UNIVERSITY OF MARMARA
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INTELLECTUAL PROPERTY RIGHTS IN *COMPUTER PROGRAMS* IN EUROPE AND TURKEY

MASTER'S THESIS

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INTRODUCTION

As we are entering in the 21st century, the integration between the European Union and Turkey is taking a new direction. Intellectual Property Rights are one of the main concerns for this integration.

The fast progress of technology in the field of intellectual property is essential for all nations. When new technology is introduced it also causesnew legal problems. The technological revolution occuring all around the world created problems for new intellectual properties to be legally protected. Computer Programs are one of these "new" intellectual properties. Even though people have been using computers for quite some time, the need for proper and necessary legal protection has become an issue for the last 15 years. Computers became personal and an essential part of our daily life. Therefore, the need to protect and to define the legal limits of use of computer programs became a necessity.

In the following paper, I will analyse the protection of computer programs in the world with an emphasis on the European Union and Turkey. Also, by discussing the possible definitions of the term computer program, the protection methods available for this intellectual property will be explained. Thereby, I will explain the form of legal protection for computer programs.

Perhaps Macchiavelli opened the door to "infringement" by stating in *The Prince* (1513): "[m]en always prefer to walk in paths marked out by others and pattern their actions through imitation. Even if he cannot follow other people's path in

every respect, or attain to the merit of his originals, a prudent man should always follow the footsteps of the great and imitate those who have been supreme. His own talent may not come up to theirs, but at least he will have a sniff to it."

ISSUES

Part 1 Defining Intellectual Property and It's Rights

A) Intellectual Property

Especially with the advancement of technology, people started to create new ideas for the improvement of our life. All these inventions, creations and opinions naturally became public, and the need to protect these opinions rose quickly. Conventions and regulations followed each other. Finally today, we have arrived at such a stage that Intellectual Property Rights (IPR)s have become very important for our daily life. These rights exist in order to protect works of arts, music, literature, technological inventions and even the name or the logo of a business.

It is difficult to explain precisely what Intellectual Properties are. This term does not refer to real property, but they consists of names, secrets, ideas and, at least, the expression of ideas. The author or creator of an intellectual work naturally has some rights over that work. Either the creator can keep this work a secret or he/she can share this work with the public and receive benefits for the work. We are using Intellectual Property Rights in order to find the middle way between the public who wants to use the work and the creator who wants to earn benefits from its creation.

Being the legal link between the world of ideas and the world of commerce, legislation regarding intellectual properties has often been subject to criticism, misinterpretation and misuse, and has occasionally been charged with being insufficient and ineffective ever since its early development.

Intellectual properties are tendent to easily spread among the countries. Technological advancement helped this spread positively and therefore national boundries could not kept them out of their states[1]. Nations slowly but firmly started to create their own legislations.

Nations with greater interest in intellectual property rights, namely those which have been producing a significant portion of the intellectual work created all over the world, have been trying to encourage others to enact efficient copyright legislations and to build up an international framework of legislation covering these issues. For this purpose, since about a century ago, bilateral and multinational agreements have been prepared and signed by various countries.

Although, to this moment, it has still not been possible to develop legislation that is followed by all countries regarding the protection of intellectual property. Many attempts have not resulted in success. One of the reasons for the unsuccessful character of these attempts is the difference in interest and expectations of various countries regarding such international regulations. While some countries aim to protect intellectual works to greater extent all around the globe, others have an interest in limiting such protections.

The first group consists of developed countries, who have been supplying most of the intellectual work in question. The second group, on the other hand,

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1 Ayiter Nuşin, Hukukta Fikir ve Sanat Ürünleri, Ankara 1981, Page 24

covers developing and underdeveloped countries, who would rather prevent any interference with their free utilization of foreign intellectual works, due to their status as "developing" countries.

Intellectual property rights are covered under special laws, designated to address the needs of each particular intellectual work. However, the continuous development in technology and the increasing need to afford the holders and users of said rights protection under the emerging conditions of usage, have resulted in the creation of new categories that, at one time, comprimised a portion of one of the traditional group of rights. These traditional rights include, for example, literary rights, rights related to amblems of origin, industrial design rights, etc[2].

On the other hand, five main forms of Intellectual Property Rights are:

Patent: Secures to the inventor of a useful product or process the right to exclude others from remaking his work[3]

Copyright: Guarantees by statute to the creator or originator of a work whereby he or she is assured for a limited period the sole and exclusive privilege of producing publishing and selling the created work.

Trade mark: Any mark, whether a word or symbol, which designates products or services coming from a single source. The owner may prevent the use of any mark which is

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2 Yosmaoglu, Nevzat, **Patentler, Know How'lar, Markalar**, Ankara 1978

3 Decree No.551 on protection of Patent Article 5 (Official Gazette June 27 1995 No.22326): The inventions which superflows the existing technological know how and which can be applicable for Industrial use.

sufficiently similar to cause confusion between the owner's mark and the competitor's mark[4].

Design rights: An exclusive right to make articles to a particular functional design or to affix a particular decorative design to an article[5].

Plant breeders' rights: A right, analogous to a patent, over new species of plants[6].

Intellectual Property Rights (IPRs) are created in order to protect peoples investments in innovation. The protection exists by giving the creator a temporary monopoly in the use of his/her work. With this right the imitations of the created work cannot exist, and therefore the creator becomes the sole producer and seller of the work. Some argue that by restricting the imitation, however, IPRs arguably raise the cost of the new technology and restrict its availability. This also retards further progress in the technology by preventing other firms from developing new innovations or improvements that build on the original innovation in a cumulative way[7]. Today we still do not have an answer to these allegations. It always depends on which side of the issue one stands, but existing laws does protect rights of the creator of the original work.

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4 Decree No.556 on protection of Trade Marks Article 5 (Official Gazette June 27 1995 No.22326)

5 Decree No.554 on protection of Design Right sArticle 3 (Official Gazette June 27 1995 No.22326)

6 National reasearch Council, Wallerstein, Mogee, Schoen (eds.), Global Dimension of Intellectual Property Rights in Science and Technology, National academy Press, Washington D.C. USA, 1993 Page 310

7 National reasearch Council, Wallerstein, Mogee, Schoen (eds.), Global Dimension of Intellectual Property Rights in Science and Technology, National academy Press, Washington D.C. USA, 1993 Page 3

Protections are mainly made in order to prevent the developing world, so called the Newly Industrializing Countries (NICs) from making illecit copies of the work which is created in the developed world. In the NICs, patent and copyright laws are weak, or in some cases they don't even exist. Unauthorized use is a combination of piracy and protectionism. It is piracy because it is an individual action to make illicit copies. It is a protectionism because of national economic policies. In order to reach a high standart of living and economic development, some governments are allowing copies of works to be made without proper permission. They are simply ignoring the problem. Some of these countries cannot afford to pay in order to copy the needed works. Others argue that they will only pay if the infant industry, created by these illicit copies, becomes a successful business. Brazil and South Korea can be considered among the developing nations.

The protection of Intellectual Property Rights has long been an important issue and a matter of dispute between the industrialized and developing nations. The methods of protection, originality issue, the time of the protection, and the limits of protection were discussed heavily among the nations. The real problem is simply the difference between the nations who argue two different sides of the issue. On one side, industrialized countries, have an interest in awarding to intellectual property owned and/or developed by them the ultimate legal protection. On the other side, developing nations generally seek access to intellectual property with as little as possible restriction.

It is very important to give a correct defininition to intellectual property. Copyright can be very intangible. For example, the context of a book is an intellectual property, and can be copyrighted, but the book itself cannot be. When somebody sells the book this does not entitle him/her to sell the rights of the text. The ownership of the work remains the same, although the book is

sold to someone else. At the end, the book is sold, but the rights belong to the writer. The important point lies within; the difference between the idea and the expression of that idea. In poor words, ideas are not protected until they become an intellectual work. So, the idea belongs to the public. Everybody can think, use repeat and sell its idea. However, the expression of the idea, in any form of intellectual property work, is protected by the law. When the issue is how to deal with computer programs, a computer programmer cannot monopolize the computer market by claiming the idea of a program.

B) The Purpose of Protection

Philosophy behind the protection is the encouragement of the individual efforts of authors and inventors. This protection must be offered in such a manner that, the author or the inventor will gain from the work at the same time arts and scieneces are promoted. Therefore, in order to keep this very carefully balanced bridge, exclusive rights have been given for only a certain period of time. A time limit ensures, at least in theory, that a work will eventually become the property of all the people and thereby prevents an individual from withholding something that might better humanity indefinitely for personal gain[8]. Simply the intellectual work will become a public domain.

C) Why is software intellectual property?

When a new technologycal invention enters to the public interest, it also creates new legal problems. In order to solve these legal problems jurisdiction mechanism starts to work. If the jurisdiction cannot solve the legal problems

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8 Computers and İntellectual Property, Defining İntellectual Property, Pag.27

because of lack of necessary laws, than the legislation makes new laws in order to protect these new technological inventions.

Since the first computer program, the debate on how to protect software on legal bases became an important issue for the intellectual property. First of all, there is the need to define "software".

Software is a composition of computer programs that helps the computer to do what the creater wants it to make. It is not an invention, but it is a creation which is written by the computer programmer[9]. Elements such as numbers, figures and words are being used. At the end, a composition of these elements creates the computer program. This shows that, software is an intellectual property. It is a creation of a programmer, and the rights to use or to sell must belong to the creator just like any other intellectual property. Therefore, the software, approving that it is a intellectual property, needs to be protected with intellectual property laws.

The two main system of intellectual property rights that the software can be protected by are Copyright and Patent.

Computer hardware is clearly patentable, and it is a commonplace in the computing field that any tasks for which a program can be written can also be implemented in hardware[10]. This supports the idea of patenting the software. On the other hand, the creator of an intellectual work has to receive exclusive

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9 In Turkish Law, also "Computer programs are not accepted as the Design Rights" according to Article 3 Decree 554 on Protection of Design Rights, Turkish Official Gazette No. 22326, June 27 1995

10 Samuelson Pamela, Adapting IPR's to New Technologies, A case study on computer programs, 1994, Page 301

rights in their work. This way, first of all, promoting the progress of knowledge will be established, and then, promoting technological progress will be achieved. Therefore, copyright law implements the first power and patent law the second.

Part 2 Anatomy of a Computer and Computer Software

We usually do not know all the parts and systems of the computer. Maybe we do not need to know every single part of a computer in our daily life. On the other hand, as we approach the 21st century, in order to choose a good machine for home or for office or in order to use or to write a program, it is important to know what computer does and how it works.

First of all, the computer itself cannot do anything on its own. It needs to be programmed in order to do something, and humans program the computer. If it is programmed in a right way the computer does not make errors. In other words, if there are no mistakes made by the creator then the computer will not have any bug in its program. Computers work very fast, and they do not make any complaints. They are made to simplyfy our life. We can discuss the main parts of a computer in five sections. These are Hardware, Central Processing Unit, Memory, Binary Notations and Software.

A) Parts of a Computer

Hardware: is the physical part of the computer. It is not a program like software. Hardware is composed of the Keyboard, the CRT Screens (Cathode Ray Tube) and all the electronic parts of each internal piece of the computer. Additionally printers, disk drivers, monitors, plotters, telephone modems, cables and many other peripherals (components connected to but not an original part

of a computer)[11] belong to hardware. Simply, hardware is everything about the computer that you can touch with your hand and you can see with your eye.

Central Processing Unit (CPU): This the brain of the computer. A CPU is built on an Integrated Circuit (IC) chip[12]. This chip contains thousands of transistors that make the system work. The only other part of a computer, except software, that can be copyrighted or patented is this IC chip. The CPU is at the crucial and central point of all the activities. Its function is to direct all the other parts of the computer.

Memory: This is used to store all the information that will be needed to run the programs. There are two types of memories. These are volatile memory and non volatile memory. Volatile memory is called ROM (Read Only Memory). This is for fast and immediate use. This memory is added in the first stage, when the computer is built. It governs the running of the computer. ROM cannot be changed by the user or by the help of other programs. This memory cannot be modified, and it is not lost when the power is turned off. The non volatile memory is called RAM (Random Access Memory). This memory is accessable and can be modified by the user and by the programs. Computer programs are stored in RAM when they are entered into the computer.

Binary Notations: The computer can only understand a numerical system. It is composed of "1" and "0" symbols only. Therefore, the computer is digital. All it does is see 1 and 0. The system for this purpose is called Binary System. We can

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11 National reasearch Council, Wallerstein, Mogee, Schoen (eds.), Global Dimension of Intellectual Property Rights in Science and Technology, National academy Press, Washington D.C. USA, 1993 Page 3

12 Thorne D. Harris III, Legal Guide to Computer Software Protection, Practice Hall Eng. 1994, Page 28

give each combination a unique value. These can be a letter of the alphabet or a word or an instruction to do some act. As we can see, the binary numbers can be used to represent almost anything; for example 0010=a, 1100=red.

B) Software:

These are the computer parts that we cannot see or touch. In order to have all these binary numbers act in a certain way and reach a useful conclusion, we need computer programs (software). They can be in many forms ranging from a complex operating system to a simple arcade game. In software, certain electronic impulses are recorded then translated into actions in the computer. We can consider Software in three main sections:

a) Operating Systems (OS) These are the programs that connect directly with the processor and help other programs to run. For example DOS (Disk Operating System) and basic monitor routines belong to the operating system. The OS is written in the computer language. The language code is directly understandable by the microprocessor. The machine code is composed of binary numbers. Of course, when the program is more understandable to the computer it is less understandable to humans. Other higher level languages cannot operate without the help of operating systems.

b) Higher Level Languages These are made in order to make life easier for the programmer. The high level programs are Basic (Beginner's all-purpose Instructions Code), C, Ada, Cobol, Fortron, APL, Logo and Pascal. These programs cannot be understood directly by the computer. They need to be converted into computer's code. Today the importance of these programs has diminished, because people do not want to write programs in these languages anymore.

c) Application Programs : These are the programs written in higher level languages. Word and Excel are some of these programs. Application programs perform a specific function. These programs range from very difficult accounting programs to a simple game on your computer. There is a need for legal protection for the application programs. This can be achieved by copyrights, trade secrets, patents and by other means.

Many would define a program as a set of instructions that directs a particular computer to perform a specific task[13], but everything is not as clear as the definition. There are different ways to give an instruction to the computer; therefore, we cannot always know when the program starts or finishes. The legal definition of a computer program is "a set of instructions capable, when incorporated in a machine-readable medium, of causing a machine having information processing capabilities to indicate, perform, or achieve a particular function, task or result"[14]

The essential parts of a Computer are its programs. Today nobody is willing to write programs in high level languages. The computer user has become a "flat user". He or she wants to use already written programs. These programs are written in a very difficult way. For example, in order to write Excel some thousand men and women with the 150 IQ, worked for two years. Therefore, the application programs need a stronger protection.

There are four ways to show the users' appriciation of the program. The first one, is that the user pays the neccessary amount to use the program. The

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13 Computers and intellectual property, Computer Programs Pag.33

14 Definition in proposed Resolution CS-2 of the American Bar Association Section of Patent, Trademark, and Copyright Law which was not acted upon in 1982, ibid. Page 36

second one is called share-way; The user gets the program and uses it; if he/she likes it, then the money is sent. The third method is free-way. In this method the user does not pay anything at all. The final way is card-way. The user simply sends a postcard to the creator(s) of the program if he/she likes the program.

Simply, the computer itself, without the programs in it, is an empty box with no use at all. The programs which gives the life to the computer must be protected by law. Law may accomplish it is function if it provides proper protection to software creators. In this case there will be no doubt that the number and qualities of computer programs will increase. The improvement of the programs is tied to the number of copies sold legally, because the computer programmer will see and receive the economical and moral benefits of their creation. This will persuade the creator to write new programs. Also by keeping the sale of these programs under legal prospects, the distribution and improvement of technology into the societies will be under control of the governments.

Part 3 Software Piracy: illegal use of software

Software Piracy is the illegal way of copying software applications into disks or computers. Today, according to the Business Software Association(BSA) in Washington, 75% of the software is copied by violating the Copyright Law. It is obvious that more and more people are getting into software counterfeiting when they realize that it is a lucrative business.

Piracy is the software firms' and software producers' biggest problem. Selling illegal copies of computer programs is accepted against the law everywhere in the world. In most countries these kind of behaviors are defined as crime and punished within the principle of criminal law. The punishment of these crimes changes from country to country.

The economic loss as a result of software piracy is tremendous. American firms alone lose $2 billon- $3 billion a year or more[15]. Therefore, all around the world, computer lobbyist, software firms and even flat users are pressing governments to take necessary precautions. As it is a common knowledge, that the majority of counterfeiting of computer programs still takes place in certain Asiatic countries, it is also becoming a threat for the computer business in Europe. About 60% of the software in use in Europe is thought to be pirated[16]

Software piracy is not limited to the business world. This crime sometime is committed by innocent and sometimes not so innocent people. Almost everyday

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15 The Economist Jan. 14 1989 Page 81

16 McCue Jim, The Spectator, page21,24, February 25 1995

some of us, without knowing or by purpose, make copies for co-workers or bring computer programs from office to home or vice versa. It is very simple to commit this piracy. When you copy a program to put on two machines at the same time the breach of law is accomplished, because each software package is licensed to be used in one computer unless a network version has been bought.

Today, Software Piracy has arrived at a point that it has become a Global concern. Piracy losses are rising rapidly. Software piracy has already been estimated to be a multibillion dollar industry.

An overview of international software piracy has been made by the Software Publishers Association (SPA):

"1993 revenues from personal computer business application software totaled 88.0 billion, while piracy losses totaled 87.5 billion. In other words, stolen goods accounted for 48% of the world software market in 1993."[17]

The software industry lost around 8 billion dollars in 1994 in revenue worldwide through piracy and other forms of illegal software use according to BSA. Pirating computer programs is an "economic short-cut" in that a good is acquired without consent, cost to the user and with obvious harm to the original creator. The economic impact of this piracy is that developers end up raising the prices of their products in order to gain these lost revenues. Although the economic cost is heavy, the greatest cost of the pirated software is an ethical issue. Taking the property of another without paying the price is accepted as theft. When somebody makes illegal copies of a computer program he/she is in fact taking

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17 Boden Larry, CD-ROM Professional Page 70 September 1995

some other person's property without his/her consent. Simply, this is an intellectual property infringement.

The Business Software Alliance is a watchdog organization based in Washington. It is also concerned with protection of computer programs from pirates and illegal users. The BSA was founded in 1988 with the help of six founder software firms - Aldus, Ashton-Tate, Autodesk, Lotus, Microsoft and Word Perfect. Afterwords, firms such as Intergraph, Lotus development, Novell, SantaCruz Operation joined the association. They exist in order to eliminate this white collar crime. Today bsa and Software Publisher Associations are seriously monitoring small business at least in order to slow down the software piracy.

The impact of Piracy clearly depends on three main points, as described by the BSA in 1994. These three elements are purchased hardware, purchased software and average number of software programs in the Computer[18]. All of these elements are used to calculate the statistics of software piracy. The statistics are mainly concentrated on business applications.

Countries that are having piracy loses are the developed countries of the Western Hemisphere. On the other hand. the developing countries take the first place in high piracy rates. The numbers below give us an idea about the rise of the problem.

Countries Ranked by Number of Illicit Copies

(followed by million-dollar piracy loses and % piracy rate)

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18 Boden Larry, CD-ROM piracy and the emerging technology fix, CD-ROM Professional September 1995, Page 70

(source: Business Software Alliance)[19]

1) USA ($2877m, 35%), U.K. ($544m, 43%), Finland ($48m, 43%), Belgium ($77m, 46%), Denmark ($90m, 46%), Austria ($67m, 48%), Germany ($1875m, 50%), Norway ($81m, 52%), Sweden ($151m, 52%), France ($771m, 57%), Italy ($404m, 58%), Netherlands ($205m, 58%)

2) Portugal ($55m, 66%)

3) Spain ($240m, 73%)

4) Greece ($79m, 80%)

32) Turkey ($159m, 97%)

As we can understand from the above table, countries with piracy rate between 35% and 60% are in the first place, because these countries have a great number of illecit copying in their market. These countries are mainly so called Westers countries. On the other hand, Turkey although has a high piracy rate, she is in 32nd place, because the market for computer programs in Turkey is smaller in respect to the other developed nations.

Software piracy in the world can be examined in four categories. These are Software friendly countries, software semi-friendly countries, software unfriendly countries and developing countries[20]. The battle is against illicit copies of software. There are four different parties who are involved in this strugle.

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19 Boden Larry, CD-ROM Professional, September 1995, Page 70

20 Boden Larry, CD-ROM Professional, September 1995, Page 70

The first one, software friendly countries, has enough knowledge and computer education to understand the importance of illegal copying. Therefore, this group is showing no tolerance for copying of illegal software. Although Italy and Netherlands have a high piracy rate (%58) and Japan has insufficient protection laws, they can still be considered as software friendly countries. The main issue is that the people there realize the need to fight against computer crimes, just as they also join together in protecting the environment. The USA leads the countries in this category.

In the second category there are software semi-friendly countries. Brazil (%77) and Korea (%78) lead in this group. The size of their market is big, but they do not take the necessary precautions in order to stop piracy. They must pull their piracy rate on to lower levels.

The third category consists of software unfriendly countries. China leads these countries with the highest rate, but with the TRIPS agreement at stake it has to improve on this piracy rate. Their current rate is 98%. On the other hand, Russia, Poland and Taiwan are not giving positive trends for the future, either their piracy rate is around 90%'s and their protection laws are weak.

The last category, developing countries, has a piracy rate at 99%. Indonesia, Kuwait and Nicaragua are in this group. They have the high number of violations and very low or almost non existing protection laws. "Developing" does not mean making illegal copies of software. They have the need to use the computer, but true development can come only with a legal approach to the piracy problem.

Today, computer companies are spending more time defending their existing technology and programs from conputer pirates instead of spending their time keeping up with new technology and creating new programs. The only way to

control piracy is tied to these four battle zones. Each zone must be considered separately and examined carefully. All the countries have different needs and developing systems in their baundries. The key point is to get the computer knowledge. The respect for the creator of a computer program will come eventually. When computer users gets to see many computer programs and when these programs do help to simplfy their life, then the concept of protecting software will be born naturally.

Global piracy losses increase every year. As we can see on Table 1, all around the world countries are having an increase in their revenue lost. Despite better patroling, software piracy is still a big problem in Europe.

Global Piracy
Revenue lost due to software piracy[21]

	Europe	North and South America	Asia/Pacific	Rest of the World
1992	2.1 Billion$	2.4 Billion $	1.3 Billion$	1.7 Billion$
1993	3.7 Billion $	2.68 Billion$	1.4 Billion$	2.0 Billion$

(Source Software Publisher Association)

21 ComputerWorld, Piracy on the rise; companies fear liability, April 18 1994 Page 12

As we can see from the table down below The trend for global piracy is not optimistic for the future unless some important precautions must be taken at this moment.

1994 piracy losses total $15.2 Billion:

39% Europe	$6.0 Billion
29% Asia	$4.35 Billion
21% North America	$3.12 Billion
9% Latin America	$1.33 Billion
2% Africa/Middle East	$392 Million

(Source: Business Software Alliance)[22]

1994 Piracy losses when looked at comparatively from the leading software using countries(US, Japan and Germany), reveal that even with relatively good anti-piracy practices for the three countries, 43% of the revenue losses occur in these markets:

18% United States	$2.8 Billion
13% Japan	$2.0 Billion
12% Germany	$1.8 Billion
57% Remaining	$8.6 Billion

(Source: Business Software Alliance)[23]

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22 Computer World, Piracy on the rise; companies fear liability, April 18 1994, Page 12

23 Computer World, Piracy on the rise; companies fear liability, April 18 1994, Page 12

ANALYSIS

Part 1 Protection of Computer Programs in the World

Legal protection of intellectual property with the help of patents, copyrights, trademarks and trade secrets is very important for world trade. In order to protect the works of creators there have been many important conventions and bilateral treaties. The increasing number of bilateral agreements forms a mosaic of treaties, which has been the basis for an international legal framework, which may eliminate the disadvantages and limited applicability of agreements covering solely two countries[24]. In light of this, the preparation of multinational treaties such as the Paris Convention for the Protection of Technological Properties of 1883 and the Berne Convention for the Protection of Intellectual and Artistic Works of 1886 should not have caused any surprise.

A) Conventions

a) The Berne Convention

Prepared in 1883, signed in 1886, the Berne Convention is the oldest international convention dealing with intellectual works. Ten countries[25] have participated in the diplomatic conferences and although some of these were non- European countries, one could say, due to their heavy influence, that the

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24 When complicated disputes arise, involcing more than two countries, the question is, "which agreement shall precede?" since they may be more than one bilateral agreement existing. Therefore, bilateral agreements should only be regarded as a step foward towards international legislation, but never as a solution.

25 Germany, Belgium, Spain, Tunisia, France, Haiti, Great Britain, Ireland, Switzerland, Italy and Liberia

Berne Convention was mainly the result of an agreement between a number of European countries. The Convention has a dynamic nature and has been subject to amendments during the last century[26], and today a significant number of states have adhered to various texts. However, the fact that not all member countries have accepted all revisions has resulted in a complex structure and confusion as to the mutual obligations of countries adhering to different texts.

The Berne Convention has tried to establish a uniform and effective protection for literary and artistic works. In order to solve the problem of conflict of laws, the principle of national treatment was introduced. Accordingly, foreign works and their creators were to be protected in each member country in the same manner as national works and creators. As to the question of uniformity, since it was nearly impossible to eliminate all differences between national legislations, a principle of minimum standart of protection has been adopted. Therefore member states may not grant protection at a lower level than that the convention required.

b) The Universal Copyright Convention (UCC)

The high level of protection supplied by the Berne Convention has been one of the factors which has not made it desirable for some countries to adhere to the Berne convention. During the post-war era, with the support of the US and under UNESCO's administration, the Universal Copyright Convention was prepared and signed in 1952. Thirty four members of the UCC were also members of the Berne Union.

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26 1896 Paris, 1908 Berlin, 1914 Berne, 1928 Rome, 1948 Brussels, 1967 Stockholm, 1971 Paris

The UCC provided a lower level of protection in compare to the Berne Convention. This fact caused some problems among countries which adhered to Berne before 1952. The fear was that the Berne Union would dissolve due to the attraction of the UCC for those countries who preferred to provide a lower level of protection for works of foreign origin. In 1971 a joint revision of both Conventions in Paris settled the problem.

c) The Stockholm Conference

The conference was originally planned for the detailed revesion of the Berne Convention text, to which was added the proposal to establish, within the Berne framework, a lower-level system of protection aimed at the special needs of developing countries.

UNESCO was asked to make it possible to revise the UCC and Berne Conventions. Therefore, in 1967, a protocol was signed in Stockholm concerning these issues and was attatched to the Berne Convention as an Annex.

The Stockholm Protocol brought changes to the application of the Berne Convention. Its aim is to supply developing countries[27] with a chance to provide a lower level of protection than industrialized countries of Berne. Accordingly, if a state accedes to the Stockholm Act of the Convention, it may avoid certain provisions of Berne for a period of 10 years, if it considers itself socially and economically vulnerable.

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27 The United Nations criteria for determining "**developing country status**" is mainly based on the annual income/person computation. Such pure economical calculations cannot suffice for a satisfying result, since development has strong relations with the social and cultural levels of the country. The main reason for reserving developing countries the right to lessen protection of intellectual properties is to help them raise their cultural standing, not to increase their wealth in economical sense.

The reservations gave the developing countries the right to reduce the term of protection from 50 years to 25 years[28]. The developing countries have also obtained the right to restrict and regulate foreign authors' right to public broadcasting[29]; and most importantly protection of literary and artistic works became restrictable by developing countries for any reason related to teaching, study and research purposes[30].

The protection of computer programs issue divides the world in two categories. On one side, there are the producers of the computer programs, on the other side there are those countries who do not have strong protection laws regarding computer programs, because they are making and using illegal copies of Software.

B) Views of Developed Countries and Developing Countries

a) Developed Countries: two examples

Industrialized countries mainly commented that allowing developing countries to have intellectual properties freely, without the proper payment, would affect all kinds of copyright protection in any kind of intellectual or artistic work.

1. The United States

Today, the US is one of the main suppliers of intellectual and artistic works all over the world. It is strongly in favor of efficient protection of authors' rights and

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28 Stockholm Protocol Art1(a)

29 Stockholm Protocol Art1(d)

30 Stockholm Protocol Art1(e)

leads those nations whose nationals suffer from losses due to international piracy regarding their intellectual works.

In the United States writers are protected by copyright laws, but recently the US patent and trademark office has given a number of patents to computer programs[31]. Since 1981, decisions by the Supreme Court have opened the path to software patents. America is the only country where computer programs can be protected both with copyright law and patent law.

America is granting software protection through patent by hoping to improve the protection of the rights of creators. Computer programmers, by being paranoid about piracy, welcome the idea of patenting the software. They see this as self defense

2. Japan

Japan sides with America on this war. Although Japan was the first major industrialized nation to consider adoption of a Sui Generis approach to the protection of computer programs[32]. The Ministery of International Trade and Industry (MITI) of Japan prepared the proposal for the protection of computer programs. In this proposal the protection against unauthorized copying was for 15 years. The computer program needed to have the originality that is enough for a copyright standard. American firms, on the other hand, believed that the compulsory license provision of the MITI proposal was being made in order to

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31 National reasearch Council, Wallerstein, Mogee, Schoen (eds.), Global Dimension of Intellectual Property Rights in Science and Technology, National academy Press, Washington D.C. USA, 1993 Page 7

32 Samuelson Pamela, Adapting IPR's to New Technologies, A case study on computer programs, 1994, Page 313

appropriate the products of US software. Therefore, as a result of US pressure[33] the Japanese government rejected the proposal. Instead, the protection system with jurisdiction over Copyright Law was accepted.

On the other hand, the US has been pressing other nations to have proper respect for intellectual property products, especially US ones, including computer programs. For example, regarding China the main concern was the lack of legislation protecting software under the copyright law. The US has pressured China for new legislation that will include software protection. In some other cases, the US wants from Thailand more enforcement of intellectual property laws[34]. Also, US pressures Brazil to change its Sui Generis legislation which creates a disadvantage for the US software producers compared with Brazillian producers.

b) Developing Countries

The developing countries were aware of their importance in forming a worldwide protective copyright system for intellectual works. Their demands, in exchange for their co-operation in reaching this purpose, were simple to define: easy access to scientific works. This was related to the fact of current economic difficulties in obtaining foreign currency in exchange for similar educational materials which forced them to look for other and cheaper ways to get hold of these works. Simply, to obtain them illegally.

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33 Samuelson Pamela, Adapting IPR's to New Technologies, A case study on Computer Programs, 1994, Page 313

34 Samuelson Pamela, Adapting IPR's to New Technologies, A case study on Computer Programs, 1994 Page 315

Also, from a political view, one can argue that these countries felt themselves under heavy political pressure and that they were very sensetive to issues related to their freedom and rights. Restriction regarding usage of intellectual works was likely to cause dislike and objection among those who pursued rigid nationalistic ideologies.

C) Current Legal Approaches in US Law-Whelan Test

Legal protection mechanism for computer programs in the world can be sum as copyright, trade secret and patent law. Developers seem to differ somewhat on the mix of legal protection mechanism they employ as well as on the degree of protection they expect from each legal device[35]. On legal approaches there are three main views about protection of computer software; The first one are concered that innovation and competition in this industry will be impeded rather than enhanced if existing intellectual property rights are construed very broadly. The second group worry that the courts may not construe intellectual property rights broadly enough to protect what is realy valuable about software. Finally the third group, mainly lawyers, are very much confident that the software industry will continue to prosper and grow under the existing intellectual property regimes as the courts and judges learn the details of software protection on a case-by-case basis as they have been doing for the past several years[36].

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35 Samuelson Pamela, Adapting IPR's to New Technologies, A case study on computer programs, 1994 , Page 294

36 Maier, Software protection, integrating patent, copyright and trade secret law, page 28, 1987

a) The Case of Whelan v. Jaslow[37]

The Third Circuit Court of Appeals affirmed a trial court decision in favor of Whelan in its software copyright law-suit against Jaslow. Jaslow's program for managing his firm's business had some of the same data and file structures as Whelan programs. Also five subroutines of Jaslow's business program functioned very similar to Whelan's program.

Jaslow defended him self by saying that Whelan's copyright protection worked only against exact copying of program code. Therefore, since there were no literal similarities between the programs, there were also no copyright infringments. Whelan argued that there were substantial similarities in the user interfaces of the two programs.

The Third Circuit Court stated that the copyright protection for the Whelan's program was not just for the program code, but it was also for the structure, sequence and organization of a program. The court also expressed its fear that if copyright protection does not include structure, sequence and the organization of a program then there would be insufficient incentive to invest in the development of software[38]. The final decision was that similarities in the manner which programs functioned could serve as a basis for a finding of copyright infringement.

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37 Whelan Associates, Inc v. Jaslow Dental Laboratories, Inc 797 F. 2d 1222 (3d Cir. 1986)

38 Samuelson Pamela, Adapting IPRs to New Technologies, A case study on computer programs, 1994, Page 296

b) Whelan Test

As a result of Whelan v. Jaslow case the "Whelan Test" was created. The court used this test to determine copyright infringement in computer program cases. The "Whelan Test" regards the purpose or function of a program as its unproctectable idea.. Everything else about the program is protectable unless there is only one or a very small number of ways to achieve the function. This test has been used by lawyers not only in the cases involving similarities in the design features of a program, but also in internal interface specifications of a program, the layout of elements in interfaces and in the sequence of screen displays when program functions are executed.

Part 2 Protection of computer programs in Europe

In order to have one big and united European Market, the European Community is harmonizing its national laws that will affect the economic and lawful integration of Europe. In the field of the computer and its related business, Europe has one of the world's fastest growing industries.

A) General approaches widely accepted in European Countries

In the case of software, Europe finds herself stuck between the countries that are the producers of computer programs and those countries who make illicit copies of them. Even though the member countries of the EU were following the Berne Convention, with the uprising technology, the need for the common protection of computer programs rose rapidly. Existing legislations of the Member States did not have enough and strong protection for computer programs. After several meetings in May 14 1991 they reached a conclusion. This Council Directive once and for all, clearified the protection for computer programs.

The protection for computer programs in Europe, prior to the adaptation of this directive, relied on Copyright Law. A number of nations had interpreted existing copyright statutes as covering computer programs. However, not all the nations of the EU had the same approach to the relation between Copyright Law and computer programs. In the late 1980's EC developed a policy concerning intellectual property protection for computer programs that member states should harmonize their laws.

Computer programs are accepted as literary and artistic work, which under the Copyright Law they are protected for life + 50 years[39]. On the other hand, France, before the 1991 Directive, considered computer programs as industrial art. Therefore, in the Copyright Law their protection became life + 25 years. Also, German courts concluded that to satisfy the originality standard of their Copyright Law, the author of a computer program need to demonstrate that the program was the result of more than average programmer's skill, a seemingly patent like standard[40].

In England, using fully licensed software is assured with the help of a pilot program. This program is called Legal/Ware and it is free with every purchase of a computer program. Legal/Ware is designed to help computer users audit the software that they have, compare that with the software they have purchased, and keep track of other information connected to support cost[41]. This package is composed of disk and workbooks. These materials have a guide to copyright law, the penalties for breaking the law and a large spreadsheet that helps users assemble the necessary information[42]. When the customer completes the spreadsheet and can account for the Microsoft packages they use, in return Microsoft certifies them as "clean".

Before the EU members agreed on the 1991 Directive on the protection of computer programs, they held several meetings in the late 80s. They were

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39 Later this was changed to life of the creator+70 years in 1993 with the directive 93/98/EEC Harmonising the Term of Protection of Copyright and Certain Related Rights, OJ 1993 L290

40 Samuelson Pamela, Adapting IPRs to New Technologies, A Case Study on Computer Programs, 1994, Page 311

41 Computerworld June 12 1995 Page 43

42 Computerworld June 12 1995 Page 43

debating the two systems of protection. Some of the Members wanted to create a new Law that would only protect the computer programs. Other Members insisted that the Copyright Law can cover the protection needed for the Computer Software. At the end, Copyright Law became the sole Law that protects the Computer Programs. In 1988 the Commission agreed in a Green Paper on Copyright. Some of the issues published on this paper were: copyright and the European Community, piracy of copyright material and Computer Programs. In this paper no conclusion was reached. It was made for the discussion of the issues only.

B) The Directive on protection of Computer Programs in Europe

The purpose of the Directive 91/250/EEC is to harmonize the Laws of Member States on the protection of Computer Programs. Therefore the Berne Convention for the Protection of Literary and Artistic Works became the common dominator for the Copyright Laws of the Member States; and Computer Programs are considered as Literary Works within the meaning of the Berne Convention (Article 1-1). This was the equavalent of the UK Copyright Law.

Before this Directive, the Copyright Law protected only the ideas behind the programs. On the other hand, Article 1(2) of the new Directive points out that the ideas and principles which underlie computer programs are not protected by Copyright Law. Therefore, the improvement of science and technology are not being stopped because of any kind of legal protection. The ideas are always free to flow.

The originality issue was a problem. Article 1(3) of the Directive clearified the problem. According to this Article, if a Computer Program is created by the author's own intellectual then it is considered as an original piece of work. The

difference between the UK and German copyright Law on originality was eliminated with this Article.

The authorship of Computer Programs is explained in Article 2 of the Directive. The Member State's legislations decide who will be entitled of being an author for the Computer program (Article 2(1)). If the legislations allows only *natural persons* to be the author then the firms will be excluded. Unless it is mentioned in the contract, the employee who creates the program gets all the credit (Article 2(3)).

The Rightholder (the author) is the legal creater of the program. He/She has the right to reproduction, translation, adaptation, arrangements and any form of distribution of the Computer Programs (Article 4). Although, the rightholder cannot stop a lawful holder from making back-up copies, load, run and save the programs, because the lawful holder (user) has the right to know the ideas and principles behind the program (Article 5).

The Directive has special measures of protection for the author of computer programs. These illegal acts mentioned in Article 7 are: Act of putting into circulation a infringing copy of the computer program, knowingly to have an illicit copy of a computer program, and possesing software that is designed to circumvent the copy protection programs. Member State's legislations will seize any illicit copies of the computer programs, but enforcements are left solely to the Member States. The Community cannot make legislation on the Criminal Law, but they agree on recommendations[43] in order to give a model for the Member States

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43 Recommendation n:R (89) 9 Computer Related Crime, Council of Europe, Strasbourg, 1990

Article 8 describes the term of protection of the computer programs. According to the Article, the duration of the protection of a program is the life of the author and fifthy years after his/her death. If the program is a composition of a group or a company, then the protection is fifty years from the date it was first made available to the public. All the protection terms start on the first of January of the year following the introduction of the program. The duration of the protection was considered too short for some of the Member States, mainly Germany. This traditional copyright terms of life plus 50 years were orinally determined when life expectancy was much shorter[44]. Therefore the term 50 years was switched to 70 years. Member States had to comply with the Directive 93/98/EEC Harmonising the term of protection of copyright and certain related rights, OJ 1993 L290, by July, 1995.

Computer programmers who want to write new software that will eventualy work with other software can look into the text of computer programs. Of course, companies like IBM, DEC, Microsoft, Lotus and Apple say that if anybody reads the text then the text will be vulnerable to be copied. Another group, lead by France's Bull and European firms, says that not allowing the reading of the text of the computer program will only help the monopolization of the market. The small companies cannot afford to pass the barries to entry to the Software market.

The negotiations for the final Directive on computer programs had intense lobbying by U.S. computer firms who were concerned protection of interfaces and program codes. The first concerns interfaces are the face that a piece of software presents to a human computer operator, or even to another piece of

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44 Morris Tony, Uniform U.S. Copyrights are equitable, Billboard, page 6, March 4 1995

software or hardware. The second concerns decompilation of program code is also can be alled reverse engineering. In this process they analize to discover what a piece of software does by reversing the system and by reading the program code.

Some big U.S. computer firms[45], opposed provisions that would allow decompilation of program code and they asked to have interfaces protected. On the other hand, some other U.S. firms[46] asked for decompilation and denying the protection to internal interfaces. IBM was among the U.S. firms that joined the Software Action Group for Europe, which lobbied during the time the EC directive was pending. This group lobbied against decompilation and for the protection of interfaces. Sun Microsystem was among the American firms that were members of the European Committee for Interoperable Systems that lobied in favor of decompilation privilege and against protection of interfaces[47].

The EC directive of 1991 on computer programs permits decompilation of program code in order to create an interoperable program. The final Directive also indicates that interfaces are ideas and they are unprotecable by copyright law. By granting the decompilation of program code (revers engineering) and by banning the copyrightability of interfaces, the dominant suppliers of system software[48] was hurt badly.

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45 Including firms like IBM, Digital Equipment, Apple The Economist, Soft in the head, Marcn 10, 1990, Page 10

46 Including firms like Sun Microsystem

47 Samuelson Pamela, Adapting IPRs to New Technologies, A Case Study on Computer Programs, 1994, Page 312

48 IBM, Digital Equipment, Apple

The Directive 91/250/EEC on the legal protection of computer programs, closed the gap of differences in the protection of computer programs by the Law's of Member States. It clearly pointed out that the ideas and principles behind a computer program are not protected by the Law, but the program itself is protected from illegal use. The Directive for the protection of computer programs of 1991 and 1993 were to harmonize Member State Laws and to encourage Member States to accept international conventions and agreements such as the Berne Convention.

Part 3 Protection of computer programs in Turkey

A) The History of Turkish Intellectual Property Protection

Turkey, like Japan and Korea at one time, has long been criticized by the industrialized nations for her lack of emphasis on the protection of intellectual property rights. This claim, for some, is to a large extent unfounded because of the protection that existed under law no. 5846, by the title Law on Intellectual and Artistic Works (LIA). LIA is a general statute that, with some exceptions (i.e. pharmaceutical) covers the basic aspects of almost all rights that can be categorized as intellectual property rights.

The protection of intellectual property in Turkey has shown a similar trend of progress as in other European countries, but with approximately 300 years difference, mainly due to the fact that the printing press was introduced to the Ottoman Empire in 1727, 273 years after its invention[49]. During the last years of the Ottoman Empire, under heavy foreign influence, the most detailed legislation concerning copyrights was enacted[50]. This Act, same as French Code defined rights over intellectual works and stated registration as a prerequisite for copyright protection. This Act remained in force until the enactment of the Act for Intellectual and Artistic Works in 1951.

On an international level, the new Turkish Republic, founded in 1923, undertook Lausanne to adhere to existing conventions regarding intellectual and technological properties; the Paris Convention of 1883 and the Berne

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49 Yarsuvat Duygun Eser Sahibi ve Hakları, Istanbul 1984, Page 35

50 in 1910

Convention of 1886. However, member states did not approve Turkey's request for membership with certain reservation[51] regarding certain provision of Berne. As a result, the adherence has only been possible since 1952.

Turkey's copyright laws, with the help of important amendments, have always kept her up-to-date. Turkey is bound by the Brussels 1948 Act of the Berne Convention of the International Union for the Protection of Literary and Artistic Works. Also, Article 8 of that Text is replaced by Article 5 of the Berne Convention 1886.

Turkish intellectual and artistic property protection, was established in 5.12.1951 with the Law number 5846 on Intellectual and Artistic Works(LIA)[52]. The LIA is the main legal source on copyright in Turkey, and it was prepared by Prof. Ernst Hirsch of the University of Istanbul School of Law, and it was based on four principles:

- To protect authors' rights
- To enable the public to benefit from intellectual works
- To provide effective and enforceable sanctions in case of infringements
- To comply with the provision of Berne[53]

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51 Lord Kinross, Atatürk, The rebirth of a Nation, 1964

52 Turkish Official Gazette No.7931 (December 5 1951)

53 Yarsuvat Duygun Eser Sahibi ve Hakları, Istanbul 1984, page 40-41

Since than the world has been faced with deep changes in the intellectual property field. Turkey, in order to follow up and harmonize itself with these changes from time to time made adjustments and amendments in her IPR Laws, such as the Act in November 1983[54]. This has been the only way to catch up with the new technological and social improvement seen in the last half century. Naturally, there have been very important changes in intellectual property rights. The latest changes were made by the Parliament on 7.6.1995 with Law number 4110, published in the official newspaper on June 12th 1995. It's scope was clarified and revised to cover four categories of works. These are literary and scientific works, music works, visual art works and motion picture works.

Bowing to pressure, and in anticipation of entering into the European Union, Turkey adopted four bodies of legislation that are, in form of contents, what the industrilized nations of the west and the East accustomed to:

- Decree No. 551 for the Protection of Patents[55]
- Decree No. 554 for the Protection of Industrial Designs[56]
- Decree No. 555 for the Protection of Geographical Indicia[57]
- Decree No. 556 for the Protection of Trademarks[58]

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54 Law No. 2936, Turkish Official Gazette No. 18210 (November 3 1983)

55 Article 6 of the Decree No.551 points out that computer programs are considered unpatentable subjects and inventions

56 Turkish Official Gazette No.22326 June 27, 1995

57 Turkish Official Gazette No. 22326 June 27, 1995

58 Turkish Official Gazette No.22326 June 27, 1995, It supersedes the 1965 Trademark Law

All four were passed by the administration, based on authority granted to it by the parliament, by way of a decree in force of law. Also the Business Software Associstion (BSA) founded its office in Turkey with the help of firms, such as Oracle, Software AG and Computer Associates.

B) Protection of Computer Programs in Turkey

Because of technological changes and the growing number of software piracy, Turkey extended its copyright protection to new types of works. Therefore, necessary measures have been taken in Turkish Law regarding the protection of computer programs in the framework of integration with the European Union. Generally speaking, the LIA allows only four categories to be protected. These are literature and science, music, fine art and cinematography, but new types of works can be added under one of these four categories. The extension of copyright protection to computer programs was added by Law No. 4110, With this amendment computer programs were included in the category of literary and scientific works.

Turkey's Copyright Act, protects literary, scientific and artistic works[59*]. As mentioned in Article 1 of the Copyright Act, only individual creations can be considered as these types of works.

Article 2.1 of the LIA[60] added that any kind of production expressed by the written and oral language, and any kind of computer program and all the drafts that in the next phase could be used for the creation of a program must be

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59 Article 1 of the *Fikir ve Sanat Eserleri Kanunu*

60 Corresponding to article 1.1 of the Council Directive 91/250/EEC

protected by the Law. On the other hand, Article 2/final[61] of the Copyrigth Law clearified that the ideas and principles which underlie any element of a computer program are not protected. Article 8 gives the right of reproduction of the work to its author. In the case of computer programs, this means the right of reproduction, loading, demostration, starting, forwarding and saving the computer programs.

Article 8 and article 13 clearly identifies the rights of the author of the protected work: Article 8.1 states that the Copyright belongs initially to the person who creates the work. In article 13 it is written that under the Copyright Act, the author has Droite de Suite, property (economic) rights and moral rights of the work. All these rights are under the protection of law.

Author's rights can be enforced against everybody; they give the absolute monopoly of the work to the writer. Simply, the moral rights are given in order to protect the integrity of the author's reputation. On the other hand, economic rights provides the creator with commercial exploitations rights.

a) Economic Rights

Economic Rights are between Articles 20 through 25 of the Copyright Law. These are:

- Article 20 of the Act also clarifies that the author of an adaptation can use its economic rights to the extent that is permitted by the author of the original work.

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61 Corresponding to article 1.2 of the council directive 91/250/EEC

- Article 21 of the Act, The right of Adaptation; states that a third person may adapt a work or convert it into a different category of work only with the consent of the author.

- Article 22 of the Act, Rights of Reproduction; indicates that reproducing the work in the original or related form by using any process and cannot be exercised by others without the creator's consent. The right of reproduction is the most essential part of the economic right of the author. This is an absolute and exclusive right.

- Article 23 of the Act, Rights of Distribution; deals with selling or to puting into circulation copies of the work for commercial use. Further distribution of copies for commercial use, with the author's consent, does not infringe the distribution rights of the author.

- Article 24 of the Act, Rights of Public Recitation Performance and Exhibition; covers reciting, performing or exhibiting the work in front of the public. Obtaining economic benefit from the performance of the work is an exclusive right of the author. It cannot be exercised by a third party without the consent of the creator.

- Article 25 of the Act, Rights of Broadcasting; addresses broadcasting the work and communicating by all means through technical installations and instruments by wire or wireless technology. Broadcasting can be done only with the consent of the author.

- Article 25 of the Act, Rights of Communicating; addresses communicating with the public by a wire system.

In simple words, the property rights include the exclusive right to exploit the work in any manner: to adopt the work, to reproduce the original or an adaptation, including reproduction of works, to publish the original or an adaptation and to distribute copies thereof, to perform the work, to broadcast it and to communicate the broadcast to the public by wire or otherwise.

Unlike moral rights, economic rights can be licensed, assigned and inherited. Each economic right is considered independent from one another. Therefore

each can be given to a different person. The term of protection of the economic rights is the life time of the creator plus 70 years after his/her death.

b) Moral Rights

On the other hand Moral Rights protect the integrity of the work and the author's reputation. There are four moral rights which include the right to communicate the work to the public or to disclose its contents, to claim authorship and to oppose modifications which are prejudicial honor and reputation, and the right to have access to the work.

- As it is mentioned in article 14 of the Act, the creator of the work has the right to determine when the work is complete and when and how the work should be made available to the public. This right includes the right to give information and an explanation regarding the work. The author can authorize a third person for disclosing the work, but the author may prohibit such acts if the way of disclosing damages the reputation of the author.

- Also under Article 15 of the Copyright Act, the author has the right to his name appearing, without alteration No other name appears on such work. This right also covers the right to claim authorship of a work. In the event that there is a conflict as to the identity of the author, a claim may be asserted to establish the real identity of the author.

- In addition, Article 16 explains that the act gives to the author the right to oppose making of alternations, deformity of his work that would damage his honour and reputation. Therefore, if the author grants a modification right to a third person, he may neverthless prohibit any modifications which violate the integrity of his reputation[62].

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62 Ünal Tekinalp/Gül Okutan Anneles XXX,N.46, page 210, Istanbul 1996. This right may lead to conflicts between authors and publishers/directors, who may need to make changes to the work. Therefore the Law provides that a publisher, producer or director is allowed to make minor changes which are required by the technicalities.

- Article 17 of the act clearifies the right to have access to the work. Those people who have the right of reproduction or adaptation of the work may ask the possessor of the work to enable them to avail themselves of the work in order to make reproductions.

Moral rights are also under Article 24 of the Turkish Civil Code and Article 49 of the Code of the obligations. The rules as to excercise of these rights by the author and other persons are set out in articles 18 and 19. Moral rights can be exercised by the authors who are natural persons throughout their lifetime and by legal entity authors in the period of their existence (Art.18). The author can appoint others to exercise his moral rights. After the author's death moral rights are not inherited. Author's rights will be passed to his close family (Children, parents etc.). They can exercise the moral rights up to 70 years from the death of the author.

c) Legal Protection of Moral and Economic Rights

Both rights shall be protected by the Law for 70 years starting, for producers, from the date of first publication of the work, for performers, from the date of performance and for broadcasting organizations from the date of the first broadcasting of a program[63].

In case infringement of moral and economic rights, legal action may be taken under civil and penal law provisions. Legal protections can be examined in two actions:

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63 Art. 82, pars 5 and 6 LIA

(i) Civil Actions: An author may demand a court declaration confirming his authorship of an intellectual work[64]. In case of the breach of moral rights, as it is mentioned in article 67 of LIA, authors can start a legal action for both the termination of infringement and its remedy. On the other hand, for breach of economic rights, the author may demand a maximum of three times the amount of his damages, to be calculated according to the current price[65]. Authors may bring anlegal action to prevent the threatened infringement. This action may also be brought in the case of a continuation of a current breach or the prevention of a probable repetition of it[66]. Besides actions for breaching the moral and economic rights, the author, according to Article 70 LIA, may claim an account of the profits made by the infringer through the infringement of his rights.

(ii) Penal actions: Infringing actions are being considered crime according the LIA. In order to constitute a crime the infringment must be committed deliberately. The criminal acts are the mantaining or distribution of a technical tool which serves to render functionless a technical device that protects computer programs[67] , the breach of the exclusive right of public rental and the importation of unauthorised copies as described in article 72 of LIA, the maintaining for commercial purposes of copies which are or should be known to be illicit and the reproduction[68] , and as it is mentioned in Article 81 of the LIA

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64 Article 15 LIA

65 Article 68 LIA

66 Article 66 LIA

67 Article 73.6 LIA

68 Article 73.5 LIA

distribution of copies made without obtaining the necessary authorisation and the special mark.

The penalties against criminal acts are between three months to one year of imprisonement and fines have been raised with the last amendments.

d) Droit de Suite: If, after the sale of an artistic work or of the manuscript of a literary work, it is resold during the period of protection, and if there is a substantial difference between the of the exprice of the last sale and the preeceding one, the seller may be required, by decree, to pay an appropriate portion of the difference (not exceeding 10 percent) on resale to the author[69].

e) Restriction for private use: According to article 38 par.1 of the LIA, making copies of the work for private use may not conflict with a normal explotation of the work and may not intervien the legitimate interests of the rigth holder. Restriction for private use entail the ability to copy a work strictly personal use without the aims of distribution and profit-making.

The amendments, which are in line with Article 13 of the TRIPS Agreement, provide for detailsd rules on how restriction for private use applies on computer programs. These rules are also taken from Articles 4, 5 and 6 of Council Directive 91/250/EEC. As we laready know, the rights of reproduction, distribution, rental, translation, adaptation of computer programs belongs to tha author or to the right holder. However, the lawful acquirer or user of a computer program does not need the authorisation of the right holder in order to perform one of these acts[70]. Also Article 38 of the LIA points out that the lawful

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69 The Copyright Act, Article 45

70 Tekinalp Ünal/Okutan Gül, Anneles XXX,N.46, page 227, Istanbul 1996

user of a computer program is free to make a back-up copy and is also entitled to observe and study the function of the program.

f) Protection of Computer Programs under Turkish Penal Code:

Computer Programs in Turkey are also being protected by other means of the Law, other than LIA. As mentioned above, moral rights are protected under Article 24 of the Turkish Civil Code and Article 49 of the Code of the Obligations. In Turkish Penal Code articles 525a, 525b and 525c on Computer Crimes also protects the computer programs and their integrity from computer pirates. These articles are considered articles for crimes from offenses in the informative field:

Article 525a describes that in case anyone commits a crime or offence in the informative field, or acquires any proram or other information illegaly, will be sentenced to 1-3 years of imprisonment and monetary penalty of 1.000.000 Turkish lira up to 15.000.000 Turkish Liras respectively[71].

Anyone, who misuses or misconducts any information or datas within a automatic data processing system or any program which may influence the rights and benefits of other adversty or harm their benefits or anyone who transfers, uses or multiples tha a.m. sytems illegally, shall be sentenced to the penalties mentioned ın this article.

This article is created in order to prevent Computer spying. Just like if somebody listens the telephone of someone else it is considered a crime, in this case also, when someone gets the computer programs illegaly they commit a crime[72]

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71 TCK (Turkish Penal Codes) 525a

72 Dönmezer Sulhi, Mala Karşı cürümler, Bilişim alanında Suçlar, İstanbul 1995, Page 509

Article 525b points out that anyone who acts adversly to the rights and benefits of others and destroys, erases, changes, hinders the system and datas included within an automatic data processing seytem or in their relevant system or anyone, who acquires, transfer such information for his/her own advantages or for and on behalf of the others, partially or wholly disobeys the rights and benefits of others, shall be sentenced to 2 upto 6 years of imprisonement and monetary penalty of 5 millions upto 50 millions Turkish Lira respectively[73].

Also, in Article 525c it is described that anyone who feeds the automatic data processing or transaction lines or systems with false information in order to create proves or printed matters for the misusage and anyone who misfeeds, erases or destroys the programs and datas of the system for their own or for the usage of third parties, will be sentenced to 6 months, upto 2 years of imprisonement respectively[74].

Article 525d finalize that beside the legal measures imprinsonement mentioned in articles 525a, 525b and 525c, anyone who acts against the rules and regulations related with tha a.m. articles shall be displaced from their official occopational activities or servantsship posts or prohibited from the execution of their independeht or public occupations for a term up to 6 months, upto 3 years of limitations consequently[75].

Finally, software pirating is considered unfair competition crime by the Turkish Commerce Law.

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73 TCK (Turkish Penal Code) 525b

74 TCK (Turkish Penal Code) 525c

75 TCK (Turkish Penal Code) 525d

Today, although there is a high piracy rate on illegal use of software, Turkey stands firmly on the side with the developing nations to prevent the increase on software piracy. Computer programs are being protected under the Law. Databases are being protected by the LIA as an adaptation[76]. The protection will not be granted to the idea behind a computer program, but to the way how it is presented. This is in accordance with the EC Directive on the protection of copyright and certain related rights[77]. Also by accepting the Agreement on Trade Related Aspects of Intellectual Property Roghts, Including Trade in Counterfeit Goods (TRIPS) accepted and signed by Turkey in April 1994 as a result of Uruguay Round of Gatt negotiations[78].

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76 Art. 3, corresponding to Art. 6 of the LİA

77 Council Directive 91/250/EEC on the egal protection on Computer programs 17.5.1991, (1991) OJ L 122/42

78 TRIPS Arts. 9 (2), 10 (2)

CONCLUSION

Part 1 Copyright or Patent

A) Ways of Protection

The reason for protecting works is to promote art and science, and to let the creator earn something from his/her work. Today we have two principal types of Intellectual Property Rights that countries are using in order to protect Computer Programs. These methods are Copyright and Patent protection. They are an important source of software protection. Their job is to clear the differences between hardware and software packages, to help new software publishers emerge, and to help transform software legally into a consumer good

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a) Copyright is an exclusive right to use, implement, duplicate, develop and modify the original work. This right allows the owner to prevent any substantial copy of the expression of the copyrighted work. The right is created when the work is created. The important point is that an idea as well as the expression thereof (in other words, the work) can be copyrighted. Even though it seems very complex the copyright Law can be summed in a few words: You can install purchased software onto a computer and make backup (archieve) copies. It is illegal to copy software for any other purpose (regardless of whether you actually use it), unless the publisher licenses you to do so.

The earliest copyright protection was given to printers in the 16-17 century. It was given by the king of England, but its purpose was simply to censor the books.

Computer Programs, by showing that they have enough originality and authorship to be copyrightable, have been accepted for copyright registration by the copyright office since 1980. Computer programs gained their copyright with the amendment of section 117 of the 1976 Act. Section 117 of the Act consists of three recommendations:

- That Computer Programs can be copyrightable.
- That the new Act apply to all computer users of copyrighted programs.
- That owners of copyrighted programs be allowed to copy those programs to the extent necessary to use them effectively without incurring liability for infringment[79]

b) Patent is an exclusive right to exploit an invention for a product or a process. This right allows the owner to prevent the production of any invention which copies the principles of the created work, and not only exact copies[80]. When a patent is issued it gives the holder the exclusive right to make, use and sell the the invention. The patent grants protection to all innovations that surpass prevailing technology and that can be successfully put into operation.

Patent means "open" in literature, and it derives from "letters patent" which means open letters (in Latin *litterae patentes*). These letters were the official papers that contained privileges, rights, ranks and titles. Patents were started in medieval Europe. This was done in order to encourage foreign technologies. In the fourteenth century, patents were given in order to induce foreign technologies with the immigration of skilled artists from abroad. Letters patent were given, for example to the Flemish weaver John Kempe by Edward II in

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79 Miller Arthur, İnt. Property, patents, trade marks and copyright, Page35, CT,1992

80 Wyatt Derick and Dashwoods Alan, European Community Law, sweet&maxwell London 1993

1331, to two Brabant weavers to settle at York in 1336, and to three clockmakers from Delft in 1368[81]

Patent requirements are very complex. This makes it difficult to obtain a patent for a created work. In order to have a patent the invention, process and so on, must be new and useful and must be a creation that goes beyond the prior art in the field. The invention must also be more than an obvious extension of knowledge generally possesed by the ordinary person skilled in that discipline[82].

Patent excludes the following, which are not considered to be "inventions":

- discoveries, scientific theories, mathematical methods
- plans, procedures and rules related to intellectual, commercial and entertainment activities
- literary works and works of art, scientific works, works with an artistic value, *software*
- procedures regarding the collection, arrangement, presentation and communication of information, which do not comprimise a technical aspect
- medical treatment and surgical processes that are applicable to humans and animals, as well as procedures of diagnosis regarding the same[83].

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81 Intellectual Property Institutions and the Panda's Thumb, 1994, Page 45

82 Thorne Davis III, Protection of Computer Program , 1993,Page 128

83 Decree No. 551 for the protection of Patents

Innovation is defined as an invention that is not known by prevailing technology. Therefore, bioprocesses to raise animal species or to cultivate plant species cannot be protected as a patent even if they comprimise an invention[84].

Patent fees are higher than normal applications for copyright. The minimum application fee is $175.00[85]

B) The Difference between Patent and Copyright protection

Computer programs have a puzzling position in the intellectual property law. They can be protected both by patent and by copyright., but both are very different from each other. The difference could prove crucial to innovation. Patents protect the process set forth in a program. On the other hand, copyright protects the idea and the expression which has been developed. In this context, in a way, the copyright represents the idea and the concept. The patent represents how that concept is put into practice. If software is to be treated as source code, that code is work that can be copyrighted. If it is treated as a series of formulas which comprise a specific process that is new and yet unknown, it can be patented. Let us illustrate this with an example: "Database" is a category of business software applications. There are several software manufacturers who have developed a database engine; i.e. D-Base, Filemaker, FoxPro, etc. No software manufacturer is and should be entitled to exclusive rights over the "database" concept, even though a database is clearly "work". However, each manufacturer has developed some unique code that enables its program to operate in a certain manner. The code comprises formulas, algorithms, etc.; i.e.

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84 Decree No. 551 for the protection of Patents

85 Protection of Computer Programs Page 130

text and expression. The process represented can be patented if we are to treat it as stand-alone "inventions". Formulas, of course, can not. Each database program mentioned above is of course more than a series of formulas comprising a process. They are displayed in a different manner from each other. In other words, they have a different "look and feel". It is this "look and feel" concept that should be copyrighted. Patent protection can not cover this "look and feel".

Note also that copyrighting is simpler and quicker to achieve than obtaining a patent. Thus, it could be to the software industry's benefit to treat software as copyrightable rather than patentable. On the other hand, patent protection may be more beneficial because of the rigid scope of protection awarded.

Overall, it can be said that copyright is more advantageous than patent. The most important advantage is that the protection provided by a copyright is longer. A patent protects the work for 20 years[86]. Copyright, on the other hand, gives protection for 70 years. Also, in order to have a patent, an inventor has to prove that his/her work is an original one, while copyright is less demanding and less strict in this aspect. In other words, because it is related to the form of expression, it is easier to prove the unique nature of a work subject to copyright.

On the other hand, patent is a monopoly legally given to the holder. It is stronger than a copyright that it covers the process as well as the expression of idea. The monopoly is absolute. Unlike copyright, the independet creation of a

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86 10 years in Turkish Patent Law

patented invention does not prevent the legitimate patentee from keeping the new discovery from using the invention[87]

The requirements for obtaining a patent are far more difficult when it comes to computer programs, because the program has to constitute an invention, which should be more than a usual extension of known programing techniques. Also, the process takes generally two or three years for patent applications, while copyright approval takes only a few days. The developments in the computer industry is at such a speed that an average software product's life cycle is, for practicality reasons, two to three years. In view of this the protection with patent seems useless because of the duration that it takes to recognize the invention.

It is only a few years ago that software producers were given copyright protection for their products. Then, those who believed in patent started arguing that computer programs were just another way of "wiring up a machine"[88]. Since then there have been 12,000 or more software patents issued[89]. This has started a war between the software companies. This allowed Microsoft to fight against Stac Electronics for infringing on a data compression. IBM took 840 patents and Microsoft spent 20$million in licensing fees. These facts alone are sufficient to show how serious and expensive is the war between software producers can be.

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87 Other forms of protection, Patents Page 128

88 The Economist April 23 1994 Page 17 Softwars

89 The Economist April 23 1994 Page 17 Softwars

To end this war, the solution is to have only one way for the protection of computer programs. The TRİPS agreement in GATT, European Community Directives and some of the interested organizations and scholars decided that the copyright is the only way to protect computer programs. Patents, where as, might create confusion regarding protection for the following reasons:

First of all, most of the patents awarded to software are not in the nature of protection of intellectual property, but used to make big profits due to the weak spots of the law. For example, one firm insists that they have patented the idea of paragraphs. This way they can collect money from all the remaining word processor suppliers. Secondly, as explained in several ways software is rarely original. On the other hand, in order to qualify for a patent, a work must be 100% original and not in use by other people. But software is built on thousands of lines that mainly rely on standard expressions that we can find in many other programs. Also, it is not the idea in computer programs but the expression of the idea that makes software useful. Therefore, they cannot be protected under a patent which protects the idea behind the work and not the expression of the idea. Besides, software is very complex.

Therefore, it is very difficult to patent a program. There can be programs written over 10.000 pages. If patents were given to computer programs then every new program would violate the law by infringing on thousands of other patents. At the end of this war, the only software companies who can survive will be the big ones with a lot of money. The smaller firms will end up in closing. Therefore, it is very difficult to say that the patent is the best way of protecting computer software. This complex war and the protection of computer programs as intellectual property works can be won by creativity and copyright and not by patents.

Part 2 The protection and the future of computer programs

There is no doubt, that modern technology and new means of media have long ago transformed protection of creators' rights on intellectual and artistic properties from being a problem on a national level to one of international importance. Advanced broadcasting techniques, fast and inexpensive publishing facilities, and convenient translation opportunities have placed local works on the demand lists in many countries. The progress in legislation covering creators' rights is behind the progress of technology. Varying interests of countries involved in the problem impede the enactment of an act or a convention with efficient global effect. Furthermore, difficulties in enforcement, high costs, and time requirements make it often unprofitable for the owners of intellectual rights to pursue their rights in foreign countries.

In this sense, the protection and the future of the most advanced intellectual property, the computer programs, becomes essential for the world.

A) Protection of Computer Programs

Today, according to the BSA, software piracy has become a 15 billion dollar problem worldwide.

As we approach the 21st Century, scientific and technological changes are occurring very rapidly and in such a wide spectrum that they are creating the need for greater and more effective protection on intellectual properties. These changes could not define the difference between inventions, which have been protected by patents, and literary works, which have been protected by copyrights. Computer programs are stuck between these two definitions. They are considered as literary work, because they have a written text and a composition. Also computer programs are composed by the characteristics of

mathematical formulas, which cannot be patentable in some countries. On the other hand, they are also considered as functional work, because they give instructions to a computer to perform a function.

Computer programs are very expensive to develop, however it is very cheap to make copies of the program. Therefore they need to be protected with more intensive restrictions. Studies have shown that the protection of computer programs is based on three main protection sytems. These are Patents, Copyrights and Sui Generis. Those who insist on copyright system argue that computer programs are another way of work such as sound recording and motion pictures. Those who believe in patent argue that the financial and mental effort required to produced software and the functional uses of software more closely resemble inventive activity rather than artistic creation, and thus patents are the more appropriate analogy[90]. The third approach is the sui generis system, a kind of protection that consists both of patent and copyright law.

B) Protection In the World

There have been several proposals in the 20th century regarding to protection of computer software. These are recommendations from the World Intellectual Property Organization (WIPO), the Association of Data Processing Service Organizations (ADOPSO), the National Commision on New Technology Uses of

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90 National reasearch Council, Wallerstein, Mogee, Schoen (eds.), Global Dimension of Intellectual Property Rights in Science and Technology, National academy Press, Washington D.C. USA, 1993 Page 8

Copyrighted Works (CONTU), IBM Corp., and others[91].Although, none of these proposals had a strong backing up to become a law.

In the Uruguay Round of the General Agreement on Tariffs and Trade (GATT) which was signed on April 15, 1994, reached a conclusion in order to have international recognation and enforcement of the intellectual property rights. As a result of the agreement in order to use these new intellectual property conditions countries have to adopt new protection laws or they have to make amendments to their existing intellectual property laws.

In the Uruguay Round Agreement on Trade Related Aspects of Intellectual Property Rights (the TRİPS agreement) the positions of patents, copyrights and computer programs were described as follows:

- Patents: All countries that are member of the World Trade Organization (WTO) have to make patents available for the protection of newly invented products and processes which are capable of industrial application, without discrimination as to place of invention, field of technology or place of production. The term of a patent may not be less than 20 years from the date an application is filed[92].

- Copyrights: WTO Member Countries have to adhere to the principles of the Berne Convention on Copyrights (1971). TRİPS, Art. 9 Copyright protection is extended to expression not to ideas, procedures, methods of operation, or mathematical concepts as such[93].

The above mentioned explanations clarified the position of computer programs that were in a big dilemma. According to the TRİPS agreement, computer

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91 Computers and Intellectual Property, Computer Programs page 37

92 Dekieffer Donald, Legal Background Vol.10 No.3, Page 1

93 Dekieffer Donald, Legal Background Vol.10 No.3, Page 1

programs shall be granted the same copyright protection as literary works(Art. 10)[94].As it is mentioned in Articles 11 and 14 the agreement obligates members to grant to copyright owners the right to authorize or prohibit the rental of their works, and reserves to performers the right to authorize or prohibit the reproduction or transmission of performances[95]. Finally, the term of copyright protection cannot be less than 50 years, as it is desribed in article 12.

The enforcement is very important for a true protection of intellectual property rights. The TRIPS agreement allows nations to harmonize their national law with international obligation, unless they already have needed requirements for the protection of IPRs. Article 61 of the treaty requires Member Countries to impose, at a minimum, criminal penalties for willful trademark counterfeiting or copyright piracy on a commercial scale[96].

Even though some of the developing countries would not like the TRIPS agreement, overall this agreement, if it is backed up seriously with all the members of World Trade Organization, is a big step to greater protection for intellectual property.

Some argue that the TRIPS agreement will benefit the developing countries. First reason is that the developing countries have their own intellectual property to defend. Secondly, without the TRIPS agreement America would leave the GATT Uruguay round talks and that would cost developing countries the other benefits of liberalization. The third reason is that developing countries could have better

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94 Dekieffer Donald, Legal Background Vol.10 No.3, Page 1

95 Dekieffer Donald, Legal Background Vol.10 No.3, Page 1

96 Dekieffer Donald, Legal Background Vol.10 No.3, Page 1

access to advanced technologies. This is important if developing countries are to foster new industries that can compete in international markets[97].

Computer Piracy might be costing any computer user a lot of money. The price of the programs, with weak protection and high piracy rates, climbs fast. The average and honest consumer pays a lot of money when he/she buys a new computer program.

C) In the Future

No product is completely safe from knock-offs and counterfeits. Many fashion-conscious people are wearing fake Levis jeans, watches bearing the Rolex name that stops running after couple of weeks, or they are using fake Louis Vitton purses[98]. In this environment it is hard to imagine what is there in the future for computer programs. There is a great chance that computer programs will create substantial legal difficulties in the future. The idea behind this is simple:

I know the goods aren't genuine, but I cannot afford the real thing... Buying counterfeit goods hurts no one except the bottom lines of fat cat corporations"[99].

Small businesses', average computer users' and developing countries' views can be summarized with the above mentioned phrases.

The rapid improvement of science and technology and the hunger for an advanced lifestyle allows the human to do almost anything to achieve his/her

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97 The Economist August 27 1994 Page 55

98 CD ROM Professional September 1995 Page 72

99 Bliss John, Washington Legal Foundation Vol.9 No 25

goals. In this sense, the protection of intellectual properties is being faced with a great challenge. On the one hand, thougher measurements have been implemented to our daily life. On the other hand, day by day software piracy rises quickly. The most advanced parts of the intellectual property are computer programs. Their protection relies mainly on copyright, although there have been many attempts to protect software with patent. Today, we are in such a stage that the protection of these programs must be done by the copyright. All the conventions and bi-lateral agreements and international meetings have resulted in favor of the copyright. Therefore, at least for now, computer programs are and will be protected by the copyright law of the countries.

As technology proceeds there can be legal difficulties in the future just like today. Advanced software systems will be created and used in a short time. The difficulty arise partly from the lack of familiarity of judges with the technical nature of computers[100]. Well informed and trained judges on computer programs are and will be a must for resolving intellectual property disputes about software.

Trends are pointing that the future can be summerized in two prospects:

a) Technological revolution could create a world that millions of people can be controled by a machine that effects people"s thougths and actions in a certain way that goes agaisnt the law. Therefore the whole society becomes a prisoner of technology

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100 Samuelson Pamela, Adapting IPR's to New Technologies, A case study on Computer Programs, 1994 Page 315

b) If this machine that controlls people's actions is used in a positive and proper way human life will improve rapidly[101].

The trend does not always show what the future will be. The future remains to be created by the lobbyists of computer firms, by politicians, by governments and maybe by the computer programmer himself. Therefore we cannot predict the future legislation for software. We can say that the protection of intellectual property rights is one of the key elements in the evolution of the society. Eventhough the technological barries are being removed, there are still big problems with the legislation on intellectual property rights.

Proper legislation must keep up with the fast advancing technology and all the nations, developing or developed, have to have strong and efficient protection on intellectual properties. Computer programs, by their very nature, challenge or contradict some fundamental assumptions of existing intellectual property regimes. Therefore, they need special and well calculated protection methods.

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101 Auqust Bequai, Computer Related Crime, European Council, Strasbourg 1990, Page 2

Abbreviations

ADAPSO	Association of Data Processing Service Organizations
BASIC	Beginner's All-purpose Instruction Code
BSA	Business Software Alliance
CONTU	National Commision on New Technology Uses of Copyrighted Works
CPU	Central Processing Unit
CRT	Cathode Ray Tube
DOS	Disk Operating System
FSEK	Fikir ve Sanat Eserleri Kanunu
GATT	General Agreements on Trade and Tariffs
IC	Integrated Circuit
IPR	Intellectual Property Rights
LIA	Law on Intellectual and Artistic Works
MITI	Ministery of Trade and Industry (of Japan)
NIC	Newly Industrializing Countries
OS	Operating Systems
RAM	Random Access Memory
ROM	Read Only Memory
SPA	Software Publisher Association
TRIPS	Tariffs on Trade Related Aspects of Intellectual Property Rights
UCC	Universal Copyright Convention
WIPO	World Intellectual Property Organization
WTO	World Trade Organization

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ÖZET

Avrupa ile kökten bir entegrasyona girmekte olan Türkiye bu girişimin sağlanması için gereken kanuni ve sosyal değişiklikleri uygulamaya başlamıştır. Avrupa ile bütünleşmek için yapılması gereken uygulamalardan biri olan fikir ve sanat eserleri dalındaki değişiklikler Haziran 1995 yılında Resmi Gazete'de kabul edilmiştir. Bu gereken değişikliklerin arasında önemli bir yer tutan Bilgisayar yazılım programları tez'imde detaylı olarak incelenmiştir.

Teknolojinin hızlı ilerliyişine paralel olarak bilgisayar yazılım programlarıda hızla bir şekilde değişime uğramış ve kanuni yollarla korunması konusunda bir çok soru işareti ortaya çıkmıştır. Tez'imde öncelikle fikir ve sanat eserlerinin tanımını yapıp, ardından genel olarak bu eserlerin hangi yollarla korunduğunu açıkladım. Ayrıca Bilgisayar ve bilgisayar programlarının detaylı açıklamalarını ve bilgisayar hırsızlığının geçmiş ve bugünkü durumundan bahsettim.

Fikir ve Sanat eserlerinin Korunmasının dünyadaki Avrupadaki ve Türkiye'deki uygulamaları özellikle bilgisayar yazılım programları üzerine neler olduğunu anlattım. Türkiye'deki fikir ve sanat eserleri kanununun tarihsel gelişimi ve bugünkü durumu, Avrupa Topluluğu hukuku ile karşılaştırması, eksikleri veya fazlalıkları bu bölümde açıkladım.

Son olarakta bilgisayar yazılım programlarının hangi yolla korunabiliceklerini, hangi korunmanın daha iyi olabileceği ve korunma yolları arasındaki yolları karşılaştırmalı olarak açıkladım. Dünyadaki GATT çerçevesinde kararlaştırılan korunma yöntemi ve yazılım programlarındaki trendlere ve kanuni koruma yollarını ve bilgisayar korsanlığına dayanarak gelecekteki senaryolar üzerine tahminlerde bulundum.

Bu konu hakkında tez yazmamın başlıca nedeni bilgisayar yazılım programlarını kanunsuz olarak kullanılmasının çevremde, dolayısıyla Türkiye'de birhayli artmış olması, hukukun ve hukukun getirdiği uygulamaların bilgisayar korsanlığı karşısında ne denli etkili olup olmadığını öğrenmek istememdir. Tezim için yaptığm araştırmalar ve ortaya çıkarttığım bu tez sonucunda Bilgisayar programlarının korunması konusunda nihayet belirgin ve tek bir

noktaya varıldığını ancak yinede insanoğlunu bu korunma uygulamaları ile bilgisayar korsanlığından uzaklaştırmanın imkansız olduğuna, ve insanın tabiatında olan daha önceki yazılmış eserlerden yararlanma dolgusunu ortadan kaldırımayacağımızı anlamış bulunmaktayım.

Bilgisayar korsanlığı için birçok fikir, iddia ve sebep ortaya sürülebilinir, ancak gerçek olan şudur ki bir insanın veya insanların emekleri karşılığı verilmeden başka insanlar tarafından kullanılmaktadır. Bu işlemden zararlı çıkan ekonomiler ve özellikle bilgisayar yazılımlarını yaratan sanatçılar, dahilerdir. Gelecekteki görüntü iç açıcı olmamakla birlikte sıkı ve yakın takip ile düzenli ve ortak uygulamalar sonucunda belki diğer fikir ve sanat eserleri gibi bilgisayar programları da denetim altına alınabilinir.

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