More Ambiguity in European Software Patenting

Risto Sarvas, M.Sc. (Tech.)
Helsinki Institute for Information Technology (HIIT)

The purpose of the patent system is to encourage the making of inventions and the subsequent innovative work that will put those inventions to practical use. It is an artificial system that functions on legal concepts defined by legislation and practice. It is a system, which involves professionals from several different disciplines: from economists to lawyers and from businessmen to engineers. Therefore, the system should not be ambiguous, controversial or difficult to understand.

In the software industry patenting is relatively new and practice has shaped in the last twenty years. This practice is still under development and is anything but clear and unambiguous. It is only sparsely covered by patent offices' and courts' precedents, which can be seen in the wide variety of legal opinions. They involve several legal concepts unfamiliar to software developers, and software itself has certain characteristics that the patent system has problems dealing with. Also the economic impact of patenting software is under dispute.

Nevertheless, software (or computer programs) is eagerly patented mainly in the U.S. but also in large numbers in Europe. Software patents have become an important tool in the digital economy, although the legislation and practice involved is ambiguous.

The purpose of this article is to clarify some of the concepts involved in patenting software in Europe. Especially the concepts and contradictions involved in the European Commission directive proposal for computer-implemented inventions in the light of the older European Patent Office (EPO) practice.

Legislation in software patents

The basis of discussion about patenting software in Europe comes from the European Patent Convention (EPC). The European patenting legislation is based on the EPC, which includes 20 member states who have harmonized their national patenting legislation according to the EPC. The EPC states in its Article 52(1) that European patents shall be granted for any technical inventions which are susceptible of industrial application, which are new and which involve an inventive step. The EPC does not explicitly state what is a technical invention - it only lists what are not technical inventions in its Article 52(2). One of these excluded non-technical items is a computer program as such. This has caused much confusion and ambiguity in the software industry and academics.

The European Patent Office grants the so-called European patents. It is an organization established in the EPC and the highest authority in interpreting the EPC's articles. It is commonly understood that the EPC and national statutes of its member states are substantially identic.

For the last twenty years the EPO has shaped the practice involved in patenting computer programs; mainly this has been manifested through its Board of Appeals' decisions. The EPO has also published Guidelines for Examination, which have been revised once in a while according to the Board of Appeals' decisions. The most recent revision was done in October 2001.

In the last years the EPC member states' application of the case law and administrative practices has been divergent. Especially the case law of the Board of Appeals and some national courts of the member states have been somewhat controversial. To remedy this divergence the European Commission published on the 20th of February a directive proposal

on the patentability of computer-implemented inventions. The goal of the directive is to harmonize national patent laws with respect to the patentability of computer-implemented inventions and by making the conditions of patentability more transparent.

The directive proposal is very similar to the EPO's Guidelines for Examination published in October 2001. Most of the terminology and concepts used are copied from the EPO and its interpretation of the EPC. Some major differences can be identified and they are studied below. Both the Guidelines and the directive proposal include several legal concepts the meaning of which can only be understood by studying EPO practice of the last twenty years. This is definitely a hurdle for IT professionals not specialized in patenting who are interested in patents.

The mystery behind technicality

In the EPO practice the EPC Article 52 is interpreted so that a patentable invention has to be firstly *technical* and secondly new, inventive and industrially applicable. What is meant by technical is not clearly stated. One can construct a somewhat fuzzy definition from the Board of Appeals' practice for understanding the policy, but to put it shortly: understanding the gray area between patentable and not patentable, technical and non-technical, computer programs is not at all trivial.

Another difficult concept has been the "as such" criteria presented in EPC Article 52(3). The Article states that the items listed in Article 52(2) are not patentable *as such*, i.e. an item listed in 52(2) may be patentable if it is not the item as such but involves a technical implementation. In other words, a machine built on some non-patentable mathematical principle is not the mathematical principle *as such* but a technical implementation. In the context of computer programs this is interpreted so that a *computer program as such* means a computer program on a carrier, e.g. on a cd-rom or a diskette. The recent EPO Guidelines for Examination state that such a computer program may be patentable if it is technical once loaded into a computer's memory. For a person not devoted to patenting terminology and practice this might seem confusing.

The EC directive proposal takes a different approach to these concepts. The EPO already hinted in its revised Guidelines a similar policy, but the directive proposal suggests it more clearly: the directive proposal does its best to evade the difficult question of technicality. First by outlining what is a computer-implemented invention: "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 realized wholly or partly by means of a computer program or computer programs." Then it lists the three common requirements for patentability: susceptible of industrial application, new, and involves an inventive step.

Technicality is no longer involved directly in the concept of patentability. This difficult concept of technicality is defined to be a part in the study for an inventive step: to have an inventive step is for the invention to make a *technical* contribution, i.e. to add to the knowledge base (state of the art) of a *technical* field and this addition should not be obvious to a person skilled in the art.

This is the approach also the EPO seems to encourage in its revised Guidelines, but it still deals strongly with the concept of technicality in patentabilty, unlike the directive proposal.

By sweeping the concept of technicality under the requirement for an inventive step the directive proposal removes some ambiguity around the patentability of computer programs. At least now the patentability of computer programs is not directly confronted with the ill-defined and intangible concept of technicality. However, the EC has not totally abandoned

this concept: it is kept at hand to exclude clearly non-technical inventions from patentabilty, for example business methods.

Patents on a carrier

The EC directive proposal clearly contradicts EPO practice in its approach to computer programs as such, or computer programs on a carrier. The EPO Guidelines state that computer programs that can cause a further technical effect when run on a computer are patentable, irrespective of whether they are claimed on a carrier.

The EC directive proposal clearly does not accept this interpretation and defines computer programs on a carrier as computer programs as such and therefore not patentable. This means that the EC proposal is more strict on the patentability of computer programs on a carrier, and it requires software patents to be claimed either as a programmed computer or similar apparatus or as a process carried out by such an apparatus. This is significant when the form of protection and possible infringement are discussed.

What can be patented?

The misconception that computer programs cannot be patented in Europe has probably vanished from the IT industry. The new questions arising involve the use of patents in doing business, the form of protection they provide and what can actually be patented.

The directive proposal does not clarify patentability of software in Europe. It still deals with the legacy of the EPO practice, in other words several legal concepts that are by no means intuitive to people outside patenting, like most IT professionals.

The proposal's definition of a computer-implemented invention seems to include all kinds of computer programs, as long as they are not claimed on a carrier. This can be seen as a simplification of the EPO practice, which relied more visibly on the concept of technicality. But as stated above technicality is not totally forgotten. Nevertheless, the requirement for technicality in the study for an inventive step, a significant requirement that limits the patenting scope of computer programs, can be interpreted to be less strict than the old EPO practice where technicality was in the definition of an invention. This is the soft spot of the directive, which leaves leverage to interpretation: does the requirement for technicality in the proposal have the same weight as the requirement for technicality in EPO practice.

Naturally EPO will still remain and function as a central patent office in Europe irrespective of the EC directive, although the directive would seem like a step towards an EC patent system. EPO will probably follow the proposal's approach in dealing with technicality in the requirement for an inventive step to harmonize its practice with the directive if the directive is implemented.

Open discussion needed

Several questions remain open in software patenting. Not only is the legislation confusing, but also the effects of patents on IT business are not clear. Especially small and medium size enterprises are worried about the monopolizing effect software patents might have on the industry. Also individual programmers have raised their concerns about software patents and their effect on innovation and free diffusion of ideas.

For the discussion to remain open and understandable the legislative bodies should take responsibility in promoting communication on software patents. The EC showed an example of encouraging discussion in its preparations for the directive proposal and also in publishing the proposal. This kind of communication among different parties is one way of clarifying the principles of software patenting, and understanding the use and effects of software patents.

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