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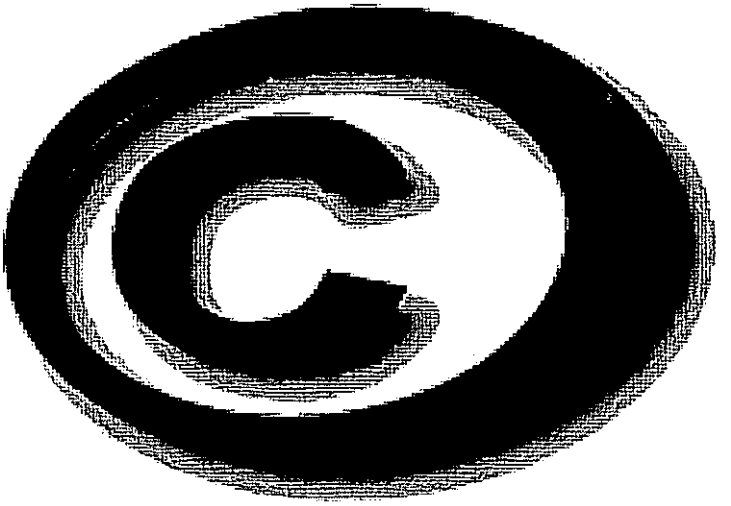
The Effect of Technology on Copyright



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Abstract.

Copyright and technology have a long and intertwined history during which both have felt their influence on each other. The exclusive rights of reproduction and distribution given to the creators of artistic and literary works today to are very different from what they were 500 years ago when this relationship began.

Copyright developed as a direct consequence of the invention of the printing press. Before its invention, the principle protecting author's rights did not exist because the mass reproduction of literary works was not possible. Gutenberg's invention of movable type, however, revolutionised the industry and the stationers in England moved from reproducing single volumes by hand to producing many more copies to match the growing demand resulting in books gaining significant financial value. Value that was difficult to access by the authors of the books until 200 years later when the Statute of Anne, in an effort to encourage the sustained production or original works, granted the authors exclusive rights to their works and started the whole copyright story.

Modern national copyright legislation has evolved with different influences throughout history. However, as the world continued to develop and cross border activity flourished national copyright legislation was not sufficient to govern what had become a global concern. International agreements were developed over time that reacted to technologies influence on copyright while at the same time setting the baseline for national copyright legislation to grow around. The Berne Convention remains the most important international agreement on copyright and most national laws and international instruments have developed with reference to it.

Following the age of the printing press, the next major technologies to influence copyright were the new recording and broadcast technologies bringing with them, revolutions that forced major shifts in copyright legislation in its efforts to curb infringement. The current digital era poses the biggest challenge copyright legislation has had to face in its history with technology enabling copyright infringements of a scale by far exceeding all other periods combined.

A lot of laws and litigation have marked the path leading up to the situation today with many remedies proving ineffective in reversing the scale of copyright infringement. It is time that the copyright industry stopped fighting new technology and realise that their survival might depend on finding new business models that incorporate technologies like P2P networks into their strategies.

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Glossary of Terms.

3D – Three Dimensional.

CD – Compact Disc.

CONTU - Commission on New Technological Uses of Copyrighted Works.

DMCA – Digital Millennium Copyright Act.

DRM – Digital Rights Management.

DVD – Digital Versatile Disc.

eBook – Electronic Book.

GATT – General Agreement of Tariffs and Trade.

GDP – Gross Domestic Product.

ICT – Information and Communication Technology.

ISP – Internet Service Provider.

ITU – International Telecommunications Union.

OFCOM - Office of Communications. The independent regulator and competition authority for the United Kingdom communications industries.

P2P – Peer to Peer.

RIAA - Recording Industry Association of America.

TRIPS – Trade-Related Aspects of Intellectual Property Rights.

WCT - WIPO Copyright Treaty.

WIPO – World Intellectual Property Organisation.

WPPT - WIPO Performances and Phonograms Treaty.

WTO – World Trade Organisation.

UCC – Universal Copyright Convention.

US – United States.

UK – United Kingdom.

UDHR - Universal Declaration of Human Rights.

UNESCO – United Nations Educational, Scientific and Cultural Organisation.

VTR – Video Tape Recorder.

VCR – Video Cassette Recorder.

Chapter 1: Introduction

'Only one thing is impossible for God: To find any sense in any copyright law on the planet.'

-Mark Twain[1]

1.1 Copyright and Technology.

Copyright is a broad subject that has filled numerous volumes in its march through history as it adapts to all the new influences that have appeared over time. Technology's role and influence in the path that copyright law follows continues to grow in significance as the world experiences an innovation rate that rivals all other periods in history put together.

The Oxford English Dictionary defines copyright simply as '[t]he exclusive right given by law for a certain term of years to an author, composer, designer, etc. (or his assignee), to print, publish, and sell copies of his original work.'[2] Black's Law Dictionary expands on this and defines it more completely as:

> The right to copy: specifically a property right in an original work of authorship (including literary, musical, dramatic, choreographic, pictorial, graphic, sculptural, and architectural works; motion pictures and other audiovisual works; and sound recordings) fixed in any tangible medium of expression, giving the holder the exclusive right to reproduce, adapt, distribute, perform and display the work.[3]

While both these definitions are correct, they mask the sheer breadth and depth of copyright; its purpose, its history, its influences, its interpretations, its effects and its evolution as it

[1] Mark Twain's notebook 1902-1903.

[2] Oxford English Dictionary 'copyright, n. (a.)' Available at http://dictionary.oed.com/cgi/entry/50049929?query_type=word&queryword=copyright&first=1&max_to_show=10&sort_type=alpha&result_place=1&search_id=wQp6-EpVXKk-793&hilite=50049929 [Accessed 22 November 2010].

[3] B Garner *Blacks Law Dictionary* (2009) 386.

continues to play an increasingly important role in safeguarding the rights to the plethora of original works that permeate these modern times.

The Oxford English Dictionary goes on to describe technology as the branch of knowledge dealing with the practical applications of the mechanical arts and the applied sciences.[4] It is not immediately apparent that copyright and technology have an influence on each other in their development and that they continue to do so with increasing significance over time. Black's definition of copyright above begins to hint at technology's influence on copyright with its general reference to the fixation of works in any tangible medium of expression.

Technology continues to develop new methods of 'fixation' or reducing copyright works to material form and so the non-specific reference to 'mediums of expression' in the definition is understandable. It is the intention of this paper to show the relationship between technology and copyright and illustrate how the descriptions of copyright have changed in time as technology continues its ceaseless march forward.

1.2 Balancing Act.

The intellectual property rights that are due to the creators of new and innovative works and products are getting harder to safeguard as technology provides for newer and cheaper ways to duplicate and distribute these works through innovations that continuously challenge the measures, both technical and legal, that are developed as countermeasures to infringement. Copyright law in particular is challenged by the new world order where the ability to access and distribute content is now within the reach of the masses and its application is under strain.

Throughout history, copyright law has had to adapt to the new methods that technological innovation manages to develop for the production and dissemination of copyrighted works. It has been hard, if not impossible, for the law to predict in which way innovation would turn as well as what the impact of new technology might be in the world of copyright. These two conditions which

[4] Oxford English Dictionary 'technology, n.' Available at *http://dictionary.oed.com/cgi/entry/50248096?single=1&query_type=word&queryword=technology&first=1&max_to_show=10* [Accessed 22 November 2010].

have also been described as legal delay and legal uncertainty have a profound impact on copyright law.[5]

This paper also evaluates technology's influence on copyright through time and the development of laws and agreements to counterbalance its impact on the rights of copyright owners in an attempt to maintain a conducive environment for the continued production of original works.

1.3 What has Technology got to do with Copyright?

1.3.1 In the Past.

The invention of the printing press is often hailed as the watershed moment in history that changed the way the creators of new works related to the rest of the world. It enabled for a single work to be reproduced quickly, cheaply and in large numbers leaving artists in the new position of not being the only ones controlling the production of their works.

Did copyright protection exist before the invention of the printing press? The Universal Declaration of Human Rights asserts in part that 'Everyone has the right to the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author.'[6] Though the declaration was only written in 1948, it did not claim that these rights were new to the world and the document was only an expression by the nations of the world through the United Nations general assembly of the rights that all human beings were entitled.[7] It aimed to re-assert these rights in the wake of the atrocities of the Second World War. The artist's rights to their works were therefore seen to be fundamental and copyright is merely a modern assertion of these rights. Rights that predated the printing press but never really had to be asserted because of insignificant infringements if any at all.

It could be argued that before the technology to copy and mass produce creative works was invented, copyright protection was not necessary because it was difficult to reproduce original works

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[5] B Depoorter 'Technology and Uncertainty' (2009) 157 6 *University of Pennsylvania Law Review* 1831.

[6] Universal Declaration of Human Rights, GA res. 217A (III), UN Doc A/810 at 71 (1948) Article 27(2).

[7] UDHR (note 6).

at a significant enough scale for there to be a need to formalise through legislation, the rights that the UDHR affirmed as fundamental. Copyright protection did indeed only come into being after the invention of the printing press, and it because of this, one perspective sees it as having been a method of managing the technology that caused a shift in the way artist's fundamental rights were protected[8] and generally enacting legislation where previously no legislation was needed.

1.3.2 In the Present.

In the context of the 21st century , copyright infringement of scale has certainly been brought about by new technology and the laws that have evolved from this are certainly aimed at managing this new technology.

Technology is developed with the aim of making things better, faster, cheaper, more accessible and ultimately easier. In the current era of information and communication technologies, the personal computer and the internet, huge technological innovations on their own, have spawned a myriad of new technologies that have indeed made our lives better, faster and easier. They have, however, also brought many problems along with them in their wake.

Today the ability to copy and distribute digital works for example can be found on most computers with access to the internet. The copies that are made are identical and indistinguishable from the original work in terms of quality as opposed to the copies made in the pre-digital world which suffered from degradation as each copy made suffered from loss of quality and detail and as such was not the same as the original.[9]

Free applications can be downloaded from the internet that will get around most measures employed to secure digital content from being copied. There are also many applications that will connect home computers to peer to peer networks that give them access to find and share virtually limitless content directly with other internet users without the need for any central web service. This has had a profound and obvious impact on the rights of copyright holders, the governing laws and their jurisdictions as well as the general public.

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[8] J Hofman *Introducing Copyright: A plain language guide to copyright in the 21st century* (2009) 1.

[9] M Smith 'Sidestepping DRM: A Look into the Analog Hole' Available at *http://www.colorado.edu/cs/policylab/Papers/AnalogHoleSummerPaper.pdf* at 2 [Accessed 9 June 2011].

1.4 Contemporary Copyright.

As technology continues to advance, the methods and ease through which copyright infringement is effected are becoming of more concern than the infringement itself because the means to copy protected works as mentioned previously are cheap and easily available. The printing press as the pioneer of technology used for the mass reproduction of works was never a concern because it was an expensive technology that was accessible to very few people and hence infringement through it was easy to control. In this information age, however, millions of people now have the ability to not only mass copy but to also distribute digitised works through computers and the networks that connect them.

Copyright law in most jurisdictions today, derives its basics from the Berne Convention (discussed later in this paper) and confers upon the author of an original work the exclusive rights to reproduce, prepare derivatives, distribute, perform and publicly display their works.[10] However, this protection afforded by the law should not be understood to be solely in the interests of the artist. The rights granted to the producers of original works serve to provide an incentive for their continued creative efforts that will in turn enrich and ultimately benefit society. If copyrighted works could be easily exploited by others without repercussion, it is said that it would deprive the authors of potential gains and take away the incentive for them and others to create further and ultimately deprive the public of new works.[11]

The rights granted by copyright have evolved through time to include new rights like moral rights as well as to expand the scope of works covered by copyright as new technologies enabling expression and distribution were developed. The methods of copyright infringement have, however, usually preceded legislation and are divided into the broad categories of direct and indirect infringement. Exceptions to copyright infringement have also had to develop with technology in order to maintain the balance needed for sustained technical innovation.

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[10] Berne Convention for the Protection of Literary and Artistic Works of 1886, as last revised at Paris on July 24, 1971, 1161 UNTS (1971) [Berne Convention from here forward].

[11] Z Chafee, Jr. 'Reflections on copyright I' (1945) 45 4 *Columbia Law Review* 503 at 510-511.

1.4.1 Direct Copyright Infringement.

Direct copyright infringement, is the exercise of one or more of the exclusive rights granted to the copyright holder without permission. This, in a fairly straight forward way, is the unauthorised copying, performance, distribution or display of a work, and is the basis around which copyright regulation has been developed.[12]

The methods and scale of direct infringement have however changed a lot throughout copyrights history as has the technology. From the relatively basic reproduction of texts via the printing press to the now ubiquitous photocopiers and personal computers, direct copyright infringement has reached unprecedented proportions. So much so, that in the new context of the online world, it is no longer practicable to pursue direct infringers due to their numbers, and more attention now being given to the parties that enable them to infringe by providing the technology for the activity. It is cheaper and easier to pursue the providers of the technology rather than the direct infringers not only because they are far fewer and easier to identify, but also because it is better to tackle the problem at its root.[13]

1.4.2 Indirect Copyright Infringement

As mentioned above, the provider of the facility for direct infringement indirectly aids the infringement of copyright.

Indirect copyright infringement, however, in the context of the law, only happens when a party knowingly enables the direct infringement of copyright by another party. Such a party becomes indirectly liable for direct copyright infringement.[14] This is a very new concept in copyright[15] because as mentioned earlier, the technology to copy works was previouslyinacessible to

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[12] S Halpern *Copyright Law: Protection of Original Expression* (2002) 343.

[13] M A Lemley, R A Reese 'Reducing digital copyright infringement without reducing innovation' (2003-2004) 56 *Stanford Low Review* 1345 at 1349.

[14] J Cohen et al. *Copyright in a global informotian economy* (2006) 482.

[15] D Lichtman, W Landes 'Indirect liability for copyright infringement: an economic perspective' (2003) 16 2 *Harvord Journal of Law ond Technology* 395 at 396.

the masses and it was therefore easy to pursue the direct infringer and there was no need to pursue the provider of the facility.

Indirect copyright infringement has, however, been gaining momentum as the main area around which copyright litigation is centred because in many cases it is impossible to pursue all the individual infringers because of sheer numbers, and more practical to sue the provider of the means for infringement adressing the problem at its root.[16] The burden on the law is to determine how to separate the technology that is used purely for infringement from technology that has other legitimate use.

The law, as it turns to address the liability of the providers of these new tools that enable copyright infringement, encounters an ever changing array of technologies that are used in novel ways to infringe on copyright. Indirect infringement is further broadly divided into cases of contributory infringement, where the provider of the good or service knows that it is being used for direct infringement and might even promote such use, and vicarious infringement, where not only is there knowledge of direct infringement, but the supplier benefits financially from it and has the ability to stop or control the infringement.[17]

So, what happens in the case of the manufacturer of a photocopy machine providing the facility to duplicate copyrighted works? While the photocopier might facilitate the copyright infringement, it is also used for significant non-infringing activity in making copies of works that are not copyrighted or in ways that do not infringe it. If injunctive relief were to be granted against the producers of photocopiers and other such technologies, innovation might be brought to a standstill and so cases of contributory infringement are examined closely with the greater good of society kept in mind.[18]

Indirect infringement is therefore not as cut and dry as it may seem at first and is mitigated by many other factors and forms the basis of modern technology's influence on copyright.

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[16] D Lichtman, W Landes (note 15) at 400-404.

[17] L Hollaar 'Legal Protection of Digital Information' Available at *http://digital-law-online.info/lpdi1.0/treatise14.html* [Accessed 27 September 2010].

[18] D Lichtman, W Landes (note 15) at 396-398.

1.4.3 Copyright Infringement Exceptions.

Without some access to previous works, it would be difficult if not impossible for new works to be created as most works are inspired by the experience of things that already exist.[19] Therefore, there must be instances where certain use of copyrighted material without permission is acceptable.

The broad criteria used in America to determine if such use is allowable include the purpose, nature and amount of the work being copied as well as the effect of the use on the potential market. This determination of allowable use placing particular limitations on the rights of copyright holders is a significant one and forms the basis of what has come to be known as the 'fair use' doctrine.[20]

Apart from fair use, it is also necessary for there to be other exceptions to the rule of copyright. Examples of these exceptions in America include reproduction by libraries, transfer of legitimate copies of phonograms, certain performances and displays, secondary transmissions, etc.[21] New technology, however, often brings the necessity to broaden the scope of allowed infringements with it. The internet, for example, by the very nature of its internal mechanics is a vast duplicating platform. If an exception were not made for its workings, it would not be possible for it to function and bring the greatest innovation of modern times to a grinding halt.

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[19] S Halpern (note 12) *at* 399.

[20] U.S. Copyright Office 'Fair Use' Available at *http://www.copyright.gov/fls/fl102.html* [Accessed 13 September 2010].

[21] Title 17 of the United States Code.

Chapter 2: Origins of Copyright- The Printing Age.

'Copyright protection became necessary with the invention of the printing press and had its early beginnings in the British censorship laws.' - B Kaplan.[22]

2.1 The Printing Press.

The printing press was developed in Germany in the middle of the 15th century by Johannes Gutenberg and is the technology that triggered the development of copyright law. In its base form, the technology consisted of individual letters stenciled onto metal blocks that could be arranged on specialized racks to form an infinite variety of words, by so doing enabling the cheap reproduction of books.[23]

Movable type, as it was called, revolutionized the world by multiplying the number of books available and made the information carried in them available to larger segments of the population. It is one of the factors that accelerated the renaissance culture of the period by making books cheaper and more widely available.[24]

It also, in its wake, brought misery and later prosperity to authors as their works came to be exploited in ways that were previously unknown. It was with the birth of this machine of infinite reproduction that author's rights to their works began to be debated.[25]

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[22] B Kaplan *An unhurried view of copyright* (2008) vii -viii.

[23] S Kreis 'The Printing Press' Available at http://www.historyguide.org/intellect/press.html [Accessed 3 June 2011].

[24] S Kreis (note 23).

[25] J Hofman (note 8) *at* 1.

Figure 1: Gutenberg's Printing Press.[26]

2.2 In the Beginning.

The concept of protecting the rights of authors to their works is a relatively new one. With the coming of the printing press in the 1500's, the printed word became the first real medium of mass communication. It is only with the coming of this machine that the notion of author's rights to their works became important. [27]

The current requirements of copyright are that an original idea or creation be reduced to material form before it can be said to be protected by the various copyright regimes in existence. Interpretations of the degree of originality required vary across regimes.[28] Material form, however, has changed considerably in the past 100 years and as such its definition has had to be changed and will indeed continue to change as technology marches on. Contemporary material form can be anything from representations on paper, performances, broadcasts, sound and video recordings all the way down to the arrangement of electronic charges that represent the binary constituents of digitised works which today will include most copyrightable material.

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[26] Image retrieved from *http://listverse.com/2007/09/13/top-10-greatest-inventions/* [Accessed 3 June 2011].

[27] J Hofman (note 8) *at* 2.

[28] Intellectual Property Office 'What is an original copyright work?' Available at *http://www.ipo.gov.uk/types/copy/c-applies/c-applies-faq/c-applies-faq-original.htm* [Accessed 12 June 2011].

The media through which artist's works have been expressed have expanded greatly through time beginning with the humble cave drawings at the dawn of our time through to the cutting edge three dimensional motion pictures of recent times. However, the first time when ownership of the works became an issue was when the technology to reproduce written works became available.

Before, and well after, Gutenberg came along with the printing press that changed the fortunes of the publishing industry and indeed the world forever, the main medium through which literary works like books were expressed was paper. It follows then, that if any protection of early literary works did exist, it would have developed mainly around works expressed on paper and in the publishing industry that reproduced and distributed these works. Nowadays books exist not only in paper form, but in digital and audio form as well.

All books during this period were handwritten and it was a long and laborious process. Producing copies of these books was an equally laborious process as the copies also had to be handwritten by the publishers of the time who were known as stationers in Britain.[29] These stationers could only produce a very limited amount of copies of books for the obvious reason of the time it took to handwrite a given volume. The profits from these few handwritten volumes also went directly to the stationer as the idea of the author having rights to the reproduction of these works did not exist back then.[30]

Given the limited amount of copies of books that could be produced before the 1500's it is reasonable to say that writing was not a profession for people who wanted to get rich through selling many copies of their works. It would also then be safe to assume that the protection of an author's economic rights as espoused by modern copyright laws was not an issue that the societies of that time had faced. It is only the mass reproductions made possible by the printing press which brought the economics angle into the picture with prominent authors like Shakespeare choosing not to publish their works in order to keep them from being reproduced.[31]

While there was not much in the way of economic incentives for an author to write a book before Gutenberg, the motivation to write was still there as is made obvious by the books written in that period. Whether it was a self actuating motivation or otherwise; in the absence of the need to

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[29] J Hofman (note 8) *at* 2.

[30] R Parry 'The Changing Role of Copyright' Available at http://copyright-debate.co.uk/?p=159 [Accessed 15 March 2011].

[31] R Parry (note 30).

protect economic rights, were there any other rights due to the author? Well, France in the 18th century approached copyright differently as its legislation evolved and separated the proprietary rights of exploitation gained by authors from what it termed to be moral rights.[32] Moral rights it described as the right for an author to claim credit for, and control the fate of their works. This separation between economic and moral rights began to spread to other countries in Europe by the end of the century and is now part of modern copyright law.[33]

This right however, unlike today, could in many jurisdictions be assigned away to a third party and was often bundled together with the economic rights in Britain and was indeed treated as one and the same. In fact, copyright after the advent of the printing press was really a printer's right where the stationers via various licensing regimes obtained all the rights to the original works[34] and it was only until 1710 with the coming of the Statute of Anne (discussed in the next section) that the author's right to be identified by publishers as the originator of the work was recognised.[35]

Copyright law has, no doubt, evolved in different ways across the many national jurisdictions in the world and it is beyond the scope of this paper to examine each in turn. It is worth mentioning, however, that there are two main systems for the protection of creative works that have developed over time. The 'copyright system' that is used by the United States, the United Kingdom and all its former colonies and protectorates, and the 'droit d'auteur' or 'author's rights' system that is used by Continental Europe and its former colonies and protectorates as well.[36] Both developed in the seventeenth and eighteenth centuries and are rooted in differing philosophies and influences but have evolved to what can be broadly said to be systems that recognise and protect both economic and moral rights and both unified by the guiding principles of the Berne Convention.

Copyright though, looks at these rights from the perspective of the work itself and how protecting these rights provide benefit society at large while the author's rights system looks from

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[32] J Hofman (note 8) *at* 7.

[33] J Hofman (note 8) *at* 7-8.

[34] R Deazley et al. *Privilege and Property: Essays on the History of Copyright* (2010) 77-81.

[35] H Chartrand 'Tilting at windmills: Moral Rights and Benthamism' Available at *http://www.compilerpress.ca/CCR%20PRN/4.%20Moral%20Rights%20&%20Benthamism.pdf* [Accessed 24 February 2011].

[36] J Hofman (note 8) *at* 8.

the perspective of the author and his justified right to the work; a subtle difference that can become important when these rights have to be honoured across borders.[37]

The next sections will briefly outline the evolution of copyright in Britain, where the first copyright legislation developed and which through time has had a profound impact on the rest of the globe. This will be followed by an even briefer discussion of the development of copyright law in the United States which though currently the largest single producer of copyright material in the world[38] did not have as much an input in the initial development of the copyright system as did England.

2.3 The Evolution of Copyright Law.

The printing press was first brought to England by William Caxton in 1476 setting off a chain of events that eventually set the basis for the development of copyright as we know it today. The first copyright law followed over two hundred years later and was a reaction, long in coming, to this seminal technology.[39]

By the beginning of the 15th century, the stationers in London had already started forming publishing associations and quickly adopted this new technology. The British Crown began regulating this industry by issuing patents then known as litterae patents to individual stationers granting them monopoly rights to print works with no reference to the rights of the authors.[40]

In 1557, in an effort to censor the publications that were being produced in London, King Philip and Queen Mary issued a royal charter that required all stationers to lodge copies of any works they printed with the newly formed Stationers Company. This company, empowered by the

[37] S Lewinski *International copyright law and policy* (2008) 33-40.

[38] Richard A. Morford 'Intellectual Property Protection: A United States Priority' (1989) 19 2 *Georgia Journal of International and Comporative Law* 336 at 336.

[39] C Joyce et al. *Copyright Law* (1974) 15.

[40] J Hofman (note 8) *at* 2.

charter, had the right to seize any books that were considered offensive to the authorities as well as the equipment used to produce them.[41]

Over the next hundred years a number of decrees were also issued by the English court of law known as the Star Chamber as well as ordinances passed by Parliament. They were mainly aimed at censorship and not directly linked to copyright as we know it today. They nevertheless remain noteworthy influences in its development.[42]

In 1662, Parliament passed the Licensing Act[43] which further increased the monopoly rights of stationers by stating that once a stationer had lodged a copy of a work with the Stationers Company, no other stationer could reprint the work. It also served to tighten the governments control over censorship. This perpetual right proved unpopular as some stationers began to put out sub-standard error-filled volumes that could not be challenged by competing stationers and Parliament eventually did away with the Licensing Act in 1679 leaving a void in legislation for the regulation of publishing that would last for many years. During this period Parliament made several failed attempts to pass new legislation while at the same time a lobby for the recognition of the author's rights to their works appeared.[44]

2.3.1 The Statute of Anne.

The Statute of Anne's complete title is 'An Act for the Encouragement of Learning, by vesting the Copies of Printed Books in the Authors or purchasers of such Copies, during the Times therein mentioned'. The main idea behind this statute was to protect authors interests in their works and therefore allow them to earn money through the sale of reproductions of their works and by so doing encourage continued production.[45] It is named after Anne, the then queen of Britain, and was enacted in 1710 to become the world's first copyright statute.[46]

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[41] J Hofman (note 8) *ot* 2.

[42] L Patterson *Copyright in historicol perspective* (1968) 143.

[43] Also known as the 'Licensing of the Press Act of 1662'.

[44] J Hofman (note 8) *ot* 3-4.

[45] R Parry (note 30).

[46] R Deazley *On the origin of the right to copy* (2004) 36.

It was timely legislation designed to bring order to the chaos that had erupted in the publishing industry since the second lapse of the Licensing Act which had been renewed in 1685 and lasted for a further nine years.[47]

It is hailed as the first law to recognise author's rights and therefore marks the period when the fortunes of authors began to change for the better and is probably responsible for the proliferation of new works that we all enjoy today. It was also aimed at eliminating the monopolies held by the stationers and preventing any other future monopolies by imposing maximum periods in which rights could be held. The statute focused on protecting the rights of authors and represented a shift in the patterns of previous legislation which held the interests of the state above all others by principally being censorship laws controlling what was printed in the claimed interests of preserving order.[48]

It was enacted with the purpose of not only protecting author's rights and limiting monopolies; it also served to encourage free speech and discourse that would naturally result in increased literary output and therefore ultimately benefit the public.[49] This aspect of benefit to society, as previously mentioned, differentiates the copyright system from the author's rights system that developed in Continental Europe.

From the introduction of the printing press, it had taken over two hundred years for the first shift in legislation in favour of the author to be enacted.

It is from the Statute of Anne that the form modern copyright regulation has assumed first becomes discernable.

2.3.2 Other significant developments.

There have been numerous changes and amendments to copyright legislation over the period leading up to now. The main technological influence through the next two centuries, however, remained the printing press and so some of the changes to the legislation mentioned below were

[47] L Patterson (note 42) at 143.

[48] R Deazley et al. (note 34) *at* 81-84.

[49] R Deazley et al. (note 34) at 83.

due to reasons and influences outside the scope of this paper but are nevertheless worth mentioning for completeness.

The Statute of Anne was finally repealed by the Copyright Act of 1842 after several amendments had been made to it to include works previously not covered and to extend the copyright duration. The 1842 statute, amongst other things, notably addressed the duration of copyright term again and extended it to cover a period of seven years after the author's death or an unprecedented 42 years from date of publication. It is also worth noting the influence the *Donaldson v Beckett* case on the new Act which established that authors had perpetual rights to first publication but that, once published, this right was annulled and the statutory copyright period was then applicable[50]; addressing an unclear stipulation from the statue of Anne. In terms of protecting literary works, this remained the governing statute for the next seventy years.[51]

The Engraving Copyright Act of 1734 was the first departure of copyright law from protecting just literary works and extending into the artistic realm. As its title suggests, it afforded copyright protection to engravers and designers of engravings with the definitions of the protections evolving over time.[52] This Act was followed by the Sculpture Copyright Act of 1814 and later the Dramatic Copyright Act of 1833 which further broadened the scope of copyright protection by protecting sculptures and performances.[53]

Even after the Copyright Act of 1842 arrived and it's inclusion of protection for performing rights, there remained the need for specialised legislation that prevented the new forms of abuse to the performing rights in musical works. The Copyright (Musical Compositions) Act of 1882 and later 1888 required that any reservation of rights in the public performance of musical compositions be clearly printed on the composition to prevent unauthorised performances. It is also during this period that new technology fostered the first legislation against piracy or the illegal copying and selling of copies of music emerges in the Musical (Summary Proceedings) Act of 1902 and the Musical Copyright Act of 1906.[54]

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[50] 1774 (1) ER 837 (HL).

[51] K Garnett et al. *Copinger and Skone James on Copyright* (1999) 38-40.

[52] K Garnett et al. (note 51) at 40.

[53] K Garnett et al. (note 51) at 40-41.

[54] K Garnett et al. (note 51) at 41.

Paintings and photographs were still inadequately protected and so eventually the Fine Arts Copyright Act of 1862 was enacted to extend protection to artists with the added twist that in the absence of a contract stating otherwise, or the creation was a commissioned work, the rights to the work were lost on first sale.[55]

As it became clear that the number of Acts dealing with the various aspects of copyright in the United Kingdom were growing, a Royal Commission was established in 1875 whose charter was to examine all the exsiting Acts and make recommendations on consolidating them into one Act. No unifying statute resulted however, and it was only the coming of the Berne Convention a few years later that prompted the forming of the 1909 Copyright Committee that laid the groundwork for the Copyright Act of 1911. This Act repealed most of the previous copyright Acts in force and combined them into one that was also in compliance with the Berne Convention extending the protection term to 50 years beyond the life of the author and gave the creators of literary, artistic, dramatic and musical works the exclusive rights to reproduce and ditribute their works.[56]

From this period onwards, the development of copyright law in the United Kingdom and in most other jurisdictions was guided by the Berne Convention.

2.4 On the Other side of the Pond.

The states of America, before the revolution that united them, largely adopted the same copyright regime that had developed in Britain.[57] With the coming of the Declaration of Independence in 1774 and the formation of the Continental Congress, the newly independent colonies decided to enact their own flavour of copyright legislation securing the rights of authors in their constitution.[58] This was soon followed by the very first American Copyright Act in 1790 covering books, maps and charts.

[55] K Garnett et al. (note 51) at 41-42.

[56] K Garnett et al. (note 51) at 42-44.

[57] R Parry (note 30).

[58] C Joyce et al. (note 39) at 19.

It was based on the Statute of Anne and set the stage upon which future legislation was to develop.[59]

America's copyright history and legislation in terms of technology is very sparse during this first era of copyright and only gains momentum in the next age of broadcasting and recording technology with the next Copyright Act coming over 100 years later in 1909.

The United States of America, though a relatively new player in copyright history in comparison to Europe is in terms of Intellectual Property production currently one of the most significant players on the globe with copyright related outputs of up to 12 per cent of its GDP (1.25 trillion dollars) emanating from its industries.[60] It then follows that the world's largest economy is also easily the world's largest copyright producer and therefore also the largest single stakeholder in the war between technology and copyright. It is for this reason that significant parts of this paper from this point on focus on the development of technology's influence on copyright in America unless otherwise stated.

[59] C Joyce et al. (note 39) at 20.

[60] WIPO 'Copyright-based industries: assessing their weight 'Available at *http://www.wipo.int/wipo_magazine/en/2005/03/article_0012.html* [Accessed 28 April 2011].

Chapter 3: Foundations of Modern Copyright Law.

'The only sound approach to collective bargaining is to work out an agreement that clarifies the rights and responsibilities of the parties, establishes principles and operates to the advantage of all concerned. '- Charles E. Wilson.[61]

3.1 International Agreements and Treaties through Time.

The world continues to shrink as technology provides new ways to communicate and traverse distances. Copyright, at its beginnings, was designed with the view of protecting the economic rights of authors and artists and did not have scope beyond national boundaries. This, however, soon proved inadequate as mass reproduction and more efficient distribution became possible. The methods through which reproduction and distribution of copyrighted goods have evolved so much that even the past 20 years have produced new methods that were unforeseeable by most of us, let alone the law.

Copyright theft across borders became a problem because all the legislation that was developing in the world was limited to the jurisdictions within which it was being developed. America, for example, in its first copyright legislation in 1790, only recognised the rights of authors within its borders with the British legislation in turn also only covering its own jurisdictions. [62]

This gave rise to reprints of British works in American publications and vice versa with notable examples being the works of Charles Dickens being reproduced in a magazine called Brother Jonathan for which he received no royalties, and the works of the equally prolific Mark Twain being reprinted by British publishers through the legislative loopholes provided by a lack of international agreements between the two countries.[63]

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[61] Available at *http://www.brainyquote.com/quotes/quotes/c/charlesew273480.html* [Accessed 15 June 2011].

[62] R Parry (note 30).

[63] R Parry (note 30).

With the situation rapidly becoming untenable, there were several attempts at protecting works across borders with the first treaty of significance between nations being the Convention for the Protection of Literary and Artistic Works signed in Berne in 1886. Until then, international protection of works was achieved by numerous less than satisfactory bilateral agreements between states which in the period leading up to the Berne Convention numbered no less than thirty three between fifteen states.[64]

Today, several multilateral treaties form the basis of most national copyright legislation that afford the same level of protection to foreign works as they do to those produced within local boundaries. For this reason, it is fitting that an examination of these baseline establishing multilateral agreements and their stance on technology follows.

3.1.1 The Berne Convention.

The 'International Convention for the Protection of Literary and Artistic Works' was signed in Berne, Switzerland on September 6th 1886 and has come to be popularly known as the Berne Convention. It was aimed at streamlining the complexities of international copyright protection by removing the problems associated with all the existing bilateral agreements and unifying them with one baseline code upon which member states were free to build.[65] Protecting the rights of authors in their literary and artistic works[66] in all union member states[67], the Berne Convention is the basis of most other International treaties and until today remains the most important.[68] It was the next logical step from the bilateral treaties of the time merging them into one unifying multilateral agreement setting minimum author rights and affording local treatment to works originating from foreign member jurisdictions.[69]

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[64] S Lewinski (note 37) at 14-16.

[65] 5 Lewinski (note 37) at 65-66.

[66] Berne Convention, Article 1.

[67] Berne Convention, Article 5.

[68] J C Ginsburg, J M Kernochan 'One Hundred and Two Years Later: The U.S. Joins the Berne Convention' (1988-1989)13 1 *Columbia Journal of Law & the Arts* at 1.

[69] S Lewinski (note 37) at 99-100.

It was originally signed by only nine countries with the notable exception of the Americans who, unprepared to align their system with the requirements of this treaty, declined to sign it and chose to go a different route with the Chace act of 1891 affording conditional reciprocal protection to foreign works.[70] It would take over one hundred years for the United States to align itself to the requirements of Berne and eventaully accede to the treaty.[71]

The Convention has had many revisions that were shaped by the various problems that arose as it was implemented in more and more countries and as the number of ratifying parties grew. In the context of this paper, the 1908 amendment in Berlin, amongst other things, recognised mechanical music reproductions and films as copyrightable works[72] reflecting the technological environment of the period. At the next revision in Rome in 1928 further categories of protected matter were introduced including broadcasting and communication with further definitions of these rights being applied in the 1948 iteration of the Convention in Brussles.[73] Further amendments to the Convention came in Stockholm in 1967, where WIPO was born, and later in Paris in 1971 that recognised reproduction rights because of the influence of new technology that fostered the easy duplication of works and the alteration of copyright terms specific to films and photographic works.[74]

Today, the WIPO administered Berne Union numbers 164 contracting parties[75] and it remains at the backbone of global copyright law.[76]

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[70] D Nimmer *Copyright: Sacred Text, Technology and the DMCA* (2003) 54-55.

[71] J C Ginsburg, J M Kernochan (note 68) at 1.

[72] S Lewinski (note 37) at 77.

[73] S Lewinski (note 37) at 77.

[74] S Lewinski (note 37) at 77-78.

[75] WIPO 'Treaties Statistics' Available at http://www.wipo.int/treaties/en/statistics/StatsResults.jsp?treaty_id=15 [Accessed 19 May 2011].

[76] J Gibson 'Who's afraid of the Berne Convention' Available at http://www.mediainstitute.org/new_site/IPI/2010/090810.php [Accessed June 5 2011].

3.1.2 Universal Copyright Convention.

The Universal Copyright Convention was adopted in Geneva by UNESCO in 1952. Also known as the Geneva Convention, its main aim was to bridge the gap between countries that acceded to the Berne Convention and the ones that had not and by so doing extend international copyright protection beyond the Berne union. [77]

The UCC set lower standards for international copyright law by, for example, accommodating the American copyright formalities requirement that Berne did not. Adopting a spartan approach to minimum copyright standards it was ratified by most Berne union member states establishing a common approach to international copyright protection between the Berne countries and the rest of the world.[78]

The UCC, however, does not apply to works emanating from countries that are covered by both Berne and itself. This has caused many UCC countries to eventually accede to Berne and the UCC has slowly lost its importance and Berne has become the dominant international treaty with the final nail in the UCC's coffin being the United States finally adopting Berne it in 1989.[79]

3.1.3 Rome Convention.

The 'International Convention for the Protection of Performers, Producers of Phonograms and Broadcasting Organisations' is a treaty on whose formation technology had a clear and direct bearing. [80] Signed in Rome in 1961, it is also known as the Rome Convention.[81]

Sound recordings, television and radio broadcasts were all new technologies that were revolutionising the copyright industry in ways not seen since Gutenberg's printing press hundreds of

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[77] S Lewinski (note 37) at 80-81.

[78] S Lewinski (note 37) at 81.

[79] S Lewinski (note 37) at 84.

[80] S Lewinski (note 37) at 86.

[81] S Lewinski (note 37) at 91.

years prior.[82] Music could now be recorded on new media including piano rolls and phonograms and broadcasting was a new and emerging industry.

A suggestion to provide copyright cover for this new fixation media was opposed at the 1908 Berne Convention because it was deemed to fall in the realm of industrial property protection rather than copyright.[83] Performances were being recorded and broadcast without regard to the rights of the performers in the broadcasts and in the 1928 Rome conference, it was suggested that these rights be recognised by the Berne Convention but were again deemed to fall outside its scope.[84]

With the growing need to protect the rights of performers, broadcasters and phonogram producers several international attempts at regulation were made. In 1939, a committee of copyright experts met in Samaden and drafted proposals recognising these rights as rights neighbouring to copyright and recommending them as annex entries into the Berne Convention. But the next conference in 1948 did not adopt these proposals and recommended that this protection be legislated on separately. [85]

The Standing Committee of the Berne Union then took over investigation on how this aspect of copyright could be covered. In consultation with the major stakeholders in the area, a subcommittee eventually produced the first draft of the convention in 1951, which was followed by another draft the International Labour Organisation in 1956 and a further draft still prepared by experts invited by the Standing Committee and UNESCO in 1957. An amalgamation of these three drafts was then to become the basis for the Rome Convention.[86]

Adopted by only six countries by 1964, the Rome convention at first did not prove to be popular amongst the copyright system countries in that they were reluctant to include performers and broadcasters rights in the fold of copyright.[87] It also failed, in addition to protecting phonogram

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[82] S Lewinski (note 37) at 83.

[83] S Lewinski (note 37) at 87.

[84] S Lewinski (note 37) at 88.

[85] S Lewinski (note 37) at 89.

[86] S Lewinski (note 37) at 89-91.

[87] S Lewinski (note 37) at 92.

reproduction rights, to include distribution rights and so was felt to not adequately address the piracy problems that were already being faced.[88]

The treaty, however, has slowly gained relevance over the years and to date has 91 member states.[89] It is also remains one of the most important treaties on neighbouring rights[90] with notable influence on the TRIPS agreement and the WPPT treaties discussed later in this section.[91]

3.1.4 Geneva Phonograms Convention.

The slow adoption of the Rome Convention, due to its perceived problems, continued to allow international phonogram piracy to run rampant. The need for an international agreement controlling cross-border trafficking of illegal phonograms was apparent and its development championed by the industry.[92]

With momentum fuelled by this need, WIPO and UNESCO established a multinational panel of experts who quite quickly drafted a proposal that was soon after adopted as the 'Convention for the Protection of Producers of Phonograms against Unauthorised Duplication of their Phonograms'.[93] This convention, signed in Geneva in 1971 by 23 countries, is better known as the Geneva Phonograms Convention and to date boasts 77 members.[94] It also expanded on the Rome Conventions protection of just the duplication rights to include the rights to distribute as well.[95]

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[88] S Lewinski (note 37) at 92-93.

[89] WIPO 'Contracting Parties' Available at http://www.wipo.int/treaties/en/ShowResults.jsp?treaty_id=17 [Accessed 25 May 2011].

[90] S Lewinski (note 37) at 98.

[91] S Lewinski (note 37) at 91.

[92] S Lewinski (note 37) at 92-93.

[93] S Lewinski (note 37) at 93.

[94] WIPO 'Contracting Parties' Available at http://www.wipo.int/treaties/en/ShowResults.jsp?lang=en&treaty_id=18 [Accessed 25 May 2011].

[95] S Lewinski (note 37) at 93.

3.1.5 Brussels Satellite Convention.

The 'Convention Relating to the Distribution of Program Carrying Signals Transmitted by Satellite' is also known as the Brussels Satellite Convention. Adopted in 1974, it is yet another example of an international treaty aimed at addressing the membership problems of the Rome Convention by focussing its ambit on one technological innovation and defining the scope of this protection in clearer and less ambiguous terms.[96]

This convention, protecting broadcasters from the illegal interception and redistribution of their program carrying signals was again prepared by UNESCO and WIPO and was immediately signed by 15 countries.[97] To date it has 35 contracting states.[98]

3.1.6 TRIPS Agreement.

During the Uruguay round of negotiations of the General Agreement of Tariffs and Trade (1986-1994), the world community, in an attempt to establish coherence to the adherence and enforceability of the GATT agreement, established the World Trade Organisation. The WTO, formed as an international legal entity, not only streamlined the GATT but was also able to enforce the agreements and continues to do so to this day.[99]

One of the annexes to the WTO agreement signed in Marrakech in 1994 is the 'Agreement on Trade-Related Aspects of Intellectual Property Rights' also known as the TRIPS agreement.[100] From the perspective of copyright, it represented the recognition of the impact that illegal trade in counterfeit goods has had on global trade;[101] an impact so big that the United States alone was

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[96] S Lewinski (note 37) at 95-96.

[97] S Lewinski (note 37) at 96-97.

[98] WIPO 'Contracting Parties' Available at http://www.wipo.int/treaties/en/ShowResults.jsp?lang=en&treaty_id=19 [Accessed 25 May 2011].

[99] S Lewinski (note 37) at 269-271.

[100] WTO 'WTO Legal Texts' Available at http://www.wto.org/english/docs_e/legal_e/legal_e.htm [Accessed 26 May 2011].

[101] E Smith 'Worldwide Copyright Protection under the TRIPS Agreement' (1996) 29 *Vonderbilt Journal of Tronsnational Law* 559 at 560.

estimated to have lost over two and a half billion dollars to Asia in illegally duplicated and traded computer software in the same year.[102] From the rest of the world, the United States' losses due to software piracy totalled to almost 8 billion dollars with domestic piracy approaching a billion.[103] All these losses being at a time when the internet, as we know it today, was still in its infancy.

The TRIPS Agreements main relevance to copyright is that it is an agreement which not only sets minimum standards that all WTO member states must adhere to[104], but also outlines enforcement obligations that must be included in the respective jurisdictions laws and procedures.[105] This enforcement element is what differentiates TRIPS from other multilateral copyright treaties in that it is backed by effective WTO dispute settlement methods that may even include general trade sanctions which any country would to take seriously.[106]

In terms of the actual protection TRIPS affords to literary and artistic works from the perspective of technology, it does not really cover new ground as it adopts most of the Berne Conventions principles as well as those espoused by the Rome Convention.[107]

In this context, TRIPS' true power lies in the fact that it inadvertently drew more countries to accede to the Berne and Rome conventions because of their attraction to the other WTO treaty benefits and by so doing forced them to adopt the enforcement requirements of the treaty[108], ultimately resulting in near universal standards in the control of piracy.

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[102] E Smith (note 101) at 562.

[103] E Smith (note 101) at at 564-S68.

[104] Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 1S, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, THE LEGAL TEXTS: THE RESULTS OF THE URUGUAY ROUND OF MULTILATERAL TRADE NEGOTIATIONS 320 (1999), 1869 UNTS 299, 33 (1994) [hereinafter TRIPS] Part II s 1.

[105] TRIPS Part III.

[106] S Lewinski (note 37) at 285-286.

[107] S Lewinski (note 37) at 318.

[108] S Lewinski (note 37) at 319.

3.1.7 The WIPO Treaties

In the twenty years after the last revision of the Berne convention in 1971, technology marched on with further developments in video and audio recording technology enabling home recording, satellite broadcasting and the rise of computer programmes and databases.[109]

The World Intellectual Property Organisation decided to change its approach towards adapting copyright to these advances in technology seen in these two decades pending the next Berne revision conference. Well aware of the great difficulty of achieving the unanimity required for a revision to the convention, it jointly formed yet another committee of experts with UNESCO whose mandate was to conduct studies on the new problems posed to copyright by the technology of the era.[110]

This resulted in recommendations of new copyright standards that were non binding to Berne Union members but nevertheless created awareness of the problems and that went on to have an intended influence on national legislations.[111] This strategy, known as 'guided development' was soon deemed inadequate and it was recognised that binding legislation was needed.[112]

The earlier recommendations eventually led to the proposal of a supplementary Berne Protocol representing an extraordinary agreement that did not require unanimous adoption by the union members. Between 1991 and 1993, the Berne Protocol committee proposed that databases, expert systems, computer programs, computer produced works, artificial intelligence and phonograms be brought into the fold of items protected by the protocol. Agreement was only reached on the inclusion of databases and computer programs.[113]

The internet and its associated technologies were at the same time being recognised as having a major influence in the world of copyright. The TRIPS agreement was creating awareness of this and lent weight to the seriousness of the technology's impact on copyright and WIPO used this

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[109] International Bureau of WIPO 'The WIPO Copyright Treaty (WCT) and the WIPO Performances and Phonograms Treaty (WPPT)' Available at *http://www.wipo.int/export/sites/www/copyright/en/activities/wct_wppt/pdf/wct_wppt.pdf* at 2 [Accessed 1 June 2011].

[110] S Lewinski (note 37) at 428.

[111] S Lewinski (note 37) at 428

[112] International Bureau of WIPO (note 109) at 2.

[113] S Lewinski (note 37) at 429-430.

to package their proposals under a 'digital agenda' heading at a Diplomatic Conference in 1996. This digital agenda label was what later led to the treaties later being known as the 'internet treaties'.[114]

This Diplomatic Conference resulted in the WIPO Copyright Treaty (WCT)[115] and the WIPO Performances and Phonograms Treaty (WPPT)[116], which were independent of the Berne Convention but at the same time complimentary as they particularly, addressed the challenges that the digital era posed to copyright.[117] These treaties represented an unprecedented departure from the norms of international copyright law as they enacted many rules before they had developed at the national level.[118]

The WCT's provisions included cover for the rights associated with digital storage, distribution and transmission of works. It also described liability limitations and exceptions as in the case of ISP's providing infrastructure for the carriage of digital goods, and digital rights anti-circumvention legislation to cover works that were, in addition to law, being protected by technological means.[119] ISP's it is worth further noting, are exempted from certain liabilities because copying lies at the very heart of the way the internet works and must be protected in order to preserve the fine balance between copyright and innovation.

The WPPT in terms of works eligible for protection largely follows those outlined in the Rome Convention and covers performers and phonogram producer's rights.[120] It, however, departs from the Rome Convention and addresses the digital agenda by providing for the rights associated with the storage, transmission and distribution of digital performances and phonograms and the related rights anti-circumvention measures.[121]

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[114] S Lewinski (note 37) at 431-432.

[115] World Intellectual Property Organisation, Copyright Treaty, Apr. 12, 1997, S. Treaty Doc. No. 105-17 (1997).

[116] World Intellectual Property Organization, Performances and Phonograms Treaty, Apr. 12, 1997, S. Treaty Doc. No. 105-17 (1997).

[117] WIPO 'WIPO Internet Treaties' Available at *http://www.wipo.int/copyright/en/activities/wct_wppt/wct_wppt.html* [Accessed 1 June 2011].

[118] S Lewinski (note 37) at 432.

[119] International Bureau of WIPO (note 109) at 4-5.

[120] S Lewinski (note 37) at 442-445.

[121] International Bureau of WIPO (note 109) at 14.

These internet treaties form the basis of many of the new national legislations such as the American DMCA[122] and form the backbone of new legislation addressing the digital era of copyright with the WCT and the WPPT having 88 and 89 signatories respectively.[123] They begin to address the problem which the internet brought with it in terms of global copyright infringement and establish the legal infrastructure to govern this multinational virtual realm.[124]

[122] D Nimmer (note 70) at 51.

[123] WIPO 'Contracting Parties' Available at *http://www.wipo.int/treaties/en/ShowResults.jsp?country_id=ALL&start_year=ANY&end_year=ANY&search_what=C&treaty_id=16&treaty_id=20* [Accessed 1 June 2011].

[124] International Bureau of WIPO (note 109) at 22-23.

Chapter 4: The Copyright Revolution - The Recording and Broadcast Age.

'Technology alone is not enough. It's technology, married with liberal arts, married with the humanities, that yields us the result that makes our hearts sing.'

-Steve Jobs.[125]

4.1 Technology revolution.

In the previous era of the printing press, the production and dissemination of creative works was first controlled by publishers, who were the first technology owners. Later in that era, the authors of the works themselves gained control through legislation establishing their rights with the development of copyright law.

New technology, however, came and superseded the printing press as the only technology of reproduction. Ubiquitous and affordable technologies like the radio, audio and video recorders gained momentum from the beginning of the twentieth century and, once again, wrested this control away from authors and then put in the hands of the public.[126]

A new era of copyright was thus born, with these technologies enabling new ways of copying protected works and broadcasting technology developing in parallel to offer new ways to propagate these works leaving the copyright owners and the law to scrambling to adapt to the new challenges posed.[127]

This era marked the beginning of a new period through which the copyrighted would struggle to regain control of their works from the new owners of the reproduction technology: the

[125] At an Apple special event March 2011 http://events.apple.com.edgesuite.net/1103pijanbdvaaj/event/index.html.

[126] J C Ginsberg 'Copyright and Control over New Technologies of Dissemination' (2001) 101 7 *Columbia Law Review* 1613 at 1614.

[127] J C Ginsberg (note 126) at 1619-1626.

public. A war they continue to wage to this day with new methods of recording and broadcasting moving beyond what could possibly have been envisioned by the legislation that developed in this period.

4.1.1 Audio and Video Recording.

The piano roll was a medium of musical storage invented in 1895 by Edwin Votey that was used to play back music via a specialise piano known as the pianolla.[128] It was the piano roll that began the copyright industries problems with sound recordings.[129]

It was a storage technology that consisted of a roll of paper with coded perforations (see Figure 2) that corresponded with associated musical notes that were interpretable and played back by the special reproducing piano. It enjoyed its popularity mainly between 1900 and 1930 after which radio, the cheaper medium, took over.

Figure 2: The Piano Roll.[130]

The piano roll was not the only sound recording media during this period when mechanical means of fixation were making their debut. It was, however, the most popular and was the technology that first turned the law of copyright towards addressing musical reproductions that went beyond intelligible notations.[131]

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[128] The Pianola Institute 'History of the Pianola -Piano Players' Available at http://www.pianola.org/history/history_pianoplayers.cfm [Accessed 8 June 2011].

[129] S A Diamond 'Copyright Problems of the Phonograph Record Industry' (1961-1962) 15 *Vanderbilt Law Review* 419 at 420.

[130] Image retrieved from http://www.koehler.me.uk/animation/piono_p_roll_1.jpg [Accessed 7 June 2011].

[131] S A Diamond (note 129) at 420.

Interestingly, the piano roll was at first not considered to be an item of copyright infringement by the US Supreme Court in the *White-Smith Music v Apollo*[132] case which ruled that the perforations on the paper, though ultimately reproducing the copyrighted music, did not represent a copy per se. Congress, however, stepped in soon after and included them in the next copyright act in the following year.

Conversely, but in the same era, in the *Edison v Lubin*[133] case the Third Circuit Court ruled that motion pictures, an equally new medium of fixation and technology, were indeed covered by the old legislation[134] under photographic works.[135]

Audio and video recordings, therefore began the last century on different footings in terms of copyright, but continued on to have a growing effect on it.

4.1.2 Broadcasting.

Broadcasting was yet another technology that revolutionised the copyright industry. Radio transmissions began competing against revenue generating live performances at the beginning of the 20th century causing consternation amongst the copyrighted and were soon deemed by the Courts to fall under the ambit of public performances therefore reserving the rights to the copyright holder.[136]

It was also a technology that rights owners sought to work with rather than against by offering performance licenses to radio stations through a collective licensing agency. Broadcasters, however, declined to pay the demanded royalties claiming that their broadcasts were neither public nor for profit. The Courts, however, also opposed this view by adopting the view that broadcasting to homes did constitute public performances, and that these broadcasts had an economic effect of

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[132] 209 US 1 (1908)

[133] 122 F. 240 3d Cir. (1903)

[134] Copyright Act (1790).

[135] R P Merges 'One Hundred Years of Solicitude: Intellectual Property Law 1900-2000' (2000) 88 *California Law Review* 2189 at 2192-2194.

[136] J C Ginsberg (note 126) at 1620-1621.

on performers by keeping people from attending their performances in personally and opting instead to listen from their homes.[137]

Broadcasting, its reach, its technology and its definitions has also changed a lot since its early beginnings and has gone on to be the enabler of the most significant methods of disseminating copyrighted works in modern times.

4.2 Legislation Through the Period.

Throughout the 20th century, legislation and the courts worked hard to keep abreast with all the new technology that emerged and managed to keep pace with it.[138]

The following section outlines the key legislation passed in the US and the UK and the one seminal case that set the groundbreaking precedent that continues to echo beyond the analogue era, into the next and most significant of copyright eras, the digital technology era.

4.2.1 British Copyright Act of 1956 - Recognises New Technology.

In 1951, following the Brussels Convention revising the Berne Convention in 1948, a new Copyright Committee was appointed in Britain to determine if there were any new developments that had happened in the intervening years since the 1911 Copyright Act that might influence the copyright law as it stood. Its mandate included paying particular attention to the technical developments in the period and the changes brought about to Berne in 1948.[139]

The Committees recommendations gave rise to the Copyright Act of 1956 which recognised the new and emerging technology of the period by, for the first time, affording protection for films, sound and television broadcasts.[140]

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[137] J C Ginsberg (note 126) at 1620-1621.

[138] R P Merges (note 135) at 2191.

[139] K Garnett et al. (note 51) at 46.

[140] K Garnett et al. (note 51) at 46.

The Act, however, did not protect performers from having their works recorded and broadcast, another aspect of copyright infringement made possible through the emergence of new technology. They only received this protection later through the Performers Protection Acts of 1958-1972.[141]

4.2.2 British Copyright, Designs and Patents Act of 1988.

The effects of new technology continued to be felt in the world of copyright and because of this, yet another Committee was again established in 1973 to investigate its effects and make recommendations on changes to the current legislation. [142]

Some of its major recommendations once again included therecognition of new technical developments since the last Committee had reported in 1951 including the new methods through which sound recordings and films could be reproduced as well as the emergent computer technology.[143] This report unwittingly heralded the dawn of a new copyright era with the emergence of the personal computer and the internet over the next two decades.

This report, however, did not result in new legislation immediately. It took 15 years for a new statute to be enacted during which there were several Amendment Acts to the then current Copyright Act of 1956. These included the Amendment Acts of 1982 and 1983, the Cable and Broadcasting ACT of 1984 and the Copyright (Computer Software) Amendment Act of 1985 which were all aimed at controlling the already rampant instances of piracy through new technology that made it very easy to reproduce copyrighted material.[144] It is interesting to note that this is the period during which the Video Cassette Recorder (VCR) made its debut in homes across the planet and that the Cassette Recorder had already been in use for two decades.[145]

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[141] K Garnett et al. (note 51) at 46-47.

[142] K Garnett et al. (note 51) at 47.

[143] K Garnett et al. (note 51) at 47.

[144] K Garnett et al. (note 51) at 47-48.

[145] Encyclopaedia Britannica 'Phillips Electronics NV' Available at *http://www.britannica.com/EBchecked/topic/456530/Philips-Electronics-NV#ref893459* [Accessed 11 April 2011].

When finally enacted, the Copyright, Designs and Patents Act of 1988 completely repealed the 1956 Act and also took on several other aspects of intellectual property policy and regulation including designs and patents. It also repealed the Copyright (Computer Software) Amendment Act of 1985 and the Performers Protection Acts of 1958-1972.[146]

An indicator that copyright law was now fully engaging with the changes in technology is that this new 1988 Act, apart from covering many of the traditional areas of copyright previously addressed, also incorporated all the Amendment Acts since the 1956 Act which addressed computer software and cable programme copyrights as well as remedies against piracy. In addition to this, it for the first time also directly addressed the specific rights aspects of satellite broadcasts and cable programmes from the perspective of the operators and the rights owners and granted film and phonogram producers the rights to control rentals.[147]

The 1988 Act, however, failed to address a new phenomenon in the copyright sphere that had also been enabled by new technology. The private recording of music, broadcasts and film enabled by the then ubiquitous Cassette recorders and Video Cassette Recorders (VCR) was happening everywhere and represented a major source of copyright infringement. The Whitford Committee of 1977 had suggested a levy on recording equipment which the government agreed on introducing but after public consultations eventually overturned the decision just before the Bill was tabled in Parliament in 1987. Non-commercial duplicating of copyrighted works remains an issue until today.[148]

The Copyright, Designs and Patents Act of 1988 is still the current copyright law in the United Kingdom. Over the years, there have been several amendments to it some of which were to further streamline the provisions for the protection of computer programmes, performers and producers of sound recordings and films, broadcasting organisations including satellite broadcasting, cable rebroadcast and database rights. The amendments have also been to align the law with the European Commissions Directives on copyright and related rights which are aimed at harmonising the European Unions copyright laws.[149] All the changes, at the same time, directly or indirectly connected to the rapid changes in technology and its capabilities in the period.

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[146] K Garnett et al. (note 51) at 48.

[147] K Garnett et al. (note 51) at 48.

[148] K Garnett et al. (note 51) at 49.

[149] K Garnett et al. (note 51) at 49.

From this period onwards, European law and the influence technology has on it, becomes the major influence on the United Kingdom's copyright law. The Berne Convention continues to set minimum standards for both the regional and national laws.

This statute, however, is still primarily rooted in the analogue era of the previous technology and has only been recently updated by the complementary UK Digital Economy Act of 2010 discussed later in the paper.

4.2.3 The US 1909 Copyright Act.

In the US, from the time of the 1790 statute there had been several adjustments to the legislation that dealt with the changing conditions of the environment, but the first major revision to the copyright law recognising changing technology only came in 1909 after Theodore Roosevelt ordered a review to bring it up to date with modern times.[150]

In terms of technology, a significant change that this Act brought about was influenced by the earlier mentioned *White-Smith Music v Apollo* case in 1908 where the Supreme Court ruled that piano rolls, emerging musical storage and playback media, could not be considered to be copies of music under the existing legislation and therefore no infringement had occurred when the Apollo Company reproduced and sold the complainants music via the new medium.[151] In part of the landmark conclusion, the Court affirmed the decision of the Circuit Court of Appeal and stated:

> It may be true that the use of these perforated rolls, in the absence of statutory protection, enables the manufacturers thereof to enjoy the use of musical compositions for which they pay no value. But such considerations properly address themselves to the legislative and not to the judicial branch of the Government. As the act of Congress now stands we believe it does not include these records as copies or publications of the copyrighted music involved in these cases.[152]

In this statement, the Court posited that it was the responsibility of Congress to amend the Act to include coverage of such new media. It was this position that brought about the amendment

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[150] C Joyce et al. (note 39) at 21.

[151] *White-Smith Music Publishing Company v Apollo Company,* 209 US 1 (1908).

[152] *White-Smith Music Publishing Company v Apollo Company,* 209 US 1 (1908).

that expanded the scope of copyright to include piano rolls and other such recordings in the 1909 Act. But this legislation did not and most probably could not have had the vision to predict that recording media might evolve further in the coming years and failed to make it clear what other tangible media it might have aimed to cover. An improvement on the definition of what was covered would have to wait until the 1976 incarnation of the Act.[153]

Intrestingly, the Act also stipulated that the artist retained exclusive rights only to the point of first recording, afterwhich anybody could make copies of the music provided they notified the artist and paid a nominal royalty fee. The purpose of this so called 'compulsory license' was to prevent monopolies in the production of records and piano rolls.[154] The 1971 sound recording amendment discussed below prevented the direct copy of a sound recording as this compulsory license was meant for the reproduction of music from scratch and not from the recordings of others.[155]

As mentioned earlier, the 1909 Act had failed in terms of future proofing, in its definition of works covered by copyright. As technology continued its march forward, it brought new issues with it and the legislation struggled to keep up with periodic amendments to the Act. Film for example was a technological innovation that was coming into its own at the time that was deemed copyrightable by an amendment in 1912.[156]

The 1971 sound recording amendment was another significant amendment due to technology that recognised the sound recordings themselves as copyrightable and distinct from the music or literary works that they carried.[157] This recognised the rights of music producers by deeming the recordings themselves to be equivalent to the 'writings of an author' based again on a Supreme Court opinion that the discretion to widen the ambit of copyright rested with Congress.[158]

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[153] L Hollar 'Copyright of Computer Programs' Available at http://digital-law-online.info/lpdi1.0/treatise17.html [Accessed 9 May 2011].

[154] R A Gorman 'An Overview of the Copyright Act of 1976' (1977-1978) 126 *University* of *Pennsylvania Law Review* 856 at 863.

[155] R A Gorman (note 154) at 863.

[156] C Joyce et al. (note 39) at 22.

[157] C Joyce et al. (note 39) at 23.

[158] *Goldstein v California*, 412 US S46 (1973).

The 1909 Act also notably required that a notice of copyright be attached to published works if federal copyright protection was to be afforded.[159] This was in contravention to the then new Berne Convention and remained one of the reasons that delayed American entry into the international copyright union until the 1976 Act which did away with the requirement.[160]

4.2.4 The US Copyright Act of 1976.

The twentieth century heralded the coming of a new renaissance period in the world of technology. Copyright was once again forced to adapt to match pace with the issues that the new technology posed to the status quo. These new and influential factors in that last century included the development and commercialisation of radio, television, various recording media, still and motion pictures and quite significantly the computer.[161] The internet was a technology that would come in the wake of the 1976 statute.

With the 1909 Act beginning to show its inadequacies, Congress ordered a review of the legislation as early as 1955 with the aim of updating it to cover the new issues that technology and the environment had brought with them. This review was to last the 21 years leading up to the enactment of the 1976 Copyright Act.[162]

This new Act in addition to elaborating on certain unclear aspects of the previous law also expanded the then current scope of copyrightable works to now include motion pictures and other audiovisual works and sound recordings in broad enough terms to accommodate the many new technological influences on copyright that had dominated the period and many future ones as well.[163] These broad definitions, however, came with new problems as they inadvertently gave the copyrighted new rights in the unforeseen digital era. This law had been designed in an offline world and it could not have foreseen the consequences of blanket 'copy' rights in the online world that followed. An example of this situation being when a computer accessed a web page, it actually

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[159] s9.

[160] C Joyce et al. (note 39) at 21-22.

[161] R A Gorman (note 154) at 856.

[162] C Joyce et al. (note 39) at 22.

[163] C Joyce et al. (note 39) at 22-23.

downloaded a copy of the page for local viewing and therefore infringed on the rights of the page owner in a way that could not have been envisioned by the architects of the Act. These broad definitions of the ambit of copyright had given copyright owners a degree of control that was contrary to the public interest in that they threatened innovation due to copyright technicalities being observed in a context for which they were never designed. [164]

The Act also expanded the ambit of the compulsory license provisions stipulated in the 1909 legislation from just musical recordings[165] to include granting the producers of mechanical recordings, juke box operators, cable television operators and public broadcasters similar conditional licenses. These technology based operators could, on the payment of a stipulated fee, access copyrighted works without the consent of the rights holder.[166] .

Notably, the judicially established precedent that entertains certain use of copyrighted works without permission through the aptly dubbed 'fair use' doctrine appeared in this Act and in legislation for the first time.[167]

This was the beginning of a new era in copyright law; yet another turning point in its history of being influenced by technology coming five hundred years after William Caxton had taken the printing press to England. This moment marked by legislation recognising that the new media was having a profound impact on copyright.

In 1975, yet another committee was established by congress to once again investigate the impact of technology on Copyright law. The National Commission on New Technological Uses of Copyrighted Works (CONTU) in its final report recommended that Congress add computer programmes and databases to the scope of copyrightable works as well as issue guidelines on how to handle infringements brought about by the photocopier.[168] In 1980 the Act was amended to include computer programmes in the scope of works covered by copyright.[169]

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[164] B D Johnston 'Rethinking copyright's treatment of new technology: strategic obsolescence as a catalyst for interest group compromise' (2008) 64 *New York University Annual Survey of American Law* 165 at 167-169.

[165] R A Gorman (note 154) at 874.

[166] C Joyce et al. (note 39) at 24.

[167] C Joyce et al. (note 39) at 24.

[168] CONTU 'Final Report of The National Commission on New Technological Uses of Copyrighted Works' Available at http://digital-law-online.info/CONTU/PDF/index.html [Accessed 11 May 2011].

[169] C Joyce et al. (note 39) at 24.

Over the next two decades, there were numerous other amendments to the 1976 Act[170], in between allowing America to eventually accede to the Berne Convention in 1989 and leading up to the next major amendment. From 1989 onwards, however, American law was largely guided by the Berne convention and the other international instruments it later became party to.[171]The next major change with direct reference to the effects of technology came in 1998 with the Digital Millennium Copyright Act.[172]

4.3 The Sony Betamax case.

Many battles between the copyrighted and the producers of the equipment that enables the copying of protected works have been fought since 1976 and indeed continue to be fought to this day.

In the precedent setting case between a Sony, a major technology manufacturer and Universal Studios, a major copyright holder, the US Supreme Court found that the technology in question, the Betamax Video Tape Recorder, was capable of substantial non-infringing use[173] and opened the flood gates for all the duplicating equipment that has been produced since the ruling. No discussion of this era is therefore complete without an examination of the *Universal City Studios v Sony Corporation of America* case that forever changed the status quo between technology and copyright.

The Betamax case, as it is also known, was an action driven by Universal City Studios and the Disney Corporation as the main petitioners with several claims against the Sony Corporation and its wholly owned American subsidiary the Sony Corporation of America as well as four retailers, an advertising agency and William Griffiths, an individual. Universal City Studios and the Disney Corporation mainly accused the group of defendants, to whom I'll refer collectively as Sony, of enabling the infringement of their copyrights through the manufacture, advertising, sale and distribution of the Betamax VTR. Sony's VTR was a device that was capable of receiving publicly

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[170] D Nimmer (note 70) at 329.

[171] C Joyce et al. (note 39) at 25.

[172] C Joyce et al. (note 39) at 25.

[173] *Sony Corporation of America et al. v Universal City Studios, Inc., et al.*, No. 81-1687, 464 US 417 (1984).

transmitted TV programmes and recording them on to a tape for subsequent playback. They sought an injunction against the advertising and production of the VTR and a damages award as well as a share of the profits that had so far been accrued from its sale. They did not, however, seek relief against William Griffiths or any other Betamax consumer.[174] Numerous amicus briefs were filed in support of both the petitioners and the respondents.

The case was first heard by the District Court which ruled in favour of Sony. It subsequently went on to appeal where the decision of the district court was reversed but ultimately the Supreme Court ruled in favour of Sony and coined what would later become known as the Sony doctrine.[175] The following is an outline of the considerations and eventual findings of each court and the path that was followed to arrive at the ruling.[176]

Central District Court of California.

The case entered the court system in 1976 with Universal and Disney's claim that Sony, apart from manufacturing, advertising, distributing and selling the Betamax for the sole purpose of encouraging end users to record television shows, also failed to advise the public that recording copyright protected programmes from television was infringing on the rights of the copyright holders. They further claimed that this caused the Betamax user to believe that it was not illegal. The District Court dismissed this first claim in 1977 ruling that Sony could not have been deemed to be promoting copyright infringement through the sale of their machines simply because they did not say that it was illegal.[177]

The case continued with deliberations on the subsequent claim that the defendants were guilty of direct or contributory copyright infringement by enabling the home user to record their content through the provision of the VTR with the petitioners further claiming that they would suffer great losses if the alleged infringement was allowed to continue.

In 1979 the District Court, in summary, ruled that because the copyright protected material was made freely available for public consumption over the airwaves and that the Betamax VTR

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[174] *Universal City Studios v. Sony Corporation of America*, 480 F.Supp. 429 (C.D. Cal. 1979).

[175] C Pope 'Unfinished Business: Are Today's P2P Networks Liable for Copyright Infringement?' 2005 *Duke Law. & Technology Review*. 0022.

[176] A full record of the proceedings from when the case first went to court in 1976, through to the reversal of the District Court's ruling by the Court of Appeal to the final ruling by the Supreme Court in favour of the Sony Corporation is available at http://w2.eff.org/legal/cases/betamax/#documents [Accessed 06 September 2010].

[177] *Universal City Studios v. Sony Corporation of America*, 429 F.Supp. 407 (C.D. Cal. 1977).

simply allowed consumers to view this content at a later time through what was described as 'time shifting', the non-commercial home recording of publicly aired programming amounted to fair use of copyrighted works. In further support for the fair use finding, the courts stated that time shifting increased access to publicly aired programming and that even if entire works were being copied, there was no demonstrated reduction in the market for the original works. The courts further stated that even if fair use was to be denied, the VTR had been shown to be useful for other non-infringing activities and as such injunctive relief was inappropriate as it would deny the public of the legitimate utility of the Betamax VTR.[178]

Ninth Circuit Court of Appeal.

In February 1981, the Universal group submitted an appeal against the decisions of the District Court to the United States Court of Appeals for the Ninth Circuit. This appeal was decided later in October the same year where, interestingly, the court reversed the decision on fair use because it held that the District Court's interpretation of the doctrine was flawed. The fair use doctrine required that any such use be productive, and the home recording of television programmes could not be seen as productive in the same sense as copying parts of a work for research or other independent work. The fact that programmes were copied in their entirety also went against the doctrine.[179]

The Appeal Court therefore ruled that Universal and Disney did not need to demonstrate that there was a potential reduction in the market for copyrighted works through off the air recordings as this was illegal in the first place. [180] They further made the observation that it seemed obvious that the enabling of mass reproduction through the VTR would surely have the cumulative effect of diminishing the market for the rights holders.[181]

The findings of the District Court were reversed in part with the Appeal Court finding Sony guilty of contributory infringement and remanding the case to the District Court for appropriate proceedings regarding damages and possible injunctive relief. [182]

US Supreme Court.

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[178] *Universol City Studios v. Sony Corporation of Americo*, 480 F.Supp. 429 (C.D. Cal. 1979) at 2

[179] *Universal City Studios v Sony Corporation of America*, 659 F.2d 963 (9th Cir. 1981) at 7-14.

[180] *Universol v Sony* (note 179) at 15.

[181] *Universal v Sony* (note 179) at 13-14.

[182] *Universal v Sony* (note 179) at 16.

In March 1982 (the following year) Sony petitioned the US Supreme Court to issue a writ of certiorari to review the judgement and opinion of the court of appeal [183] to which the Universal Studios group filed opposition two months later.[184] The Supreme Court went on to review the case anyway from January 1983 through to January the following year with the final opinion of the court reversing the decision by the Court of Appeals and finding for Sony once again.[185]

After much debate, a divided Supreme Court was of the majority opinion that because a significant number of copyright holders who license their works to be broadcast on free public television did not object to time shifting by home users, the Betamax VTR was therefore capable of substantial non-infringing activity. The opinion was also that the Universal group failed to show how time shifting would have an impact on the value and potential market of their works [186]

A petition for rehearing was denied by the Supreme Court in March 1984 setting the important legal precedent known as the Sony Doctrine whose premise is that contributory infringement can not be found in an item is capable of substantial non-infringing use.[187]

This much cited doctrine continues to allow for the many innovations in technology that we have witnessed over the years many of which would not have been possible without this ruling and sets the stage for the events that occurred in the next era of technology and copyright, the digital era.

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[183] D Dunlavey et al. 'Petition for Writ of Certiorari to the United States Court of Appeals for the Ninth Circuit.' Available at *http://w2.eff.org/legal/cases/betamax/betamax_petition_writ.pdf* [Accessed 13 September 2010].

[184] S Kroft et al. 'BRIEF FOR RESPONDENTS UNIVERSAL CITY STUDIOS, INC. AND WALT DISNEY PRODUCTIONS IN OPPOSITION.' Available at *http://w2.eff.org/legal/cases/betamax/betomax_respon_writ.pdf* [Accessed 13 September 2010].

[185] *Sony v Universal* (note 173).

[186] *Sony v Universal* (note 173) at 25.

[187] USLegal: Definitions 'Sony Doctrine Law & Legal Definition' Available at *http://definitions.uslegal.com/s/sony-doctrine/* [Accessed 13 June 2011].

Chapter 5: Copyright Crisis - The Digital Age.

'The countries that flourish in the twenty first Century will be those that have telecommunications policies and copyright laws that provide their citizens access to a wide choice of information services.' – Al Gore[188]

5.1 Information: The Commodity of the Age

Information has always played a key role in our lives and has been used throughout history to guide the decisions that we make in everyday matters as well as in matters of global significance. The First World War, for example, was sparked off by the news that the Austro-Hungarian Archduke Franz Ferdinand had been assassinated. In reaction, the Austro-Hungarian Empire attacked Serbia which it believed to be responsible for the assassination inadvertently starting a chain reaction that escalated into a war fought between the major nations of the world at the time. To this day, it remains unclear if Serbia was actually behind the assassination.[189]

Was the Great War fought for the wrong reasons or just because of misleading or inadequate information? There are doubtlessly many opposed opinions which all rely on different information as their basis. Information was nevertheless the key element that drove the decision that lead to this event that defined the period.

Information is used every day in much less dramatic ways than the way in which the Austro-Hungarians reacted to the news of their loss, but it remains central to the way decisions are taken regarding almost anything. It is, however, still being used in ways that are equally period defining. The previously so-called industrialised nations have moved on to what are now termed as knowledge economies or post industrialised nations. In these economies, production is based on knowledge, which is in turn based on information. This transforms information from merely being

[188] Extract from 'Information Superhighways' speech delivered at the International Telecommunications Union (ITU) in 1994. Available at http://vlib.iue.it/history/internet/algorespeech.html [Accessed 14 December 2010].

[189] M Duffy 'The Causes of World War One' Available at http://www.firstworldwar.com/origins/causes.htm [Accessed 15 June 2011].

something on which you base an opinion, reaction or product, to something that is so much more. It is now the key production input that is driving the major economies of the world and is undoubtedly of great value.

In today's world, the methods through which information is gathered, stored and disseminated are highly advanced. It is, for example, possible for online shops like Amazon to passively collect information about the shopping habits of millions of people who shop on their websites quickly, cheaply and efficiently and build up a database that would be of value not only to themselves, but to online advertising companies who specialise in target marketing. By so doing, they transform the information they gather into a tradable commodity almost like any other tangible good. This has become possible because of the ease through which technology has enabled the cheap collection of reliable information, or data as it has come to be called.

The nature of information or data has also changed with the innovations that technology has brought about. It is now possible to reduce artistic works like books, photographs, music and films to a logical arrangement of ones and zeroes or binary code that that can then be played back by computers or other such devices, and even transmitted between them. This is also known as digitisation. A computer or any other digital-capable device will interpret the representation of an artistic work in binary code and recompile it into the music, film or book that it was originally derived from.

Therefore, data in the computing sense moves from being just information about a product to being the product itself. Digital goods as they are also known form an increasingly larger and important proportion of the artistic works being produced and traded today. Information has thus become a commodity and is a commodity whose volumes are growing to staggering amounts as the world continues to move more and more products into the digital realm.

Access to information has also played a significant role in its commoditisation. Information is of little value if it is not available to those who might benefit from it. The Austro-Hungarians might have reacted very differently if they had been privy to more information about the fate of their Archduke that might have pointed away from the Serbians. In a similar way, access to digital works has played a pivotal role in the way the world changed its outlook towards this new way of packaging creative works.

In this age the access to the virtually limitless stores of digitised content provided by the internet is ubiquitous and available to millions of people. This access has given rise to amazing innovations in the dissemination of information from powerful search engines that continually index

the entire content of the World Wide Web, to enabling technologies like the interactive web where anyone is now able to upload content that is instantly available anywhere in the connected world. [190]

The revolution in access to information that technology has brought about has, at the same time, provided new avenues for the exploitation and abuse of the new mediums in ways that could not have been envisaged. Hackers and cyber criminals are the new burglars and thieves of the age with words like spam, virus and trojan evolving to have new meanings in the online context.

5.2 Communications Revolution

The internet was built by bolting together the existing technologies of computers and telecommunication networks to give rise to a virtual environment known as cyber-space that paved the way for novel new methods of information exchange.

The so called information age has been propelled forward by the wide range of technologies that have been developed to run on top of the internet across which millions of terabytes of data are traded every day.

From the perspective of communication, today's world is a very different place from what it was a few decades ago. The information age has given rise to amazing new technologies that were previously inconceivable by most of us. The internet, for example, has gone from being an experimental computer network used primarily to exchange text based messages over telephone lines to the aptly named information superhighway where high speed access (also known as broadband) connects millions of homes at speeds that would have been called impossible at its inception when it was the sole preserve of a handful of universities in the United States.

The internet in this same period has stopped being a thing of awe as more and more people connect to it, and has been upstaged by the technology that runs on top of it in a mind boggling array of applications. Millions of applications manipulate and transport data in ever newer and novel ways over the internet which has now become an infrastructure facility that is taken for granted. Email for example has evolved from being the novel method of communication that it was a mere 10 years ago and is now the de facto standard way of exchanging information. Email clients applications

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[190] L Veasman '"Piggy Backing" on the Web 2.0 Internet: Copyright Liability and Web 2.0 Mashups' (2007-2008) 30 *Hastings Communications & Entertainment Law .Journal* 311 at 314.

have moved from desktop computers and now exist on many modern cellular phones, yet another marvel of modern times. The internet, with its host of wonders, has also made the journey across from the desktop computers and extended its reach into our very pockets through mobile phones.

Communication has also moved on from the traditional formats of voice or text into the multimedia arena that now includes pictures, video and much more complex combinations of all these mediums in real-time interactions. This has been made possible by the exponential increase in affordable computing power coupled with the development of connectivity solutions that allow cheap high speed internet access that has seen web connected computers become everyday gadgets that can be found in many homes and providing the communications platforms for the newer forms of communication mentioned above.

These newer cheaper, better, faster methods of communication, as mentioned in the previous section, have been instrumental in enabling the efficient exchange of digital commodities and have played a very important role in enhancing their value. Without these ubiquitous methods of delivering digital content, digital works would probably have much less real world value because of difficulties in accessing them and would probably have remained the preserve of the techno enthusiast with many opting for the traditional formats that are fixed to mediums like CD's and DVD's.

5.3 The Digitisation of the World

The evolution has not only been in the way we exchange information, but also in the type of information that we exchange. Joe Bloggs sitting in Cape Town can take a picture of his child using his mobile phone and send it to his mother in Edinburgh as a multimedia message and simultaneously share the same picture via the internet with his friends on Facebook and then read and respond to his work email all while sitting in a bus and from the same mobile phone. It is with similar ease that he could download a new hit single from the internet and share it with his friends via a variety of methods and begin what might become the pandemic distribution of the digitised work which only he, amongst the many who will soon have the song, paid for.

Artistic works are increasingly being digitised to take advantage of the new methods of playback, distribution and storage that technology has made possible. The most common example of a digitised creative work is the MP3 music file which by itself has revolutionised the music industry

by providing a vehicle through which music can be compressed and repackaged with minimum loss in terms of sound quality resulting in a compact digital file that is easy to store and transmit across the web. In fact, the impact of the MP3 has been so great that revenues across the industry from this digital music file format have risen from just US$ 20 million in 2003 to a staggering US$ 4.2 billion in 2009.[191]

The problem is not only that it has become a lot easier to distribute copyright protected works; it is also that it has become a lot easier and cheaper to make lossless copies of the same works. A simple desktop computer, through freely available software, will duplicate a digitised work and produce a copy that is identical and indistinguishable from the original. Software can also rework the original digital file and optimise it for distribution through compression or through re-authoring to different formats depending on intended use. These problems have been further compounded by the emergence of online communities linked via bespoke software applications designed to provide better environments within which files can be shared freely.

These communities, trading across what are better known as peer to peer networks cost the copyright industry huge amounts in lost revenue as they illegally exchange copyright protected works with each other. It is in cyberspace and in digital reproduction that that the bulk of copyright infringement is happening today. This chapter discusses the technology, in this most prolific of copyright eras, in tandem with the legal and technological efforts employed to keep infringement in check.

5.4 The Internet.

The Internet is to date the single most significant technological innovation permeating most aspects of our lives that involve communications.

It has had staggering effects on copyright in terms of it being the infrastructure across which, in only the past decade, copyright infringements of unprecedented scale have taken place. It is also a technology that has spread in usage faster than any other previously known with its spread recorded

[191] International Federation of the Phonographic Industry (IFPI) 'IFPI Digital Music Report 2010' Available at *http://www.ifpi.org/content/library/DMR2010.pdf* [Accessed 13 December 2010].

at more than 3 times faster than that of the television in a 1999 analysis by the ITU and as depicted in Figure 3 below.[192]

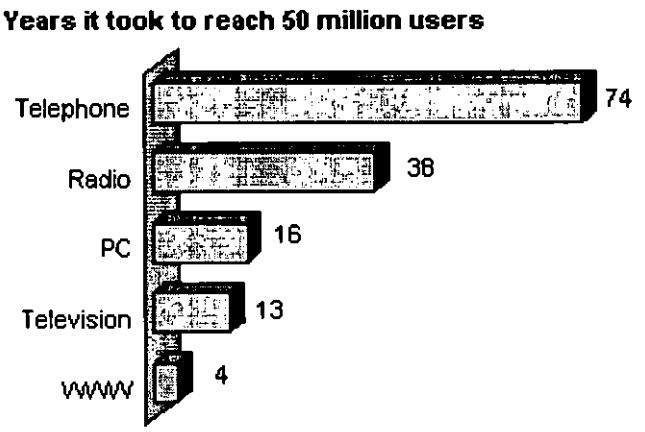

Figure 3: Internet host computers and growth rate, January 1990 - July 1999 [193]

The internet and all the technology that has evolved on top of it also gave rise to new territorial issues with the spawning of cyber-space. Cyber-space, the virtual environment created by the interaction of millions of computers from all over the world, in essence exists everywhere there is a connected computer and hence brings with it complications of legal jurisdictions as it occupies multiple sovereign territories that are governed by different laws but resides in a borderless environment in the online sense.

While the location of an internet host can be geographically pinpointed and therefore subject to the law of that land, the location of content is only defined by internet addresses which currently are not subject to law in terms of jurisdiction. This, however, is already changing with the internet being carved up into distinct jurisdictions along the lines of public policy and commercial efficiency with nations blocking access to some websites through electronic fences and electronic marketplaces creating their own forms of regulation.[194]

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[192] ITU 'Challenges to the Network: Internet for Development' Available at *http://www.itu.int/ITU-D/ict/publications/inet/1999/ExeSum.html* [Accessed 14 December 2010].

[193] Graph available at *http://www.itu.int/ITU-D/ict/publications/inet/1999/ExeSum.html* [Accessed 14 December 2010].

[194] T Schultz 'Carving up the Internet: Jurisdiction, Legal Orders and the Private/Public International Law Interface' (2008) 19 4 *The European Journal of International Law* 799 at 805.

The internet, has also evolved from being just a vast collection of content or giant billboard as it was in its beginnings to a living and breathing technology that now has a lot of content flowing upstream from users instead of just downstream.

The consumer has also become the producer causing the world wide web to expand beyond easy measure and with this growth comes a proportionate increase in copyrighted works. YouTube, for instance, is an example of a website that is a veritable quagmire of copyright nighmares with issues ranging from claims for shares of revenues derived from the adverts targetted to suit the user generated content, to content that is uploaded by users without the apropriate rights to it.[195]

The interactive web is also not immune to the issues that plagued its predecessor. Issues of copyright infringement through the various methods of linking to content resident on other websites without permission

5.4.1 Internet Specific Legislation.

The WIPO internet treaties discussed earlier controversially set the baseline for the development of national legislation instead of following the tradition that had, until then, been national legislation informing the development of international treaties. The following sampling of national acts starting with the much cited DMCA, the trailblazing legislation that followed soon after the WIPO treaties, and the recent UK Digital Economy Act covers the general landscape.

5.4.1.1 US Digital Millennium Copyright Act.

By the time the time the Digital Millennium Copyright Act was being enacted in 1998 technology had, once again, advanced beyond what would have been recognised by the CONTU commission two decades earlier. The world had moved on from the analogue methods of recording and transmission to the digital era epitomised by the CD and the maturing internet. The era of the cheap and lossless digital copy had begun and copyright was scrambling to keep pace.

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[195] B Buckley 'Sue Tube: Web 2.0 and Copyright Infringement' (2007-2008) 31 *Columbia Journal of Law & the Arts* 235 at 237-240.

In the years that had past since the 1976 Act, technology innovation had continued to accelerate at an unprecedented rate and abandoned the old analogue media that was used for many copyrighted works and adopted new digital methods for the storage of the same that enabled more efficient storage methods, cheap transmission, and also enabled copies that were indistinguishable from the originals at virtually zero cost. This new digital environment demanded not only that legislation evolve to prevent illegal copying, but that also that technical measures be developed to discourage it. The copyrighted believed that technical measures could be used to control the duplication of their works and this gave rise to measures like the widely used serial copyright management system (SCMS) used by manufacturers and copyright holders to prevent duplication.[196] It was, however, only a matter of time before people developed methods to circumvent these digital protections and copyright infringements of unprecedented levels continued to escalate.

Enter the DMCA. This ACT represented a departure from traditional copyright legislation that provided direct and indirect protection for classified works with the accompanying exceptions and remedies in that it addressed areas previously untouched by law. Its main premise was framed around the prevention of the use of circumvention technologies for copyright infringement, and providing exemption criteria for ISP's, a brand new direction and approach to protecting the new ways in which works could be exploited.[197] It also, quite interestingly, brought the protection of vessel hulls into the copyright fold.[198]

The DMCA added a new chapter to American copyright law that describes and prohibits the use of circumvention measures to access or copy protected works. It also outlawed the development and sale of technology that is used primarily for the breaching of any technological measures used to protect copyright. The amendment Act, however, upheld the fair use principles while expanding the exception categories to include technology centred areas like reverse engineering of computer programmes to enhance interoperability, Encryption research, etc.[199]

The second major area of the DMCA involving ISP liability addressed two looming problems that had been brought about by the development of the internet. The first problem was that the very nature of the way the internet worked necessitated that ISP's store, as well as make temporary and transient copies of content in the delivery of their service. This presented a problem that could

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[196] T C Vinje 'Copyright imperiled?' (1999) 21 4 *European Intellectual Property Review* 192 at 198.

[197] D Nimmer (note 70) at 331.

[198] DMCA Title V.

[199] DMCA Title I.

potentially have halted the development of what is quite clearly one of the most important technological innovations of recent times. The second problem was that ISP's also acted as hosts to many secondary services that had already begun to include peer to peer networks across which digital file exchanges were happening. The DMCA importantly outlined conditions in which the ISP would be exempt from liability[200] if this was to happen and preventing secondary infringement claims on the providers of this already vital infrastructure.

By limiting ISP liability in four broad categories[201], the DMCA provided protection for ISP's from indirect infringement lawsuits as the providers of the infrastructure across which copyrighted works may be transmitted[202] and enabled the development of the internet.

The DMCA at the same time was also an implementation of the requirements of the two new treaties that the United States had acceded to in 1997; the WIPO Copyright Treaty (WCT) and the WIPO Performances and Phonograms Treaty (WPPT).

5.4.1.2 UK Digital Economy Act 2010.

Technology has had such a profound effect on copyright that the United Kingdom is yet another of the world nations that has found it necessary to address the issues that copyright faces in the new realm of cyberspace in separate legislation of its own.

The Digital Economy Act of 2010, in its preamble describes one of its functions as 'to make provision about the online infringement of copyright and about penalties for infringement of copyright and performers' rights'.[203] It quite clearly in that sentence recognises the online world as a new domain within which the existing legislation before it did not adequately cover therefore necessitating separate legislation that attempts to cover the width of all the new issues that this new technology enabled virtual environment has brought with it.

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[200] DMCA Title II.

[201] Acting as a conduit, system caching, storage at users direction and information location tools.

[202] A Kao 'RIAA v. Verizon: Applying the Subpoena Provision of the DMCA' (2004) 19 *Berkeley Technology Law Journal* 405 at 409-411.

[203] Digital Economy Act of 2010.

The Act came in the wake of recommendations made by the Digital Britain White Paper report after a government sanctioned investigation into the changes in the communications and digital technologies sector.[204] With respect to copyright, it amends certain sections of the Communications Act of 2003 [205]and in addition describes the obligations of Internet Service Providers towards copyright owners and elaborates on remedies and procedures that should be followed by the subscriber, the copyright holder, the ISP and OFCOM, the British communications sector regulator in the various contexts of online copyright infringement.[206]

It goes on further to amend the Copyright, Designs and Patents Act of 1988 by increasing the penalties for producing or dealing with unauthorised copies from the statutory maximum to 50 000 pounds[207] and again the effects of changing technology are apparent by the Act's amendment of the Public Lending Right Act of 1979 to include new book formats like eBooks and Audio Books. In this same section, it specifically excludes the electronic transmission of copyrighted works from the definition of the term 'lent out'[208]; yet another change due to advances in technology allowing for digitised books that can be traded online via several methods.

Five hundred years have past since the early litterae patents were issued granting stationers monopoly rights to reproduce books to this, the UK Digital Economy Act of 2010. During this period, the rights to these creative works have shifted from the authors, to the publishers and then back to the authors again and there's been a spawning of associated rights to these works as well as a broader definition of what these rights are to now include moral rights. We have also seen the scope of works protected by copyright expand to include things like engravings and later broadcasts and most recently computer programs. Given the changes that we have seen in technology as well as legislation on this journey through copyright, it is clear that this journey is far from over and with the accelerated innovations we've seen in the past fifty years, it would seem that copyright still has a fair way to go before it finally catches up with technology.

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[204] Digital Economy Act of 2010 explanatory notes at 56.

[205] Sections 224(3), 314(1) (a) and Schedule 15, paragraph 63 and the preceeeding heading.

[206] Digital Economy Act of 2010 ss 3 - 18.

[207] Digital Economy Act of 2010 s 42.

[208] Digital Economy Act of 2010 subsec 43 (2).

5.4.2 Peer to Peer Networks.

No discussion of the internet and its influences on copyright can be complete without the mention of P2P networks. Even as a technologies wholly dependent on the internet, they have surpassed the internet itself as networks with influence on copyright because many, as the following sections will show, are specifically designed for the infringement of copyright.

P2P are networks that are established through direct connections between end user computers with or without an intervening entity such as a central server facilitating the connections. These direct connections are usually established through computer applications and are for the purpose of file exchanges between the peers. They work better than traditional networks as they allow for faster file transfers, better bandwidth utilization, etc. and are used in a variety of legitimate ways by businesses, government and academia.[209]

The new laws of the digital era necessarily protect the rights of online service providers as the providers of facilities over which information is exchanged. Laws like the DMCA were enacted with the view of limiting the easy availability of digital content on the internet by outlawing technology that circumvents copy protection and heightened the penalties for copyright infringement on the internet.

The DMCA, however, also affords protection through liability limitations to online service providers of several categories including those of transitory communications services which it defines as '[entities] offering the transmission, routing, or providing of connections for digital online communications...without modification to the content of the material as sent or received.'.[210] Inadvertently, peer to peer networks also fit this definition but their activities, unlike those of traditional online service providers, are of increasing concern to copyright holders and the current trend in case law is to deny them safe harbour despite the liability limitations in the DMCA for varying reasons discussed in the following sections.

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[209] Federal Trade Commission 'FTC Issues Report on Peer-to-Peer File Sharing' Available at *http://www.ftc.gov/opa/2005/06/p2p.shtm* [Accessed 13 June 2011].

[210] U.S. Copyright Office 'THE DIGITAL MILLENNIUM COPYRIGHT ACT OF 1998, U.S. Copyright Office Summary' Available at *http://www.copyright.gov/legislation/dmca.pdf* [Accessed 28 September 2010].

5.4.2.1 Napster.

Napster was the first file swapping network that brought P2P networks to the attention of the world. With over 26 million users from across the globe as early as the year 2001, it was set to change the way the music industry worked forever.[211] It was also to set the tone of what the expectations of the online world were about access to music and the new digital file format, the MP3.[212]

Napster, through their MusicShare application, leveraged the advantages of the compressed nature of the MP3 file which allowed for quicker transfers over the internet as opposed to the traditional digital music files (.wav) which were much larger and therefore occupied more space and took a lot longer to transmit. Napster, in a similar way to the Pirate Bay a few years later, not only provided the facility to share and download music files, but also maintained a real-time database of MP3 music files that were available for download.[213]

In 1999, A & M Records Inc. along with several other record companies (A & M Records from this point on) sued Napster Inc. claiming both contributory and vicarious copyright infringement by providing and profiting from technology used for the illegal sharing of their protected digital audio recordings. Napster denied both these claims on several fronts by first citing that the downloading of the MP3 files represented fair use because their users primarily used them for sampling music before eventually making a purchase, and for 'space shifting' where the user already possessed the song in question and simply wanted it in a different format. The Court's findings were contrary to these claims.[214]

They also claimed that section 1008 of the Audio Home Recording Act of 1992[215], protecting manufacturers of audio reproduction mediums from prosecution for non-commercial use of their

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[211] G Mariano 'Napster fans stretch across the border' Available at http://news.cnet.com/Napster-fans-stretch-across-the-border/2100-1023_3-255378.html?tag=mncol;1n [Accessed 6 June 2011].

[212] G J Bergen 'The Napster case: The whole world is listening' (2002) 15 *The Transnational Lawyer* 259 at 261.

[213] J U Blackowicz 'RIAA v. Napster: Defining copyright for the twenty-first century?' Available at http://www.bu.edu/law/central/jd/organizations/journals/scitech/volume71/blackowiczupdate.pdf [Accessed 6 June 2011].

[214] *A&M Records Inc. v Napster Inc.* 17 USC 114 F. Supp. 2d 896 (2001) s III B 5.

[215] 17 USC.

products, insulated them from action as their application, MusicShare, was for non-commercial use. The Court, however, deemed the downloading of MP3's to fall outside the scope of that Act.[216]

Napster also tried to claim safe harbour protection under the DMCA's section 512 that conditionally excludes ISP's from liability but failed to convince the Court that it met the necessary criteria to be deemed an ISP.[217] The way P2P networks operate has, however, evolved since Napster and it may well be that eventually safe harbour can not be denied.

The District Court ruled in favour of A & M Records and found Napster guilty of both the contributory and vicarious infringement alleged, with the preliminary injunction decision later being affirmed by the Court of Appeals in 2001[218] effectively shutting down Napster for good.

There have been several other major cases in the digital era where technology has been used for copyright infringement and has been found to work in different ways making the judgement on the liability of the creator of the technology difficult.

The new P2P networks that have been developed go beyond merely facilitating trade in MP3 music files and now encompass anything from films, all the way to software and potentially anything that can be digitised broadening the scope of possible losses to industry exponentially.

5.4.2.2 The Pirate Bay.

The Pirate Bay, in 2006, was a popular website domiciled in Sweden that serviced users of P2P networks who were looking for shared content on the internet. It did this by hosting torrent files which were mainly used to identify and locate digitised music and movies. It further ran a tracker service that helped keep track of when and where the shared resources were available.

In January 2008 Hans Fredrik Lannart Neij, Gottfrid Svatholm Warg, Peter Sunde Kolmisoppi and Carl Ulf Sture Lundstrom were individually charged in the Stokholm District Court with aiding and promoting copyright infringement through this website. The charges were supported by a

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[216] *A&M Records v Napster* (note 214) s VI.

[217] *A&M Records v Napster* (note 214) s VI B.

[218] *A&M Records v Napster* (note 214) s X.

consortium of copyright holders seeking compensation led by the International Federation of the Phonographic Industry (IFPI).[219]

The Technology.

To understand the intricacies of this case, one needs to understand what the tracker service did, and the difference between a torrent file and the actual content that it refered to. Content in this instance refering to creative works reduced to digital form and subsequently made available on the internet

A torrent file, put simply, is a file containing data about digital content. It does not contain the content itself. This information is used in the subsequent distribution of the file it refers to. A torrent file is created using freely available programmes like BitTorrent[220] that may divide the target file into smaller parts and assigning unique identifiers to each part called checksums that form part of the resulting metadata in the torrent file. Additional information that is specified during the creation of the torrent file will be the address of a tracker server (in this case the Pirate Bay tracker).[221]

Pirate Bay acted as a host for torrent files which were uploaded and downloaded by end users who were independent of the website. Pirate Bay claimed their only interaction with the torrent files that were listed on it's site was deleting those that advertised themselves as refering to something that they didn't.[222]

A tracker is an online entity that maintains a list of the locations of currently available files indexed according to their checksum ID's. When one runs an application that will download files shared via torrent applications, it contacts the tracker specified in the torrent file selected for information on the locations of the files with the checksum ID's specified in the torrent files. The application, in turn, registers the ID's of all the shared files on the local computer with the tracker which lists them in its index ready for search queries. In this way, the tracker acts as a directory of all

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[219] BBC News 'Pirate Bay hit with legal action' Available at *http://news.bbc.co.uk/2/hi/technology/7219802.stm* [Accessed 13 September 2010].

[220] Available at *http://www.bittorrent.com/* [Accessed 23 September 2010].

[221] B Dessent 'How do I create a new torrent (share a file I have with others)?' Available at *http://btfaq.com/serve/cache/56.html* [Accessed 14 September 2010].

[222] *IFPI v The Pirate Bay*, A translation of the verdict by the IFPI' VERDICT B 13301-06' Available at *http://www.wired.com/images_blogs/threatlevel/2009/04/piratebayverdicts.pdf* [Accessed 15 September 2010].

available files and their locations but does not actually store the files themselves, nor is it involved in the actual transfer of files.[223]

Pirate Bay's tracker was created by Gottfrid Svatholm Warg and through his admission, resulted in a P2P network because the tracker was necessary for initial contact to be made.[224]

The content was first made available by a person known as the seeder. The seeder was also usually the person who created the torrent file in the first place and uploaded it onto a host like Pirate Bay. The seeders in this case were the end users of The Pirate Bay who in many cases seeded copyrighted works into the P2P swarm starting the first of many direct infringements on the same content

The Case.

The Pirate Bay website provided people with the opportunity to share information through torrent files that pointed to the locations of copyrighted works. The website further hosted a tracker service that provided information on when these locations were available and what content was being shared. It is because of the provision of these two services that the four men were individually charged with complicity in the breach of the Swedish Copyright Act.[225]

They were further charged with preparation for the breach of the Copyright Act. The District Prosecutor in his indictment claimed that not only was the facility to upload and download torrent files provided, but that the publicly accessible storage for the same files was also provided knowing that they were specifically intended to be used in breaching the Copyright Act.[226]

The IFPI consortium also claimed that the defendants were complicit in, and prepared for the copyright infringements and that they were also negligent in their obligations in preventing the violations. They sought a damages award to each of their number for the utilisation of their copyrighted works as well as all associated costs including interest.[227]

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[223] B Mitchell 'What Is a Bit Torrent Tracker' Available at *http://compnetworking.about.com/od/bittorrent/f/bttracker.htm* [Accessed 15 September 2010].

[224] IFPI Translation (note 222) at 29.

[225] IFPI Translation (note 222) at 15.

[226] IFPI Translation (note 222) at 15.

[227] IFPI Translation (note 222) at 19-20.

All four denied the charges saying that a file sharing service was not illegal per se and further claimed that the Pirate Bay only supplied and received torrent files and neither referenced nor had any direct contact with copyright protected material. All the copying and sharing of this material was done by end users and none of the material passed through any of their computers. Peter Sunde Kolmisoppi also stated that he was not involved with the Pirate Bay operationally and his only function was to sell advertising space whose proceeds were used to fund the website. Carl Lundstrom also said that his only involvement with the website was that he acted as their Internet Service Provider (ISP) housing their servers and providing internet connectivity to them through his companies Rix Telecom AB and Rix Port 80 AB.[228]

The Ruling.

The District Court, on examination of the evidence placed before it, quickly concluded that copyright infringement had clearly taken place and that it had been committed by the users of Pirate Bay. What it then looked at was whether the four defendants aided and abetted the rights violation by providing the facility to download, upload and store torrent files coupled with the tracker service on the Pirate Bay website.

The court found that all the defendants were aware that a large number of their service users were exchanging copyrighted works because of the complaint emails that they received and subsequently posted for ridicule on the same website. Therefore, by providing the facilities that they did, they aided and abetted the offences and all the defendants were, jointly and in collusion, involved in the different workings of the website. Finally, they also profited from its activities through advertising revenues and could therefore be held liable for complicity in the breach of the Copyright Act.[229]

The charge of preparation for the breach of the Copyright Act was dismissed because the Swedish Criminal Code, in Chapter 23 s 2, states that one can only be found guilty of preparing for an offence if they had not already committed the offence and been found guilty of it. The torrent files associated with the period in question had already been used and thus the crime committed, and the machines hosting these files confiscated at the end of this period.[230]

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[228] IFPI Translation (note 222) at 17-18.

[229] IFPI Translation (note 222) at 48.

[230] IFPI Translation (note 222) at 54.

On April 17th 2009, the Court sentenced all four defendants to one year's imprisonment with fines and awards and costs to the IFPI consortium to the total tune of $4.5 million.[231] All four appealed this verdict and appeared before the Svea Court of Appeal at the end of September 2010 where they lost the appeal and even had their fines increased.[232]

Pirate Bay, however, has continued running and is hosted at different locations which are continually shutdown in the various jurisdictions it has managed to find a host.[233]

5.4.2.3 Grokster.

In June 2005, another landmark ruling in the case between a group of copyright holders led by Metro-Goldwyn-Mayer (MGM from here on) against Grokster and StreamCast (Grokster from here on), the developers of a P2P application, set a new precedent in US case law. This case, ultimately reviewed by the Supreme Court, was really about how far the copyright infringement liability exception precedent established in *Sony v Universal Studios* could be pushed in its intended application to support technical innovation.[234]

Grokster, the defendants, were the authors of a file sharing application that established a P2P network that MGM claimed to have contributed to significant violations of their copyrights. Grokster not only marketted itself as a Napster replacement, it also made no attempt at curbing the copyright infringement it enabled and profitted from the advertising revenue they made through selling banner space on their application. Grokster, however, was different from Napster in that it was a decentralised system with the connections being made directly between peers with no central service being provided by the themselves and therefore could not monitor or control activity on the

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[231] BBC News 'Court jails Pirate Bay founders' Available at http://news.bbc.co.uk/2/hi/technology/8003799.stm [Accessed 15 June 2011].

[232] J Halliday 'Pirate Bay co-founders lose appeal' Available at http://www.guardian.co.uk/technology/2010/nov/26/pirate-bay-founders-appeal [Accessed 15 June 2011].

[233] K Fiveash 'Pirate Bay now run from Pirate Party 'mountain bunker' Available at http://www.theregister.co.uk/2010/05/18/pirate_bay_pirate_party_last_link_in_bandwidth_chain/ [Accessed 20 June 2011].

[234] *Metro-Goldwyn-Mayer Studios Inc. et al. v Grokster, Ltd., et al.*, 545 US, 04-480 (2005) Opinion of the Court at 10-11.

network.[235] Grokster also insisted that their application, much like the Betamax, was capable of significant non-infringing use.[236]

The Supreme Court still found unanimously in favour of MGM and held that the Grokster application was intentionally distributed to promote infringement by the end-user and therefore different from the *Sony* case where the actual intention to cause infringement had not been shown. [237] The court, in the process, also set new precedent by introducing a new form of secondary liability to copyright infringement in the form of inducement which it descibed as

> [Showing evidence] of "active steps... taken to encourage direct infringement,"... such as advertising an infringing use or instructing [on] how to engage in an infringing use, show an affirmative intent that the product be used to infringe....[238]

The much celebrated verdict was welcomed by the Recording Industry Association of America (RIAA) as a period defining ruling that included a permanent injunction against any further trading of their works and the total shutdown of Grokster.[239]

RIAA then turned its attention to LimeWire, the next front in the P2P war it was waging.

5.4.2.4 LimeWire.

LimeWire was another P2P network client that worked in very much the same way as Grokster did. Its operations predated the *Grokster* case and go back to the year 2000.[240]

Thirteen major record companies led by Arista records and representing the vast majority of the sound recording copyright stakeholders in the US in 2006 brought an action against the

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[235] F Lohman 'What Peer-to-Peer Developers Need to Know about Copyright Law' Available at http://w2.eff.org/IP/P2P/p2p_copyright_wp_v5.pdf [Accessed 6 June 2011].

[236] *MGM v Grokster* (note 234) at 4.

[237] *MGM v Grokster* (note 234) at 16-17.

[238] *MGM v Grokster* (note 234) at 18.

[239] RIAA 'Music Industry Announces Grokster Settlement' Available at http://www.riaa.com/newsitem.php?news_year_filter=2005&resultpage=3&id=81648953-2457-2877-94B4-D28C93625445 [Accessed 7 June 2011].

[240] *Arista et al. v Lime Wire et al.* Summary judgment at 4.

LimeWire company and its owners claiming that the defendants facilitated , encouraged and even profited from copyright rights violations by developing and distributing their P2P network client LimeWire.[241]

LimeWire claimed that their software was for legitimate use only and in an attempt to indemnify themselves, went further to even include a 'click-wrap' style agreement on the terms of its use regarding copyright (see Figure 4) and amended its end user license agreement to reflect the same.[242] This notice was found to be an insufficient effort because no evidence was found of the defendant applying accessible technical prevention measures to mitigate the effort.[243]

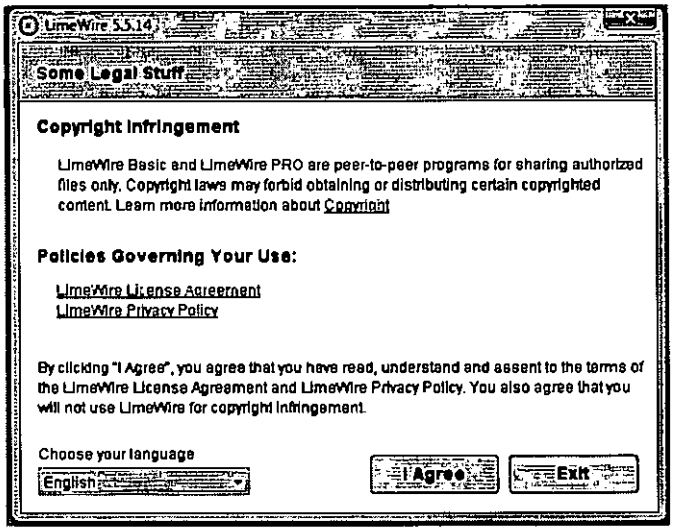

Figure 4: LimeWire copyright notice.[244]

It continued operating even after the *Grokster* case introduced the inducement angle to contributory copyright infringement and continued to gain market share to the point that it was said to be responsible for up to 58 per cent of the P2P music trade.[245]

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[241] *Arista v Lime Wire* (note 240) at 1-2.

[242] Lawrence 'The LimeWire Decision & The End of Entrepreneurial P2P' Available at *http://www.webtm.com/category/case-analysis* [Accessed 7 June 2011].

[243] *Arista v Lime Wire* (note 240) at 41.

[244] Screen grab taken on 2010-09-14 while installing LimeWire.

[245] Lawrence (note 242).

The case, however, went very much like the Grokster case and finding that LimeWire knew that it was mainly being used for copyright infringement, and even went as far as advertising itself as an alternative for Napster, Kazaa, Morpheus, etc. [246]

The plaintiffs, through expert researchers found that an overwhelming majority of the files shared across LimeWire were being illegally shared[247] and that the application was specifically designed for the downloading of audio files.[248] It was also proved that they were aware of the infringing activities and even provided support for the activities[249] while making no credible efforts at preventing copyright infringing activity via their software.[250] It was therefore found that they were guilty of secondary infringement by providing the facility and being aware that their application was being used for copyright infringement. The Court therefore applied the newly coined inducement doctrine and found LimeWire guilty of inducing direct copyright infringement granting summary judgement.[251]

Even after the very public battle that eventually shutdown LimeWire for good, it continues to echo across the internet with a new variant already operating under the new name LimeWire Pirate Edition. It is claimed to be an improvement on the last version of the official LimeWire as it is stripped free of the banner ads that the original used for generating revenue. Also, differently from its originator, it has all its premium features activated for free.[252] This new version has been developed by so called 'piratical monkeys'[253] and LimeWire have distanced themselves from it with the posted notice in Figure 5 that now appears on their home page.

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[246] *Arista v Lime Wire* (note 240) at 34-35.

[247] *Arista v Lime Wire* (note 240) at 7-9.

[248] *Arista v Lime Wire* (note 240) at 10.

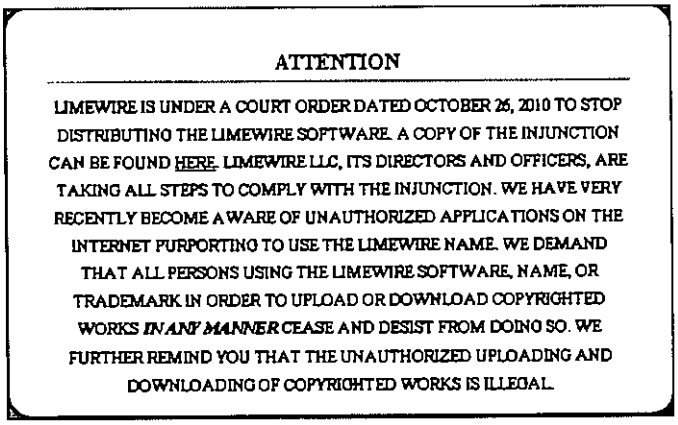
[249] *Arista v Lime Wire* (note 240) at 36-37.

[250] *Arista v Lime Wire* (note 240) 38-41.

[251] *Arista v Lime Wire* (note 240) at 58.

[252] S J Purewal 'LimeWire Is Quietly Resurrected: It's Baaack!' Available at http://www.pcworld.com/article/210092/limewire_is_quietly_resurrected_its_baaack.html?tk=rel_news [Accessed 7 June 2011].

[253] S J Purewal (note 252).



ATTENTION

LIMEWIRE IS UNDER A COURT ORDER DATED OCTOBER 26, 2010 TO STOP DISTRIBUTING THE LIMEWIRE SOFTWARE. A COPY OF THE INJUNCTION CAN BE FOUND HERE. LIMEWIRE LLC, ITS DIRECTORS AND OFFICERS, ARE TAKING ALL STEPS TO COMPLY WITH THE INJUNCTION. WE HAVE VERY RECENTLY BECOME AWARE OF UNAUTHORIZED APPLICATIONS ON THE INTERNET PURPORTING TO USE THE LIMEWIRE NAME. WE DEMAND THAT ALL PERSONS USING THE LIMEWIRE SOFTWARE, NAME, OR TRADEMARK IN ORDER TO UPLOAD OR DOWNLOAD COPYRIGHTED WORKS *IN ANY MANNER* CEASE AND DESIST FROM DOING SO. WE FURTHER REMIND YOU THAT THE UNAUTHORIZED UPLOADING AND DOWNLOADING OF COPYRIGHTED WORKS IS ILLEGAL.

Figure 5: Notice on LimeWire's website.[254]

5.5 Digital Rights Management.

Despite all the efforts that have been made by the law to control digital copyright infringement, it is clear that P2P networks are yet to be brought under control. Copyright owners have therefore themselves made efforts to protect their wares while the law continues to struggle to restore the balance that these networks are said to have upset.

Digital goods can today be copied quickly, cheaply and without loss of quality and they can also be compressed and/or modified to suit delivery methods. This availability of infinitely replicable, high quality digital merchandise as well as giving rise to new online markets, is also the lifeblood of the gigantic virtual computer networks known as peer to peer networks.

The proliferation of digital content in the world and the increasing ease with which it is distributed across the internet has also given rise to copyright infringements of proportions previously unknown. New methods beyond the copyright protection afforded by the law have had to be developed as it becomes harder to stifle the rate at which copyright protected material is being duplicated and distributed.[255]

The circumvention of these technical protection measures is illegal as provided for by the WIPO Copyright Treaty in Article 11.[256] As unusual as the inclusion of this type of protection might be

[254] Available at http://www.limewire.com/ [Accessed 3 June 2011].

[255] T Gillespie 'Designed to 'effectively frustrate': copyright, technology and the agency of users' (2006) 8 4 *New Media & Society* 651 at 652.

[256] Apr. 12, 1997, S. Treaty Doc. No. 105-17 (1997).

in the scope of copyright, it has been made necessary by the scale of digital piracy that has defined modern times; made possible in the first place through the circumvention of the protection measures applied to the original media.

The varieties of methods employed are grouped mainly into three categories. These are typically technical protection measures, interoperability prevention and contractual agreements. They are also collectively referred to as Digital Rights Management (DRM) techniques and a discussion of some common methods employed to prevent unauthorised distribution, online or otherwise, follows below. No DRM technology, however, is completely secure and it continues to be bypassed by hackers even as new systems are developed.[257]

DRM in Documents, Books and Publications.

Modern word processing applications now have the capabilities to password-protect the documents produced on them to prevent them being edited, printed, sections being copied or even opened at all.

Another method becoming more popular amongst publishers and retailers is the production of documents, books and publications in formats that require specific software or hardware to view them. Amazon, the online retailer, for example encodes their eBooks such that they are only viewable through their eBook reader (Kindle) or special software that is registered with them.[258] While this might work well for Amazon, it is not necessarily popular with consumers as it complicates things for them if they wish to resell the book or view it through another device that is not registered with Amazon.

There are, however, easily obtainable programmes that will bypass these DRM techniques and make digital books available for public consumption through P2P networks or otherwise.[259]

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[257] S Bono et al. 'Security through Legality' (2006) 49 6 *Communicotions of the ACM* 41 at 42.

[258] Amazon employs DRM techniques that match a digital file to a registered Kindle device or application and allows you to register up to 6 devices. Available at *http://www.omazon.com/gp/help/customer/display.html/ref=hp_kland_foq_kshare?nodeId=200375630#multiple* [Accessed 10 June 2011].

[259] D Goodin 'Hackers break Amazon's Kindle DRM' Available at *http://www.theregister.co.uk/2009/12/23/amazon_kindle_hacked/* [Accessed 24 May 2010].

DRM in Pictures.

There are a lot of picture shared across the internet that are original works and therefore subject to copyright protection. Some websites require that you affirm that you have the rights to distribute photos before you can upload and share them.

However, professional photographers whose pictures will normally have higher monetary value than the type shared on many websites employ more robust technical protection measures like digital watermarking, where an image will have an obvious or non obvious watermark on it to assert the authors ownership and control usage.[260]

DRM in Movies.

Movies or digital films are a highly traded commodity on P2P networks. They are available in a variety of formats that are ripped[261] from DVD's into files that are easily downloadable.

CD's and DVD's employ encryption for DRM and you cannot make direct copies of them using standard software. There is, however, free specialised software available on the internet that strips most forms of protection from the media and delivers a file that is easily copied and distributed.[262]

DRM in Music.

Digital music files in their most common format, the mp3, represent the largest proportion of traded files on P2P networks.

There have been attempts by music vendors to introduce DRM techniques that make it harder for music files to be traded illegally. Apple Computer's online music store iTunes, in an effort to curb piracy, initially encoded their downloadable music in a proprietary format that could only be played on their own applications or devices.[263] iTunes, however, eventually changed it's business model to offer a large part of its music collection without DRM protection after successful

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[260] M Smith (note 9) at 3.

[261] Ripping is the name given to the process of copying movies and music from CD's and DVD's (and more recently Blue Ray Disks) and transforming them into new format digital files which may or may not be compressed for use on digital media players.

[262] DVD Shrink is one of many such software applications that will, under the guise of being a backup solution, remove region protection, decrypt, and even compress DVD's at the click of a button. Available at *http://www.dvdshrink.org/what_en.php* [Accessed 10 June 2011].

[263] S Jobs 'Thoughts on Music' Available at *http://www.apple.com/fr/hotnews/thoughtsonmusic/* [Accessed 10 June 2011].

negotiations with the record companies that had initially required that all music have such protection mechanisms if it was to be offered for download.[264] Apple's main arguement against DRM on music was that the music companies themselves sold music on CD's that were easy to copy and that those sales represented the biggest part of global music sales.[265]

DRM protected music is unpopular because it restricts owners of music collections from using different applications or devices to play back their music limiting them to one particular manuacturer.

DRM in Computer Software.

Computer software is often protected via 'click-wrap' or 'shrink-wrap' contractual agreements and more recently via a novel technical protection measures that require that a programme be activated on the producer's website where the software license is validated. If the authentication fails then the product is not activated and lapses into reduced functionality or total dysfunction.

End User License Agreements displayed on the software also offer another layer of protection but have proved to be an ineffective deterrent to piracy.

5.6 New Technology that will change Copyright.

5.6.1 The Espresso Book Machine.

The Espresso Book Machine (EBM) is one of the latest entrants in the world of technologies that will probably have an industry changing impact in the parallel realm of publishing and copyright. The EBM, much like the internet, is not really a new technology, but rather a combination of existing technologies pulled together to provide new utility.

The EBM, invented by Jeff Marsh and developed by Jason Epstein and Dane Neller through their company On Demand Books, is a machine that is roughly the size of two standard sized photocopiers arranged in tandem (see Figure 6). It basically combines a printer, a paper binder and a paper trimmer through innovative precision engineering and novel software into a machine that can

[264] M Jayasuriya 'Apple Ditches FairPlay, Death Knell Rings for Music DRM' Available at *http://www.publicknowledge.org/node/1928* [Accessed 10 June 2011].

[265] S Jobs (Note 263).

produce a perfect copy of a paperback book in a matter of minutes. It works by accessing a digitised book through a local or online repository, which it then prints, glues together, covers and trims to produce a trade quality paperback book at minimal cost.[266] It was listed by Time Magazine to be one of the best inventions of 2007 and can produce a 300 page book for about USD $ 3.0 which might actually be cheaper than one produced through conventional methods.[267]

It is still very new technology and is being tested by various concerns including Blackwell Books in England, who plan to install one in each of their sixty bookshops across the country.[268] The first installation was done in 2006 at the World Bank in Washington DC where it was tested successfully and printed thousands of individual publications on demand.[269]

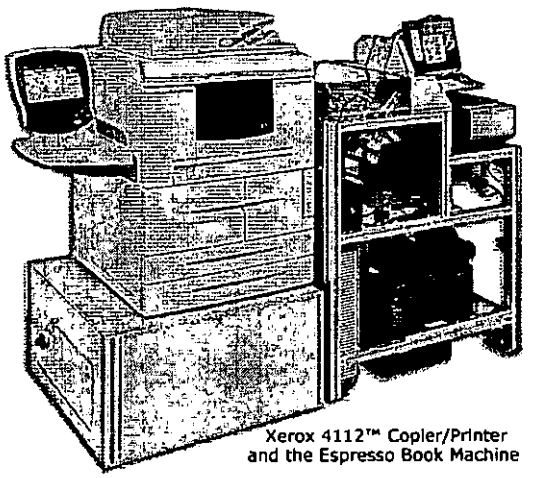

Figure 6: The Espresso Book Machine.[270]

[266] M Helprin *Digital barbarism* (2009) 158.

[267] Time Magazine 'Best Inventions of 2007' Available at *http://www.time.com/time/specials/2007/article/0,28804,1677329_1677980_1677970,00.html* [Accessed 24th January 2011].

[268] M Helprin (note 266) at 156.

[269] On Demand Books 'About ODB'. Available at *http://www.ondemandbooks.com/history.htm* [Accessed 17th January 2011].

[270] Picture retrieved from the EBM brochure. Available at *http://www.ondemandbooks.com/EBM_Brochure.pdf* [Accessed 7th January 2011].

Traditionally, a publisher needs to print minimum amount of books for the economies of scale to work in order for there to be a reasonable unit cost. There are also transportation and warehousing costs that need to be considered. This means that a book will only be published if they are reasonably certain that they can sell the entire print run. This also means that a lot of books might not be printed because they are not able to sell as many, or because they've done several runs in the past and might not be able to sell a complete new one.

With thousands of ebooks already available in the public domain and hundreds of thousands more easily available from book publishers, the EBM will bring a new fundamental change to the way the publishing industry works. Apart from eliminating the need to warehouse books, it also removes distribution costs as well as all the staffing and logistics costs that go with these processes. The print on demand functionality that this innovation introduces eliminates the need for this by reversing the traditional model where the book is printed first, then warehoused and then shipped to the store before finally being sold, to the book first being sold and then produced on the spot.

It will also vastly expand the number of books available from bookstores bacause they will only need to have access to digital book repositories and not store physical copies of the book. In this respect, the EBM should have a resoundingly positive effect in the world of the copyright because it will greatly expand the works available through traditional outlets. This includes works that are out of print and even works that might never have been printed because of too small an anticipated audience.[271]

The novelty of the EBM does not end there. It is also unlike the technological innovations of the past in that it is designed, through software, to account for every book that it produces by connecting to a central location on the internet and remitting a royalty payment to the respective copyright holders either directly or through their publishing houses.[272] This is clearly a welcome feature that will be celebrated by copyright holders across the world and might perhaps herald a new era where technology is developed that makes the copying and distribution of copyrighted materials easier while at the same time upholding the rights the owners and easing the burden on the law.

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[271] M Helprin (note 266) 158-159.

[272] On Demand Books 'EspressNet Software' Available at *http://www.andemandbooks.com/software.htm* [Accessed 24th January 2011].

5.6.2 Three Dimensional Printing

Three dimensional (3D) printing or fabricating is a technology that has existed for about 10 years now and has evolved from its original intended use of being technology that was used just for building 3D prototypes or models into a technology that is now being used in the actual manufacture of finished goods. Also known as rapid prototyping, it works through an additive process of printing successive layers of specialised materials on top of each other which eventually build up to a 3D object.[273] In a device that looks and works much like a traditional printer an architect, for example, can output design specifications for a house into an actual 3D model rather than just regular two dimensional drawings.

This technology has now been improved to produce more detailed objects and now allows for the use of new materials like nylon and even titanium to render the 3D object. It is being used in real world industrial applications from printing aircraft parts, medical implants and even complete mechanical devices.[274]

In terms of intellectual property rights, 3D printing might sound like it should be regulated more in the realm of patents and industrial design rights because it will make the production of manufactured goods possible through a much cheaper process and remove the formidable fordist production line and its economies of scale as a barrier to entry. However, because 3D printing is driven by computers and it requires design specifications to be able to produce the finished products, there will be a digital design file in which regular copyright clearly vests.

United States Copyright Law, in its definitions, includes 3D object in its ambit with certain qualifiers with the following entry:

> "Pictorial, graphic, and sculptural works" include two-dimensional and three dimensional works .... Such works shall include works of artistic craftsmanship insofar as their form but not their mechanical or utilitarian aspects are concerned; the design of a useful article, as defined in this section, shall be considered a pictorial, graphic, or sculptural work only if, and only to the extent that, such design incorporates pictorial, graphic, or sculptural features

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[273] The Economist 'Technology: Print me a Stradivarius' Available at *http://www.economist.com/node/18114327* [Accessed 16th February 2011].

[274] The Economist '3D printing: The printed world' Available at *http://www.economist.com/node/18114221/* [Accessed 16th February 2011].

> that can be identified separately from, and are capable of existing independently of, the utilitarian aspects of the article.[275]

This definition therefore excludes 3D objects with utility from the ambit of copyright.

Picture then if you will, a scenario in which these 3D fabricators have become commonplace and are even available in homes; very much in the same way as we saw previously industrial technology like the laser printer becoming cheaper and ubiquitous in domestic consumption. The demand for these 3D printers would be fed by the growing amounts of goods available for home fabrication as would the demand for the 3D schematics be symbiotically fed by the increasing number of home fabricators.

In this scenario, it would just be a matter of time before free design schematics for 3D objects became available (leaked or otherwise) on the web. The open-source proponents already have a role in producing and sharing all sorts of 3D object schematics and adding content to the public domain[276] that will have an economic impact on the copyrighted by shrinking the market for their products. It would also be just a matter of time before copyrighted material illegally found its way into the marketplace.As in the case of the music industry, traditional businesses would then have to adapt their business models and start offering their wares as downloadable files that can then be printed in the comfort of your own home to feed the market demand for this new format of goods.

Because of the above, it does not (or should not) take a stretch of the imagination to envision something like a pair of shoes being digitised, transmitted across the internet and then reconstituted into a perfectly good pair of shoes in our homes of tomorrow.[277] Further to this, as with all things digital, it follows that it would also be possible to make an identical copy of the original digital file and distribute it through an ever growing variety of methods. From there, it would not take much before the trading of these files across the internet started gaining momentum.

The prospect of Nike shoes being illegally traded on peer to peer networks and other online methods then becomes a reality. A reality which current copyright laws are not prepared for

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[275] 17 USC s 101 2009.

[276] C Anderson 'In the Next Industrial Revolution, Atoms Are the New Bits' Available at http://www.wired.com/magazine/2010/01/ff_newrevolution/ [Accessed 16th February 2011].

[277] The Economist 'Case history: A factory on your desk' Available at http://www.economist.com/node/14299512 [Accessed 16th February 2011].

because while current laws might be applied to protect the files from which 3D content might be rendered, are they expansive enough to cover the 3D output? If someone downloaded the schematics for an entire car but only rendered one headlight to use in another work, would that constitute fair use? In current copyright law, if I buy music online, I then have the right to play it for personal consumption as many times as I please. The shoes would have been downloaded for direct purpose of printing but for the seller of the schematics to remain in business, it should be a one time activity to allow them repeat business.

If copyright does not protect ideas themselves, but the material expression of the ideas, then surely the shoes described above warrant protection because the underlying software used to render the 3D object can be considered a literary work. In the same way copyright vests in music, from its expression on paper, performance, transmission and storage media, then similar neighbouring rights should apply to the shoe from its design to its rendering. Can the protection afforded to the expression of a spoon in software design, for example, be transferred to the spoon itself as a neighbouring right?

The Rome Convention protecting performers and producers of phonograms introduced neighbouring rights related to copyright because technical innovations in phonograms and broadcasts because it was suggested at the Berne Conventions of 1908 that these bordered on industrial rights and in 1928 and 1948 that these rights sat outside the traditional scope of copyright.[278] 3D works rendered directly from a copyrightable source might well be deserving of neighbouring rights protection much in the same way as phonograms.

The Berne Convention has a rudimentary mention of 3D objects when it lists 'three-dimensional works relative to geography, topography, architecture or science' under protected works.[279] This, however, does not cover the situation described above and this baseline statute could not have been drafted to predict the situation that this new technology could soon make a reality.

Until now, copyright protection has been associated with literary and artistic works. Will copyright laws then be faced with a scenario where they need to expand their definitions of the works protected and the way in which they are protected to include products previously protected by patent and industrial design rights? The lines between patents, industrial design and copyright

[278] S Lewinski (note 37) at 86-91.

[279] Berne Convention, Article 2 s 1.

will continue to be crossed in this way and will continue to blur as technologies like this continue to mature.

5.7 Some Proposed Copyright Legislation influenced by Technology.

Legislation necessarily needs to continue to adapt to the ever changing technological environments. The following sections briefly describe some recent proposed measures to control copyright infringement that are yet to come into law.

5.7.1 Anti-Counterfeiting Trade Agreement.

The Anti-Counterfeiting Trade Agreement is an agreement that is being negotiated between several countries including the United States, Canada, Switzerland, Japan and the European Union that has a section aimed at addressing the challenges posed by new technologies on the enforcement of intellectual property rights including copyright. Under discussion are the roles and responsibilities of ISP's in deterring copyright infringement on the Internet.[280]

This agreement could force ISP's in countries that are party to this treaty to disclose information about suspected infringers and even sever their internet connections. It is, however, still in negotiation.

5.7.2 P2P Piracy Prevention Act.

Copyright holders or their agents will still routinely participate in P2P networks themselves looking for any peer that might be sharing their intellectual property and take legal measures to ensure that

[280] Office of the United States Trade Representative 'The Anti-Counterfeiting Trade Agreement - Summary of Key Elements Under Discussion' Available at *http://www.ustr.gov/sites/default/files/uploads/factsheets/2009/asset_upload_file917_15546.pdf* [Accessed 9 June 2011].

infringers remove the content. It is not a simple task given the size, geography and volatility of the networks and new measures are constantly in development.

Since the DMCA, new legislation has further been proposed in an attempt to keep pace with the changing technology. As early as 2002 in the United States, there was talk of developing legislation that would allow copyright holders to engage copyright infringers through more direct and aggressive methods. A notable example of this was the proposed P2P Piracy Prevention Act that would protect copyright owners from legal action resulting from their efforts to prevent the distribution of their works via P2P networks through unauthorised interventions.[281]

The P2P Piracy Prevention Act proposed to allow copyright holders to disrupt illegal file trading over P2P networks using such methods as diverting, file blocking and impairment without fear of legal action.[282] This bill was critisized as being too heavy handed and that it had the potential of curtailing the legitimate use of P2P technology and halting innovation.[283] Recommendations were made that the copyright owners should only use legal countermeasures against pirates and that they should consider altering their business models to incorporate the expectations of P2P network users.[284] The same critic also recommended the development of better copy protection methods to prevent the creation of more illegal digital goods.

5.7.3 Others.

Other examples of proposed legislation include the 'Combating Online Infringement and Counterfeits Act' introduced to Congress in 2010 aimed at empowering courts to issue injunctions

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[281] J S Humphrey 'Debating the Proposed Peer-to-Peer Piracy Prevention Act: Should Copyright Owners be Permitted to Disrupt Illegal File Trading Over Peer-to-Peer Networks?' (2003) 4 2 *North Carolina Journal of Law and Technology* 375 at 375.

[282] H Berman et al 'H. R. S211 To amend title 17, United States Code, to limit the liability of copyright owners for protecting their works on peer-to-peer networks.' Available at http://www.arl.org/bm~doc/HR5211.pdf [Accessed 10 May 2010].

[283] J S Humphrey (note 281) at 415-416.

[284] J S Humphrey (note 281) at 416.

against internet domain names found to be party to copyright infringement activities, irregardless of the host's geographic location.[285]

Another recent bill is the 'Preventing Real Online Threats to Economic Creativity and Theft of Intellectual Property Act of 2011' which has very similar provisions to the Combating Online Infringement and Counterfeits Act mentioned above, but is not copyright specific and includes other areas of intellectual property but might yet be sufficient to prevent copyright infringing web presences.[286]

The 'Inducing Infringement of Copyrights Act of 2004', is an example of a bill that was designed to directly address the inducement later found in the *Grokster* case, but never got to be voted on.[287] It is presumable that the judicial decision in *Grokster* was sufficient and the bill lost its impetus.

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[285] Congressional Research Service 'Combating Online Infringement and Counterfeits Act' Available at http://www.govtrack.us/congress/bill.xpd?bill=s111-3804&tab=summary [Accessed 14 June 2011].

[286] Congressional Research Service 'Preventing Real Online Threats to Economic Creativity and Theft of Intellectual Property Act of 2011' Available at http://www.govtrack.us/congress/bill.xpd?bill=s112-968&tab=summary [Accessed 14 June 2011].

[287] Congressional Research Service 'Inducing Infringement of Copyrights Act of 2004' Available at http://www.govtrack.us/congress/bill.xpd?bill=s108-2560&tab=summary [Accessed 15 June 2011].

Chapter 6: Conclusion

'As poison ivy results in a rash, so too can it be said about copyright being a side effect of technology. It is an irritating but non-fatal reaction.' – Mwangi Gachago.

6.1 Analysis.

The common thread throughout this treatise has been that technology has always come before copyright evolved to incorporate it in its considerations. With the rate at which new innovations are being made, the rate of litigation has had to follow suit and the gap between the law and technology is beginning to widen again. Can a new method be found that will close this gap and perhaps preserve the balance between the protection of copyright and the enabling environment for innovation?

Another common thread seen is between all the cases examined and the fact that technology was being used for the unauthorised copying of protected works in all of them. They are, however, actually quite different when the methods and technologies involved are looked at closely.

Direct copyright infringement was shown in all them, yet curiously all the litigation is centred around the technology providers. Sony argued that their user's infringement constituted fair use as they only used the machine for time shifting what was already being broadcast freely. Napster and Pirate Bay shifted the war to the internet by providing the means to share and access illegally copied works by facilitating the illegal distribution of copyrighted works through its tracker function as well as hosting the torrent files. Grokster and LimeWire completely de-linked themselves from their P2P client applications and produced applications that would form their own networks and could not monitor or control the activities on the networks their technologies created. All of them, apart from Sony were found to be guilty of indirect infringement but it is *Sony* that continues to provide the legal precedent for the protection of new technology that is capable of infringing copyright.

The Sony doctrine, as is mentioned above, opened the door for the unprecedented scales of copyright infringement being experienced today by enabling the new technologies that emerged. But society has yet to see the diminishing production of creative works around which copyright is

ultimately aimed at preventing. An interesting observation made severally is that today's P2P networks threaten not the continued production of creative works, but the publishing corporations by taking the distribution out of their hands and putting it into the hands of the many.[288]

File sharing networks are still alive and well, with new methods of trading digital content being developed constantly. Laws like the DMCA that facilitate taking down of infringing content are struggling to cope with the sheer volume of infringing content that is out there regularly being taken down only to appear again in a different form.[289] The law is clearly not equal to the task that current technology has put before it and it is time a new approach to managing copyright was adopted.

Without technology, copyright as we know it would not exist. As mentioned in Chapter 2, the need to protect author's rights to their works only emerged when the printing press enabled the mass duplication of their works. Without the printing press and all the technology that followed in its wake, however, the creators or original literary and artistic works would not be able to achieve the levels of commercial exploitation achievable today and the industry would still be at the stage where insignificant volumes of books were being reproduced by hand. They, the copyrighted, are therefore completely dependent on technology to reproduce and distribute their works so that they can achieve the volumes necessary for there to be value and so have an interest in keeping at least some technology alive and developing.

It should, however, not be left up to the copyrighted to determine which technology should be allowed to flourish and which to quash. Recognising their understandable yet undoubtedly self-serving interests would come at a cost to society that is difficult to discern due to the unpredictable nature of technical development. Short term vision and interests might halt an innovation that would, in the long term lead to even more groundbreaking inventions that would revolutionise the world for both the copyrighted and the public.

The Betamax ruling, for example, could not have foreseen how rapidly the market for the technology and consumption of copyrighted works would have grown. A lot of technology that had its origins in the VTR would probably not exist had the Court ruled in favour of the Universal group. The VTR (subsequently known as the VCR) continued to grow in popularity over the years with various evolutions to its size, form, functionality and storage media spawning many new novel gadgets and industries in its wake while expanding the markets for copyright material exponentially.

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[288] T O'Rielly 'Piracy is Progressive Taxation, and Other Thoughts on the Evolution of Online Distribution' Available at *http://openp2p.com/lpt/a/3015* [Accessed 13 June 2011].

[289] Lawrence (note 242).

The divided Supreme Court could just as easily have ruled against it and halted the development of what is easily the biggest earner of copyright revenues in modern times. Based on this reasoning, we may never know what other court rulings or legislation may have had on the offerings of technology today. The long term effect of the Sony doctrine to today's technology should be taken into serious consideration when any changes to copyright law are attempted. Despite it being considered a blow to the copyright industry at the time, its effect was an adaptation by the industry to the technology resulting in expanded markets.

6.2 The Way Forward.

In the 500 year period that copyright has existed in one form or the other, the law has always lagged behind in adapting to the new environments that have been brought about by technical innovation. The law recognising author's rights in their works, for example, took over 200 years in developing between the invention of the printing press and the codification of the Statute of Anne.

With the passage of time, the law has been reacting faster to technological changes, but has yet to match pace with innovation. The WCT and the DMCA that followed it were legal reactions to digital technology that was already almost a decade old. It is, therefore, not reasonable to expect that at one point, the law will be at par with technology and will be able to finally maintain an optimal balance between interests society and the copyrighted.

It is therefore my proposal that the copyrighted adapt to the new technology by finding new ways in which to derive financial benefit from their works. If history has shown us one thing, it's that technology will change in ways that we cannot fathom and it is unreasonable to expect the law to be prepared for unimaginable changes.

The profitability of creative works has not yet been shown to reduce because of the effects of technology. Neither has the number of new works coming to market declined.[290] Technology has had quite the opposite effect by providing new ways to exploit markets, increase penetration and accelerate production.

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[290] T O'Rielly 'Piracy is Progressive Taxation, and Other Thoughts on the Evolution of Online Distribution' Available at *http://openp2p.com/lpt/a/3015* [Accessed 13 June 2011].

Businesses are adapting their ways of doing business to the new technological landscape, devising new business models to fashion alternative revenue streams. Digital Rights Management technology is also constantly evolving to protect digital content from being pirated so easily. Legal solutions, however, are struggling to keep up with the changing environment. Secondary liability in copyright infringement is being proven in a variance of cases, but technology continues to march on and precedent can no longer be relied on to provide a basis for law in these types of cases because of the ever changing environment.

A total re-evaluation of the rights associated with copyright might be due and the resulting regime should take the drastic changes in the environment into account to formulate new rules that will restore balance in the favour of the public and not stifle legitimate advances in technology.

The public, as well as being consumers of technology, are greater consumers of copyrighted content. While technology permeates many areas of our lives, copyrighted content achieves universal penetration. Not everybody has a radio, but everybody has listened to music or seen pictures and photographs. The same public, however, cannot be expected to recognise the longterm effects that illegally consuming copyrighted content can have on its supply. It is the responsibility of our leaders and policymakers to identify these relationships and regulate the environment for the sustained production of both.

Even though the many lawsuits that have happened over the past decade have eventually shut down the major P2P networks, there are still many others that continue to operate in ways that are always at least one step ahead of the law or even despite the law.[291] The extent of copyright infringement that has occurred in this period has been so big that businesses have to consider re-evaluating their business models and attempt to remodel them to work with the P2P networks rather than against them.

A model that universally reduces the price of digital content has been proposed as a possible solution to illegal downloads.[292] This, however, may not be a workable solution because it does not consider the huge income disparities across the globe. What might be very attractive pricing in Europe may very well be prohibitive in India where the demand for the same content can easily outstrip that in the UK due to sheer population.

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[291] S J Purewal (note 252).

[292] Lawrence (note 242).

The International Federation of the Phonographic Industry in a recent report said that the industry made significant headway into selling digital music with sales topping 4.2 billion dollars in 2009 up from a mere 20 million in 2003.[293] This period in which gains were made selling digital music is also the period during which the music industry began to take digital music seriously and adopt online sales strategies. However, another study done by the Institute for Policy Innovation in 2007 shows that the losses to the US alone through piracy of sound recordings grew to a staggering 12.5 billion dollars.[294]

Looked at simply and without considering pricing, the losses through piracy did not automatically translate into gains when the digital music was legitimately made available online. The losses through piracy do not seem to be related to the availability or unavailability of legitimate digital content.Therefore, by extrapolation and considering global income disparities, a person willing to download a song for free would not necessarily buy if it even if it was cheaply available online.

An alternative model requiring a considered licensing fee for every downloaded P2P client might be easier to manage. This model would require a well placed and experienced international administrator such as WIPO, who could practically use the WCT as an effective delivery and enforcement vehicle for this requirement. This fee should be low enough to be accessible by computer owners from even the poorest of nations and would be paid to WIPO or its nominee that then divides the proceeds proportionately according to copyright output. A percentage of this fee would also be retained by the developer of the technology to incentivise them to adhere to the licensing requirement as well as encourage development. It would then have the double effect of stopping illegal file trading because all P2P clients would be licensed while at the same time establishing new revenue streams for the industry.

The industry could argue that this model would not create revenues that are close to what their current business models generate, but this would be a short sighted view. They already claim to be losing large amounts of money through P2P networks and their associated technologies. These losses continue to accrue despite all the new laws and litigation surrounding digital piracy. With technology still advancing and the law straggling behind, the widening gap between them is bound to mean further losses still.

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[293] IFPI (note 191) at 6.

[294] S Siwek 'The True Cost of Sound Recording Piracy to the U.S. Economy' Available at *http://www.ipi.org/ipi%5CIPIPublications.nsf/PublicationLookupFullTextPDF/51CC65A1D4779E408625733E00529174/$File/SoundRecordingPiracy.pdf* [Accessed 29 September 2010].

If they do not adapt their business models to accept and embrace these new times much as the industry adapted to radio at the beginning of the last century, it might eventually lead to the collapse of their industries with society being the ultimate loser.

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