

Software Patents: the state of the union

Nick Reeve, partner, Reddie & Grose

Recent decisions by the US Supreme Court in *Bilski v Kappos* and by the Enlarged Board of Appeal of the European Patent Office (EPO) in G 3/08 have declared "business as usual" when it comes to assessing the patentability of inventions relating to business methods or software. However, these two jurisdictions have very different ideas when it comes to exactly what that usual business might be.

In the US, the courts and the patent office continue to apply a broad interpretation of what can and cannot be protected by patents, using the "machine-or-transformation" test as their guide. The EPO, on the other hand, follows the "technical problem/technical solution" approach and takes a narrower view on what patent law should protect. Although the approaches in both jurisdictions refer to the importance of hardware or technology for assessing business methods or software inventions, they arrive at quite different results when applied to actual cases.

We examine the current state of patentability in these two important jurisdictions, looking at where this leaves applicants for software and business-method patent applications, and to what extent adding hardware to a claim improves the chances of obtaining patent protection. We also look further afield to key jurisdictions, such as the UK, Germany, Japan, Canada and Australia. With recent decisions issued by the German Federal Court of Justice, and a decision on Amazon.com's appeal expected any time soon in Canada, we consider whether these jurisdictions are looking to follow the example of the US or the EPO.

The US

On 28 June 2010, the US Supreme Court issued its highly anticipated decision in *Bilski v Kappos*^[1] relating to the patentability of business methods. The decision does not significantly change the law, and patentable inventions that relate to computer software or business methods are unlikely to be treated differently following the Supreme Court's decision than they were under the "machine-or-transformation" test proposed earlier in the corresponding Court of Appeal case, *In re: Bilski*^[2].

Under the "machine-or-transformation" test a claimed process is deemed to relate to patentable subject matter if it:

[1] Is tied to a particular machine or apparatus, or

[2] Operates to change articles or materials to a different state or thing.

The Supreme Court held that the "machine-or-transformation" test was not, as had been considered by the Court of Appeal, the sole test as to whether a process is patentable or not, but that it could provide an indicator of patentability. The Supreme Court offered little additional guidance as to what was required of an invention to take it into the realm of patentable subject matter, other than it should not be an abstract idea. The Supreme Court's ruling specifically leaves open the possibility of patentable business methods, but makes it clear that this will not apply in every case.

At the present time, this latest decision will probably make little difference to applicants prosecuting their US applications. On the day of the decision being published the US Patent and Trademark Office (USPTO) issued a memo to examiners^[3] instructing them to continue to apply the "machine-or-transformation" test, and to also object to applications that clearly relate to abstract ideas. Further developments are expected in the future.

Europe

On 12 May 2010 the Enlarged Board of Appeal (EBA) of the European Patent Office (EPO) released its decision in response to questions posed by the president of the EPO concerning the patentability of inventions implemented in computer software. The decision, G 3/08, confirmed that the current approach to patentability set out in the case law of the Technical Boards of Appeal is both consistent and correct.

According to the EBA, the [Hitachi \[4\]](#), [Microsoft \[5\]](#), [Ricoh \[6\]](#) and [Comvik \[7\]](#) decisions of the Technical Boards of Appeal provide the current European framework against which the patentability of computer software related inventions is assessed. These decisions interpret the exclusion of computer programs and business methods found in Article 52(2) of the European Patent Convention to only apply to computer-related inventions that fail to provide a technical solution addressing a technical problem.

Based on the "technical problem/technical solution" approach, the Technical Boards of Appeal have developed a structured method of assessing whether an invention is patentable or not. Under this method, a claim will not be deemed to fall foul of the excluded subject matter provisions provided it contains a technical feature, it being irrelevant whether this feature is known from the prior art or not. This is a low hurdle to overcome, and is satisfied, for example, by a claim comprising hardware, or any computer program claimed in conjunction with a computer or computer-storage medium.

But what the EPO gives with one hand it swiftly removes with the other by shifting the focus to examination of inventive step and stipulating that only technical features can contribute to inventiveness. To quote T 154/04 from the Technical Board of Appeal, a case recognised in G 3/08 as summarising the position on patentability, "non-technical features, to the extent that they do not interact with the technical subject matter of the claim for solving a technical problem... do not provide a technical contribution to the prior art and are thus ignored in assessing novelty and inventive step."[\[8\]](#)

The issue of whether a computer program or a business method is excluded from patentability therefore depends on what it achieves in practice, and whether it is directed to solving a problem with technology, or merely a problem that is grounded in other non-technical fields such as commerce or administration.

Why so different?

The European and US approaches to patentability are based on rather different starting points. The US statute at 35 USC § 101 states that "whoever 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". There are no specific exclusions listed in the statute itself, and the courts are generally reluctant to limit the scope of the statute wording, leading to a very broad range of subject matters that can be protected by patents. To date, jurisprudence of the US courts has led to the development of only three specific exceptions to patentability: laws of nature, physical phenomena and abstract ideas.

Article 52 of the European Patent Convention (EPC), on the other hand, specifically lists a number of exclusions that are not considered to be inventions protectable by patents. These include discoveries, scientific theories, mathematical methods, aesthetic creations, schemes, rules and methods for performing mental acts, playing games or doing business, programs for computers, and presentations of information. The European exclusions are more severe than the exceptions from patentability developed in the US, and it is from this point that jurisprudence at the EPO has developed.

So how does one overcome an excluded subject-matter objection in these jurisdictions? One possibility is to introduce hardware or physical entities into the claims.

Under the US approach, a process claim directed only towards a series of steps may fail the "machine-or-transformation" test. Requiring the steps to be performed on a general computer ties the method to a particular machine and arguably satisfies the test. Since the claim is directed to a method carried out on hardware, or to the hardware itself, it is no longer a mere abstract idea, but rather a practical implementation of such an idea. In the US, hardware is a true ally.

Under the European approach things are a little less straightforward, and claiming a business method performed on hardware such as a general computer will not get you very far. The business method itself is non-technical and cannot contribute to inventiveness, and as general-purpose computers are also known, the claim would be found obvious. The hardware must be specifically adapted in some manner, or the method and the hardware must interact in a technical way, so as to provide a technical solution to a technical problem.

Looking further afield

UK

The latest decisions from the UK, such as *Symbian*^[9], have shown a willingness to more closely align its approach to patentable subject matter with that of the EPO, but the UK and EPO approaches do still differ. In particular, the UK courts look at the contribution of the invention in relation to the prior art and check whether this contribution is in an excluded field and is technical.

This approach appears, on the face of it, similar to the EPO's, given that it requires a technical contribution over the prior art, analogous perhaps to a technical solution to a technical problem. However, under the UK contribution approach, "novel or inventive purely excluded matter does not count as a "technical contribution"^[10]. This interpretation means that a novel and inventive computer program will not be considered as making a technical contribution unless it is run on apparatus and results in a technical effect. This test is criticised in the T 154/04 decision for being unsupported by the EPC.

Although the patentability tests in the UK and Europe do differ, the general view (at least of the UK courts and the UK Intellectual Property Office^[b1]), is that they will reach the same outcome in most cases. Nevertheless, many software inventions that are patentable under the EPO test are considered by the UK Patent Office as making no contribution outside of an excluded field, and are subsequently disallowed.

Germany

In recent decision Xa ZB 20/08, issued on 22 April 2010, the German Federal Supreme Court fully endorsed the EPO's approach to patentable subject matter. The patent in question related to a method for generating documents on a host computer. The court held, in line with EPO practice, that a claim combining technical and non-technical features should not be excluded from patentability. The decision on whether the claim is patentable or not then depends only on whether the claimed invention is new and inventive.

This latest German case further highlights the aim of European member states to more closely align their practice with that of the EPO. This is highly desirable given that patents granted by the EPO will be enforced by the courts of the individual member states.

Canada

Under Canadian law patentable inventions include any new and useful art, process, machine, manufacture or composition of matter, or any new and useful improvement in any art, process, machine, manufacture or composition of matter.[\[11\]](#) Scientific principles or abstract theorems are also explicitly excluded.[\[12\]](#) On the face of it, this puts Canadian patentability requirements on a very similar footing to those of the US. However, on closer inspection it appears that the approach adopted by the Canadian Patent Office puts the patentability barrier considerably higher than in the US, and arguably closer to the UK or EPO.

According to the current Manual of Patent Office Practice (MOPOP) of the Canadian Patent Office, the procedure to assess patentability is to look at what, as a matter of substance, the invention has contributed over the prior art. For a claim to be patentable it must define at least one element that is not excluded from patentability and that also forms part of the contribution. Taking computer programs as an example, a program provides a patentable contribution if it causes the device it controls to provide a technological solution to a technological problem. This is a slightly uneasy mix of the UK and European approaches. It requires an assessment of patentability based on the contribution of the prior art but also requires the claimed invention to provide "a novel and unobvious technological solution to a technological problem".[\[13\]](#)

It should be noted that the MOPOP guidelines do not have the authority of a legal judgement, and could be changed in light of forthcoming decisions. Indeed, with a highly anticipated decision on the Amazon.com "one-click" online ordering system expected from the Federal Court shortly, it is hoped that we will soon have some further guidance on patentability in Canada.

Japan

The Japanese Patent Act stipulates that a patentable invention must be a creation of technical ideas utilising a law of nature.[\[14\]](#) In practice, the patentability barrier in Japan falls somewhere between those of the US and Europe.

According to the Examination Guidelines for Patent and Utility Model in Japan[\[15\]](#), software is patentable provided the information processing is performed by a specific component, and the software and hardware cooperate with each other in some way. This means that simply adding a general-purpose computer to a claim will not overcome a statutory subject-matter objection unless there is some sort of interaction between the software and hardware, such as controlling resource management.

This is a higher requirement than that of the EPO, but on the other hand, in Japan once a claim has been deemed to include statutory subject matter, all the claim elements, including non-technical features such as business method steps, are considered for the purposes of inventive step. This leaves open the possibility of allowable claims in Japan that would not be considered inventive in Europe.

Australia

The threshold for patentability in Australia also sits somewhere between those of the US and the EPO. A patent may be granted for a device or machine, a substance, a process, computer hardware and software, and some business methods. The claims must cover a method of manufacture, which is interpreted broadly under Australian law as a practical implementation that provides a concrete, tangible, physical or observable effect. Inventions should also be directed towards something that is commercially useful.

According to the Patent Manual of Practice and Procedure before the Australian Patent Office it is the substance of the claim that is important, rather than the form. Merely including hardware that is not directly related to the claimed invention will not be sufficient to overcome a non-

statutory subject-matter objection.[\[16\]](#) However, the scope for patentability is broad, covering, for example, executable code and computers programmed to achieve any result which has utility in the field of economic endeavour.[\[17\]](#)

Given the relatively low threshold to patentability in Australia, it is a jurisdiction that should be given careful consideration when considering global filing strategies for business-method and software applications that may meet resistance in, for example, the UK or the EPO.

Summary

As we have seen, patent offices generally take the view that patents should be granted only for inventions that are tangible, either in their physical implementation, or in the effect they have on an end article. Abstract concepts, not going beyond [\[b2\]](#) algorithms, rules for playing games or doing business, and more controversially, software, are in many jurisdictions specifically excluded from patentability. However, each jurisdiction has its own way of implementing the exceptions to patentability and it becomes very important to consider the various requirements of target patent offices at the time of drafting an application.

As we have shown above, inclusion of hardware in the claims of a patent application is not a panacea for overcoming excluded-subject matter objections, but is something of a tried-and-tested remedy in several jurisdictions. Where hardware is not sufficient to assist with excluded subject-matter objections, the applicant will need to consider what the purpose of the invention is, and whether that purpose concerns an improvement in the way the hardware itself (such as a computer) operates.

Early action can greatly improve the chances of obtaining a granted patent as well as saving substantially on costs along the way, and in all cases, applicants should seek advice from their patent attorneys as early as possible.

ACTION POINTS FOR COUNCIL

- 1. Consider the relevant patentability thresholds in each of the key jurisdictions preferably whilst drafting the application, but at least before the 12-month priority period expires.
- 2. Ensure in your application you have an adequate description of how the invention is implemented in hardware. In particular consider how the software interacts with the hardware to achieve a technical result. For Europe consider what technical problem is overcome by the inventive concept.
- 3. Ensure the right claims are on file for each jurisdiction before Examination starts. Get the right claims in front of the Examiner as early as possible; less time and money will be required during Examination arguing that a claimed invention relates to patentable subject matter.
- 4. For applicants outside Europe consider having a European Patent Attorney review your application well in advance of filing in Europe, given that European and UK patent law generally apply the strictest patentability criteria.

Nick Reeve

Nick Reeve is a partner with Reddie & Grose. His patent and trade mark practice encompasses the electrical, electronic and mechanical sectors, with particular emphasis on computer software, telecommunications and cleanTech related inventions for clients in the UK and globally. He speaks fluent Japanese.

Pete Sadler

Pete Sadler is an associate with Reddie & Grose. He works with clients on patent matters in the general mechanical, electrical and electronic fields, including telecommunications, electric motors, integrated circuits, smartcard systems and software and business methods for both the domestic and global markets.

[1] Bernard L Bilski and Rand A Warsaw v David J Kappos, Under Secretary of Commerce for Intellectual Property and Director, Patent and Trademark Office.

[2] In re Bernard L Bilski and Rand A Warsaw; Section II A.

[3] Acting Associate Commissioner for Patent Examination Policy to Patent Examining Corps, 28 June 2010; see http://www.uspto.gov/patents/law/exam/bilski_guidance_28jun2010.pdf.

[4] T 258/03 (OJ EPO 2004, 575).

[5] T 424/03.

[6] T 172/03.

[7] T 641/00, COMVIK (OJ EPO 2003, 352).

[8] T 154/04 r.5(F).

[9] Symbian Ltd v Comptroller General of Patents [2008] EWCA Civ 1066 (08 October 2008).

[10] Aerotel Ltd v Telco Holdings Ltd & Ors Rev 1 [2006] EWCA Civ 1371 (27 October 2006), paragraph 26(2).

[11] Canadian Patent Act (RS, 1985, c P-4), Section 2.

[12] Canadian Patent Act (RS, 1985, c P-4), Section 27(8).

[13] Manual of Patent Office Practice (MOPOP) of the Canadian Patent Office, sections 12 and 13, particularly 12.06.06.b.

[14] Japanese Patent Act, Section 2(1).

[15] Part II, Section VII, Chapter 2.

[16] Patent Manual of Practice and Procedure, Section 2.9.2.10.

[17] Patent Manual of Practice and Procedure, Section 2.9.2.7.

[b1] UK Patent Office, or UK Intellectual Property Office intentional?

[b2]?sense?