Legal Protection of Computer Programs by Patent Law — Comparative Study of Trends

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Introduction

Although legal protection for computer programs is usually provided by treaties and national law under copyright, it can also be obtained through patent law. The existence of treaties on intellectual property may lead to the assumption that the legal protection of computer programs is basically the same around the globe. However, this is not the case. While it is true that verbatim copying of a computer program is a copyright infringement in most legal systems, there are differences that must be considered, especially the infringement of a patent which protects underlying ideas.

While there are known precedents in Europe and in the United States for interpreting the statutes or treaties regarding protection of computer programs, if those inventions were patented in Mexico or in other Latin America countries, very different scenarios would result. What would the likely approach be in Latin American countries? There are several possibilities — the European Patent Office approach, the US ap-proach under *State Street Bank v. Signature Financial Group* or *Bilski v. Kappos*, or perhaps the recent English High Court decision, *Halliburton v. Comptroller-General*.

In the following we compare the legal protection of computer programs in the US, Europe and Mexico.

US Patents

The historical need started in the US, when computer programs were developed, with the subsequent dispute over their patentability. As could be expected, the developers of computer programs first tried to protect their creations by a patent, but when they were faced with adverse judicial ruling, they then sought protection through copyright. Consequently, in 1974, Congress created the Commission on New Technological Uses of Copyright Protected Works, which issued a final report on July 31, 1978. The report's main conclusion was that computer programs were and should remain protected by copyright.

However, judicial precedents on the protection of computer programs by patents were established. While initially the American legal system denied the legal pro-

tection of computer programs by means of patent law, this decision was later reversed.

The US decision that reversed the criteria on the protection of computer programs was *Gottshalk v. Benson*. As mentioned, the criterion prevailing then in the US Patent and Trademark Office was to reject such patent applications on several grounds; probably the most important being that computer programs only did simple mathematical equations.

However, on appeal those decisions were reversed and the cases for the issuance of patents remained. Not satisfied with this situation, USPTO requested a *certiorati* review from the US Supreme Court, and in *Gottshalk v. Benson* reversed the then Federal Court of Customs and Patent Appeals (now Court of Appeals for the Federal Circuit).

Broadly speaking, what the US Supreme Court established in *Benson* was that an algorithm was not patentable because it was a general idea with no practical application, which only worked in a digital computer. The vagueness of the decision caused it to be interpreted in a minimalist way by the Federal Circuit. An interpretation which was later accepted by the Supreme Court in *Diamond v. Diehr*, was that the court would authorize the patent called "software hardware", thus opening the door to granting patents for computer programs. The Supreme Court in *Diamond* identified the processes within an invention, processes that could be chemical, industrial or of another nature. Moreover, by this case, algorithms or computer programs could be patentable because they involve processes that are part of an invention.

The evolution of legal precedents continued in a liberal sense by allowing patents to be granted to computer programs under more circumstances. To illustrate this, in *Re Alappat*, the Court of Appeals for the Federal Circuit found that mathematics alone, which represents abstract ideas, is not patentable, nevertheless it could be when applied to a practical application, e.g. to a machine (called "machine-or-transformation test"). Therefore, a computer program that performs specific functions could be patentable.

Later, in *State Street Bank v. Signature Financial Group*, the Federal Circuit held that a computer program that uses a mathematical algorithm to produce useful, concrete and tangible results would be patentable. In the same decision, the Federal Circuit held that the exception for the non-patentability of business methods was an ill-conceived doctrine derived from legal provisions that were no longer applicable. Consequently, in the US, the door remains open for patenting computer programs as long as they meet the specific court requirements of patentability and produce tangible and useful results; furthermore, the door is open for patenting business methods.

Machine-or-Transformation Test

While *State Street Bank* considered the decision that ended the question of whether computer programs and business methods were patentable in the US, the Supreme Court in *Bilski v. Kappos*, held that the machine-or-transformation test ("MOT test") is not exclusive for determining the eligibility of a process patent and also explained the so-called business method exception which was rejected by *State Street Bank*.

In *Bilski*, the applicant claimed a patent for an invention that assessed business risks in the energy market. The USPTO refused the application because it failed the MOT test. The Federal Circuit held that the MOT was the exclusive test in order to determine if a "process" would be subject to protection under the Patent Act, holding that the invention at issue was not eligible for protection.

On *certiorati*, a majority of five members established that even if a business method was not precluded per se, the patent at issue would be considered an unpatentable abstract idea. However four concurring justices held that "although a process is not patent-ineligible for conducting business, a claim that merely describes a method of doing business is not patentable." This decision was considered a step back by some, or at least a change in direction toward European approaches. The Supreme Court made no test, but only established general principles for the Federal Circuit to develop in future cases (see "No Precise Boundaries in Bilski — Implications of Supreme Court Decision on Method Inventions" [24 WIPR 29, 8/1/10]).

European Patents

Initially, in the European Union, the problem was that the granting of patents was decided differently by each country until the adoption of the Munich Convention on the Grant of European Patents ("European Patent Convention"). It seems that the United Kingdom, before signing the agreement, had been extremely liberal, with cases that closely resembled the reasoning behind *State Street Bank*.

However, in 1973, the European Patent Convention established the European Patent Office, with powers to issue a patent valid in all member states. Through this scheme, a patent valid in all member countries of the agreement can be obtained from the EPO. Article 52(1) of the Munich Convention states that European patents "shall be granted for any inventions in all fields of technology, provided that it is new, involving an inventive step and is industrially applicable." However, Article 52(2)(c) states that the schemes, rules and methods for performing mental acts, or businesses, as well as computer programs shall not be patentable.

This issue involves interpretation of both the office responsible for granting or refusing the European patent, and the courts responsible for reviewing the decision. In a document posted on its website, the EPO describes the law as well as the practice of patentability of software.

This document states that computer-implemented inventions are patentable only if they are technical or solve a technical problem, if they are new and constitute an inventive technical contribution to the state of art. Therefore, the European patent is granted if the computer program or the invention implemented by a computer makes a technical contribution. The EPO exemplifies a case to understand this approach; the case involves a patent application on an invention that, by changing the software on certain mobile phones, solved a technical problem by increasing the range of their signal. The EPO ruled that the invention itself was patentable because it solved a technical question, in addition to being novel and inventive.

However, the solution does not seem to be as simple as that described above. The EPO's own structure includes the Boards of Appeal and the Enlarged Board of Appeal established by Article 112 of the EPC. The main purpose of the Enlarged Board of Appeal is to achieve the implementation of a uniform law, or to grant decisions when critical issues arise. A recent referral made by the President of the EPO presented a series of questions regarding patentability of computer-implemented inventions. The first question was whether a patent for a computer program may be issued if the solicitant changes the title of the patent application by avoiding the term "computer program". The rest of the questions were related to the place where the technical effect should occur in order to have the invention patented. Should it be on the computer running the program itself or outside the hardware of the computer? This is an interesting issue because if it is the former case, then all these kinds of inventions would be eligible, even if there were no technical effect beyond the computer. Since the Enlarged Board of Appeals dismissed all the questions, it could not make a statement on any of them.

It is noteworthy that one of the uniformity issues identified in the EU is the diversity of criteria developed in each country, whose administrative offices and courts are not bound to follow the criteria of the EPO or its Boards of Appeal in the process of granting a patent, in opposition proceedings, or in nullity cases.

As an example, in the recent case *Halliburton v. Comptroller*, the English High Court decided which general approach would be adopted by the UK courts for computer inventions in relation to the mental act exclusion set by the statute (see "Patent Court Decision Clarifies Mental Act Patentability Exclusion" [25 WIPR 18, 12/1/11]). The appeal was filed after the UK Intellectual Property Office denied the patent applications submitted by Halliburton, with respect to the design of roller cone drill bits in oil drilling. There were two interpretations for the mental act exclusion. The wide one, if the invention could be performed mentally, regardless of whether it was claimed to be performed by a computer, then it would remain unprotected. In the narrow exception even if that scheme could be performed mentally, it would be protected if it were claimed to be performed by a computer. In *Halliburton*, however, the court ruled that this exclusion should be taken narrowly, so if the invention were claimed to be performed by a computer, it would be eligible for protection. Finally, the court commented on the differences in approach between the UKIPO and the EPO, concluding that although the approaches were different, the result would be the same.

Mexican Patents

The case of Mexico is taken as an example of the shared perspective in many countries in Latin America. The Mexican case on the patentability of computer programs is in its initial phase. While section IV of Article 19 of the Industrial Property Law provides that computer programs shall not be considered inventions for the purposes of the statute, the internet electronic document viewer of the Mexican Institute of Industrial Property (IMPI), the government agency empowered for granting patents and trademarks, reveals a number of patents on computer programs.

Some examples are:

- Method and system for processing internet payments using Internet Electronic Funds Transfer, patent no. MX 226 517, holder: The Chase Manhattan Bank, granted by IMPI on March 2, 2005;

- Method, device and computer program product for demultiplexing video images, patent no. MX 247 557, holder: Intergraph Software Technologies Company, granted by IMPI on July 27, 2007;

- Computer program radio waveforms, patent no. MX 235 721, owner: Motorola, Inc, awarded by IMPI April 10, 2006.

However, all these patents are at risk of a third party requesting annulment before IMPI. The basis of this is found in section I of Article 78 of the Industrial Property Law, which provides that "the patent or registration shall be void in the following cases. . . When it has been granted in contravention of the provisions and requirements conditions for granting patents".

Moreover, nullity procedures are not subject to any statute of limitations, which means that an action to declare void a patent can be exercised at any time. By literally interpreting the legal provision, the legal syllogism results in the invalidity of the records in question. However, at the time of publication of this article, no precedent was found on the invalidity of the patent on computer programs. It could be because the owners are aware of the precariousness of their titles, and they have not dared to sue a possible infringer. This is because an effective strategy against patent infringement claims is to make a precise request for the nullity of the patent in dispute.

Over time, these titles will be tested. However this will not begin until litigation on the validity of these patents arises. Assuming that case law determines that patents on computer programs are valid, the second phase will be to determine the scope of these patents. As can be

seen, the Mexican approach is slowly evolving and only time will establish software patents in Latin America.

The best choice for holders is litigation, which would reflect case law establishing principles on patents for computer-implemented inventions. A statutory change would not be viable, since the validity of a patent would be litigated according to the statute in force at the time of filing and prosecution. Moreover, a comparative study of the issue on several legal systems shows that any attempt to change rules is always subject to great opposition.

Conclusions

The analysis of what has happened and what is happening regarding the patentability of software can be summarized by two approaches. The first is a change in strategy for those seeking patents for computer programs by changing the vocabulary describing their inventions in order to obtain the patent. The second refers to future claims. The issues will be the same as those presented after the first generation of cases that afforded protection to computer programs by copyright, when the focus was no longer whether the computer program were eligible for protection, but rather what the level of protection was and the limitations of that protection.

It is necessary to determine the stage of a legal system in relation to its patent law. The Mexican legal system, and arguably legal systems in Latin America, are at the very first stages. Some titles are granted, but there is still not much litigation nor well developed principles. Since legal developments and approaches have more clarity in Europe than in the US, and since the discussion on the patentability of computer programs seems more open, the European approach would prove useful for the Mexican legal system and other Latin America countries to follow.