

CHAPTER 6

COPYRIGHT AND THE CULTURAL AND INFORMATION INDUSTRIES

Copyright is the area of the law that provides protection to “original works of authorship” including paintings, sculpture, music, novels, poems, plays, architecture, dance, instruction manuals, technical documentation, and software, among other items. Legal protection flows from the fact that an author independently creates the work and that his or her “expression” of an idea is original, rather than copied from another person. Copyright has a different standard than the novelty standard in patents, which focuses on the newness of a useful idea or concept, not the expression of that idea. Unlike inventions, works of authorship need not be useful. Copyright extends only to the expressions of ideas and concepts, and not to the ideas or concepts themselves. The difference between copyright and patent is referred to as “the idea-expression dichotomy”.¹ The famous example is that Shakespeare’s play *Romeo and Juliet* was a creative expression, a work protected by copyright (had such a doctrine existed at the time), but that all stories about young men and women falling in love despite family and caste obstacles would not have infringed that play.

There is no rigid definition of works which fall under copyright. Rather, it is said to extend to all “literary and artistic works” and it is intended that a flexible standard exist. In practice, copyright protection has been extended to works that the lay person might consider neither literary nor artistic, such as computer software or technical documentation.

Copyright protection may subsist in the same product or technology with other forms of intellectual property; for example, an invention related to computer software may be protected by patent law, and at the same time, the software code may be protected by copyright. Similarly, copyright may protect a work of art that is also protected as an industrial design, and copyright may protect a written text that is also a trade secret.

In some countries, in order to qualify for copyright protection works must be fixed, so another person can perceive them in a sufficiently stable or permanent form. However, copyright protection occurs without any special registration, deposit, or other bureaucratic requirement; upon creation or fixation of the expression, the rights of copyright automatically protect the work. It has been agreed inter-

nationally for many years that nations may not require “formalities” for the use and enjoyment of copyright.²

In 1961, with the Rome Convention, new categories of rights, which were not previously protected by copyright, were created. These new rights were referred to as “neighboring rights”, and they included broadcasts, phonograms, and performances.³ With the adoption of the TRIPS Agreement, the term neighboring rights has been largely supplanted by the term “related rights” although both terms are still used.

THE CULTURAL INDUSTRIES

Activities and industries whose basic strength is rooted in the protection of their primary products and services through the laws of copyright and related rights, are often referred to as cultural industries.⁴ However, the term is too narrow, as computer programs are also protected by copyright.

It is said that the most cultural aspect of any person is the language spoken by that person. Dress, activities, spiritual practices, diet, and so forth, can also be cultural indicators; however, nothing so quickly says “culture” as language. When language is written down; woven into music; adapted into audiovisual productions; or used in conjunction with computers, works to be protected under the laws of copyright are often created. When sustained, commercially driven, and strategically organized, these activities are grouped into businesses and categorized into industries which provide products and services to satisfy our cultural needs and desires, as well as many other pleasures, requirements, advantages, and accessories.

This chapter will visit each of the cultural industries, discuss its characteristic features and activities, and thereby highlight the relationship between these culturally rich and dynamic activities, and copyright and related rights protection. As used here, the term “industry” is construed as covering not only the enterprises in a certain activity or business, but also the many individual creators, authors, artists, and performers who take part in commercial cultural activities both worldwide and locally, and the communities that they have come to constitute.

The industries which comprise the business of copyright are most logically distinguished and categorized as follows: music, audiovisual, art, architecture, literary, information technology, interactive entertainment and education. This grouping mostly corresponds to the different categories of copyright and related rights works, but, more importantly, it reflects the reality that certain activities and products are germane to specific industry practices and to certain products and services. The ultimate products and services, then, are the bases of the categories.

Creativity and innovation are at the heart and soul of the copyright industries. The power of the products and services they produce is undeniable. Almost every person has had his or her life changed by a book. Almost every person has laughed or cried because of a movie. Graphic artists and sculptors move us to see the beauty in life. Computers and computer software make our work easier, give us the ability to communicate globally, and allow us to have access to unlimited amounts of information and knowledge.

TABLE-6.1 TOP SIX CATEGORIES OF UNITED STATES INDUSTRIES ON THE FOREIGN SALES AND EXPORT LIST (1999)

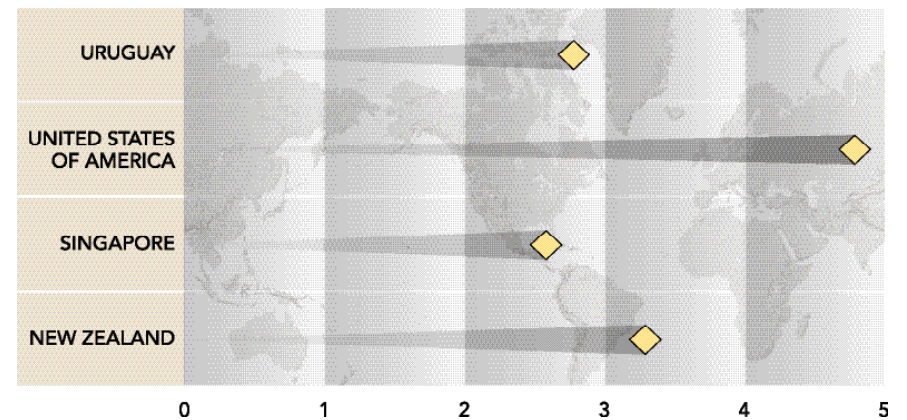
Rank	Industry
1	core copyright industries
2	chemicals
3	motor vehicles
4	aircraft manufacturing
5	agricultural products
6	electronic components and accessories

Source: Economists Incorporated, *Copyright Industries in the U.S. Economy: The 2000 Report* (Washington, D.C.: International Intellectual Property Alliance, 2000).

To get an idea of the size of the copyright industries, a few statistics are presented (see Table - 6.1 and Chart - 6.2). Looking at the US figures, for the year 1999, the core copyright industries contributed an estimated US\$457.2 billion to the economy, representing approximately 4.94 percent of GDP. During the period from 1977 to 1999, employment in the

core copyright industries grew from 1.6 percent of the workforce (1.5 million workers), to 3.24 percent of the workforce (4.3 million workers). In terms of foreign sales and exports, the core copyright industries accounted for at least US\$79.65 billion in 1999.⁵ Statistics from other countries mirror the above. In New Zealand, copyright industries increased their proportion of GDP between 1987 and 1994 from 3.1 percent to 3.4 percent.⁶ In Uruguay, copyright industries accounted for 2.9 percent of GDP.⁷ In Singapore, it was 2.7 percent.⁸

CHART-6.2 CONTRIBUTION OF COPYRIGHT INDUSTRIES TO GDP (PERCENT)



UNIVERSALITY OF MUSIC

Music is the most universal, the most accessible, and the most widespread, from a global perspective, of all of the copyright-related industries. Music is employed as an important element in other media, such as motion pictures, videos, and interactive software products. It plays a large role in the success of television, and is the chief product offered by radio. The business of music is widespread, lucrative (but not evenly so), and cultural. No country in the world lacks some form of music, and almost all countries create multiple forms and styles.

The next sections will describe how a copyright framework functions to protect contributors, looking at each level of the business model in which music travels from the mind of a musician or songwriter to the ear of a consumer.

MUSICAL COMPOSITIONS

The entire process underlying the business model of the music industry starts with a song, or more accurately, a musical composition. The songwriter (a term which generally applies to one who creates a song with both lyrics and music) and the composer (a term which generally applies to one who creates a song with only music) are the owner(s) of all rights of copyright in the musical composition at the point of fixation,⁹ when the songwriter physically fixes his or her idea, either in musical notes, or by using analog or digital recording capacities. Upon creation or fixation, depending on national legislation, copyright protection automatically comes into force without further formalities.

Musical compositions, when grouped in large numbers, constitute musical catalogues. To preserve, exploit, and commercialize musical catalogues, music publishing companies are formed. Facilitated by the property aspects of the IP system, catalogues are bought and sold daily; they are rich assets whose value is determined by historical and projected cash flows and earnings. The value can change dramatically overnight, literally, on account of one hit recording by one artist or group. As a good example, "Macarena", a global hit by the Spanish group Los Del Rios, sold millions of copies and changed that group's catalogue from an afterthought into an asset with financial value.¹⁰

The renewable (sustainable) nature of intellectual property, and the creative uses to which it can be put, can be seen quite clearly using the example of musical compositions in a catalogue (see Box - 6.3). Musical compositions can be re-recorded by any number of performers, thereby increasing the inherent value of the underlying asset (the musical composition). The whole process is made possible by the copyright and related rights laws, which empower the right holders, through the rights of reproduction, public performance, distribution, and communication to the public.

BOX-6.3 BOWIE BONDS

The renowned British performer David Bowie, over the course of his 30-year plus career, has written hundreds of musical compositions, as well as performing and recording them. From his recordings of those compositions, and from cover versions by other artists, an income stream has been produced; and with a measured certainty, will continue on into the future. A creative brokerage organization, The Pullman Group, saw an opportunity to "securitize" the musical compositions as an income-producing asset. It licensed Bowie's rights to his musical compositions for US\$55 million, which it paid to him. It then sold bonds to investors on the basis of a repayment and profit model using the income from the musical compositions as both the security for the investment and the source of the repayment.

This is, thus far, a win-win-win situation. Bowie received present income based on many years of projected royalties. The Pullman Group received fees and will receive profits from its creative business model. The investors will receive interest on their investment much higher than normal interest rates. The whole transaction is securitized by proven IP assets in a most creative way. There are plans under way to create and issue similar bonds to investors using other music catalogues, such as those of Marvin Gaye, Holland-Dozier-Holland, and James Brown. The business model of the security bonds can also be applied to drug patents deriving from the current research in human genomics. These events point to the virtually limitless possibilities embodied in the creative use of intellectual property (music, in this particular example).

Source: <http://www.pullmanco.com/article136.htm>; Global Finance, November 1999: 66-67

QUALITY RECORDINGS

The next level in the business model of the music industry is for musical compositions to be recorded. Though musical compositions can be delivered or disseminated in their live state, for example, via concerts and dances, the more prevalent form for their diffusion and distribution

is as recorded music, usually in the form of music cassettes, compact discs (CDs), and newly emerging technologies, for example, MP3-bearing objects, such as the Diamond Rio Player. Over the last few years, the prevalent format for recorded music has been the CD, which accounts for approximately 65 percent of all recorded music sales.¹¹

The process of recording musical compositions necessarily involves performers, thus rendering a recording of their performances. Copyright and related rights laws facilitate the recording process, and aim to protect all of those whose participation in the recording process is crucial to its success. Musicians and singers literally create the recording, along with sound engineers, editors, and producers. As such, the law recognizes that they have an ownership interest in the final recording, in the same way that those who create a musical composition have an ownership interest in the final composition. It is because of this that recording companies (see next section) rely so heavily on contracts with performers both to secure a transfer of rights and to secure the recording companies' position in order to recoup their often heavy investments in these recording projects. The whole process of creativity and participation by the songwriters and composers, musicians and singers, the investment of the recording companies, and the final delivery of the finished product to the public is dependent on the laws of copyright and related rights.

With new recording technologies, music can be recorded literally anywhere, from a small hand-held device all the way up to state-of-the-art recording studios with hundreds of separate channels designed to capture sound as accurately as is scientifically possible. If the highest possible quality of sound is to be achieved, however, the recording phase requires professionals with specific knowledge of this technical process. It is a profession which has applicability in other media (for example, in radio and television, at live concerts, and in discos). Mixing a recording is sometimes a separate skill from those possessed by the engineers and producers, as is preparing the final product so that it can be manufactured into cassettes and CDs. Each one of these positions or functions represents separate jobs, skills, and employment opportunities in the economic development sphere.

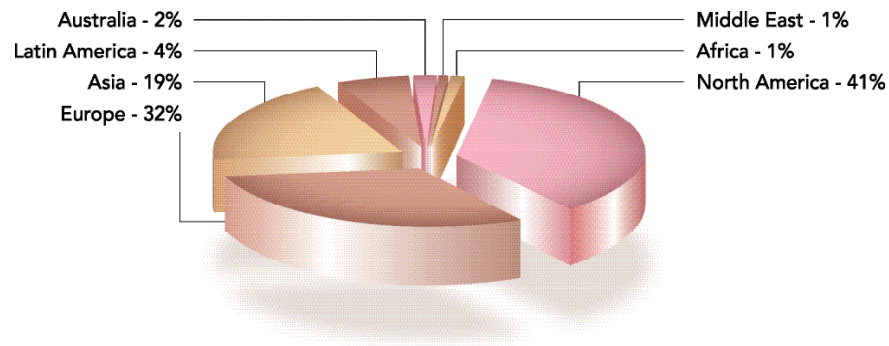
THE BUSINESS OF DISTRIBUTION OF RECORDED MUSIC

Once a recording of a musical composition has been achieved, the most visible aspect of the global music business model comes into play. The distribution of recorded music is dominated by five multinational enterprises whose interests also extend to many areas, products, and services other than music: AOL/Time-Warner, Sony, Bertelsmann, EMI, and Vivendi Universal.¹² While estimates of the distribution market share by these five companies vary somewhat, and while independent record producers do exist in many countries of the world, it can be said that the five companies mentioned above control somewhere around 80 percent of all sales of recorded music.¹³

The global music business is promoted by extensive marketing. Potential customers of recorded music are bombarded daily with music: in cars, in elevators, on radio and television, in shops and restaurants, and at live events. Getting a customer to the point where he or she feels it is necessary to purchase the CD or cassette of a favorite artist is a process which requires enormous financial, human, and creative resources. The major recording companies spend millions of dollars on promotion, both for new artists and for well-known ones. Campaigns are often centered around events (such as concert tours or musical, sporting, or television events) which attract upwards of a million people. This large-scale promotion and allocation of resources would not take place without the certainty that, if there are to be financial rewards, those who have been creatively and financially responsible for making that happen will be the first in line to both recoup the investment and be rewarded for the efforts.

In 2001, the global music market was worth US\$33.7 billion.¹⁴ North America, Europe, and Japan (83 percent of the Asian market) were the leaders (see Chart - 6.4). The figures in this chart are limited to sales of recorded music.¹⁵

CHART-6.4 GLOBAL RECORD INDUSTRY SALES – 2001



Source: International Federation of the Phonographic Industry (IFPI)

The multinational recording companies are vitally concerned with the discovery, nurturing, development, exposure, and commercialization of new talent, new songwriters, new singers, new musicians, new groups, and new music. This process is ultimately their lifeblood, and one way they can secure their future is to keep a constant and large flow of new talent moving through their systems. The more accurate they are in recognizing commercially viable talent, the more successful they will be in terms of profits and losses. It is axiomatic that their chances are increased by having a larger pool of talent to choose from, not a smaller pool. They are all diligently searching for the next “Macarena”.

The other side of this process is the fact that small and niche markets have been overlooked, or at least not emphasized, as the large companies target the biggest markets with the most common tastes to secure the greatest opportunities for profit. As shown in Chart - 6.4, the sales of recorded music in Latin America, the Middle East, and Africa indicate that there will be significant market potential in these regions.

With the level of investment for some aspects of the music business increasingly being lowered by the advent of the Internet as a new promotion and distribution medium for recorded music, as well as for the promotion of new and less well-known musicians, small recording companies and musicians should be able to find unprecedented opportuni-

ties for marketing their products and themselves (see the last section of this chapter). These small recording companies could also succeed in reaching out to potential customers by discovering and featuring diversified regional and local music and talented musicians hidden in their communities. If copyright laws are effectively used to provide business stimulation for composers, musicians, and recording companies in the local community, niche and indigenous music could surely expand, as there is clearly a market for almost all types of music. The next section will discuss the high potential of indigenous music for industry, composers, and musicians.

WORLD MUSIC, LOCAL MUSIC

“World music” is an interesting term.¹⁶ Some see it as describing any music that is outside of the mainstream of “Western music”, a catchall phrase, which attempts to avoid differences and cultural aspects so important to non-Western music and its musicians.¹⁷ Some would say that world music has now become mainstream, enthusiastically marketed by established record companies. However defined, world music is popular today and presents an opportunity for regional and local musicians worldwide to commercially exploit their talent and their musical traditions.

Because many people prefer their own music, there is a very clear opening for entrepreneurial efforts to attract indigenous, national, and regional populations and cultures. There are local, national, and regional players and enterprises who have stepped into this vacuum, and who provide music products and services to a potentially global market. Depending on the cost of production, talent, and distribution, small runs of locally desirable music can now be profitable. Indeed, with the advent of the new technologies in this field, the possibility becomes more real that every musician and musical group can serve as their own record company; every songwriter can serve as his or her own publisher; and those who are not so directly involved with the creation side of the music, such as the recording studio and the production company, can also fulfill important roles. (See Chapter 7 for discussions on the protection of folklore).

There are many success stories of talented people who were overlooked by the multinationals, or who were deemed to be too cultural, too regional, or too “niche” for the common-denominator approach. Los Del Rios sprang onto the world stage with a massive hit. Other examples abound, such as Cuban music, which has gone mainstream. Global success has been achieved by Gloria Estefan (who has sold over 45 million records¹⁸) and the Buena Vista Social Club. Puerto Rican Ricky Martin is a worldwide phenomenon, combining the rhythms of Latin American music with English lyrics. The same can be said for the American singer/performer Christina Aguilera, who will cross back over from English into Spanish lyrics for her millions of Spanish-speaking fans.

With the greatly heightened awareness provided by the Internet and enhanced telecommunications services, the demand for world music is increasing. The *rai* music of North Africa has existed for years and one of its best known proponents, Chebb Mami of Algeria, has been achieving growing regional success. Since his participation in a recording with the well-known British performer Sting, Chebb Mami and *rai* music have achieved global success with mainstream consumers.¹⁹ The Senegalese singer Youssou N’Dour had a similar boost into the global market place through collaboration with the well-known British artist Peter Gabriel. N’Dour was asked to write the anthem for the 1998 World Football Championship hosted by France.²⁰

The new economy, the new technologies, and the new opportunities augur well for the music business. Perhaps the next trends could come from Nigeria, such as the *juju* music of King Sunny Ade (who has made over 110 recordings²²); or the *gamelan* music of Indonesia²³; or the tango, bossa nova, or samba of Latin America; or literally from any other place. The space for creativity, the rapid emergence of new artists and groups, and fast-changing tastes, are all reasons why the music business is exciting, profitable, and global as well as local in nature.

As Chapter 9 will examine in more detail, the presence of strong copyright and related rights laws, and their active enforcement, are the foundation for a vibrant local and national music industry. Music piracy robs the local community of spirit, opportunity, and funds which would otherwise

flow into local products, developing local artists and musicians, songwriters and composers, and production companies and recording companies. When people are faced with a choice between a cut-rate pirate copy of, for example, the new Ricky Martin CD, as opposed to the legitimate local recordings of community artists and musicians (which must necessarily reflect the cost of developing talent) who are perhaps known but not yet popular, the dramatic cost differential most often points in favor of the pirated music. This process, caused primarily by the absence of effective copyright and related rights, kills the local market, strangles local talent and businesses, and precludes any advancement of the local music industry.

COLLECTIVE MANAGEMENT OF COPYRIGHT AND RELATED RIGHTS

What infrastructure and systems could help promote the incubation and development of local music culture? A system called collective management of copyright and related rights is one of the most effective and has been established in a number of countries on the initiative of government or through the relevant private sector. Collective management is the exercise of copyright and related rights by organizations acting in the interest and on behalf of the owners of rights. The collective management organization negotiates with users (such as radio stations, broadcasters, discotheques, cinemas, restaurants and the like), or groups of users and authorizes them to use copyrighted works from its repertoire against payment and on certain conditions. On the basis of its documentation (information on members and their works) and the programs submitted by users (for instance, logs of music played on the radio), the collective management organization distributes copyright royalties to its members according to established distribution rules. A fee to cover administrative costs, and in certain countries also socio-cultural promotion activities, is generally deducted from the copyright royalties. The fees actually paid to the copyright owners correspond to the use of the works and are accompanied by a breakdown of that use. These activities and operations are generally performed with the aid of computerized systems especially designed for the purpose.²⁴

Collective management is helpful because it is currently not possible for any one person or company to monitor all uses of its musical compositions or recordings on a global basis, or even on a national basis – although this could change with advancements in relevant technology. Dealing mainly with public performances, such as television, radio, discos, and live concerts, collective management societies play a vital role in keeping track of how and where musical works are being used, in securing compensation for such usages, in computing who is entitled to what percentage of compensation collected, and in timely distribution of compensation to its rightful recipients. It is an enormous task and is under-taken by organizations of all sizes. The following are examples of prominent collective management societies:²⁵

TABLE-6.5 SELECTED COPYRIGHT COLLECTIVE MANAGEMENT SOCIETIES IN THE WORLD*

Country	Society	Note
Australia	APRA	Founded in 1926
Cuba	ACDAM	
Estonia	EAU	1,000 members
France	SACEM	The world's oldest (1851) with 87,000 members
Germany	GEMA	Founded by the composer Richard Strauss
India	IPRS	
Indonesia	KCI	
Israel	ACUM	3,000 members
Japan	JASRAC	Its total revenues for fiscal 1998 were over ¥ 94 billion (about US\$850 million dollars). ²⁶
Singapore	COMPASS	
South Africa	SAMRO	The largest collecting society in Africa
Trinidad & Tobago	COTT	Founded in 1986
United States of America	BMI and ASCAP	BMI has 250,000 members (the world's largest) maintaining a repertoire of more than 4,500,000 compositions for purposes of licensing. ²⁷ ASCAP has 100,000 members with total revenues of US\$560 million in 1999. ²⁸
	SESAC	SESAC was founded in 1930, the second oldest in the United States (headquarters in Nashville). ²⁹

Country	Society	Note
United States of America	Harry Fox Agency	National Music Publishers' Association (NMPA) is a service for licensing musical copyrights, established in 1927 and currently representing over 800 American music publishers. ³⁰
Zimbabwe	ZIMRA	The first independent society in Africa – established by PRS (the society of the United Kingdom).

* The full names of these societies can be found in the list of abbreviations at the end of the book.

To create and promote cultural industries in the world, and particularly in developing and least-developed countries, thoughtful consideration should be given to establishing collective management societies and to enhancing their operation. It is one effective way to ensure respect for copyright, while at the same time helping artists, musicians, songwriters, and others involved in the creative and business processes of the music business to realize income from their efforts. This is also one important dimension as to how local industries can grow and how they are helped to contribute to the national economy and as well to the national culture.

AUDIOVISUAL: MIXING SOUND AND IMAGE

The audiovisual industry is perhaps the most difficult to both define and review. It is at different times referred to as the film industry, the movie industry, or the motion picture industry. These terms are not fully inclusive, and it is referred to herein as the audiovisual industry. The highest-quality medium on which to capture images is film. Less expensive, and producing a lower-quality image, but also much used, is video, or video tape. The newly evolving medium for this process is now digital technology. Another component of the industry produces hand-drawn images, or computer-generated images, and this is generally referred to as animation (a movie or pictures consisting of a series of drawn, painted, modeled, or computer-generated images or scenes³¹). Thus, the term audiovisual is applied, and it is used herein to refer to all of the foregoing methods of capturing both images and audio elements to produce an audiovisual production.

FILM MAKING

Full-length motion pictures are marketed, according to a specific schedule, allowing for maximization of profit potential at each level. The first phase is theatrical exhibition, where the experience involves a large screen, amplified sound, and sharing with others. Separate income figures are maintained for this. The next phase is the home video market, where videograms, or, lately, digital versatile disc (DVD) devices are purchased or rented for viewing in the privacy of the home. The next phase is the release in the cable and satellite television markets, a private circuit for which consumers generally pay a subscription fee. This can be initiated by pay-per-view and is followed by general dissemination as part of regular cable or satellite programming. Around this time a niche-marketing effort to specific audiences, such as passengers on planes and boats, occurs. The final phase of the life of an audiovisual production is usually free television. However, the introduction of new technology, such as DVD, can often revive an otherwise dormant asset and produce considerable income revenue by virtue of creating a new market and new consumers for pre-existing products.³²

Copyright laws apply expressly to audiovisual or cinematographic works.³³ However, because the costs and number of parties associated with creating audiovisual works are much greater than those for writing a song or a book, special rules have developed as to who is the rightful owner of an audiovisual production. In some countries, it is the producer, that is, the one who produces the financing. In other countries, it is the persons who make contributions to the work, such as the writer of the underlying literary material, the director, producer, actors, or photographer. This is why ownership of audiovisual works is a matter of national legislation.³⁴

One large segment of the various and disparate elements which combine to create audiovisual works is the set of actors and other performers whose performances are embodied in the work. This group is badly in need of updated international and national protection. The Rome Convention (1961) was the first international instrument to focus upon and grant protection to performers. However, viewed from today's

perspective, the instrument contains provisions that do not adequately protect audiovisual performers, as technology and the economy have changed radically since its adoption. In an effort to find consensus as to protection for performers in audiovisual productions, WIPO hosted the Diplomatic Conference on the Protection of Audiovisual Performances from December 7 to 20, 2000. The conference came very close to adopting a new instrument, which could have been viewed as a follow-up to the WIPO Performances and Phonograms Treaty (WPPT), which deals only with performers of audio phonograms. However, consensus was lacking, although 19 out of 20 articles of the draft treaty were approved.

Additional income, often quite substantial, is generated indirectly by audiovisual productions, from the merchandising of items which are seen in or associated with these productions. Merchandising of items such as toys, cars, interactive games bearing the same title or including the characters of the production, books, and clothing are now much more than mere ancillary aspects of major audiovisual productions – they are often highly valuable profit centers for these expensive productions.³⁵ Large sums have been paid by global product manufacturers to have their products seen on-screen in major movies.³⁶ These merchandising items are always protected by inherent IPR, mainly copyright and marks.

As in the music industry, the audiovisual industry is dominated by global entertainment companies in which audiovisual production is just one of several endeavors (see Table - 6.6). However, audiovisual production, especially at the level of full-length feature motion pictures, does not take place exclusively in Europe, Japan or the United States of America. The audiovisual industry in India produces some 800 feature movies per year and sells billions of tickets worldwide.³⁷ Hong Kong SAR is also the home of vibrant feature film production activities, and produces products with a unique style and energy.

TABLE-6.6 RANKING BY AUDIOVISUAL TURNOVER OF LEADING COMPANIES*

1.	Walt Disney	United States of America
2.	Viacom	United States of America
3.	Sony	Japan
4.	Time-Warner Ent.	United States of America
5.	ARD	Germany
6.	News Corp.	Australia
7.	Polygram	Netherlands
8.	NHK	Japan
9.	General Electric	United States of America

*Source: Statistical Yearbook: Cinema, Television, Video and New Media in Europe (Strasbourg: European Audiovisual Observatory, 1998).

BOOKS

Copyright law in general owes much to the literary publishing industry, and to books in particular. Book production in the first millennium was a tedious, slow affair. Scribes wrote books by hand, some much more artistically than others. Organized religion was a prime moving force in the preservation of knowledge through books, as well as the proliferation of multiple copies of books.

The effect of copyright protection of books virtually all over the world is evident. Mass production of books (when compared to prior production methods) was made possible with the assurance of income from their sales. Because of books, the state of the world's knowledge expanded exponentially, and such expansion continues to this day with increasing velocity with each new technological development, such as telegraph, radio, television, computers, telecommunications, and the Internet. Books, in general, have been one of the most important and durable inventions ever. The proliferation and wide dissemination of knowledge through books has had and still has an immense impact on civilization.³⁸ Books, as well as newspapers and magazines, are easily shared because of their compact size and portability.

THE MASS MARKET

The literary publishing industry covers more than books, although one could easily focus on just that element, since over 50,000 new book titles are published every year, more than 500 million copies of books were released in print format in 1999, and the industry generated more than US\$80 billion in revenues.³⁹

However, it would not present the full story of the literary publishing industry to focus only on books, since newspaper publishing and periodicals are also an integral part of that industry (see Table - 6.7). In 1996, there were an estimated 8,391 daily newspapers in the world, with an estimated readership of 548 million.⁴⁰

TABLE-6.7 A LIST OF SELECTED NEWSPAPERS WITH CIRCULATION (1999)

1.	<i>Yomiuri Shimbun</i>	Japan	10,233,923
2.	<i>Asahi Shimbun</i>	Japan	8,321,138
3.	<i>Sichuan Ribao</i>	China	8,000,000
4.	<i>Bild</i>	Germany	5,674,400
5.	<i>Mainichi Shimbun</i>	Japan	3,978,617
6.	<i>Sun</i>	United Kingdom	3,687,370
18.	<i>Eleftherotipia</i>	Greece	1,858,316
20.	<i>Wall Street Journal</i>	United States of America	1,752,693
21.	<i>Kerala Kaumudi</i>	India	1,720,000
40.	<i>New York Times</i>	United States of America	1,086,293

Source: <http://www.mediainfo.com>.

Because of the convenience with which newspapers and periodicals deliver their content, whether news, current events, easily digestible stories and features, or dazzling photographs, they have successfully relied upon copyright laws to safeguard their products and services from what otherwise could be rampant piracy and illegal use. As literary works, newspapers and periodicals are protected in the same way as books. However, because of the nature of their products and services, and because of the new methods of distribution, there are two areas in which

copyright laws are being both challenged and reclarified as they apply to newspapers and periodicals. One is the area of publication of excerpts and quotations of copyrighted material in the interest of free speech, public dialogue and criticism, and publication of current news. In some countries, notably the United States of America, such publication may be justified as an exception to copyright laws under the doctrine of "fair use." The copyright system in this case serves to achieve a fair balance between right holders, on the one hand, and the interests of the public, on the other hand.

Another interesting copyright issue which has arisen recently is the ability of newspapers and magazines to take literary works primarily intended for publication in paper editions, and to republish them in electronic format. Does the underlying license or assignment cover publication in both media? That is the issue which copyright law is now dealing with; cases centering on this issue are making their way through various court systems at the moment. While there are arguments on both sides, one thing is crystal clear: books, newspapers, and magazines, as an industry, have been able to protect their products and services, expand their businesses, and reach out to millions of people, because copyright laws have given them the required assurances, consistency of results, and reliability.

COMPUTER SOFTWARE

The heart and soul of the digital revolution is computer software. The computer software industry is huge.⁴¹ It touches literally everything which is digital. It is the only industry which has never had to cope with the impact of the digital revolution, since it is the only industry which commenced its business in digital format; and it has served as the basis for the creation of more new wealth than at any other time in history.

Software and computers are inextricably tied together. Computers were created during the 1940s, and at first went through a slow evolution. Things took a quantum leap forward in 1976, when Apple Computer developed a powerful personal computer which allowed ordinary people

to bring unprecedented computing power into the private home. From the point of the introduction of the PC in 1981, not a day has gone by without some new development, advance, or breakthrough in this industry: computing power and capabilities, data storage and management, and telecommunications – but it is computer software which is fundamental in most of these advances (see Box - 6.8).⁴²

BOX-6.8 COMPUTER SOFTWARE INDUSTRY IN ISRAEL

In 1984, software exports from Israel amounted to US\$5 million; in 1997, this figure had soared to US\$540 million, with an annual average growth rate of 25 percent. Domestic software sales have grown by 10 percent per annum, and in 1998 were then expected to top US\$1.5 billion. Israel's software industry has more than doubled in size in recent years, and the country provides leading-edge software in fields as diverse as defense, commerce, education, and entertainment. The government has made a conscious decision to emphasize computers in daily life. Every kindergarten in the country has a computer, and over 35 percent of Israeli homes have computers. The list of major software companies with operations in Israel is extensive, and even more impressive is the work of venture capitalists there, who have helped create over 500 new and promising start-up businesses in the software field in just the past few years. Underpinning all of this economic growth and development, is the fact that the Israeli government is a strong supporter of IP laws.

Source: <http://www.ish.org>.

How big is the computer software industry? The following figures are revenues for licensing computer software for four large US companies in 1999: Microsoft, US\$21.6 billion; IBM Corporation, US\$12.7 billion; Computer Associates, US\$4.9 billion; and Oracle Corporation, US\$3.8 billion.⁴³

Computer software is considered a “literary work” meriting protection under copyright law. Software is written and created by using instructions in words, or a source code, which contain instructions for the computer hardware. Computer software protected under copyright as a literary work was debated during the 1970s and 1980s, and some consideration was given to the creation of a *sui generis* or special form of intellectual property protection unique to computer software. This idea of a new breed of IP was ultimately rejected as it became clear that the rules of copyright as applied to other art forms were flexible enough to apply to the expression contained in computer source code.⁴⁴ As the law of copyright relating to computer programs evolved, especially in the United States of America, it was extended to protect the “structure, sequence and organization” of computer programs and the text and visual appearance of the programs on the screen. But copyright extends to the expression of ideas, and not to the ideas or process(es) embodied in any literary work or software program. That paradox, often referred to as the “idea versus expression dichotomy,” led some to seek patent protection for inventions contained in their computer software programs, in addition to copyright protection.⁴⁵

COPYRIGHT VERSUS PATENT PROTECTION

Many computer software programs satisfy the basic elements for the issuance of a patent: industrially applicable (useful), new, and not obvious. Thus, patents have been issued on many software-related inventions.

Notwithstanding the issuance of software patents, many more right holders rely on copyright protection for computer software. The dynamics of protection under copyright and patent are quite different. Copyright protection is automatic and vests upon the creation of the work at the time the program is written. Depending on the provisions of the relevant national law, such protection may last for the life of the author plus 50 years (now 70 years under many national laws, such as the European Community member States and the United States of America). Patent protection is subject to strict procedures for the perfection of rights, such as examination, public disclosure, and maintenance fees. The term of

protection for patents is more limited: 20 years from the date of filing. Patent enforcement, however, is more extensive than that provided under copyright law. Finally, because a patented invention is generally broader in scope and applies to an idea, not an expression, it may be easier to avoid copyright infringement by expressing the same idea using different source codes.

Another supplement to copyright protection for computer software is trade secret law, which can protect a computer software source code as long as it has been maintained as a secret. One way in which computer software has affected intellectual property profoundly is that the same software product or technology may be protected by copyright, patent and trade secret law. Whereas, before the advent of the technological age, it was common to think of patent law as applying to technology and copyright law as applying to culture and art, these distinctions have become more blurred. A recent example of this has been the plethora of patents issued on business methods,⁴⁶ a subject matter that recent case law in some countries recognizes as legitimate for patents, but which might have been thought of years ago as a non-technical subject more correctly protected by copyright, trade secret or unfair competition law. The good intellectual property strategist will think in terms of various forms of legal protection for the same product or technology.

OPEN SOURCE SOFTWARE AND COPYRIGHT

If business-method software is a reflection of seeking stronger exclusive rights for intellectual property through use of the patent system, a new movement in the area of computer software, most particularly with respect to the operating system,⁴⁷ is open source software,⁴⁸ which seeks to freely share the intellectual work of other like-minded programmers. The open source software movement contrasts with the business decisions taken initially by the management of Apple Computer, with respect to its operating system. Until the mid-1990s, they refused to license it to any other manufacturer, a business practice that caused Apple’s operating system to lose support from application developers.⁴⁹ Open source software also takes a completely different approach than Microsoft, which licenses its Windows operating system to manufactures and vendors

who agree to its licensing terms, thereby guarding the particulars of the operating system as proprietary assets. Whereas, one is not legally able to modify, adapt, or change the Windows operating system, the source code of open source software is guaranteed to stay “open”.

The central idea behind open source software is that any programmer who has received a copy of the software and has agreed in a licensing contract to its conditions, can adapt, change, modify, reproduce, and disseminate the operating system. This does not mean that the software is necessarily free, publicly owned, or without significant limitations on use. The mindset behind this is a sort of collective development: more programmers focusing on the program will bring swifter upgrading, a quicker fix for problems and bugs, and make a better program; and nobody will own the addition, upgrade, or modification.⁵⁰ Approximately 90 percent of the world’s personal computers employ the Microsoft Windows operating system.⁵¹ Open source operating systems are, currently, installed in relatively few computers. It also has difficulties to overcome, for example, there is no central authority to confirm or reject modifications made by a number of programmers and there is a limitation to technical support and warranties for modified versions.⁵²

Computer software owes much to copyright laws. There is no faster moving industry, in terms of developments and advances. Automatic protection for programs, applications, and upgrades has been an immense advantage, since it seems that there are advances literally everyday. Copyright protection for software was updated and clarified by the WIPO Copyright Treaty (WCT), to keep pace with technological and telecommunications developments, particularly the Internet. The WCT, and its sister treaty, the WIPO Performances and Phonograms Treaty (WPPT), were referred to in the media as the “Internet Treaties.” They entered into force, respectively, in March and May 2002. Even open source software, which at first glance might appear to run against copyright and its underlying rationale, is actually made possible and sustained specifically because of copyright. The exclusive rights which the open source software movement shares among the world programming community (reproduction, adaptation, and communication to the public) are defined by copyright. These rights are inherent in the products, services, and processes which make the open source movement viable, and, while

implemented through contractual licensing (mostly in the form of click wrap and shrink wrap licenses), rights attributable to open source software are enforced as industry-inspired exceptions and limitations through copyright law.

WORKERS OF THE WORLD

The computer software industry has grown exponentially during the past decade to the point where software companies are not able to adequately fill their employment needs from existing pools of workers. Hiring and signing bonuses are becoming more prevalent in this industry, and stock options, in both start-up companies and long-standing, major corporations, are also becoming more common. Some countries have emphasized the future employment potential in this industry and produced a surplus of skilled workers. The best example of this is India, which has a rich pool of computer programmers (see Box - 6.9).

The immigration aspects of importing skilled workers have come to the public’s attention lately.⁵³ Skilled workers imported for specific projects and jobs, with special immigration status or visas, are one answer. The existence of the problem of the availability of skilled workers is good evidence that this particular industry is growing by leaps and bounds. In dealing with the shortage of skilled workers, mainly computer software programmers, one must not forget that there is little incentive to educate and develop skilled software programmers if a country’s copyright system is too weak to respect and protect their work from piracy and theft.

BOX-6.9 SOFTWARE INDUSTRY IN INDIA

In the 1970s, the Indian Government made a crucial decision to focus more of its resources on higher education for its citizens. In 1980, the government looked at computers and computer software as a focal point for economic growth and development. Along with revisions to its IP laws, the government changed its standard computer operating system to what was then the emerging international standard, CP/M. It also established software technology parks, the largest being in Bangalore. The results have been measurable and positive. IT software

and services industries in India grossed US\$5.7 billion in 1999/2000, and reflected an overall growth rate of 53 percent. More than 40 percent of the "Fortune 500" companies outsourced their software requirements to India during this period. The market capitalization of Indian software companies listed on the Indian Stock Exchange, during the period January 1999 to February 2000, grew from US\$4 billion to US\$95 billion. During the same period, software exports earned foreign exchange worth US\$4 billion, and accounted for 10.5 percent of India's total exports. Surveys predict that the software sector in India during the next one-year period will grow at the extraordinary rate of 50 percent. Of the 134,000 H-1B work visas granted in the United States of America in 1999 – visas permitting foreign workers to enter the country for employment needs that cannot be filled domestically – fully 48 percent came from India, a sure acknowledgement of the quality of the Indian computer software work force.

Source: <http://www.nasscom.org/>; <http://www.heinz.cmu.edu>

APPLICATION SERVICE PROVIDERS

One of the more interesting developments concerning the availability and use of proprietary software programs is the sudden rise of application service providers (ASPs). These companies allow users to make use of their software programs for a limited time, mainly through the Internet. Why buy a program when you can rent someone else's, especially for short or periodic usages? These ASPs change the business model for proprietary software companies. Rental rights in such programs exist to prevent abuse and to protect the underlying program creator. Many ASPs, which must make available to their users varied and multiple products, feel that an open source software architecture is the best way to tie together disparate components and to distinguish themselves from their competitors.⁵⁴

COMPUTER SOFTWARE PIRACY

Piracy of computer software programs can undermine the exciting growth and development of this industry. As in other cultural industries affected by this problem, piracy of computer software is a serious challenge to the economic vitality of the industry, and countering it requires constant and determined efforts. With respect to computer software, one form of misuse is sometimes unintentional, that which occurs within SMEs. A software program is purchased legitimately then copied and used by multiple users in the company. This widespread practice is contrary to both copyright law and the contractual terms of most software packages. A site license permitting use by multiple users at one site may be required. This is a situation which can be fixed relatively easily by raising awareness and providing accurate information to the users involved.⁵⁵

Piracy of computer software programs on the Internet is a far more serious problem. Microsoft is approaching this problem using a natural weapon: applied computer software programs which search the Internet nonstop for certain words and phrases which indicate illegal activity. These programs, commonly known as "web crawler software," have resulted in the removal of over 7,500 illegal products in 33 countries, 64 criminal raids, and 17 civil lawsuits in 15 countries. It is reported that this software is being developed by Microsoft to search out not just their own software programs but also piracy involving music and motion pictures.⁵⁶ This is one way in which technological measures of protection, as supported by applicable provisions in the WCT and WPPT, are helping to enforce copyright protection and protect all of us from illegal and often dangerous products.

The computer software industry is one in which creativity; entrepreneurship; multinational enterprises; innovation; increasingly short-lived product cycles; the interests of the public at large and governments; and the well-being of many other industries and businesses, all intersect. Developments in technology, marketing, and products are accelerating, perhaps faster than in any other industry. Wealth is being created within this industry and, as a result, in other industries, at a rate and of such enormous proportions as has never been witnessed before. This industry, like all of the others discussed in this chapter, deals with serious piracy

challenges; this industry, like the others, also looks to copyright law for the protection and well-being of its products and services. For all of these reasons, therefore, piracy in this industry is a problem which we can not afford to ignore, even for a moment.

INTERACTIVE SOFTWARE ENTERTAINMENT AND EDUCATION PRODUCTS

In the mid-1980s, there was a movement to create a new category of copyright work called multimedia. It was an attempt to deal with the opportunities created by computer software and related devices storing software content, such as CD-Read Only Memory (ROM). This industry in reality comprises two vital, exponentially expanding elements: interactive gaming products, and interactive education and entertainment products. They are grouped together because they use the same technologies and the same principles of copyright protection, the products appear similar in terms of their mechanics and technologies, and the net result is the same, whether it be education or entertainment (so-called "edutainment").

GAMES

Three multinational enterprises (Sony, Nintendo, and Sega) have the major share of the interactive games industry, at least in respect of its current hardware manufacturers. Microsoft, subsequently joined this sector in which the stakes and profits are enormous.⁵⁷ The devices manufactured for these interactive games reflect much of the technological mind behind the ever-increasing push for market advantage. For example, Nintendo's Game Boy™, a 100-million-plus selling product manufactured in 52 different colors, is a market leader. It is a handheld device, as contrasted with Nintendo's 64™ device, which is used in conjunction with a personal computer (PC). The Game Boy™ plays games especially made for that device, or platform, including the very popular Pokemon™ series of games; the device is also compatible with the Game Boy Camera™ and Game Boy Printer™ as add-ons.⁵⁸

Nintendo's competitors have their own ideas about how to service this vast market. Sony is currently the leading company in this field. Its Playstation™ platform was a very popular device and has been updated by the much-improved Playstation 2™ model. The Playstation 2™ device is a console with enormous power; it also plays DVDs and allows its users to connect to the Internet, attach a hard drive and keyboard, as well as play games. In its first week of release in Japan, more than one million units were sold. It was released in the United States of America on October 26, 2000, together with 26 new game titles created especially for it.

Sega has long been working on plans to challenge Sony in the console market with its own version, the Dreamcast™. However, on January 31, 2001, Sega announced that it was abandoning all work on the Dreamcast™ model, at a considerable loss. Seeing how large and lucrative this market segment is, Microsoft has entered the competition with its own platform, which it has labeled the Xbox™. The Xbox™ stats of 600 MHz Intel Pentium processor, graphics chip, 3-D audio sound, 8 gigabyte hard disk drive, and Windows 2000™-based operating system, are considerably more powerful than many PCs.⁵⁹

The foregoing is a very brief overview of the specially designed and manufactured hardware and software components of this rapidly growing industry. It does not include the market for the vast array of home PCs for which these types of games and programs can be purchased.

One dimension in this area which copyright law is able to deal with is that of the characters appearing in these various productions. When a character is artistically and graphically rendered, or adequately described in a literary work (which is how most of these productions are initially created) as the basis for a video game, edutainment, or film production, copyright law generally protects that character in the same way that the entire work is protected, from the point when it is created or fixed, without regard to further formalities. James Bond™, the Pink Panther™, Lara Croft™, the Pokemon™ characters, the multitude of characters from the Star Wars™ series, are merely a few of the many examples which have received life after their initial debuts and which, like many of the others, have demonstrated that intellectual property (here, copyright) is a limitless

resource which is renewable; which creates jobs, businesses, and even industries; and which can expedite economic development when the IP regime is nurtured and vigorously enforced. Without viable copyright protection, these characters would probably not have been created, and they would surely have experienced abbreviated lives. It is important to note that copyright protection for characters is not evenly recognized or enforced in the international context. Moreover, other areas of law and remedies are often employed in the protection of characters, most notably contracts, and the law of unfair competition, misappropriation, and marks.

“EDUTAINMENT”

The digital revolution has had a profound impact on education and leisure time entertainment. The widespread availability of a CD-ROM containing educational materials, such as the *Microsoft Encarta Encyclopedia*TM, is a good example of the high value which such a product might offer for those who do not have Internet connectivity. In this example, however, interactive CD-ROMs have almost killed the market for encyclopedias in book form; in that regard, note the shift of the *Encyclopaedia Britannica*TM from a paper-based product, to an interactive product offered at one of the most heavily used websites. The addition of audio and video dimensions (as offered within the CD-ROM platform, as well as through Internet-delivered programs) is a good example of the essence of what the digital revolution can bring to almost any given situation, such as making educational products which talk, incorporate music and other sounds; link to other related subjects; and respond to questions or directions from the viewer.

Interactive games and leisure programs constitute a vast and growing industry as competitive as any other. The interactive games industry has been growing faster than any other part of the entertainment business; estimates of annual gross revenues are in excess of US\$20 billion.⁶⁰ A popular interactive game or program can generate hundreds of millions of dollars in sales revenues, easily topping best-selling books and all but the very highest-grossing films. Multi-platform titles such as *Myst*TM, *SimCity*TM, *Command and Conquer*TM, and *Wing Commander*TM, have

each generated over US\$100 million dollars for their publishers.⁶¹ Other titles on subjects as diverse as golf, basketball, Formula 1 auto-racing, football, soccer, and flight simulation, are extremely popular and also generate large revenues for their publishers.

It is interesting to note that almost anything which achieves popularity in its own right can be the subject of an interactive game or software program. James BondTM is the subject of an award winning game, *Tomorrow Never Dies*TM; and David Bowie has created his own interactive video game, *Omikron: The Nomad Soul*TM.⁶² Literally anything or anybody can be used as the subject of such games and programs, which reflects one of the important tenets of intellectual property in respect of economic growth and development: it is literally unlimited in terms of what is possible.

As with all forms of copyrighted works, piracy and counterfeiting are major problems with which this industry is coping. It is claimed that piracy cost the US producers of interactive video games more than US\$3 billion in 1998⁶³ (for further discussion on enforcement of IPRs, see Chapter 9).

The interactive entertainment and education industry uses the latest technological developments and, with the vital assistance of copyright law, brings information, entertainment, leisure time activities, and educational opportunities. There is no more competitive industry, both in terms of technology or product development, consumer promotion, and outreach. Its products often reflect current events, current themes of entertainment, or cutting edge issues, and they allow the consumer to experience things he or she might not otherwise ever be able to experience, such as flying an aircraft, playing on the world's greatest golf courses, or being in the middle of the world football championship. The educational products can bring awareness and enlightenment to people who might live in places and under circumstances where such things are not normally available. This is invaluable as they are tools for giving opportunity, inspiration, and hope where there might not have been any. They can also be great entertainment.

COPYRIGHT AND TECHNOLOGICAL CHANGE

The introduction and enhancement of new media, information, and telecommunications technologies – such as the videocassette recorder (VCR) in the late 1970s, the digital revolution in the 1980s, and the Internet in the 1990s – have consistently challenged both copyright laws and the cultural industries and communities which live and prosper under them. The next section will discuss what impact the changes brought by technological advances have had on the copyright system and how copyright laws have been interpreted, adapted, and clarified as a response to those changes.

VIDEOCASSETTE RECORDERS

The VCR was developed and introduced with the technical capability to record from the television, and some models provided for two-cassette devices, which allowed for home recording from other cassettes. A major court case in the United States of America (*Sony Corp. vs. Universal City Studios, Inc.*, 464 U.S. 417 (1984)) was fought over this new technology. The case, ultimately decided by the US Supreme Court, held that it was “fair use” for consumers to tape free over-the-air broadcasts at home for the purpose of watching them at a later time, and introduced the term “time shifting” with respect to recording television programs and productions for later viewing. Private copying is seen as an exemption from copyright infringement in many countries. It often co-exists with a parallel system of levies on blank recording materials (blank tapes and hardware) to offset the losses associated with private copying, a system which appears to have established a fair balance among the various interested parties involved in the issue.⁶⁴

THE DIGITAL REVOLUTION

In 1995, a media guru predicted that a change from atoms to bits was irrevocable and unstoppable. The methodical movement of recording music as analog signals or waves on pieces of plastic, like the slow

human handling of most information in the form of books, magazines, newspapers, and VCRs, was abandoned in favor of the instantaneous and inexpensive transfer of electronic data that moved at the speed of light.⁶⁵ In fact, the digital revolution had really started in 1981, when Philips and Sony jointly developed the CD, and adroitly offered to license this technology to any manufacturer or company that agreed to a simple license and royalty arrangement. This was the first time that massive amounts of data were capable of being brought to the attention and use of ordinary people at a reasonable cost.

DIGITAL MEDIA AND COPYRIGHT

The CD swiftly replaced vinyl records and music cassettes, as its new format embodying digital technology in a mobile and longer-lasting form was quickly accepted by the public and the major recording companies. The result was that the music industry was given an opportunity to resell their existing catalogues anew in CD format.⁶⁶ This surge of new and unanticipated revenue financed unforeseen company expansion, the signing and development of many more new artists, and perhaps funded more than a few M&As.

Audiovisual productions in digital format are also gaining much success because of their high quality resolution, and relatively inexpensive price. A whole new generation of consumers is now repurchasing audiovisual productions which were thought to be inactive, or at least not commercially viable. However, audiovisual subject matter, when it is digitized and reproduced in DVD format, is much easier to copy and is susceptible to unauthorized posting on the Internet. Millions of copies potentially could be pirated in this scenario. Strong efforts are underway by the industry to prevent this form of piracy and, where it occurs, to stop it in its tracks and seek civil or criminal remedies against those responsible. Technological measures, such as encryption, to stop digital piracy are essential. The audiovisual industry agreed on an encryption technology to protect audiovisual content when manufactured and disseminated in DVD format. The WCT and WPPT contain special provisions which prohibit any circumvention of such measures of technological protection for copyright works.⁶⁷

Literary works are also available in digital form. An e-book is an electronic device, generally small and portable, which contains a digital version of one or more books, made readable by a screen and an addressable operating system. Though several technical problems remain unresolved, the opportunities presented by e-books are impressive in terms of portability, searchability and, not unimportantly, the preservation of trees. E-books offer undreamed of opportunities for new and unknown writers, opening up channels for self-publishing, as well as low-cost publishing by non-publishers, or by publishers specializing in vanity publishing, subscription publishing, and do-it-yourself publishing.⁶⁸

Electronic publishing in digital form, on-line or off-line, also heralds the possibility of custom-made, state-of-the-art books and materials. Completely new, "composite" publications can be created on demand, where a reader or user might have very specific interests. The searchability of electronic databases, the accountability of electronically licensing the subject materials with proper credits, and the cost-effectiveness of automated printing, make these potentially valuable publications a reality.⁶⁹ Newly developed automated printing systems also offer new hope and new opportunities, not just to new or unknown authors, but to the developing and least developed countries and the supply of books and printed materials in their educational systems. With these new systems, producing 10 copies of 100,000 titles can be almost as profitable or cost-effective as producing 100,000 copies of 10 titles. Books can, therefore, be custom-made for specific situations, classes, or schools and, perhaps most importantly, in different languages. The possibilities and opportunities are both clear and exciting.⁷⁰

Because of these technological advancements and developments, there are also important challenges to basic copyright law. Copying and transmission are rendered easy; the applicable laws of copyright therefore become more easily violable. Technological methods of protection, such as encryption with subscriber or fee-based keys are logical methods of protecting works in digital form, but are also not without problems. The more layers of protection one places on a work, the more difficult it is to get it to the consumer, thereby defeating the optimum commercialization objectives of selling to the public in the first place. Technical

solutions are expected to be found which resolve the myriad problems, and which take into consideration the interests of all those involved, including the author's and publisher's need for widespread commercial dissemination of their works under protected circumstances, as well as the public's need for works in a cheap and easily obtainable format.

With the digital revolution, and all the technological and other developments it has brought, some question the continuing viability of copyright in the face of such dramatic change. Those who ask such questions, however, are a minority, because copyright has withstood every technological change which has taken place; and for good reason: copyright laws support technological innovation and creativity.

Digital technology and the Internet have changed the way in which we receive information, including copyrighted works. Does that mean that we must completely rewrite copyright laws? Of course not. Copyright laws have been created, written, and refined to provide for such challenges. The language in the Berne Convention on the most basic of all copyright rights, that of reproduction, was written in a way that can encompass any of these types of technological and other challenges. Berne Convention Article 9(1) states that, "Authors of literary and artistic works protected by this Convention shall have the exclusive right of authorizing the reproduction of these works, in any manner or form." This provision has withstood the test of time, the test of change, and even the test of digital technology. The concept and the language were carried forward in both the WCT and the WPPT, where Agreed Statements state that: "The reproduction right... fully applies in the digital environment, in particular to the use of works in digital form."⁷¹

The legal cases which we are seeing now, in which the underlying facts are pushing the interpretation of existing copyright laws (for example, Napster in music; DVD audiovisual works; video games; and television shows), are uniformly being decided on sound copyright principles. As will be discussed later with respect to the Napster case, judges are interpreting copyright laws in respect of specific situations in ways that support and affirm the rights of authors, artists, creators, and inventors, and those who finance, manufacture, and distribute their creations.

COPYRIGHT AND THE INTERNET

As mentioned above, certain technological developments have pushed the evolution of copyright laws. As can be seen regarding the revisions to the Berne Convention, which occurred in Diplomatic Conferences held in 1908, 1928, 1948, 1967, and 1971. The Diplomatic Conference on Certain Copyright and Neighboring Rights Questions, held from December 2 to 20, 1996, which adopted the WCT and the WPPT, can be viewed as an extension of these efforts to update and clarify copyright laws. For specific reasons, in this instance, it was felt that it would be better to adopt new treaties than to amend the existing Berne and Rome Conventions.

These Diplomatic Conferences took place approximately every 20 years, and reflect the technological challenges of that time. Copyright laws, and the purposes and objectives which underlie them, have withstood all of the challenges that technology has posed, including the phonograph player, radio, television, photocopier machine, VCR, CD, and DVD. However, another major challenge to copyright is now upon us: the Internet.

While the Internet has not penetrated every home (the current estimate of Internet penetration is 560 million users, or 9 percent of world population), use is sufficiently widespread and increasing at such a rate as to make it impossible to ignore.⁷² Its effects on bottom-line business operations also cannot be ignored. It potentially allows every person to have access to virtually unlimited products, services, and information, and at almost the same time. Because of the tremendous good which can come of this particular advance, we must guard against its being used for illegal or improper purposes, or for negative reasons. The Internet cannot become a lawless zone of illegal activity, characterized by theft, piracy, fraud, or other criminal activity.

Copyright laws, and the works they protect, are being challenged in the context of the Internet. During the first half of the 1990s, the copyright community had intense discussions at WIPO regarding the impact of the Internet on society and with respect to intellectual property. The WIPO Internet Treaties, the WCT and the WPPT, entered into force in March

and May 2002, respectively. The next section will describe the most recent events which are testing the viability and robustness of the Internet Treaties.

CHALLENGES FROM NAPSTER

New (MP-3) technology has made it easy to compress music files, so that they take up considerably less space, are easy to upload and download over the Internet, and can be neatly stored in mobile devices. Most of such activity occurs without the knowledge or consent of the right holder to such music and, thus, is in violation of the spirit, intent, and express provisions of copyright law. Napster facilitates the sharing of MP-3 music files (as well as files of other copyright works), both from a central server with a database of thousands of files, and from one consumer to another without the necessity of a central server, popularly known as a peer-to-peer (p2p) transactions. This activity is almost always without the knowledge or consent of the right holder.

As a result of litigation initiated by the major recording companies, the proprietors of the MP-3 technology have entered into a licensing arrangement with the rightful owners of the recorded music, thereby legitimizing their activities. A negotiated royalty or licensing fee will be paid for certain types of use of the copyrighted works. Consumers who wish to enjoy the advantages of the new technology through this business model will enter into a subscription arrangement with the provider, for example, the MP-3 enterprise. In return for a small monthly or yearly subscription fee, consumers will have quick and easy access to huge amounts of recorded music within a legal framework that supports the integrity of copyright law. This business model is feasible because a central server lies at the core of the operation.⁷³

On the other hand, for the p2p activity which the Napster program and its progeny (such as Gnutella, Freenet, OpenNap, and Aimster) have created and facilitate, there is no central server to identify illegal activity. It is suggested that the answer to this particular area of illegal activity will be found in technology such as a computer software program which identifies illegal transactions and those persons or entities involved.

Consumers have a great interest in and need for music; and more specifically, for that music to be delivered to them in the easiest possible way, and as inexpensively as possible.

On February 12, 2001, the United States Court of Appeals for the 9th Circuit rendered its landmark decision in an important legal case, *A&M Records, Inc., et al. vs. Napster, Inc.*

The court ruled that Napster's "fair use" defense, which Napster claimed occurred through sampling, space shifting, and permissive distribution, was without merit, and that as a consequence, Napster would be held liable for contributory infringement of copyright if the case was ever tried at the district court level. Napster had been given actual legal notice of the infringing nature of its activities, but it had failed to take any action to correct those infringements; it had also failed to police its system, which the court found would have been possible through its file-tracking capability. Napster would also be held vicariously liable for the infringements of its users. The court ruled that, contrary to Napster's claims, the safe harbor provisions contained in the US Digital Millennium Copyright Act applicable to legitimate ISPs did not apply to Napster.

Napster exploded in popularity in 2000, eventually gaining some 80 million users who freely exchanged copyrighted music. Napster's activities had negatively affected legitimate CD sales and had likewise presented an obstacle for the legitimate right holders (the record companies) to attempt to enter the business of distributing music on-line through the Internet with their own operations. Napster's activities were held to be for commercial gain: the more users it was able to service and demonstrate, the more investment funds it was able to receive, and the more valuable its stock would become. Finally, the court refused to establish a compulsory licensing arrangement which would have legitimized Napster's activities (in the court's own words, "would have given Napster an 'easy out' of the case").

One other important argument in this case should be mentioned here. Napster argued that its activities were nothing more than home copying and personal use, which the United States Supreme Court had specifi-

cally approved in respect to VCRs in the case of *Sony vs. Universal*. The court, in rejecting Napster's defense, distinguished the two cases. VCRs had a substantial legitimate use and involved only the potential abuse of reproduction rights. Napster, on the contrary, had a substantially illegal use (the underlying documents confirmed that Napster had built its business on this premise), and also violated the right of distribution.

Napster closed its service in July 2001. Since then, Napster and the record companies have been preparing for a trial at the US Federal District Court in Northern California in which the companies are seeking damages. In February 2002, Judge Marilyn Patel of the Federal District Court wrote that these could amount to billions of dollars.⁷⁴ The Napster case, as it has come to be known, is important for several reasons. Sharing copyrighted works over the Internet without the authorization of the applicable right holder has been found to be illegal, contrary to copyright law, and punishable by the full weight of the legal remedies available for infringement. While this case took place in the United States of America, it is a major precedent in an area of rapidly evolving law, based entirely on the provisions of the WCT and the WPPT, which can serve as good law for other countries who are in the process of implementing the provisions of these treaties. Finally, while the case was about music, its principles are equally applicable to film, video games, computer software, and literary works.

CHALLENGES TO LITERARY PUBLISHING

Literary works are also under assault, but the response by this industry has been somewhat different from that of the music industry. Books have largely been spared the widespread copying and dissemination which has occurred in music. Though few people will want to read a book on the computer screen, digital publication of works over the Internet is growing, and will continue to grow, in spite of the attendant legal, technical, and practical problems.⁷⁵ A publisher's digitization of his entire catalogue will also open increased possibilities for piracy of those works. This is a situation which should be monitored with a view to further developments.

The newspaper industry has made substantial changes in its business model to adapt to the new environment. Most major newspapers have established Internet websites, on which they post a free electronic version of their newspaper. Very few newspapers are able to charge a fee for electronic access to their products. This business model of giving its product away is not one which these businesses would have voluntarily chosen, but they are left with no viable alternative. People refuse to pay for what they can get legitimately elsewhere for free. Therefore, subscription fees for news services are difficult, but not impossible. Popular sites, such as, for example, those of the *New York Times* and *CNN*, derive money from advertisers who pay to have themselves displayed on these high-traffic sites. High volume Internet sites establish brand name and market share. The new business models which will tap into these new economic changes, and thereby make them profitable, are being worked on currently.⁷⁶ However, newspapers and related publications, in which one is dealing with shorter works with time-sensitive dimensions, have, in large part, adapted to the new paradigms without much litigation or destructive posturing. The consumer is constantly being given more products and services from which to choose.

CHALLENGES TO COMPUTER SOFTWARE

Computer software has also been rampantly copied and illegally offered for downloading over the Internet. The software industry has incurred huge losses from piracy over the Internet and through the illegal reproduction and sale of physical copies. Computer software programs are protected works. Relying on rights provided in the WCT and the WPPT, the computer software industry has zealously sought out those who illegally offer their products to the public. The industry has used the courts and law enforcement agencies, and has also created special programs (webcrawler software) to seek out websites which illegally offer computer software, and many have been shut down. However, because new piracy operations are born or resurface daily, this is a never-ending fight which requires huge resources and efforts.

Present and future efforts by the computer software industry to fight piracy, especially the type that uses the Internet as its means of reproduction

and distribution, will be ably assisted by the provisions applicable to this issue in the WCT and the WPPT and by the implementing national legislation which will bring those provisions to the countries which ratify or accede to these treaties. The intelligence and foresight of those delegates who negotiated and then adopted the treaties in 1996, when many of the problems involving piracy over the Internet had not yet surfaced, are all the more admirable. WIPO is proud to have provided the forum and environment in which these two far-reaching international instruments came into being.

Two of the treaties' provisions are worth mentioning here. The right of communication to the public, including making works available over the Internet, provides, for the first time, a right for the owner or right holder to consent to his or her work being posted over the Internet. This important right is applicable not just to computer software, but also to all copyrighted works, as well as the related rights which are the subject of the WPPT. The other noteworthy provision is the obligation to provide legal remedies against the circumvention of effective technological measures that are used by right holders in connection with their exercise of rights in the digital environment, again particularly regarding the Internet.

Such technological measures include a technology called steganography, also known as watermarking. Through steganography, information can be embedded in the copyrighted works, such as music, films, software, and books, in digital or analog form, allowing the copyright owners and entities concerned to determine whether the work has been illegally copied.⁷⁷ It is expected that these many forms of technological protection, including encryption, will become mature enough to be an effective control mechanism of copyrighted works in the digital and on-line environments.

Better copyright management will help to reduce all forms of piracy, and to encourage use of the new digital technologies and of the Internet. These incredibly powerful tools, taken together with the proven and potent benefits inherent in copyright and related rights laws, can serve as the basis for developing the many cultural activities associated with and protected by copyright. At the same time, it is important to recognize the criticisms that have been made of overly strong management

technologies as possibly jeopardizing other public interests, especially exceptions to copyright protection based on public debate and free expression. The balance between effective protection against copyright infringement and the public policies underlying exceptions to copyright law is currently an issue of great interest and importance.

CHALLENGES TO THE AUDIOVISUAL INDUSTRY

The motion picture and video industry was for a time spared the wholesale copying and distribution of its products via the Internet experienced by the software industry; however, with the digitization of audiovisual works, this situation is now changing. The specific reason for the previous lull on this particular front is that motion pictures are bandwidth and storage intensive; downloading a full-length motion picture can take in excess of 12 hours, a period of time most consumers are not yet willing to give for that purpose. This situation is changing, however, as the public infrastructure is greatly enhanced, and, as a consequence, more and more bandwidth comes on line.

The motion picture industry has made a concerted decision to “go digital” in the past few years. An industry-wide standard was finally agreed upon, and the DVD came into being as a common platform for the dissemination, use, and enjoyment of full-length motion pictures. This digitization also opened the door, as in music and other works, for easier copying. An encryption system for DVDs known as the Control Scramble System that was put in place was soon hacked; litigation to prevent the dissemination of the disencryption program has thus far supported the rights of copyright holders as opposed to the interests of pirates and hackers.⁷⁸

Video games and interactive entertainment and educational programs are in a situation similar to that of motion pictures. Their programs are so large and storage intensive that they have not been the subject of widespread piracy, although they have not been totally immune. Some websites offering these programs without authorization have been sued by right holders, and the rights of copyright holders have been sustained

there also. As in the motion picture industry, this industry is vigilant and aggressive about protecting its property and its rights, and with the support of the WCT and the WPPT, copyright will prevail in the face of these ongoing challenges.

Copyright laws provide the framework by which businesses and persons involved in the cultural industries can make important business decisions, can rely upon and expect consistency and reliability for their operations and investments, and can compete fairly. The results have been spectacular. Economic benefits made possible because of copyright and related rights laws are evident in each of these industries; there has been measurable growth and development; an ever-expanding range of products and services; greatly enhanced creativity and innovation; and hope about the future, and the ability to tackle and satisfactorily resolve any and all problems.

- 1 Melville B. Nimmer and David Nimmer, *Nimmer On Copyright* (New York: Matthew Bender & Company, 2000), 2-6 to 2-30. See also *Berne Convention, Articles 2(1) and 2(2)*; *TRIPS Agreement Article 9(2)*.
- 2 See *Berne Convention, Article 5(2)*.
- 3 *International Convention for the Protection of Performers, Producers of Phonograms and Broadcasting Organizations (Rome Convention)* (1961).
- 4 Shahid Alikhan, *Socio-Economic Benefits of Intellectual Property Protection in Developing Countries* (Geneva: WIPO, 2000): 50, 56.
- 5 *Copyright Industries in the U.S. Economy: The 2000 Report* (Washington D.C.: International Intellectual Property Alliance, 2000).
- 6 *Address of the Honorable John Luxton, Minister of Commerce and Industry, New Zealand, September 9, 1997*.
- 7 Luis Stolovich, Graciela Lescana, and José Mourelle, *La Cultura Da Trabajo* (Montevideo: Fin de Siglo, 1997).
- 8 Alikhan, *Socio-Economic Benefits of Intellectual Property Protection in Developing Countries*: 69.
- 9 Note that a musical composition may also be a "joint work" of more than one author or a "work made for hire" where the work is owned by the creator's employer.
- 10 <http://www.geocities.com>
- 11 *International Federation of the Phonographic Industry, World Sales of Recorded Music, 1999* (<http://www.ifpi.org/statistics>).
- 12 *Irish Times, February 16, 2000*. See also <http://acusd.edu/gen/recording>; www.ifpi.org; www.duke.edu.
- 13 *Independent (London), February 8, 1999*.
- 14 *Statistics by IFPI* – <http://www.ifpi.org>
- 15 *Composers and music publishers also derive income from other forms of exploitation of their various assets, such as directly from the musical compositions which they own (for example, public performance income from television and radio), and from the licensing of recordings for advertisements, motion pictures, and other creative uses for which fees are paid.*
- 16 *Asian Wall Street Journal, January 28, 2000; Mainichi Daily News, January 14, 2000; Boston Globe, November 21, 1999*.
- 17 *New York Times, October 3, 1999*.
- 18 <http://www.music365.fr>
- 19 <http://www.ark21.com/chebmami>; <http://www.cnn.com>
- 20 <http://www.isis-imtl.com>; <http://www.africana.com>; *New York Times, June 24, 1998*.
- 21 *Independent (London), February 14, 2000*.
- 22 <http://www.nwlink.com>
- 23 <http://www.unesco.org>
- 24 http://www.wipo.int/about-ip/en/index.html?wipo_content_frame=/about-ip/en/copyright.html
- 25 <http://www.prs.co.uk>
- 26 <http://www.jasrac.com>
- 27 <http://www.bmi.com>
- 28 <http://www.ascap.com>
- 29 <http://www.sesac.com/>
- 30 <http://www.nmpa.org/nmpa.html>
- 31 <http://www.dictionary.msn.com>
- 32 *Los Angeles Times, June 22, 28, 2000; M2 Presswire, July 28, 2000*.
- 33 See *Berne Convention, Articles 2(1) and 14bis*.
- 34 See *Berne Convention, Article 14bis(2) and (3)*.
- 35 *For example, the characters in the Star Wars and ET movies created whole industries and enormous revenue from the manufacture and sale of products based on them.*

- 36 Mercedes reportedly paid a considerable sum for its vehicle to appear in **The Lost World**; as did Nokia and BMW, which were prominently featured in the latest James Bond movies. See <http://www.vanguardngr.com>
- 37 <http://asia.cnn.com>
- 38 The importance of book publishing in respect to education was recognized in the appendix to the Berne Convention, which provides developing countries with a mechanism for compulsory licensing (in respect to the rights of translation and reproduction) of books deemed necessary to their economic, educational, or cultural interests.
- 39 Donald T. Hawkins, "Electronic books: A Major Publishing Revolution," Online 24, No. 4 (July/August 2000). See also <http://www.ipa.org/statistics>
- 40 <http://www.unescostat.unesco.org>
- 41 Kiplinger's Personal Finance Magazine, November, 2000.
- 42 <http://www.britannica.com> (personal computer)
- 43 <http://www.softwremag.com>
- 44 It was confirmed in the TRIPS Agreement, Article 10(1) of which says "Computer programs, whether in source or object code, shall be protected as literary works under the Berne Convention."
- 45 Gregory J. Kirsh, "The Changing Role of Patent and Copyright Protection for Software" – <http://www.gigalaw.com>; see TRIPS Agreement, Article 9(2).
- 46 The United States Federal Court of Appeals, in the landmark case of **State Street Bank vs Signature Financial Group** (149 F.3d 1368), ruled that a new method of doing business, which involved or centered around computer software, was subject to patent protection (for further discussion on this issue see Chapter 4).
- 47 Operating systems tell the computer hardware what to do to make it work, to accept applications and programs, and in general, make the unit interface with the user.
- 48 Its leading proponent is Linus Torvalds, who created the basis for the Linux operating system.
- 49 Independent, August 23, 2000; Irish Times, April 23, 1999; Computerworld, January 26, 1998.
- 50 <http://www.opensource.org>
- 51 <http://www.intellectualcapital.com>
- 52 <http://www.opensource.org>; see also the IBM Public License for its open source software (<http://www.ibm.com>), and the Mozilla Public License (<http://www.mozilla.org>).
- 53 <http://www.itaa.org>
- 54 <http://www.stardock.net>
- 55 <http://www.salon.com>; <http://www.bsa.org>
- 56 <http://www.law.com>
- 57 Wall Street Journal, June 13, 2000; <http://www.guardianunlimited.co.uk>
- 58 <http://www.gameboy.com>
- 59 <http://www.guardianunlimited.co.uk>; New York Times, "Microsoft's Game Plan," September 4, 2000; <http://www.cnn.com>
- 60 Economist (London), October 7, 2000.
- 61 Dean Takahashi, "Myst Opportunity," Upside (January, 1999).
- 62 <http://www.guardianunlimited.co.uk>; Stereo Review's Sound & Vision, January 2000.
- 63 <http://www.idsa.com>
- 64 See for example, the United States Copyright Act, at 17 USC 1001 et seq.
- 65 Nicholas Negroponte, *Being Digital* (New York: Alfred A. Knopf, 1995): 4.
- 66 Economist, October 7, 2000.
- 67 WCT, article 11; WPPT, article 18.
- 68 Donald T. Hawkins, New York Times, July 2, 1998.
- 69 New York Times, July 18, 2000.

- 70 **Wall Street Journal**, July 3, 2000.
- 71 *WCT Agreed Statement 1; WPPT Agreed Statement 6.*
- 72 <http://www.gtreach.com/globstats>
- 73 <http://www.salon.com>. Recent headlines indicate that the foregoing business model is growing in acceptance. The Recording Industry Association of America (RIAA) has formed a pool to collect royalties from webcasters who stream music online. At the 2000 World Congress of the International Confederation of Societies of Authors and Composers, the organization which looks after the interests of those connected to musical compositions, agreements were entered into for the collection of licensing income generated by the use of music (musical compositions) on the Internet, including webcasting, streaming, and music on-demand situations (<http://www.CISAC.org>; <http://www.RIAA.com>). As of July 8, 2002, the Copyright Arbitration Royalty Panel (CARP) in the United States of America promulgated a final Decision (part 201 of 37 CFR) setting terms for fees and compulsory licenses for use of musical works on the Internet (see: http://www.copyright.gov/carp/webcast_regs.html).
- 74 **New York Times**, February 23, 2002, *Napster Wins One Round in Music Case*, Matt Richtel
- 75 See, DOI Project, <http://www.doi.org>
- 76 **American Journalism Review**, September 1999, June 2000; **Independent**, August 24, 1999; **Editor & Publisher**, February 20, 1999; **Guardian**, April 10, 2000; **New York Times**, October 4, 1999.
- 77 *The Secure Digital Music Initiative (SDMI) has been working on the standardization of the technology to be used in audio material. For further technical details about steganography, see Business2.com, February 6, 2000: 56; <http://www.jjtc.co/steganography>*
- 78 **New York Times**, July 14, 16, and 18, 2000; <http://www.salon.com>; <http://www.cnn.com>