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Software and business method patents in Europe and the UK

Patents for software and business methods have been a contentious topic of discussion amongst patent practitioners in Europe for a long time. Our briefing note aims to explain the current situation and resolve common misconceptions.

Background

There is much confusion in the tech industry about the patentability of software in the UK and Europe. The starting point for this confusion is Article 52(2) of the European Patent Convention (EPC) which is mirrored in the UK under Section 1(2) of the Patents Act 1977. Article 52(2) EPC sets out a list of activities which shall not be regarded as inventions (commonly referred to as categories of "excluded subject-matter"), specifically:

- discoveries, scientific theories and mathematical methods;
- aesthetic creations, schemes rules and methods for performing mental acts, playing games or doing business, and programs for computers; and
- presentations of information.

Article 52(3) EPC qualifies Article 52(2) EPC by excluding the subject matter of these activities only to the extent to which a European patent application or patent relates to such subject matter "as such".

As a result, patents can be granted at the European Patent Office (EPO) and United Kingdom Intellectual Property Office (UKIPO) for inventions which involve the categories of excluded subject matter set out in Article 52 EPC. However, the "as such" qualification has also been used to limit the scope of allowable subject matter in these categories.

Over the years, the EPO and the UKIPO have developed the way in which the allowability of patent applications for computer software and business methods is assessed. The EPO has settled on an approach that gives greater certainty to applicants in comparison to other patent offices, such as the US patent office, where the law in this area is in a state of flux. The UKIPO's approach is similar to that of the EPO, but with some subtle differences which are explained below.

How does the EPO interpret Articles 52(2) and 52(3) EPC?

The first important case to address the issue of subject matter involving computer software was EPO Technical Board of Appeal case T208/84 ("Vicom"). A claim to a method of digitally processing an image was allowed, even though the processing was essentially carrying out the steps of an algorithm. The processing was considered to be technical and therefore the claim was not excluded because it related to a computer program or mathematical method as such.

The basis for the qualification that an invention must be technical arises from the EPC which states:
- "The claims shall define the matter for which protection is sought in terms of technical features of the invention" (Rule 43(1) EPC); and
- "The description shall: (a) specify the technical field to which the invention belongs" (Rule 42(1)(a) EPC).

In 1999, two EPO Technical Board of Appeal cases, T935/97 and T1173/97 ("IBM"), established that claims having the form "a computer program product" and "a computer readable medium having a program recorded thereon" were allowable.

Following the IBM decisions, it became accepted practice of the EPO that software itself could be claimed directly. This continues to be the practice of the EPO so long as other requirements, such as clarity of the claim language and sufficiency of disclosure, are met.

In T931/95 ("Pension Benefits System Partnership"), it was held that the claims of an application must define non-excluded subject matter and be novel and inventive. The claims were directed to a method and an apparatus for controlling a pension benefit program. The method claim referred to technical means, but was refused because it related to a method of doing business as such (i.e. it did not define non-excluded subject matter).

In this case, the apparatus claims did define technical features and were not refused merely because they related to excluded subject matter. However, the apparatus claims were refused on grounds that they lacked an inventive step because it was viewed that the differences from the prior art lay in an economic field (i.e. non-technical) and hence there was no technical contribution provided by the distinguishing features of the invention. This case marked a substantial shift in the EPO's approach to non-excluded subject matter.

Subsequently, in T258/03 ("Hitachi"), the Board of Appeal held that there could be no distinction between apparatus and method claims in the assessment of the technical contribution of features. Therefore, method claims involving technical apparatus (e.g. a computer) should also be considered under the requirement of inventive step.

Following the Pension Benefit and Hitachi cases, if a claim involves technical features, then the EPO will not reject it for simply relating to excluded subject matter. The question is whether the technical distinguishing features over the closest prior art provide a non-obvious technical solution to a technical problem – i.e. the question is one of inventive step. Applying the approach of T641/00 ("Comvik"), if a feature cannot be considered as contributing to the technical character of the invention, it has no significance for the purpose of assessing inventive step.

In 2008, in referral G3/08, the President of the EPO referred questions regarding the patentability of programs for computers to the EPO's Enlarged Board of Appeal. After a lengthy period in which many amicus curiae briefs were filed, the Enlarged Board declined to answer the questions posed in the referral on a legal technicality; it was held that, since there was no divergence in existing case law, the legal requirements for the referral itself were not met.

Since then, the EPO has continued to apply the precedents set out in the Pension Benefits, Hitachi, and Comvik cases, amongst others.

What is the current practice of the EPO?

When assessing whether a claim which includes computer-implemented or business method subject matter is patentable, the following is the current test applied by the EPO:

1. Identify the closest prior art;
2. Identify distinguishing features of the claim over the closest prior art which provide a technical contribution (i.e. technical features that aim to solve a technical problem); and
3. Assess whether the (technical) distinguishing features would be obvious to the skilled person in light of the technical problem.

As can be seen from the above test, there is considerable emphasis placed on the so-called "technical features", and the "technical problem" of the invention. The question then arises as to what exactly is required to make a feature, and a problem, "technical", and some guidance on what is not technical has been provided recently by the EPO Technical Board of Appeal in case T1670/07 ("Nokia").

Considering the possible extremes provides a good starting point. There can be no doubt that a computer itself constitutes a technical feature. Conversely, a method for calculating pension benefits constitutes a non-technical feature. However, what happens when the feature in question is a computer that is used to calculate pension benefits? Is this new feature technical in its entirety, and if not, which parts are technical?

There has been a trend in recent years to avoid conceding that any claimed features may encompass aspects that would be deemed to be non-technical. This has manifested itself in three distinct lines of argument that would-be patentees of computer-implemented or business method inventions have submitted to the EPO.

The first argument is that any use of a technical measure must in itself be technical. Hence, calculating pension benefits using a computer is an entirely technical feature. However, in the Nokia case this line of argument was dismissed as nothing more than an attempt to "leak" the

technical character of a computer through to its use in calculating pension benefits. In other words, the only technical feature present is the computer itself, and not the calculation of pension benefits. The take home message here is that if you are relying on the use of hardware to achieve patentability, the use in question had best not be in a non-technical field.

The second argument is that, if a feature can prompt a user to carry out an action that is technical, this feature must be technical. For example, the now infamous Microsoft Windows "Start" icon could be said to prompt a user to interact with a computer in a particular way. Therefore the icon itself is a technical feature. This line of argument has become common in the smartphone era, because smartphones typically seek to utilise efficiently limited touch screen real estate to prompt users to interact in a certain way. However, in the Nokia case, the Board dismissed this argument as a so-called "broken chain". In effect, the Board said that any ultimate interaction prompted by such a feature would be entirely contingent on the user's thought process, and it was therefore by no means guaranteed that this feature would always result in a technical interaction with the computer. Hence, if the features in question are common technical means, such as an LCD display providing information that suggests a user interaction, they are unlikely to be viewed favourably by the EPO.

Finally, it is an accepted principle of patent law that technical prejudices are taken into account when assessing inventive step. For example, if the prior art suggests that something should be done only in a particular way, a patent application directed to a different, but equally viable way is likely to be inventive. Accordingly, the third line of argument attempts to apply this principle to non-technical features. That is to say that if a patent application directed to a new business method is counter-intuitive, or radically different from known business methods, the new business method is inventive. However, in the Nokia case, the Board dismissed this argument by saying that only technical prejudices are taken into account.

In the above example, there is no technical reason that the skilled person could not use a computer to implement the non-technical calculation of pension benefits. In other words, programming a computer in a new way presents no technical prejudices. Hence, if a computer is being used in a conventional way, albeit running a new business method, it is unlikely to be considered inventive.

What has the EPO granted patents for?

In the past, European patents have been granted for inventions in a number of fields which might be deemed to fall within the software and business method categories, for example in areas as diverse as image processing, graphical manipulation software, artificial intelligence, user interfaces, speech recognition, operating systems, genetic algorithms, genetic mining systems, database systems and financial trading systems.

Do the EPO's Guidelines Provide Specific Examples?

As the law develops, the EPO updates its Guidelines for Examination in order to help patent applicants decide whether their inventions are likely to be considered patentable. Recently, the EPO added a specific section to the guidelines on artificial intelligence, which we reported on here. In addition, the guidelines now includes clarification on how inventions directed towards graphical user interfaces are assessed. In summary, if a graphical user interface credibly assists the user in performing a technical task, then the invention is more likely to be patentable. However, if the invention merely provides an improvement from an aesthetic point of view, then the EPO will take a negative stance.

How does the practice of the UKIPO differ from that of the EPO?

In the past, the UKIPO has attempted to follow the EPO's approach to software and business method related inventions. However, the UKIPO is bound by the precedents set by the UK Courts. This can often result in disparity between what the EPO and UKIPO will allow.

Practice in the UK was defined in a UK Court of Appeal judgment in Fujitsu Limited's Application ("Fujitsu") which was an appeal against an appealed decision to refuse an application relating to crystal modelling using a computer. The judge in this case confirmed that a criterion for patentability of subject matter which, on the face of it, falls within the statutory exclusions was that the claimed invention should provide a technical contribution in order to be patentable. Following the Fujitsu case in the UK and the IBM cases at the EPO, the UKIPO issued a practice notice which stated that its practice towards software related inventions would "remain in step with that of the European Patent Office".

However, when the EPO moved to its current "inventiveness" test following the Pension Benefits and Hitachi cases, the UKIPO continued to apply the "technical contribution" approach, as it had to following the precedent in Fujitsu. There was therefore a disparity in the way in which the UKIPO and EPO viewed the wording of the EPC.

In 2006, two cases which involved issues of excluded subject matter, Aerotel Ltd v Telco Holdings Ltd and Macrossan's Patent Application reached the UK Court of Appeal and were conjoined in a single judgment. This lead the Court of Appeal to reaffirm its support for the traditional UK approach to excluded subject matter in which the technical contribution of a claim is decisive in determining whether claimed subject matter is excluded from patentability.

However, following two further judgments in the Patents Court, the UKIPO issued a further practice note stating that it would not reject claims to a computer program or a program on a carrier merely on account of their form. A further judgment from the Court of Appeal in Symbian Limited v Comptroller General of Patents was handed down in the latter part of 2008. This case was an appeal brought by the UKIPO against a decision by a lower court to overturn the UKIPO's refusal of Symbian's software-related patent application concerning accessing data in a dynamic link library in a computing device. In the case before the Court of Appeal, the UKIPO asserted that a computer program is excluded from patentability unless it has a novel effect outside the computer.

The Court of Appeal did not agree and asserted that a computer program is allowable if, when it is run on a computer, it provides a better computer, for example by being more reliable and improving the functioning of the computer.

In Symbian's case, this was because the software "has the knock-on effect of the computer working better as a matter of course". In essence, it is not a precondition for patentability that there is a novel effect outside the computer.

The Court of Appeal's judgment in Symbian did not go as far as adopting the EPO's approach to software inventions. However, it does say that the UK and EPO approaches should give the same result. This judgment should now mean that the UK stance on patentability of software-related inventions, whilst not necessarily following the same reasoning, should be broadly similar to that of the EPO.

Nevertheless, since the UK and EPO approaches can still differ in the way in which they are applied to specific cases, there are likely to be situations where patents may be allowed by the EPO, but not by the UKIPO, and vice-versa.

How does all this apply in practice to the applicant?

For applications relating to pure business methods or computer programs involving only conventional computer program steps, refusal should be expected under both UK and EPO approaches. Yet there remains uncertainty in the middle ground and application of the two approaches to the same claimed invention may produce different results.

Since the national courts have the final say on whether patents granted by the EPO are valid, applicants and patentees should be aware that, due to differences in approaches, even if a patent relating to a computer-implemented invention is granted by the EPO, there may be a higher level of risk that the patent could be revoked by a national court, than would be the case for patents in other areas of technology.

In order to increase the likelihood of having a patent application relating to business methods and software granted and reduce the risk of revocation by a national court, applicants should ensure that patent applications relating to software and business methods describe physical, technical components and highlight technical advantages achieved by the invention and possible sub-inventions. The specific steps of data processing and the interaction between components implemented using conventional hardware and software should be fully explained in detail in the patent specification, along with the technical advantages that these steps achieve.

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