COLLOQUIUM ON
LANGUAGE DIVERSITY IN THE INFORMATION SOCIETY

Session B
Synthesis and Recommendations: Defining legal rules

COPYRIGHT PROTECTION OF SOFTWARE

a paper by
dr. András Szinger
I. LEGAL PROTECTION OF COMPUTER SOFTWARE

Two substantial needs are present in the modern society regarding computer software: the need (expectation) of all of us to get access to software products easily, and on the other hand the need of creators of software, to get protection in order to maximise the benefits of their creation. The challenging task of legal regulation would be to balance these two needs effectively.

Legal solutions raised for the protection of computer software in two different areas: copyright law and patent law.

1. Copyright Protection

1.1 Legal framework

1.1.1 International Regulation

The Berne Convention on the protection of literary and artistic works is an international convention signed by more than 140 countries, originates from 1886., last revised in 1971. It forms the basis of international copyright law, as it prescribes minimum standards to the copyright legislation of the members of the Berne Union, and also includes the rule of national treatment. However, the Berne Convention does not provide specific regulations on software-works.

One of the results of the GATT Uruguay round was the adoption of the TRIPS-agreement in 1994. This was the first multilateral agreement, which had clear provisions on the copyright protection of software. The signatory states of the agreement are obliged to provide the same copyright protection to computer software (even in source code, even in object code) as the Berne Convention provides for literary works.

In 1996, when the need of creating an international basis for harmonised national legislation concerning copyright issues in the digital age became urgent, the diplomatic conference of WIPO (World Intellectual Property Organization) adopted two international treaties (currently signed by more than 50 countries of the world), the WIPO Copyright Treaty (hereinafter referred as WCT) and the WIPO Performances and Phonograms Treaty (hereinafter referred as WPPT). The aim of these treaties was primarily to describe the uses of authors’ works that takes place within and via Internet as a series of temporary and permanent reproductions and communications made directly or indirectly to the public.

From our point of view, the most important provision of the WCT can be found in Art. 4. (1.§ (2) c.), upon which signatory states are also obliged to give copyright protection to computer software.

1.1.2 European Union

During the 1980’s upon the evolution of software, computer programs were included in the catalogue of protectable items in many of the Western countries’ copyright law.

1 Agreement on Trade-Related Aspects of Intellectual Property Rights, Including Trade In Counterfeit Goods
The EC referred to the need of harmonised copyright protection of software first in its White Paper about the Internal Market (1985), aiming to create clear legal basis for the innovative investments in this new field opened by technical progress.

The EC Commission started to elaborate a directive on the copyright protection of software upon the 1988 Green Paper, which summarised the fields requiring immediate intervention. The first draft of the directive was proposed in 1989, and finally, the Council adopted the directive in 1991. The basic principle of the directive is that all member states must protect computer software as a literary work in terms of the Berne Convention.

1.1.3 The Hungarian Copyright Law

The former Hungarian copyright act (Act III. of 1969 on copyright, which was in force until the 1st of September, 1999) had a general provision on protectable items, under which all creations of literature, science and art – regardless whether or not specified “expressis verbis” by the act – fell under copyright protection, based on their individual, original nature originating from the intellectual activity of the author.

This provision enabled the court extremely early, in 1972 (!) to rule that computer programs are protected by copyright. Then in 1983 computer software was formally included in the exemplificative list of copyright protectable items.

The new Hungarian copyright act (Act LXXVI. of 1999 on copyright, entered into force on the 1st of September, 1999, hereinafter referred to as CA) provides detailed regulation concerning computer software. It contains provisions harmonising with Article 3 of Act No. I of 1994 promulgating the European Agreement on the establishment of an association between the Republic of Hungary and the European Communities and their Member States (signed in Brussels on December 16, 1991), and compatible with several legal rules of the European Communities, including the above mentioned Council Directive 91/250/EEC on the legal protection of computer programs.

1.2 The legal definition of software

Neither international treaties, and (usually) nor national copyright regulation do contain definition with regards computer software. But there are a few (e.g. American, Australian, Japanese) exceptions:

- “A “computer program” is a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result.”
- “Computer program means an expression, in any language, code or notation, of a set of instructions (whether with or without related information) intended, either directly or after either or both of the following: (a) conversion to another language, code or notation;

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3 Decision No. 25.P.27.228/1972. of the Capital Court. This approach was adopted by the High Court in its decision of PFIV.20.417 in 1982.
(b) reproduction in another material form; to cause a device having digital information processing capabilities to perform a particular function.\textsuperscript{5}

Despite the lack of formal definition, most of the national and international rules contain a few elements of the software, which are considered to be under copyright protection. For example, according to the Hungarian CA “computer program creations and related documentation (hereinafter referred to as software), whether fixed in source code or object code or in any other form, including application programs and operation systems”\textsuperscript{6} shall fall under copyright protection.\textsuperscript{7}

1.3 Subject of the protection

According to the legal tradition, and general principles of copyright law, copyright protects only the \textit{expression} of the \textit{original} work (e.g. software), and does it without any formal registration or other process in order to attain copyright. “\textit{Expression}” indicates “the need for copyrightable works to be in some sort of physical or material form”.\textsuperscript{8} “\textit{Originality}” does not require that there must be an inventive thought, which serves as a basis of the work, but the work must not be copied from another authors’ original work.

Therefore any ideas, principles, algorithms or interfaces are excluded from the copyright protection.\textsuperscript{9} The reason of this is to allow non-infringing independent creations of similar nature to the original work.

1.4 Why copyright?

There are several motives and reasons of protecting software in the field of copyright law.

First, there is a \textit{theoretical} reason. From general aspect, computer programs are often considered to be – “only” – technical solutions, therefore regarded as “outsiders” among other – traditionally – copyright protected types of authors’ works, such as musical or literary works. Software itself in fact is not just a technical result, but an authors’ creation which has technical character. The only difference is the “active” nature of the computer program, meaning that it has technical (physical) effect in computer hardware during its operation. But this fact does not state reason for the software – as an original expression – being excluded from copyright protection.

On the other hand, there are a few \textit{practical} reasons of why copyright is the most suitable form of legal protection of software. According to Steckler\textsuperscript{10}, these main points are:

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\textsuperscript{5} Australian Copyright Act of 1968, sec. 10 (1)
\textsuperscript{6} CA Art. 1. (2) c
\textsuperscript{7} The three basic protected elements of the software (object code, source code and documentation) were first introduced in the 1977 model law of the WIPO.
\textsuperscript{8} Stoianoff, 1999, p. 500.
\textsuperscript{9} According to the Hungarian act, any „idea, principle, concept, procedure, method of operation or mathematical operation on which the interface of the software is based” is excluded from the protection. (CA Art. 58.)
\textsuperscript{10} Steckler, 1994, p. 294.
• **International acceptance** of copyright: via international agreements\(^\text{11}\) the protection is not only recognised by EC members, but also by their most important trading partners;

• **The lack of monopolies**: only the expression of the work is protected, and not the underlying idea, therefore independent research (speeding up innovation) is not considered to be an infringement, and yet the authors are granted the rights suitable for the exploitation of their creation;

• **Flexibility**: via licensing contracts the rights of users and producers can be tailored to their real needs (within the balanced framework of internationally harmonised legislation).

1.5 Rightholders, rights and free uses

Continental legal systems share the tradition that the authors’ – moral and economic – rights are, under normal circumstances,\(^\text{12}\) not transferable. Yet as an answer for the industrial needs – and in conformity with the international legislation – the new Hungarian CA allows authors to assign the economic rights relating to software. Therefore most of the holders of economic rights of computer software are economic associations.

The act contains specific provisions – harmonising with the EC Directive – enabling the users to observe and study the operation of the software – including reverse engineering – without the authorization of the rightholder in order to get to know the idea or principle serving as a basis for any elements of the software, or in order to acquire the information necessary to the combined operation of an independently created software\(^\text{13}\). The aim of this regulation is to enforce innovation.

Due to anti-piracy considerations, holders of software-rights often argue that the user should have the right to copy the software from the original carrier to another. The Hungarian CA – balancing the rights according to the similar provisions of the EC Directive – entitles users to make one back-up copy of the software if it is necessary for the use\(^\text{14}\).

The new Hungarian regulation also enables shrink-wrap\(^\text{15}\) and click-on\(^\text{16}\) licensing of software if copies of the software are procured in the course of commercial distribution, as in this case it is not obligatory to conclude written licensing agreement\(^\text{17}\).

1.6 Criminal law protection

One of the main questions raised by the practice is: which legal rules can ensure the respect of copyright? Are civil law sanctions sufficient to restrict infringing uses of software? The answer worldwide seems to be no. Since 1993 the Hungarian legal regulation provides

\(^{11}\) See supra 1.1.1., especially the TRIPS-agreement.

\(^{12}\) E.g. with such exceptions as works created under employment or other service relations, etc.

\(^{13}\) CA Art. 59 – 60., see the Annex for details.

\(^{14}\) CA Art. 59. (2)

\(^{15}\) "A shrink-wrap licence, as the name suggests, is usually contained in a shrink-wrap sealed packaging, and it supposedly accepted by the purchaser upon opening the package. Thus, licence terms are imposed by software houses on end-users without the need for a written agreement." Kennedy, 1999, p. 18.

\(^{16}\) Click-on licensing enables end-users to license the electronically purchased (or shareware) software product – upon reading through the licensing agreement displayed on the screen – with one single mouse-click of.

\(^{17}\) CA Art. 60. (5)
criminal sanctions regarding infringement of copyright\textsuperscript{18}, and since 1999 circumvention of technological measures for the protection of copyright – based on the provisions of the WCT – is prohibited also\textsuperscript{19}.

The Hungarian association of the largest software-houses (Business Software Alliance) carries out a very intensive activity based on these legal instruments and using mass media in order to ensure the respect of copyright.

2. Patent Protection

2.1 The concept of patents

A patent is issued for an invention, or an accomplishment of a technical nature, being essentially a monopoly right over the invention. “For a technical invention, the scope of the law of patents does not only cover the tangible presentation (surface), but also the theory contained in this example, with the patent protection relating to the content.”\textsuperscript{20}

This means, that unlike copyright law, parallel development is restricted. If someone obtains a patent protection, everyone else is excluded from using or exploiting the patented work even though it is independently developed. “The law of patents protects the idea of the invention, whereas the expression of the creation belongs within the scope of the law of copyright.”\textsuperscript{21}

A technological invention can be protected by patent on a condition that it has an element of worldwide novelty and inventiveness. This test of novelty and inventiveness in patent law is substantially different from the test of originality in copyright law. Obtaining a patent protection also requires passing an extensive and difficult, long procedure of application, research, examination and registration, whereas copyright protection comes into being similarly by the creation of a protectable work.

2.2 Patentability of software

Although following the EC’s 1997 Green Paper on the Community Patent and the patent system in Europe, both the European Parliament and the Economic and Social Committee supported the patentability of computer programs, a contrary view has been expressed on behalf of small and medium-sized companies, which are concerned that such steps will stifle innovation and adversely affect the developers of open-source software.

At present computer programs “as such” are excluded from patentability by the European Patent Convention\textsuperscript{22}, as programs of data processing are not regarded as inventions. That means, that software itself is not protectable independently, but it does not mean that a software-related invention could not acquire patent protection.

\textsuperscript{18} Art. 329/A. of the Hungarian Criminal Code, see Annex for details.
\textsuperscript{19} Art. 329/B. of the Hungarian Criminal Code, see Annex for details.
\textsuperscript{20} Steckler 1994, p. 294.
\textsuperscript{21} Steckler 1994, p. 294.
\textsuperscript{22} Art. 52 (2) and (3)
There were several cases, where it was held, that if the subject of the monopoly would be the software “as such”, the patent protection could not be granted. For example the Examining Division of the European Patent Office refused the application of IBM in 1999\(^{23}\), on the ground that the claims were directed to a computer program as such, and therefore excluded from patentability. The essential requirement of patentability is that an invention has a technical character. In this case the programs did have technical effect, because the physical effect on computer hardware caused by the execution of the program. However this feature is common to all computer programs and could not be used to distinguish programs with technical character from programs “as such”. The technical character must be found elsewhere in the effects caused by the execution of the program by the hardware, beyond the mere interaction with the hardware.

Upon this decision, the U.K. Patent Office decided to have a new approach to claims for computer software, according to which where there is a substantial technical contribution, the fact, that a computer program was necessary to bring this about and that the patent claims were directed to a computer program on a carrier or by itself would not in the future be fatal to a patent application.\(^{24}\) This could indicate that modern trends in patent law do internationally favour the acceptance of computer programs within the ambit of patent protection.

Considering the latest events, in the end of the year 2000 the EC Commission has started a consultation procedure on whether the national laws of the Member States on the patent protection of computer-implemented inventions should be harmonised. Among others, the questions below were included in the consultation paper:

- the current legal situation in Europe, the US and Japan concerning the patentability of computer programs;
- the consequences for innovation and competition of the law in these regions, especially the various interpretations of the “innovative step” requirement;
- the roles and interests of European independent software developers, in particular, developers of open-source software, in relation to patent protection for software.\(^{25}\)

According to the present Hungarian legal regulation, computer programs are excluded from the patent protection.\(^{26}\) Yet, due to our obligation to harmonise the Hungarian legal regulations with the EC-law, we ought to follow any substantial change in this field in the future.

\(^{24}\) Based on a report by Jean Hughes and Denton Hall (EIPR 1999/9. News Section: National Reports, N-160.)
\(^{26}\) Act XXIII. of 1995 on patents, Art. 1. (2) c)
II. THE DEVELOPING COUNTRIES’ SOFTWARE IN THE DIGITAL AGE

1. The Hungarian Situation

Concerning the present Hungarian situation of producing computer software, the stress must be put on the following elements.

The quality of the Hungarian technical education is traditionally considered to be very high. The level of education in the field of infocommunication is among the bests of the OECD-countries. Therefore the creativity of Hungarian experts in the software sector is acknowledged worldwide. The value added to the products per capita by Hungarian developers is also extremely high.

The chances of Hungarian-developed software products are low in the commercial, mass-consumption fields (as operation systems, word processors), but can be high in the field of professional software satisfying specific industrial or scientific needs.

To mention some examples, at present there is at least two Hungarian software developer companies, which are without doubt among the leaders of their field of profession.

One of them is an institution doing research and developments solely in the field of natural language processing. The developers – former researchers of different academic laboratories – have elaborated a language independent technology, which serves as basis for their products including proofing tools, spell checkers, hyphenators, grammar checkers and thesauri. The company has committed itself to create translation support and machine translation tools. They also created an internet-based dictionary system based on heavy-duty dictionary servers. The company plays an active role in four research projects of the EU, and has an intensive co-operation with Dutch, French, Polish etc. academies of science.

The success of the company is indicated by the list of its partners. Among the software developer companies, who have licensed the products of this Hungarian firm are such firms as Microsoft, Lotus, IBM, Rank Xerox, Franklin, Adobe, Corel, or Quark.

The other well-known Hungarian software house aimed also a special professional field. This company is the world-leader nowadays in the market of architectural computer-aided designer (CAD) software, being the largest Hungarian software exporter. Their market-leader product is sold in 80 countries and in 22 languages, enabling 35,000 architects worldwide to apply computer-aided design. Their aim was not just to innovate, but creating a product and selling it. Executing this task, the largest help was them the revolution of infocommunication and the well-educated and motivated human resources.

But behind these results, the most important and fundamental condition is the adequate legal protection of the software work, enabling users to maximise their software resources, and developers to maximise the benefits of their intellectual creation.

27 See http://www.morphologic.hu for details.
28 See http://www.graphisoft.hu for details.
2. Software on the Internet

2.1 Electronic dissemination

The internet, often described as the network of the networks, offers almost unlimited possibilities to software developers to easily disseminate their creations worldwide. As the software itself consists of electronic data, it can be easily transmitted via the network. This feature enables users to download software from the internet, and license it electronically, by click-on licensing. The whole process does not require to make any copies of the work on tangible carrier, and that’s why the possibility of electronic software dissemination is open to almost every developer.

2.2 The future: Application Service Providing

Another step to make, is that instead of purchasing software products and installing them onto a computer from a tangible carrier (e.g. CD) or from downloaded files, to take the advantages of applications provided online by ASPs (Application Service Providers).

With the help of large bandwidth (e.g. ADSL) the users of online applications are enabled to access and use such applications as word processors, mailer, organiser programs with their own personal settings, in their own language, with their customised user interface against subscription fee, without requiring large harddisk space. The most important advantage of the service is that with the help of web access it is available from everywhere, not just from the user’s own computer.

These technical possibilities would hopefully enable smaller or medium-sized software developers to disseminate, license and promote their products with the minimalization of costs.

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29 See supra 1.5
III.
ANNEX: EXCERPTS FROM THE RELEVANT HUNGARIAN LEGAL RULES

ACT LXXVI. ON COPYRIGHT

Article 1

(2) All creations of literature, science and art – regardless whether or not specified by this Act – shall fall under the protection of this Act. Such creations are, in particular:
c) computer program creations and related documentation (hereinafter referred to as software), whether fixed in source code or object code or in any other form, including application programs and operation systems,
(6) No idea, principle, concept, procedure, method of operation or mathematical operation may be the subject matter of copyright protection.

Software Program Creation
Article 58

(1) The provision of Article 1, Paragraph (6), shall apply also to the idea, principle, concept, procedure, method of operation or mathematical operation on which the interface of the software is based.
(2) The provision of Article 4, Paragraph (2), shall apply also to the adaptation of the software from the original program language to a different program language.
(3) The economic rights relating to the software shall be assignable.
(4) The provisions of Article 30, Paragraphs (3) and (4), shall not apply to the software created by the author as a duty under an employment contract.

Article 59

(1) Unless otherwise agreed, the author’s exclusive right shall not cover the reproduction, alteration, adaptation, translation and any other modification of the software, including the correction of mistakes, as well as the reproduction of the product resulting from these acts in so far as these acts of use are carried out by the person authorized to acquire the software in compliance with the intended purpose of the software.

(2) No provision in the licensing agreement shall prohibit the user from making a back-up copy of the software if it is necessary for the use.

(3) The person entitled to use a copy of the software may, without the author’s authorization, observe and study the operation of the software and may make a trial use thereof in the course of its loading, displaying on a monitor, running, transmission or storage in order to get to know the idea or principle serving as a basis for any elements of the software.
Article 60

(1) No authorization of the author shall be required for the reproduction or translation of a code which is indispensable for the acquisition of the information necessary to the combined operation of an independently created software with another software supposing that

a) these acts of use are performed by the authorized user or another person entitled to use the copy of the software or a person put in charge of performing these acts by these persons;
   b) the information necessary to the combined operation has not been readily accessible to the persons referred to in Item a);
   c) these acts of use are limited to those parts of the software which are necessary for ensuring the combined operation.

(2) The information obtained through application of the provision of Paragraph (1) shall not be

a) used for a purpose other than the combined operation with the independently created software;
   b) communicated to another person unless this is required for the combined operation with the independently created software;
   c) used for the development, production and putting into circulation of another software essentially similar as regards its form of expression, or for other acts resulting in the infringement of the copyright.

(3) The provision of Article 33, Paragraph (2), shall apply, mutatis mutandis, to the acts falling under the provisions of Paragraphs (1) and (2).

(4) Paragraph (2) of Article 34 and Paragraph (1) of Article 38 shall not be applicable to the software. The term defined in Article 49, Paragraph (1), shall be four months in the case of software.

(5) In case copies of the software are procured in the course of commercial distribution, it is not obligatory to lay down in writing a contract relating to the use of the software.

ACT IV. OF 1978 ON THE CRIMINAL CODE

Infringement of Copyright and Neighboring Rights
Section 329/A

(1) A person who infringes a right of the author of a literary, scientific or artistic creation attached to such work, a right of a performing artist attached to his performance, a right of a producer of a sound recording attached to his sound recording, a right of a radio or television organization attached to its program, or a right of the producer of motion picture attached to such work, for the purpose of gaining profits and/or thereby causing financial injury, commits a misdemeanor offense and shall be punishable by imprisonment of up to two years, labor in the public interest, or a fine.
(2) The punishment shall be imprisonment of up to three years for a felony, if the infringement of copyright or neighboring rights
   a) causes substantial financial injury,
   c) is committed in a business-like manner.
(3) The punishment shall be
   a) imprisonment of up to five years, if the infringement of copyright or neighboring rights results in particularly considerable financial injury,
   b) imprisonment between two to eight years, if the infringement of copyright or neighboring rights results in particularly substantial financial injury.
(4) A person who commits an infringement of copyright or neighboring rights by negligence shall be punishable for misdemeanor offense by imprisonment of up to one year, labor in the public interest, or a fine.

Circumvention of Technological Measures for the Protection of Copyright and Neighboring Rights

Section 329/B.

(1) A person who
   a) manufactures or fabricates,
   b) furnishes, distributes or markets
   any instrument, product, equipment and/or accessory for the circumvention of the technological measures defined in the Act on Copyright instituted for the protection of copyright and neighboring rights commits a misdemeanor offense and shall be punishable by imprisonment of up to two years, labor in the public interest, or a fine.
(2) A person who conveys economic, technical and/or organizational information to another person for the purpose of and as necessary for the circumvention of technological measures instituted for the protection of copyright and neighboring rights shall be punishable as set forth in Subsection (1) above.
(3) The punishment shall be imprisonment of up to three years for a felony, if the circumvention of technological measures instituted for the protection of copyright and neighboring rights is committed in a business-like manner.
(4) A person implicated in the offense described in Paragraph a) of Subsection (1) above shall not be punishable if voluntarily confessing to the authorities his involvement in the manufacture or production of any instrument, product, equipment and/or accessory intended for the circumvention of the technological measures instituted for the protection of copyright and neighboring rights prior to the authorities gaining knowledge of such, and if surrenders such manufactured and fabricated objects to the authorities, and if provides information concerning any other individuals participating in manufacture or production.
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