



Federation of the Electronics Industry

PATENTABILITY OF COMPUTER-IMPLEMENTED INVENTIONS

Response to the Consultation Paper by the Services of the Directorate General for the Internal Market.

The Federation of the Electronics Industry (FEI) is the association representing the United Kingdom's electronics industry. It includes both large and small companies that have a business as developers of software. Some are suppliers of software to customers to run on their own equipment. Others supply complete hardware products that depend for their innovative characteristics on software included in the products they sell. Our members are also users of software and suppliers of third-party software for use in, for example, a systems-integration context. In other words, we are involved with all aspects of the software business.

We welcome the opportunity to take part in the Commission's consultation exercise. What is absolutely clear is that there is a lack of clarity about the current position that cannot be in the general interest of the economy of the European Union. There is also a lack of consistency in the current practice of member states. We believe urgent action is needed to make sure that the scope of patent protection available in this area is clear and comprehensible to all sectors of industry and is applied in a consistent manner throughout the European Union. We therefore welcome the intention announced in the Commission's paper to introduce a harmonising directive.

We turn to the questions set out in Section 1 of the Commission's paper.

SCOPE OF HARMONISATION

- *Should harmonisation take place on the basis of the elements contained in this document? Or:*
- *Should a more restrictive approach be adopted? Or, conversely:*
- *Should more liberal conditions coming closer to the practice in the United States of America prevail in the future?*

The FEI is strongly in favour of granting patents for inventions involving software where there is a technical contribution to the state of the art. Consequently, we agree that everything that the paper suggests should be patentable should indeed be so, and - to give a formal answer to the question in the second bullet - a more restrictive approach should not be adopted.

However, despite our generally positive reaction to the paper, there are points where we have reservations. That means we cannot give whole-hearted support to the proposition in the first bullet, since we do not completely agree that harmonisation should take place on the basis of the elements contained in the Commission paper.

Claims to computer programs

We interpret No (vi) of the “Possible Key Elements”:

“A computer-implemented invention may be claimed as a product, namely as the programmed computer, or as a process, namely as the process carried out by the programmed computer.”

as implying that these are the only forms of claim that would be permitted for a software-related invention. We believe that to be too restricted. The EPO’s jurisprudence has already acknowledged that computer programs may be claimed by themselves, as footnote 21 to the paper itself acknowledges. We believe that where an invention derives from the steps carried out by a program, it is artificial to restrict the coverage of the patent to the resultant programmed computer. That solution has the effect of putting the onus of being the primary infringer on the user, who in general has no control over, or even knowledge of, whether a particular program will cause him to infringe a patent. We believe that where it is accepted that a programmed computer meets the criteria for patentability - however those criteria are defined - then if the corresponding computer program embodies the inventive concept, the supply of that computer program in a commercial context should be a directly infringing act. That would include both the program recorded on a carrier and the program when supplied for instance by transmission over a network as a set of signals. That in turn requires that it should be possible to include claims for computer programs, subject to the same tests of patentability as apply to the resultant system. The alternative simply compounds the present lack of clarity about commercial responsibilities.

Relationship between patents and copyright

We are concerned about the apparent effect of the proposed Key Element (ii), which states that

“Patent protection ... does not extend to the expression of a computer program ...”.

If a patent is granted based on an invention embodied in a computer program, then if the program is copied, the appropriate acts of reproduction, installation and use of the resultant copy will infringe both the copyright in the original program and the patent. If on the other hand the expression of the program is not copied and instead an independent program is devised which falls within the claims of the patent then there will be infringement of the patent but not of the copyright. Both these necessary results already flow automatically from the positive statements in the paper about what is patentable and the normal rule that copyright protects the expression not the underlying ideas and principles. The negative statement in this key element is not necessary and simply confuses the issue since it appears to rule out patent

infringement in the case of a program which copies the expression of a patented program. We believe this key element should not be included in the eventual directive.

The crucial point is that patent and copyright protection are, in the words of the paper, complementary, since they apply to different aspects of the program. Hence both forms of protection may apply to the same program. We are pleased to see that this principle appears to be confirmed in the comments on this section, and we believe that they could form the basis for a helpful recital in the eventual directive.

Business methods

The consultation paper proposes a solution based on a requirement for a technical solution to a technical problem. The consequence is that, as set out in the proposed Key Element (v), business methods where the advance is in the business steps would not be patentable. This is not a solution which represents the consensus of our members. We have a diversity of views.

One view among our members would hold that the boundary is drawn correctly in the consultation paper. According to this view, investment in research of a technical kind warrants the incentive of patent protection, but developments of a purely business nature, even if implemented by computer, do not because they lack the consideration of disclosure of a technical advance and implementation which has always been the quid pro quo for the grant of patents. Extending patents beyond the field of technology into the field of pure commerce would be an unjustifiably broad step which would hinder the adoption of e-commerce without any matching benefit to society.

Another view is that inventions should be protectable by patents if they embody a technical solution when taken as a whole. When assessing inventive step the invention should not be dissected into technical and non-technical features. If a company invests in the development of a new computer program, and the program is novel and inventive, it would be artificial to permit patenting for one type of novelty but not another. The argument that a patent is justified as an incentive for investing in the development of a product is as sound when the novelty is in the business steps that the program carries out as it is when the novelty is in any other feature of the program.

The third view is that there is no reason to restrict the patenting of business methods to a technological environment, and if they meet the criteria of novelty and non-obviousness they should always be patentable.

We are all agreed that no patent should be granted for the mere transfer of an existing business method to a computer system, because that clearly does not involve an inventive step under any criteria. It is important that patent offices should be robust in rejecting applications in such cases.

IMPACT OF HARMONISATION

What would be the impact of the preferred option on:

- *innovation in software and underlying knowledge and techniques;*
- *the ability of SMEs to enter the market for innovative software tools and services and the market of innovative applications of software;*
- *the creation and dissemination of free/open source software;*
- *the position of the European software industry in global competition; and the general development of the Information Society?*

Preliminary points

Some characterisations we have seen about the current consultation treat the subject as being whether software should be subject to patents at all. Thus it has been said by one organisation that “the European Patent Office is proposing to allow the patenting of software”. That seriously misrepresents the situation, but is a fairly widespread view which misleads some individual programmers and small software companies into believing that the debate is about whether those who write software should, or should not, be entirely free to ignore patents and their effect on the customers who install and run their software. They believe they are defending a position where software is, or can be, a patent-free enclave.

The current situation is, of course, entirely different. All software developers are already operating in a world where patents can impinge on their operations. Thus many patents have been granted for decades on, for instance, data compression and communications techniques involving encryption. These are well recognised subjects for patenting and cannot be open to challenge. The traditional subject of such a patent will be the complete system, or a process involving its use. However, while the system might be implemented wholly in hardware, it will frequently - this is merely an implementation choice - have the patented characteristics purely because of the computer program that controls its operations, which will have been developed and supplied for the express purpose of causing the system to operate in the desired manner. The customer will be the direct infringer, because he creates the infringing system by installing and running the software, but the supplier of the program will have a liability as a contributory infringer. Therefore, software suppliers are already exposed to the possibility that what they do may lead them into questions of patent infringement, and it is far better that they should realise that fact than believe that patents are something they can ignore. Then they can move on to understanding the opportunities as well as the exposures that the patent system offers them. One of the most damaging effects of the current specific exclusion for computer programs is the lack of clarity it engenders about the current position.

It is essentially small European companies who suffer under the present confusion. Large European companies understand the current possibilities and exploit them. Foreign companies, especially from the United States, come from an environment where the expectations are in any event different, and they too are active in acquiring software-based patents. The only ones not to take advantage of the present possibilities are the small companies who think that “software is not patentable”. Therefore part of our preferred option is the deletion of the present exclusion for computer programs as such. We note that member states did not feel the time was right to support this step at the recent Diplomatic Conference to revise the EPC, but we welcome the decision in the final Conference Resolution MR/22/00 e to make it a

priority to prepare for a further Diplomatic Conference that would address the matter in the light of the consultations now taking place.

We have been disturbed by the public comment from some quarters which welcomed the reluctance of the EPC member states to remove the exclusion for computer programs as such at this stage and treated it as a decision on the merits of the issue. These same quarters publicly suggest that many existing software-based patents are wrongly or even fraudulently granted and apparently seek to put their validity into question. Many of the existing software-based patents are granted to innovative European-based companies active in the telecommunications and professional and consumer electronics fields. There must be no room for doubt that the fruits of their research and development activities - past as well as present - will continue to enjoy the intellectual property protection they have shown, by their patenting activities, they need. Otherwise their chances of technical leadership on a global scale will be put at risk..

Questions in the paper

Innovation in software and underlying knowledge and techniques

Innovation in new products requires investment, and that investment can only be justified if it is likely to lead to a commercial return. It is true that computer programs already have a measure of protection in copyright, but, as is well recognised, copyright is limited to protecting a program against being copied. The protection a patent gives extends to preventing others producing (or, rather, exploiting commercially) a program implementing the same functionality but otherwise written independently. We believe that this greater extent of protection is a correspondingly greater incentive for investment in innovation and the introduction of that innovation into the market.

We believe that the justification for patent protection is no less in this field of research and development than in any other. It is sometimes suggested that one special characteristic of software development is that it is “incremental” and that consequently patents are inappropriate to it. We do not think that the ratio of major departures to small improvements is essentially different in this field from any other. There are always more of the latter than the former and the fact that some people are not inventive does not mean we should not encourage those who are.

One of the benefits of the patent system is that it requires inventions to be described in a way allowing others to understand how to carry them out. Therefore patents inherently further the object of wide dissemination of the underlying knowledge. In this respect patents are a better form of intellectual property protection for computer programs than copyright. It is a paradox of copyright protection for programs that the normal proprietary computer program is distributed in object-code form, which cloaks the very expression the copyright is designed to protect and therefore withholds knowledge of how the program functions.

It is significant that those of our members who are familiar with the patent system from their hardware activities have no doubt about the advantages of patents for all their activities, including the development of software.

The ability of SMEs to enter the market for innovative software tools and services and the market of innovative applications of software

We do not consider there is any significant difference, for the purposes of this consultation, between software products of one kind or another, be they tools, applications or (a category not mentioned in the question) system software.

We believe the advantages to SMEs who produce innovative software of a ready availability of patents are if anything greater than they are for a large company. While the opposite view is sometimes expressed, the arguments against are in reality no different from those not infrequently heard from SMEs in any other field who are unfamiliar with the opportunities patents offer them. Our reasons for believing that patents offer advantages to small SMEs include the following.

- Large companies developing and launching a new product can fund the investment required from their existing business. A small company or start-up is much more dependent on outside finance. The investment required is, of course, much greater than that merely required for the research and development activity. It is also required to cover the launching of the product and - especially for a start-up - the establishment of the entire marketing, support and distribution infrastructure. All these are necessary if the general economy is to benefit from the greatest possible availability of innovative new products, and that, we believe, is the essential object of this entire consultation.

A patent helps attract investment in two ways. First, it forms a separate, clearly identifiable asset that helps justify the investment. Secondly, it gives the investor added confidence in the viability of the business. Finance will be available to a new company or start-up only if the investor, normally a venture capitalist, evaluates the risks involved and decides on balance that the chance of adequate returns outweighs the chance that the business will fail and he will lose his investment. Success is never guaranteed, and venture capitalists are always looking for factors that limit their exposure. They are therefore encouraged when the new business has patent protection, because the rights it gives provide a better barrier against competition which might sink the new business than does copyright. Those of our members who have been involved in spinning off businesses with innovative software products are only too aware of how important investors consider patent protection to be for the products concerned.

- A patent may be the only weapon a small company possesses that prevents a large company from marching into its territory. Without the small company's patent protection, the large company may well be prepared to invest in developing a competing product that has the same functionality but does not infringe the copyright in the original program. That this is a real danger is shown by the way we have seen successive versions of widely used operating systems absorbing more and more functionality that had previously been provided by separate add-ons from small companies.
- If, rather than aiming for exclusivity, the small company chooses to exploit its patent by licensing, the economics are all on its side, because the scale of activity

of the large company means that the returns to the small company from licensing are much greater than they would be if the licence was granted by the large company to the small. Fears are sometimes expressed that small companies cannot enforce patents against the resources of large companies. In our experience, large companies will subject the patent to rigorous scrutiny but once convinced it embodies a genuine invention will be prepared to respect it. In fact, there is a well-recognised advantage to being the first large company prepared to take a licence, because the patent at that stage is still untested and the company may well get more favourable terms than would be available once the patent has the added credibility of a licence from a substantial company. That in turn can give the small company added resources to enforce the patent against other.

The creation and dissemination of free/open source software

We are certainly not opposed to free and open-source software, and our members are themselves producers of such software. But it is a part only of the overall software market and on no realistic model could it ever entirely replace revenue-earning software - indeed, it frequently presupposes the existence of both additional proprietary software which works in conjunction with it and a prior product for which it sets out to provide an alternative. We must be careful to avoid choosing a solution purely because of its perceived effects on this one section of the market, however much it may be worth encouraging.

Provided the product is innovative, the developer of free or open-source software would be able to obtain a patent and make use of it as an additional intellectual property right. The patent could be included in the licence for the product, giving added force to the licence terms that enforce the open nature of the software. And it can be used in the same way as is often done for open standards in the electronics field, where those proposing the standard grant licences for compliant products under their own essential patents underlying the standard that are free of charge but are on the condition that licensees and their affiliates grant a reciprocal free licence under any of their own patents that may be essential to the standard. That has the dual advantage of helping keep the standard free of third-party problems and channelling development into compliant products, thus discouraging the development of non-compliant variants.

If one assumes that the sole object of open-source software is to replicate the functionality of an already existing product, then it cannot be denied that the possibility that the prior product was subject to a patent would be an impediment to the release of the software. We cannot say it would be a complete barrier, because we do not know what considerations might apply when the time came which might lead to the grant of acceptable licences. But we must not assume that the prior product would be some dominant program that deserves to be faced by an open alternative. It might be the sole product of a small company, who would see its crown jewels snatched away from it because it would be much less likely to survive the competitive threat of an open alternative. It cannot be right to withhold an intellectual property right from an entire industry to meet objectives that apply to one particular section, and then under one hypothesis about the market situation that is in any case better seen as a competition-law issue.

The position of the European software industry in global competition; and the general development of the Information Society

Many innovative European companies seek to operate on a global scale. We believe that it is very much in the interests of the European economy to foster this development. Differences in the level of intellectual property protection in different territories cause difficulties for these companies and the European Union can best help them by encouraging global harmonisation. If other countries can be persuaded to adopt the European solution, so much the better. But the patent protection given in the United States to software is so well established that in all reality it is unlikely to be possible for the European Union to achieve a reduction in the level of that protection. Therefore, if Europe decides on a lesser level of protection it will cause its industry to be faced with a patent barrier to entering the US market. We believe that the best help Europe can give its industry is to take the opposite course and ensure that in their home territories European companies have the ability to build up their own intellectual property protection for their software-based inventions, both to enhance their position in their home markets and to give them bargaining power in seeking access to the foreign territories.

We are seeking the best solution for all those sections of the European industry that develop software, both the conventional software businesses and those who produce electronic products with software at their heart. If we believe that the future for these sections is merely to produce non-innovative products that replicate the functionality of products from other countries, and in particular the United States, then it might well be that they would be better served by a regime where there would be no patents that could affect their products. That would make copying easier. Such a regime does not exist at present, of course, because as we have pointed out many patents that exist at present may be infringed directly and indirectly by the supply and installation of a computer program. It could only be achieved by extinguishing existing protection, which would constitute an unacceptable expropriation of existing rights.

But we are not so pessimistic. We believe that the European software-developing industry is innovative and would be best served by giving it a strong intellectual property backing. That is the best way to help it flourish and ensure that European influences play their full part in the development of the Information Society.

11 December 2000