

Software Protection In Europe – The Commission’s proposal for a Directive on the patentability of computer-implemented inventions.

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I Introduction

The Commission’s proposal for a Directive on the patentability of computer-implemented inventions, adopted on 20 February 2002,² aims at harmonising the provisions within the Community for dealing with inventions which make use of software. The Directive will bring under the supervision of the European Court of Justice the rules applicable by national courts and patent offices charged with assessing the validity of patents and applications. This paper sets out the background to the initiative and explains the key features of the proposal.

II Background to the Proposal

The present situation

The law governing the patentability of software and related inventions in Europe is governed by Article 52 paragraphs (2)(c) and (3) of the European Patent Convention³, according to which computer programs “as such” are excluded from patentability, as well as other entities including business methods and mathematical methods. These provisions were negotiated and adopted in the 1970’s at which time computer equipment that might be found in a child’s toy today would probably have occupied an entire room, if not a floor of a building, if indeed it could have been built at all. Since then, perhaps 30,000 software-related patents have been granted by the European Patent Office under the terms of the Convention, and a considerable body of jurisprudence on the subject has been built up by the appellate bodies of the European

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² COM(2002) 92 final (text available at http://europa.eu.int/comm/internal_market/en/indprop/comp/02-277.htm)

³ The full text of the relevant paragraphs of Article 52 EPC are as follows:

52(1) European patents shall be granted for any inventions which are susceptible of industrial application, which are new and which involve an inventive step.

(2) The following in particular shall not be regarded as inventions within the meaning of paragraph 1:

- (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 programs for computers;
- (d) presentations of information.

(3) The provisions of paragraph 2 shall exclude patentability of the subject-matter or activities referred to in that provision only to the extent to which a European patent application or European patent relates to such subject-matter or activities as such.

Patent Office. These granted patents relate not only to the core subject-matter of digital data processing, data recognition, representation and storage, but lie also in many other technical areas. The criterion the EPO has adopted has been that a patent depending for its implementation on the use of software will not be refused if it makes a *technical contribution*. "Inventions" which make no technical contribution (for example if the contribution is no more than an improved way of doing business) are however not regarded as patentable.

Because the European Patent system only provides a system for the examination and grant of patents, but leaves the administration of post-grant proceedings, including proceedings relating to the validity of patents, to the authorities of the contracting states, these software-related patents, once granted, have to be interpreted and defended in the national courts.

Member States are obliged to respect Article 52 EPC and the other provisions setting out conditions for patentability in their national laws. However the interpretation of these conditions is made in each case in the context of national legal traditions. There is no mechanism in the EPC whereby national courts can refer for binding opinion particular questions to a supra-national body in the manner which exists within the EU. Consequently, there exists the possibility that differences may arise between European countries as regards the validity of patents granted by the EPO, even to the extent that the same invention may be held to be protectable by a valid patent in some countries and not in others⁴. Another example of a divergence in practice which did at one time arise concerned the allowable form of claims⁵. Conditions for patentability among the contracting parties of the EPC are therefore effectively not totally uniform, which leads to uncertainty for patentees and users of patented technology. All Member States of the European Community being contracting parties to the EPC, this therefore has direct negative effects on the proper functioning of the internal market of the European Community, which is a classic justification for intervention at the Community level⁶.

The Situation in the US and Japan

In the U.S., in order to be patentable, an invention must simply be within the technological arts. No specific technological contribution is needed. The mere fact that the invention uses a computer or software makes it become part of the technological arts if it also provides a "useful, concrete and tangible result". All this means that there are in practice few restrictions on patenting of all kinds of computer programs as well as business methods (apart of course from the generally-applicable

⁴ See for example the UK cases of *Merrill Lynch's application* [1989] RPC 561 and *Raytheon's application* [1993] RPC 427 in which the English Court applied a stricter interpretation of Section 1(2) of the UK Patents Act (which is supposed to have an equivalent effect to Article 52(2) EPC) than had been applied in the EPO.

⁵ The EPO Boards of appeal in *Computer Program product I and II* (T1173/97 OJ EPO 1999, 607 and T0935/97 [1999] RPC 861) have allowed claims to computer programs on a carrier (eg a diskette) or even as a transmitted signal. The UK Patent Office issued a practice notice on 19 April 1999 indicating the intention to accept such claims, but it has only been recently that the German courts have become ready to accept such claims (decision of the *Bundesgerichtshof* (BGH)) issued on October 17, 2001 in Case X ZB 16/00). It is still unclear how other Member States will react.

⁶ See for example *Titanium dioxide* C300/89 [1991] ECR I 2867, *Spain v Council* C350/92 [1995] ECR I 2003, *Germany v Council* C426/93 [1995] ECR I 3743.

requirements of novelty and inventive step). In Japan a patentable invention has to be “a highly advanced creation of technical ideas by which a law of nature is utilised”. This doctrine has traditionally been interpreted in a manner intermediate between the situations in the U.S. and Europe.

Consultations

Following a consultation centred on the Commission’s 1997 Green Paper⁷, the patentability of computer programs was one of the priority issues identified in early 1999 on which the European Commission should rapidly take action⁸. It was envisaged that a Directive harmonising Member States’ law on the issue would remove the ambiguity and lack of legal certainty surrounding the issue. Furthermore, it was suggested that “computer programs” should be deleted from the list of non-patentable items in Article 52 of the European Patent Convention.

After 1999, public debate on the issue intensified. Some sections of European industry have repeatedly asked for swift action to remove the current ambiguity and legal uncertainty surrounding the patentability of software-related inventions, while on the other hand, developers and users of open source as well as small and medium-sized enterprises who backing them have increasingly raised concerns about software patents in general. Indeed the entire foundation of patent system namely that patents stimulate innovation and are therefore basically good for society has been called into question.

This was the position in the autumn of 2000, when plans were being finalised for a diplomatic conference to amend the European Patent Convention. In accordance with the previous consultations, an amendment to Article 52(2)(c) had been prepared which would have deleted the reference to programs for computers from this paragraph and thus removed the explicit restriction on patenting software from the Convention. However it became apparent that simple deletion of the exclusion without other complementary measures might not be appropriate as it could have had unpredictable and possibly undesirable effects, and the EPO contracting states accordingly agreed to remove this item from the agenda of the diplomatic conference to allow the Commission to undertake a further consultation on elements for a possible harmonisation. These elements were set out in a paper which was made available on the Internet⁹.

The October 2000 Consultation

⁷ Promoting innovation through patents: Green Paper on the Community patent and the patent system in Europe COM(1997) 314 final, 24 June 1997

⁸ Promoting innovation through patents: The follow-up to the Green Paper on the Community patent and the patent system in Europe COM (1999) 42 final , 5 February 1999

⁹ The patentability of computer-related inventions: consultation paper by the services of the Directorate-General for the Internal Market (19 October 2000). Paper available for downloading at http://europa.eu.int/comm/internal_market/en/intprop/indprop/softpaten.htm. The consultation, which closed on 15 December 2000, also invited comments on a study "The Economic Impact of Patentability of Computer Programs" (text available for downloading at http://europa.eu.int/comm/internal_market/en/intprop/indprop/studyintro.htm) which had been conducted by the Intellectual Property Institute, London, on behalf of the Commission.

The consultation adopted a two-pronged approach. In the first place, views were sought on whether there was any need at all for action at the Community level on harmonisation, and in the event that this question were to be answered in the affirmative, what the appropriate level would be in general terms. The paper then proceeded to set out in some detail the current state of the case law as established within the EPO, with the suggestion of a number of very specific elements which might figure in any harmonisation exercise based on this status quo.

The responses were analysed by a contractor and his report can be downloaded from the Website of the DG Internal Market¹⁰. A very large number of comments were received (1447 by the official closing date after elimination of duplicates and “spam” messages). Views were sharply polarised, between those who were more or less satisfied with the position set out in the paper and those who were totally opposed to patents covering the dissemination and use of software that runs on general-purpose computers (actually more than 90% of the responses). Patents for other types of invention which include a computer program, for example in the case of the chemical or mechanical industries, were generally not so controversial, although a small number of submissions expressed opposition to patents in any form. Opponents mainly included independent developers and smaller companies, and many of these coupled their views with support for open source software, the majority of such submissions being forwarded to the Commission as part of a campaign mounted by the Eurolinux Alliance.

It is perhaps a result of this polarisation and of the precise nature of the questions asked, that opponents of software patents tended to concentrate in their responses on the first part of the consultation which treated the economic effects in more general terms, while the “supporters” of software patents gave more detailed answers to the questions about the possible elements for inclusion in a Directive.

Among the principal reasons cited by opponents of software patents were that patents would unfairly stifle innovation and competition in the software field, be detrimental to SMEs and the open source community, and thereby to the European economy as a whole. A substantial number of these contributors expressed a general perception that software patents would prevent them from continuing to develop and “publish” software code without the constant threat of patent infringement.

Most comments of those who were generally in favour of patents for computer-implemented inventions expressed broad support for the harmonisation of Member States’ patent laws on the basis of the status quo, as defined by the case law of the EPO Boards of Appeal. The consultation paper, in principle, had sought to reflect this case law, with the exception of the so-called program product claims (discussed further below). The reasons cited were consistent with the view that the patent system is working reasonably well at present and generally reflected the traditional position that patents provide an incentive to investment and are a justified reward for innovation.

There was a majority view among software patent supporters that U.S.-style business methods which display no technical contribution should not be patentable, although

¹⁰ See http://europa.eu.int/comm/internal_market/en/indprop/comp/softreplies.htm

certain submissions expressed a preference for more liberal conditions going in the U.S. direction, possibly allowing patents for non-technical business methods. These contributors believed that global competition requires such a move and/or that computer-implemented business methods (which make no technical contribution) deserve patent protection just as any other inventions. Some submissions suggested special treatment for software inventions, for instance the reduction of the protection period of 20 years to, *e.g.*, 5 years.

Although numerically in a small minority, submissions supporting the principles set out in the paper tended to come from representative bodies or single large organisations and therefore probably represent greater numbers of jobs in the sector. However, the Commissioner for the Internal Market, Mr Bolkestein, made it clear when introducing the proposal that the Commission has neither conducted a referendum, nor attempted to assess the simple balance of economic power in coming to its conclusions on this matter. Rather the object of the exercise has been to discern what is best for the interests of Europe as a whole.

There was however one point on which there could be said to be “consensus” albeit that subscribers to the consensus come from very different starting positions: that there is need for action of some kind. Very few submissions received and none of the Member States who expressed formal opinions were satisfied with the way in which the main thrust of the current practice is now based virtually entirely on decisions of the EPO Boards of Appeal and the Courts.

Other consultations and studies

A number of reports and studies carried out on behalf of the Commission and others were considered by the Commission in coming to its position. These are referred to in the Explanatory Memorandum to the proposal. In addition, the German government published in November 2001 the report of a detailed study¹¹ of the legal and economic implications of patenting of software. These various reports and studies each had different emphases, but tended to agree that despite the strength of feeling expressed on both sides of the argument, there is actually not a great deal of clear evidence about the role patents play in stimulating or otherwise innovation in the field of software. This suggests that it would be risky to take any action now to make a radical change in the scope of what is patentable.

Constraints

In formulating the proposal, the Commission was subject to certain constraints which flow mainly from the obligations under the TRIPS Agreement and the operation of Community law and practice.

Article 27(1) of the TRIPS Agreement stipulates that patents shall be available “in all fields of technology, provided that they are new, involve an inventive step and are

¹¹ *Mikro- und makroökonomische Implikationen der Patentierbarkeit von Softwareinnovationen Geistige Eigentumsrechte in der Informationstechnologie im Spannungsfeld von Wettbewerb und Innovation (Studie, November 2001)* – full text available for download at <http://www.bmwi.de/Homepage/download/technologie/Softwarepatentstudie.pdf> ; English summary at http://www.bmwi.de/Homepage/download/technologie/Softwarepatentstudie_E.pdf

capable of industrial application”. This form of words has been incorporated in the latest revision of Article 52 of the EPC. The Agreement does not specify what is to be regarded as a field of technology, so it is up to contracting parties to determine what this means in detail. European countries have indeed made their own interpretation regarding what is within a field of technology (and what is not) through the list of exclusions in Article 52 EPC, which of course includes the notorious “programs for computers ‘as such’”.

However the discretion to interpret this provision is not unlimited. Article 27(1) TRIPS has a sting in the tail in the form of the non-discrimination provision: patents have to be available and rights enjoyable without discrimination as to the field of technology. Contracting parties are not therefore free to introduce special rules applicable to certain sectors or fields of technology.

Moreover the proposal itself is limited in scope to the field of computer-implemented inventions. In preparing the proposal, the Commission has therefore had to work within the framework of general patent law in order to avoid creation of rules specific to one sector only. This obstacle could have been circumvented by having a Directive with horizontal effect, for example one which regulated the criteria for patentability in general, but such an initiative would need to have been justified against the principle of subsidiarity which dictates that action at the Community level must be limited to what is strictly necessary. In the event, the Commission’s conclusion was that there was no clear justification for any major adjustment to the scope of what should be patentable as regards computer-implemented inventions (or inventions in general).

It should also be noted that TRIPS rules out certain other suggestions which have been made where these involve special treatment, such as the introduction of a shorter patent term for software inventions.

30,000 “illegal” patents

One striking feature to have emerged from the formal consultation and from other submissions received was the lack of agreement over what constitutes the “*status quo*” as regards patentability of computer-implemented inventions in Europe.

According to opponents of software-related patents, the EPO has progressively eroded the distinction made in the Convention between computer programs “as such” and inventions which make use of computer programs. As a result, it is said that many of the patents which have been issued relate in practice to computer programs “as such” and are therefore “illegal”. Viewed from this perspective, the basis of the October 2000 discussion paper, and subsequently of the proposal itself, is not to codify the *status quo* as has been developed in the jurisprudence, but represents instead a proposed major extension to the scope of what is patentable.

This position however ignores the string of consistent decisions of the Boards of Appeal of the EPO, which have been supported (at least regarding the general approach taken) in the courts of the Member States where they have been tested (principally Germany and the UK). Normally, statutes are interpreted by the courts and other competent tribunals and it is those interpretations which define the state of the law. Such interpretations may of course evolve over time, but in the present

circumstances it is not a realistic basis on which to work to assume that there will be a major “fundamentalist” revisiting of the Convention’s provisions which would have the effect of overturning all this weight of jurisprudence.

The above has practical implications for how the results of the consultation must be interpreted. Although many submissions have expressed the fear that software patents, “if permitted” would harm innovation in the field, many correspondents appear to be unaware that what was being suggested did not represent any major change. It is thus difficult to judge how much weight to give to such views, since enterprises, whether large or small, which have been operating successfully in the present environment should not see their interests harmed by the suggestions in the paper.

Implications for the approach adopted in the proposal

In the light of the foregoing considerations, the Commission came to the view that there was no clear justification for any major extension or restriction in the scope of what is presently considered patentable. There was however an objectively demonstrated need for action at the Community level to harmonise and make transparent the provisions in this area, in order to deal with certain potential and actual divergences in interpretation on what were essentially technical, but nevertheless important points.

III The Proposal

Scope

The proposed Directive relates to “computer-implemented inventions”. This is defined in Article 2(a) as “any invention the performance of which involves the use of a computer, computer network or other programmable apparatus and having one or more *prima facie* novel features which are realised wholly or partly by means of a computer program or computer programs”.

The term “invention” is used in a broad sense to encompass both patentable subject-matter and matter whose status is as yet indeterminate. Strictly speaking, an invention must by definition be novel, but in order to avoid convoluted wording, the proposal uses the term “invention” in the sense of “alleged” or “potential” invention.

Note that the definition refers to the *novel features* as being realised by a computer program. In other words the hardware itself is not new. The “*prima facie*” novel features of an invention are the features which purportedly distinguish it from what has been done before. This approach has been adopted since it will have to be applied in the course of patent examination or court proceedings which have as their very objective the determination of patentability.

A computer program in isolation from any machine on which it can be run does not meet this definition. The way in which the definition requires the presence of a “computer program” as an essential element of the *performance* of the invention in realising its novel features means that the program must be a distinct entity from the invention itself. This interpretation is reinforced by recital 7 which recalls the exclusion of computer programs “as such” from patentability because computer

programs “as such” do not belong to a field of technology, and by Article 5 which limits the scope of permissible claims to programmed apparatus and processes carried out in such apparatus (see below).

It should be understood clearly that this definition of “computer-implemented invention” and its combination with the requirement in Article 3 that “Member States shall ensure that a computer-implemented invention is considered to belong to a field of technology” does not mean that all software is patentable. The purpose of requiring computer-implemented inventions to be considered as belonging to a field of technology is to establish that the mere fact that an invention relates to a process carried out in a computer is not, *in itself*, reason for refusing or invalidating a patent. A process in a computer belongs to a field of technology because a computer is a physical apparatus and data processing involves physical processes such as the flowing of electric currents. However, as will be seen below, there will only be a patentable invention if the contribution made by the “invention” has a technical character.

Technical contribution

In order for a computer-implemented invention to be patentable, it must make a “technical contribution”. This is defined in Article 2(b) as “a contribution to the state of the art in a technical field which is not obvious to a person skilled in the art”.

The definition can be broken down into four elements:

(a) state of the art

The “state of the art” encompasses all published material and other knowledge available to the person skilled in the art as of the priority date of the application. What is comprised in the state of the art will be determined according to normal principles of patent law. No special problems arise in dealing with computer-implemented inventions.

(b) contribution

According to Article 4(3), the contribution is to be assessed by consideration of the difference between what is claimed and the state of the art. A contribution may be discerned in different ways, for example in the identification of a means to solve a problem (which may already have been recognised and possibly solved by other means) or in the recognition of the existence of a problem requiring solution (following which the solution itself may be immediately apparent). Inventive step may also arise where a fresh insight has been gained into an already known phenomenon, or in the combination of any of the above factors.

Note that the requirement to consider the scope of the claim as a whole means that the contribution itself may contain technical and non-technical elements. It is a necessary consequence of the definition of “computer-implemented invention” that the contribution made by an invention within the scope of the Directive will include features implemented by means of software. However in assessing the “technical

contribution” and whether it is obvious to the person skilled in the art, only contributions in a technical field will be taken into consideration.

(c) technical field

This is the most important part of the proposal and provides the key to determining the boundaries of what is patentable. Article 4(2) provides that it is to be “a condition of involving an inventive step that a computer-implemented invention must make a technical contribution”.

The proposal itself does not define what is meant by “technical”. In practice definitions of this concept can be and have been envisaged, but it would be difficult to find one which would be workable and which at the same time would not itself introduce other terms or concepts which themselves require interpretation¹². A further obstacle to adopting a strict definition of “technical” is that this would be applicable only to inventions within the scope of the Directive and would risk the development of criteria for patentability which are different from those applicable to inventions in general. Such an approach would not be acceptable from the point of view of compatibility with the TRIPS Agreement (see above).

It is a clear consequence of Recital 12, which includes the passage “... where an invention does not make a technical contribution to the state of the art, as would be the case, for example, where its specific contribution lacks a technical character, ...” that not all contributions necessarily have a technical character. Moreover, Recital 13 gives an example of an entity (an algorithm defined without reference to a physical environment) which is to be regarded as being “inherently non-technical”. However this recital also provides that a defined procedure or sequence of actions when performed in the context of an apparatus such as a computer *may* make a technical contribution.

Since general principles of patent law are to continue to apply to computer-implemented inventions (Recital 14) the jurisprudence on the question of “technical” will continue to be relevant under the Directive.

The courts and Boards of Appeal have developed the notion of “technical contribution” by reference to the exclusions in Article 52(2) EPC. The common

¹² For example, in Germany, one of the ways in which an invention may be considered technical is if it involves the use of natural forces in a way that a technical result is achieved without the interposition of human mental activity (definition first proposed in the decision of the *Bundesgerichtshof* in *Rote Taube* BGH GRUR 1969, 672). It is at least arguable that this definition includes all data processing since the manipulation of data within a computer at the level of individual bits is a physical process involving natural forces. Supporters of open-source software who wish to avoid data processing being considered as “technical” have suggested (see <http://swpat.ffii.org/analysis/directive/index.en.html>) providing an additional element to the definition of “technical” which would require the presence of an “advantageous transformation of material objects, such that the relation between cause and effect can be reliably validated only by experimentation with natural forces (empirical verification) and not by computational deduction from prior knowledge (mathematical proof)”. However it is not clear how this approach would be compatible with the long-established principle that an inventive step can arise from the recognition of a problem to be solved (following which the actual solution might be self-evident and involve no inventive activity). Moreover, such an approach would probably also rule out inventions in other fields far removed from data processing which are susceptible to being mathematically modelled to high precision (for example mechanical systems).

thread that runs through the list of excluded matter was considered to be that none of these entities “as such” was technical in nature and therefore capable of involving a technical contribution. In the field of computer-implemented inventions, technical contribution has tended to be found where there is an interaction with the physical world or where there is an effect on the way the computer makes use of its resources (as opposed to the “mere” act of processing data). Specific examples where technical contribution has been found include:

- An increase in processing speed (*Vicom*¹³)
- An improved method for entering the rotation angle into a draw graphic system. (*IBM*¹⁴)
- The co-ordination and control of the internal communication between programs and data files held at different processors in a data processing system (*IBM*¹⁵).
- The implementation of an interface to combine the functions of independent systems which involved the exercise of technical skills before computer programming could begin (*Sohei*¹⁶)

The last mentioned case is of particular interest because it suggests that a contribution will not be considered technical if it results solely from the exercise of “mere” programming skills.

Moreover, no technical contribution is likely to be found where the improvement in relation to the prior art is essentially an economic one¹⁷. This has important consequences for business methods, which are frequently implemented using computers and would therefore usually fall within the scope of the Directive. The unequivocal requirement for a technical contribution as a condition of patentability thus excludes the possibility that patents for “pure” business methods (in which the only contribution is in a non-technical field) will be allowed. However an invention in the general field of business methods may still be patentable if it makes a technical contribution. Such a patent would confer a monopoly only on the method **including the respective technical contribution** and would not extend to the method itself, or the method when implemented in other ways.

This illustrates clearly the contrast with the US law, which grants patents to inventions without regard to whether or not they make a specific contribution having

¹³ Case T208/84 (15.7.1986) [1987] OJEP 14. This was a landmark early decision which established that an invention which relies on a mathematical method or algorithm may still be patentable if it relates to a technical process using a computer in which the method is used but does not seek protection for the method as such. The application concerned a method for digital processing of images. A claim was allowed which related to a method of processing images involving use of an algorithm. The technical benefit of the claimed method was said to be substantial increase in processing speed compared to the prior art.

¹⁴ T59/93 (20.04.1994)

¹⁵ T6/83 (6.10.1988) [1990] OJEP 5

¹⁶ T769/92 (31.5.94) [1995] OJEP 525

¹⁷ See e.g. *Controlling pension benefits system/PBS* T-0931/1995 decision dated 8.09.1995, in which the problem to be solved was the provision of an improved private pension plan.

a technical character, and which can therefore result in patents which effectively cover business methods as such.

(d) not obvious to a person skilled in the art

In *Controlling Pension Benefits*¹⁸, the Board decided that the correct approach to determining patentability on the basis of the presence of a technical contribution was to assess this as part of the inventive step. In particular, the Board overturned the previous practice of the so-called “contribution approach” which had hitherto been applied under Article 52(1) EPC¹⁹. This decision effectively determined that all processes when run in a computer are technical in character (because a computer is a machine). Having a technical character is of course a necessary but not sufficient requirement for being a patentable invention.

As with the definition of “technical”, it is important that the determination of obviousness should not involve a different test to that applied to inventions in general. Where the “problem-solution” approach is used, the first step would be to identify the “technical problem” to be solved. There may be problems of a non-technical nature (as in the *Pension Benefits* case, where the problem was the elaboration of an improved actuarial tool), but only technical problems may be taken into consideration. If no technical problem is identified, there can be no inventive step irrespective of how ingenious the solutions to any non-technical problem may be; however, if one or more technical problems are identified, the inventive step will be assessed in the same way and according to the same criteria as for any other invention.

Form of claims permitted

Article 5 of the proposal deals with the form in which computer-implemented inventions may be claimed. Two basic types are permitted:

- as a programmed apparatus; or
- as a process running in a computer

A computer program on a carrier or otherwise in isolation from a machine on which it is to be run is neither a patentable process nor a patentable product, and claims to such a program will not be allowable under the Directive. This is an important aspect in which the proposed Directive departs from the recent practice of the EPO (which has since been followed by Germany and the UK) to permit such claims²⁰. Having no claims to computer programs on their own will mean that the simple act of copying a computer program cannot amount to patent infringement.

¹⁸ Ibid. at page 13 “In the Board’s view, a computer system suitably programmed for use in a particular field even if that is in the field of business and economy has the character of a concrete apparatus ... and is thus an invention within the meaning of Art 52(1)”.

¹⁹ IBM cases T1173/97 (1.7.98) and T0935/97 (4.2.99) had proposed the test of “further technical effects” caused when software is run on a computer. Under this approach, which was communicated in guidance to the EPO examiners, it was not considered enough to qualify for “technical character” that a program should simply run in a computer, but it was necessary to show **specific novel effects** of the invention having a technical character. In the absence of such specific novel effects, the appropriate course of action was refusal under Art 52(1) on the grounds that the application related to excluded matter.

²⁰ See note 5 above.

This course of action represents a compromise. If claims to computer programs in isolation were to be allowed, proving patent infringement would, in certain circumstances, be more straightforward for right holders. However, in the course of consultations, fears were expressed that patents including such claims could be used to prevent "reverse engineering" and other activities considered legitimate in respect of computer programs already protected under copyright law. Moreover, such claims could be said to be contrary to the EPC, which does not allow patents for computer programs "as such".

It must be remembered that unauthorised copying and commercial distribution of a computer program will almost always constitute infringement of copyright in the actual code of the program. Moreover, commercial dealing in a program which, when loaded and/or run in a computer performs a patented invention, will usually amount to "contributory infringement" of the patent and therefore still be actionable under patent law²¹, although this is more difficult to prove than primary infringement.

Interoperability, reverse engineering

The protection of computer programs under copyright law within the EU is subject to important exceptions, which provide the right (subject to certain conditions) to perform acts such as decompile or study the operation of a program without committing infringement²². Such explicit provisions are needed under copyright law because the acts mentioned inevitably involve making copies of a program and would therefore involve infringement in the absence of specific exceptions.

As already mentioned above, the disallowance of patent claims covering computer programs in isolation means in practice that simple copying of a program would not be patent infringement. It is possible, however, that certain acts considered legitimate under copyright law might nevertheless risk infringing a patent, particularly if restrictive terms were imposed in a patent licence. To avoid this risk, Article 6 and recital 18 of the proposal safeguard the exceptions provided under the copyright directive by providing that acts which would be permitted under Directive 91/250/EEC cannot be affected by the existence of patent protection for inventions within the scope of the Directive..

Monitoring and review

The proposal (Articles 7 and 8) requires the Commission to monitor the effects of patents for computer-implemented inventions and report to the European Parliament and Council within three years of the date by which the Directive must be transposed

²¹ Contributory infringement is not harmonised at EC level and is thus for the laws of the Member States to deal with. See for example the decision of the High Court of England and Wales in *Menashe Business Mercantile Ltd & Anor v. William Hill Organisation Ltd*. (Case No. HC 01C 04669; [2002] EWHC 397 (Patents) (15 March 2002)) in which it was explicitly confirmed that an act of infringement could be committed either by supply of a disk containing a program or by downloading of a computer program over the internet, if, once installed, the programmed computer fell within the scope of a patent claim.

²² Council Directive 91/250/EEC of 14 May 1991 on the legal protection of computer programs (OJ L 122 [17.05.1991] page 42) – see Articles 5 and 6.

into Member States' laws. In practice, because of the long pendency period for patent applications, it is unlikely that many granted patents will be in existence by this time. However this does not mean that the monitoring will be of no interest. Patent applicants do not have to wait until their patents are granted before commercialising and/or licensing their inventions. In a fast developing technical field such as this, clear patterns should already be emerging within the period envisaged for the review.

Next steps; relationship with the EPO

The proposal must be approved in a co-decision procedure by both the European Parliament and by the Member States in the Council (by qualified majority) before it can come into force. However its legal effect will be limited to the Member States. The EPC is an international treaty whose membership is wider than that of the EU and the Directive will have no direct effect on the European Patent Office or its organs such as the examination divisions and the Boards of Appeal. The Commission will remain in close touch with the EPO during the coming months and will take a view on what action, if any, might be appropriate within the context of the EPC once it becomes clearer what the final shape of the Directive might be.

If the Directive is adopted more or less as proposed, it is not likely that an amendment to the EPC itself would be essential, since the proposal has been crafted to be consistent with the EPC. Amendment of the implementing regulations to the EPC by way of an explicit reference to the Directive would however probably be needed to ensure that Community law and EPO practice can remain in step. There is precedent for such an approach in the case of the Biotechnology Directive²³. Amendment of implementing regulations by the Administrative Council is a relatively straightforward procedure and could in principle be completed quite quickly after the Directive is finally approved. Member States will also need to transpose the provisions of the Directive into their national laws, although if the EPC implementing regulations are amended before this process is completed, Member States will immediately be bound by their obligations under the EPC in relation to European patents within their respective jurisdictions.

Conclusion

The proposal by the Commission of a Directive on the patentability of computer-implemented inventions has represented an important step in the process of harmonising practice in this area. The process will continue as the proposal is debated in the institutions of the European Union and in the context of the EPO.

²³ See Chapter VI (Rules 23b-23e) of the Implementing Regulations to Part II of the EPC, which was added by decision of the Administrative Council dated 16 June 1999.