserted as prior art and to access the arguments made for and against the assertion. That additional information has the potential to help patent examiners make more-informed and better-targeted rejections and could also help patent prosecutors more easily understand the nature of the prior art.

The USPTO is still developing the specifics of the XML tagging, and suggestions should be sent to John Owens and the USPTO before the development schema is locked down.

Conclusions

When dealing with the patenting process, applicants have often been frustrated by the lack of solid information on costs, timelines, and the likelihood of success; third parties have been frustrated by the difficulties in locating and tracking potentially problematic pending patent applications; and new patent attorneys have struggled to locate model responses to help them in practice. Bit by bit, the USPTO is addressing these and other issues with its transparency initiatives. Of course, agencies are continually tempted to withhold information from the public – especially when the information reflects poorly on the administration. To that end, patent applicants and others with vested interests in the patent system should continue to push the USPTO to march onward toward its stated goal of transparency and open government.

Endnotes

1. *See* American Inventors Protection Act of 1999, sec. 4502, § 122(b)(1)(B), 113 Stat. 1501A-552, 1501A-561 (codified at 35 U.S.C. § 122(b)(1)(B) (2006)); *see also* 37 CFR § 1.14 (2010).
2. *See* U.S. Patent & Trademark Office, U.S. Dep't of Commerce, Performance and Accountability Report Fiscal Year 2010 (2010), *available at* http://www.uspto.gov/about/stratplan/ar/2010/USPTOFY2010PAR.pdf.
3. *Patent Dashboard*, U.S. Patent & Trademark Office, http://www.uspto.gov/dashboards/patents/main.dashxml (last visited Feb. 14, 2011).
4. David Kappos, *Greater Transparency: Introducing the USPTO Data Visualization Center and the Patents Dashboard*, Director's Forum: David Kappos' Public Blog (Sept. 7, 2010), http://www.uspto.gov/blog/director/entry/greater_transparency_introducing_the_uspto.
5. *United States Patent and Trademark Office Bulk Downloads*, Google, http://www.google.com/googlebooks/uspto.html (last visited Feb. 14, 2011).
6. *Bruckelmyer v. Ground Heaters, Inc.*, 445 F.3d 1374, 1378 (Fed. Cir. 2006).
7. *Id.* at 1380-81 (Linn, J., dissenting); *see also* Joseph Scott Miller, *Something Old, Something New Part 1*, The Fire of Genius (May 13, 2006), http://www.thefireofgenius.com/2006/05/13/something-old-something-new-part-1.
8. *See* Chris Jagalla, *Using USPTO Public PAIR Part 1*, The Intellogist Blog (Aug. 3, 2010), http://intellogist.wordpress.com/2010/08/03/using-uspto-public-pair-part-1.

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