

FOCUS ON THE PATENTABILITY OF COMPUTER PROGRAMS

Professor Bernard Perbal, D. Sc, LL.M
President of the International CCN Society

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ABSTRACT

The Nuts and Bolts section of our Journal (mirrored on the ICCNS society web site), is meant to provide a very practical way to share useful information, that goes beyond the scope of cell signaling and basic CCN protein biology. Considering the number of requests we have had for information related to protection of Intellectual Property (IP), I am pleased to initiate what will be a series of articles that will focus on various IP topics. The inaugural topic is the protection of computer programs. Some colleagues may wonder how and why the patentability of computer programs is a topic of interest for scientists working on CCN proteins . . . As a matter of fact, to assist us in analyzing the potential involvement of CCN3 in human genetic diseases, we considered developing a computer program designed to analyze large amounts of data. Sharing the concepts and the computer program raised concerns regarding IP and protection of the software that we would handle. We believe that many colleagues have encountered similar problems. This article provides a short focus on computer program patentability. It is aimed to provide basic legal information, and to help our readers in understanding the process. It is not intended to replace IP counselors or technology transfer departments. Future articles will address other practical aspects of IP protection.

INTRODUCTION

The protection of Intellectual Property (IP) is important to take full advantage of one's research investment. Because it is a common observation that many researchers do not have a good appreciation of what they must and can protect, we have felt that a series of short articles pointing about the benefits and the limits of IP protection could be beneficial to our scientific community.

In this first article, I have focused on the patenting of computer programs. Several groups dealing with the manipulation of quantitatively important sets of data have developed computer programs that can be of great use by other investigators. For example, and to give only one among many other fields in which computer programs are required, human genome research has lead to direct-to-consumer (DTC) genetic testing that involves the manipulation of very large amounts of data that cannot be sorted and analyzed without relying on computerized protocols.

Once a computer program has been developed for a specific purpose, it might turn out to be useful in another closely related or even a very distant field. This leads to the need for IP protection. The patenting of computer programs has been the subject of quite different

positions in Europe, North America and other countries. Thus, it is important for those who might be faced with the question of patenting a computer program to know what is feasible or not. By no means is this short presentation intended to be comprehensive. Neither it is meant to replace the advice provided by technology transfer departments or law offices. We hope that through the reading of this article, those who are interested in protection of IP in the field of computer programs will get an idea of how the field is evolving.

1. Computer programs are protected by copyright laws

Although there is no authoritative legal definition of software, it is generally understood that a computer program is a set of instructions sent to a machine for processing the information that is sent to this machine. Software is considered a **work of the mind**¹. As such, computer programs, whether in the form of source code or object code, benefits from the protection offered by **copyright** under the Berne Convention of 1971². Computer programs have often been compared to a musical composition. As such, their classification as work of the mind is logical and reasonable. However, the protection of computer programs by copyright does not apply to the **functions** of the program. Therefore, the production of a computer program producing the same effects as a previously published program would not constitute a copyright infringement.

In other words, let's consider a program P1 that was developed to sort the mutations on chromosome 8 which are associated to a particular physiological defect D. The codes arrangement of this program are protected by copyright.

However, using another codes arrangement in a program P2 to obtain the same mutation sorting on chromosome 8, will not be considered as a violation of the copyright given to P1. This consideration has led many programmers to claim patentability of their invention.

2. To what extent is it possible to patent a computer program ?

Legally, computer programs are not regarded as inventions in Europe³. However, Article 27 of TRIPS, which defines patentable subject matter, **does not mention computer programs** in the list of exclusions that is provided in paragraph 2 and 3. In other words, what is not excluded from patentability can be patented. Hence, the TRIPS treaty does not reject the idea of patenting a computer program.

To be patentable, an invention must meet three major requirements: it must be new, involve an inventive step and must be susceptible to industrial application. An invention is new provided that it has not been disclosed in any public form at the date of the filing.

The invention involves an inventive step if a skilled person, having a common knowledge in the field of the invention, would not have reached the result claimed by the invention from the pre-existing « state of the art ». Novelty and inventive step(s) are common features of computer programs. Potential industrial application is gained from the technical effect(s)

¹ Article L112-2,13° Intellectual Property Code (*Act No. 94-361 of 10 May 1994 art. 2 Official Journal of 11 May 1994*). Article 10 of TRIPS (Trade-Related Aspects of Intellectual Property Rights),

² <http://www.wipo.int/treaties/en/ip/berne/index.html>

³ Article L611 -10 of the Intellectual Property Code paragraph 2c ; Article 52, paragraph 2 of the European Patent Convention (Munich Convention of 5 October 1973 , amended in 2010)

brought by the software. Use of the computer program by hardware delivers effects that go beyond the simple physical interaction between a machine and the program. Hence, computer programs meet the classical requirements for patentability.

However, problems may arise when it comes to publishing the content of the invention in a detailed form that would allow the skilled person to obtain the effects produced by the invention. In the case of a computer program, patenting would require the publication of source codes and it is therefore the decision of the inventor to decide whether obtaining a patent and publishing critical information is acceptable. Major companies, such as Coca-Cola, or Michelin, have considered that keeping their invention as a secret was the best economical choice.

The exclusion of computer programs appears inappropriate to the pace at which technologies change nowadays. Conflicting national case law led the Commission of the European Communities to propose in 2002 a Directive⁴ aimed to harmonize "national laws regarding the patentability of computer-implemented inventions".

After reconsidering the concept of « technical nature » that an invention must meet to be patentable, the proposal stated that in Europe, "computer-implemented inventions may be considered as patentable when they **provide a technical contribution**" and that as such, they should not be excluded from patentability. This is quite different from the U.S. where the invention must be « **within the technological arts** » with no need for a technological contribution. In other words, a computer program may be patented if it **produces technical effects**, that would otherwise not be obtained. Previous case law already considered the principle that inserting software into a technical package was sufficient to allow patentability.

In spite of its progressive position, the 2002 directive was rejected by the European Parliament on 6 July 2005.

3. Where do the recent European decisions stand ?

Several decisions of the Boards of Appeal of the European Patent Office established the boundaries of patentability in the field of computer programs and constituted an interesting development in accepting the patentability of software as products distributed on media⁵. The EPO Guidelines for Examination⁶ state that « While programs for computers are included among the items listed in Art. 52(2), if the claimed subject-matter has a **technical character** it is not excluded from patentability by the provisions of Art. 52(2) and (3) ».

A computer program by itself is patentable if it is capable of bringing about, when running on or loaded into a computer, a **further technical effect going beyond** the "normal"

⁴ Proposal for a Directive of the European Parliament and of the Council on the patentability of computer-implemented inventions. <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2002:0092:FIN:EN:PDF>

⁵ http://www.univ-paris1.fr/fileadmin/diplome_droit_internet/2001_13-7_rapport_gp_rtravai_interministeriell.pdf

⁶ <http://www.epo.org/law-practice/legal-texts/guidelines.html> - updated in 2013

physical interactions between the program (software) and the computer (hardware) on which it is run (EPO decisions T 1173/97, T0935/97 and G 3/08).

The position of the EPO clearly reframes the four criteria typically required for patentability, namely: i) technical aspect, ii) novelty, iii) inventiveness, and iv) industrial application. It also clarifies the limits of patentability contained in article 52 of the European Patent Convention.

This clarification has taken its full dimension with the decision of the Paris Court in Exalead Co/Sinequa⁷) which cancelled the patent⁸ held by Exalead on the grounds that in the patent application, the mere description of the claimed process did not mention any technical characteristics of the search engine itself.

The High Court decision was in accordance with French and European jurisprudence and confirmed that **providing technical specifications is not sufficient** for the invention to be patentable under the Article 52 of the EPC.

At the same time, the EPO Board of Appeal considered⁹ that the rejection¹⁰ of a program patent application regarding a "System and method for financial transactions" was incorrect. The Board of Appeal felt that the application filed by the appellant met the criteria of novelty and inventiveness without any critical discussion of the technical nature of the invention. Indeed, the transaction system essentially involved i) a control unit which processes the transaction for consumers, ii) a menu to access the service via a mobile phone, iii) a connection to at least one bank, and iv) storage of information processed by the control unit base.

Furthermore, an Enlarged Board of Appeal was constituted to reconcile several seemingly divergent decisions¹¹ of the regular Boards of Appeal of the EPO:

- i) the distinction between a computer program alone and a computer program embedded in a computer system was irrelevant
- ii) any device including specifications and any claim involving technical means were inventions
- iii) a claim to a method implemented in a computer system did not fall as such within the category of computer programs

In its decisions¹², the enlarged board pointed out that the **notion of legal development**

⁷ TGI Paris 3rd c. March 19, 2010, No. 08 / 01998

⁸ EP1182581

⁹ Case number T 1051/07 April 24, 2010

¹⁰ the patent application 02021882 filed by Telekom Co. Ltd was rejected by the Examining Division of the EPO, for lack of inventive step

¹¹ decisions T 1173/97 and T 424/03 provided divergent positions about the distinction between computer-implemented claims and computer program claims. Decision T 1173/97 considered that computer programs are methods (not patentable) and T 258/03 considered that a method acquires a technical character when it involves technical means. Decisions T1177/97 and T 172/03 were not in agreement regarding the programmer's activity.

¹² decision G 3/08 issue on May 2010

should be taken in account and stated : *“Development of the law is an essential aspect of its application, whatever method of interpretation is applied, and is therefore inherent in all judicial activity. Consequently, legal development as such cannot on its own form the basis for a referral, only because case law in new legal and/or technical fields does not always develop in linear fashion, and earlier approaches may be abandoned or modified.”*

In response to the question of whether a claim to a program on a computer-readable medium necessarily avoids the exclusion from patentability, the response was that there is a *“legitimate development of the case law and there is no divergence which would make the referral of this point to the Enlarged Board of Appeal by the President admissible”*.

The enlarged board also suggested that *“when judiciary-driven legal development meets its limits, it is time for the legislator to take over”*.

Decision G3/08 does not question the previous decisions and adds to the jurisprudence. According to Reddie & Grose¹³ « The EBA decision G3/08 is important as it confirms that the case law relating to excluded subject matter in Europe is mature and fully developed, and gives legal certainty to applicants of European applications concerning computer software related inventions.”

All of these issues are reminiscent of the decisions taken by the courts of the US in the same context. In a first phase , the Court of Appeals for the Federal Circuit , stated that a computer program that provides a **“tangible, concrete and useful”** effect justifies the filing of a patent. However, in a similar case, the Supreme Court of the United State considered that a test called **“machine or transformation”** is a useful tool for assessing the patentability of process . The Court also overturned the exclusion on the basis of “business method” arguing that the definition of “process” included the concept of « Method » in Chapter 102 of the Code on U.S. patents.

CONCLUSION : Patentability of computer programs in the future

The adoption by the European Parliament in December 2012 of official agreements regarding the creation of a Unitary Patent for Europe could open new avenues for patenting of computer programs. However, discussions aimed at a new and unified set of patent guidelines for computer programs will need to take in account Article 9 of the drafted regulation, which states that « ... the protection of computer programs **copyright** and biotechnological inventions can not be prohibited » and therefore maintains the **protection of computer programs within the scope of copyright**. It will be intriguing to examine how the trade agreement that is being negotiated between the European Union and the United States (TTIP)¹⁴ will affect the patentability of computer programs in the future.

¹³ <http://www.reddie.co.uk/news-and-resources/ip-developments/g308-software-related-inventions>

¹⁴ Transatlantic Trade and Investment Partnership - ec.europa.eu/trade/policy/in-focus/ttip/

The problems that are briefly presented here show the complexity of intellectual property protection when it comes to computer programs, and raise many questions about the relevance of a legal system that is seriously challenged in societies where technical progress occurs at a very fast pace.

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