Ms Sián Elena Stevenson

STVSIA001

Master of Laws

Faculty of Law, University of Cape Town

# A Discussion into the methodology, purpose and problems surrounding the protection of digital content by means of Digital Rights Management of Intellectual Property in a digital age.

Supervisor: Associate Professor Julien Hofman

Research dissertation presented for the approval of Senate in fulfillment of part of the requirements for the Master of Laws degree in approved courses and a minor dissertation. The other part of the requirement for this qualification was the completion of a programme of courses.

I hereby declare that I have read and understood the regulations governing the submission of Master of Laws dissertations, including those relating to length and plagiarism, as contained in the rules of this university, and this dissertation conforms to these regulations.

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## 1. INTRODUCTION

The subject of this dissertation is the impact of Digital Rights Management (DRM) systems on existing issues of fair use, in terms of standard copyright legislation, privacy issues and control of the actual DRM mechanism. I will look at both the international situation, predominantly that of the United States being the forerunner in the DRM market, and at the South African situation and the particular socio-economic nuances here that make the situation unique. I propose to explore the subject of DRM, through a review of current literature, by defining DRM itself, exploring its purpose, looking at the current models and the problems that arise through their use. Furthermore, I propose to look at the various forces shaping the DRM debate in the United States. I will then examine the DRM situation in South Africa, defining the peculiar issues that effect DRM in South Africa, examining the regulatory and socio-economic environments and determining whether the issues arising in the United States are applicable to the South African situation. Finally, I intend to close with a discussion of possible solutions being posited in the United States and a suggestion as to the general direction in which the DRM debate should be moving.

My analysis of the South African situation is informed by assumptions drawn from an examination of the current operating environment (be it legal or technological) that DRM would fall into and assessing how the issues arising with DRM in the United States would be affected by the particular environment in South Africa, or whether DRM will be an issue at all.

## 2. WHAT IS DIGITAL RIGHTS MANAGEMENT?

In this chapter I will attempt to give a brief explanation of what DRM is as an understanding of the rational for the development of DRM as well as an understanding of how it works is essential as a background for the legal arguments to be raised at a later stage.

Since the onset of the Internet and the increase in both digital technologies and the use thereof for both storing and transferring valuable content, it has become imperative that such content accordingly be afforded protection so as to maintain the value thereof for the holder of the copyright. Enter Digital Rights Management (DRM). DRM was developed as a means for maintaining this value. The issue at the forefront of DRM is trust. DRM uses technology and business methodology to assure that this trust is possible. This in turn can provide, and has hoped to create, a possible means for establishing some level of constancy or stasis in the current ever changing and uncertain arena of digital intellectual property (InterTrust Inc, 2002).

Since the concept of protecting creative works by means of a copyright afforded to the creator of the work, issues have emerged which have threatened the existing status quo of producers of creative/intellectual/valuable content. But “disruptive technologies” (InterTrust Inc, 2002), such as the Video Cassette Recorder, have always emerged and have generally been dealt with by a paradigm shift on the part of the content owners and an amendment to the current legislation in order to encompass the new technology. Often this has required a new way of thinking about how valuable content is protected and how

a revenue stream can be created and/or sustained by means of the ownership of this valuable content.

Supporters of the imposition of a stringent technological or legal system as a means of protecting digital content argue that the Internet is exceptional due to the capabilities it has for reaching multiple markets, and to the digital nature of the content transferred, which enables users to make perfect reproductions of the content, and then transmit such copy, almost instantaneously. Previously, with analog content, copies could be made but this was often time consuming and always resulted in a loss of quality of the content being duplicated in the resultant copy. This argument is partly valid and partly invalid. The Internet does have the ability to reach a vast number of consumers in a disparate number of places which traditional person-to-person real world access could not achieve. However, this does not need to be a disadvantage. This factor is only viewed by the owners of digital content as a negative factor when considered together with the nature of the content being digital. Digital content owners would normally be only too happy to have access to such a vast marketplace, but when they fear that their content will be copied with no loss of quality, almost instantaneously, they feel that the motivation to purchase such content is removed.

This chapter briefly explained DRM. However, a mere explanation of what DRM is does not demonstrate explicitly why DRM is important. The next chapter goes into further detail about DRM focusing particularly on the benefits thereof.

## 3. THE BENEFITS OF DIGITAL RIGHTS MANAGEMENT OR WHY DOES ONE NEED DIGITAL RIGHTS MANAGEMENT TOOLS?

DRM is a tool which can be beneficial to people wishing to protect valuable digital content. Why it is beneficial and for whom such benefit can accrue is demonstrated in this chapter.

DRM is not only necessary or desirable for people in the entertainment industry, i.e. music or film, but can also be an important tool for doctors, lawyers and other professionals wishing to transfer valuable digital content across an essentially unprotected network. Traditional and simple cryptography techniques that have been used for centuries to protect confidential information can be, and are, used to protect information sent over digital networks. The problem arises when the information needs to be utilized and treated differently depending on who is accessing the information. It needs to be easily available to certain individuals whilst being kept private from others or, various users utilize the information differently and for different purposes, requiring different rights of access. The use may necessitate payment or registration by certain users which would require a careful process of tracking the use of content as well as being able to handle the auditing of any payments received for the rights to use the content.

DRM is a complicated procedure involving a number of different but intricately linked processes. The next chapter seeks to explain these processes clearly so that the various stages of the procedure can be examined, understood and ultimately analysed.

## 4. HOW DOES DIGITAL RIGHTS MANAGEMENT WORK?

According to the model utilised by InterTrust (InterTrust Inc, 2002) DRM protects any content working within any business model selected and utilised by the customer. Furthermore, it supports any and all methods of distribution that one may choose to use to distribute content, for example, downloading content from the Internet or from a website, streaming, burning onto a CD or DVD. Furthermore, and most importantly for the current debate, InterTrust's version of DRM does not tie one to any particular device to access or protect digital content: one can utilise a desktop PC or a mobile phone. This will become particularly pertinent in the discussion on the monopolistic attitude of the various players involved in the debate over DRM.

The technology used by InterTrust operates in the following manner: the content owner selects the digital content that he/she wishes to protect. The content is then encrypted using encryption software. A "packager" (the best analogy to describe a packager is a zip program – it is a software tool that creates a new encrypted/proprietary file with the appropriate rights embedded in the file) is then used to determine specific usage rules to apply to the specific digital content/ digital products to be sold. These usage rules are delivered (delivery seems to consist of the creation of the file and the placing of it in a format usable by retailers – for example on a CD, on a web server) in a secure file called a Rights Pack (InterTrust Inc, 2002). The encrypted digital content is then sent to the retailer and it is placed on the retailer's content distribution system. At the same time the Usage Rules (in the form of a Rights Pack) that have been specified for

the digital products are sent to the Content Rights Server. This Content Rights Server would not have to be located at InterTrust, but given the need for these servers to be hack-proof, it probably would be located at InterTrust. In fact it is doubtful that the InterTrust business model allows for any other servers to fulfill this function (InterTrust, Inc 2002). The product is now ready to be purchased. The purchaser selects the digital product that they wish to purchase and pays for the product in the same way that any payment over the Internet would occur. The payment is cleared through the retailer's payment clearing system. The purchase is then authorised and such authority is transmitted to the rights software on the purchaser's device. The content is now ready to be redeemed and retrieved (InterTrust Inc, 2002). Once the authorisation has been retrieved the software on the purchaser's device automatically retrieves the content from the Content Distribution System (InterTrust Inc, 2002) and retrieves the usage rules contained in the Rights Package from the Content Rights Server. When both the encrypted digital content selected by the purchaser and the usage rules defined in the Rights Package have been downloaded on the purchaser's device, the purchaser can access the content according to the rules defined for that particular digital product in the Rights Package.

DRM systems have been a long time in development and much time and effort has gone into their creation. One therefore assumes that they have also been developed with a specific purpose in mind. The following chapter looks at the purpose of DRM.

## 5. WHAT IS THE PURPOSE OF DIGITAL RIGHTS MANAGEMENT?

DRM is a technological means that has been developed to protect the valuable digital content that is transferred over an unsecured digital network to provide compensation where compensation is due. So, for example, if one writes a song and a record company produces the song and a CD is released for public consumption and sold in the shops for R100, a portion of that R100 would be paid to the songwriter as the Copyright Holder of the material and would be compensated for creative input and resultant creative work. For the price of R100 the purchaser would get the limited right to use the creative work. However with technological advancements it is now possible for the purchaser to place a CD in the CD drive of their PC and to copy the digital format of the music onto their hard-drives. This in itself is not an infringement, or should not be an infringement as I propose that this falls directly into the fair use exception in terms of copyright law. From there they are able to send a copy of the digital format to any number of other people who have not paid compensation for the use of the CD. This is where the problem arises. A method is thus needed to ensure that adequate compensation flows to copyright holders in exchange for the limited but fair use of creative works.

In fact even non-digital existing creative works are at threat. If one considers that cassette tapes can be turned into MP3's – which are not digital *per se* but would also need the protection of DRM. This raises another argument in the whole DRM debate, namely that of whether or not DRM depends on the hardware utilised, irrespective of whether it need originally be digital or not.

The benefit, purpose and way that DRM works have all been discussed. It is clear that DRM has a clear function and purpose. However, DRM also raises numerous issues which were not essentially part of the original purpose or function of DRM but are intimately involved in any DRM system. Chapter 6 seeks to outline some of the contentious issues involved in DRM.

## 6. UNDERSTANDING THE ISSUES INVOLVED IN MANAGING ONLINE DIGITAL CONTENT

There are a number of very valid concerns surrounding the use of technological means to protect valuable content. These issues range from broad policy concerns that DRM is going to be manipulated as a means for harvesting more profit from an existing consumer base by means of a pay-per-use system of licensing (Adkinson and Eisenach, 2002), to the concerns that are raised about user rights, in particular, the right of fair use endowed upon the user in terms of Copyright Law, the constitutional right to privacy and the associated concerns around data mining. The control that is given either to copyright owners or to the people owning the means of protection, DRM, is also a concern as this control is far-reaching, expansive and powerful. This control would facilitate the "unbundling" of user rights (Adkinson and Eisenach, 2002) which is not a good thing for the consumer. An article published last year in Wired Magazine posited that DRM is merely a mechanism enabling content owners to exploit the consumer, stating, 'Big Media want you to pay for what you read, watch and hear – and keep paying. DRM technology will make sure you do.' (Howe, 2001). This in itself is not necessarily a bad thing provided that the price is right and that access is easy.

However, critics of this form of control maintain that the only people this is benefiting are the owners of the digital content or the devices that enable the control of the digital content. The result to the consumer is that they will now have to pay for rights which previously fell under their right to fair use (Adkinson and Eisenach, 2002). These

were previously free and non-infringing uses of legally purchased copyrighted material. This raises the whole price-gap argument that will be discussed at a later stage. In essence, the price-gap argument is similar to the argument upon which Black Market economics is based. If goods have specific production values which are less than their sales value, they can be sold for profit. A free market with competition creates a smaller and smaller gap between sale price and production value as competitors enter the market and either differentiate on service and offerings or cut costs and become more efficient to compete. This is why there is such a market for pirated CD's (arguably it has nothing or very little to do with MP3's and digital piracy via downloading on the peer-to-peer networks) as the production cost for CD's is about $1 (admittedly, the overall cost is probably about $3), but the sale price is $20. The monopoly imposed by "copyright" means that producers could charge whatever they like in the sale of the goods. I argue that the motivation by big media for DRM is merely an attempt to protect their massive profit margins (Adkinson and Eisenach, 2002).

Proponents of extreme technological protective measures state that these measures are in actuality a means of protecting the consumer. They base this somewhat strange statement on the argument that without measures ensuring that the copyright holder has their content protected at all times (and thus facilitating adequate compensation to flow back to the creator), it might not happen that any creative work is created for the consumer to enjoy at all (Adkinson and Eisenach, 2002). This sounds like a rather circuitous argument meant to couch simple greediness in a concern for the creative good and benefit to society. It has been shown in many ways that over-regulation

never feeds creativity but in fact stifles it (Levine, 2002). Furthermore the very purpose of the fair use provisions in copyright laws was to allow people to utilise (to a limited extent) other people's creations in order to stimulate their own creativity. Thus it is argued that creation begets creation.

There is no agreement amongst the various interest groups as to how protection of digital content should occur, to what extent this should be driven by the legislature, and to what extent it should be determined by technological solutions or informed by big media. But this is not necessarily a bad thing when one takes into account the dynamic state of the market and the lack of certainty as to what technology, if technology does provide the solution, will become the standard and how this will interact with any legislative measures implemented already by Congress and those to be implemented in the future. It is, however, of general consensus that policy changes will be needed and as Adkinson and Eisenach state: 'In the long run, however, we believe policy changes will be needed…'(Adkinson and Eisenach, 2002).

The following chapters will undertake a more detailed discussion of the rights of fair use and privacy, detailing the legal nature of these rights, their purpose, how they are traditionally protected and an explanation of the threat that they are under from DRM.

## 7. THE RIGHT OF FAIR USE

Fair use is recognized in terms of copyright law as non-infringing use of a work by an authorised purchaser. In other words two elements need to be present in order for fair use to arise. Firstly, the user must be in possession of a legally obtained copy of the work. Secondly, the further copying or otherwise of this work must not constitute an infringement of the copyright holder's rights.

South African legislation incorporates the right of fair use into the Copyright Act 98 of 1978 at Section 12 thereof. Section 12, deals with the general exceptions from the copyright afforded to musical and literary works. In the United States, fair use in copyrighted works is dealt with in Title 17 of Section 107 of the U.S. Code. There are certain guiding principles to be used when determining what does or does not constitute fair use and thus fall under an exemption from the copyright laws.

### 7.1 The Principles of the Right of Fair Use

The four main principles of the right of fair use can be expressed as questions and summarised as follows:

1. What are the purpose and the character of the use?
2. What is the nature of the copyrighted work?

3. How substantial is the portion used when compared to the copyright work as a whole?
4. What is the effect of the use upon the potential for, or the value of the copyrighted work? (University of Delaware, 1998).

Simplistically put, these questions basically determine the commercial impact that the breach of copyright will have on the ability of the copyright holder to make a return (however quantified) on their creative product. There is no one-size-fits-all solution to determine whether or not an action on the part of the consumer is considered to fall within the fair use exemption, but rather it is something which would need to be carefully considered and determined on a casuistic basis.

From a social perspective fair use serves a type of balancing function. A balance needs to be maintained between the owner's right of ownership in the creative work and the social good of an environment of free speech, the transfer of knowledge, an open environment for learning and criticism and the creativity which flows therefrom. But the social benefits are not all "airy-fairy" benefits.

**7.2 The Market Benefits of the Right of Fair Use**

There are real market benefits of fair use in instances where the transactional cost of licensing outstrips the actual value of the product to the consumer. In this instance, the market failure that would exist from this absurd situation is corrected by allowing the

user a right of fair use in instances such as this (Burk, 2001). Another economic benefit demonstrated by the allowance of a doctrine of fair use is that of knowledge transfer. This facilitates reverse engineering, especially in computer software programs not under patent law, by allowing the copyrighted material to be utilized in a limited sense. (Sony Computer Entertainment Inc v Connectix Corp, 203 F.3d 596, 602-08 (9th Cir. 2000). This in turn facilitates innovation and allows for a successfully reverse-engineered-program to emerge. It might seem as if it should not be a desired outcome of law that one legal framework allows for another to be broken down. However, an important point to note, is that this kind of innovation, based on reverse engineering, can prevent a monopoly which could otherwise be established by patent. This cannot have been the intention of the legislators drafting the patent laws (Samuelson, 1993).

It is also important to note that in the past the argument about a device having a substantial non-infringing use formed part of the fair use doctrine, as often fair use would provide the substantial non-infringing element. For example, the VCR was held to be legal as it had a substantial non-infringing use, namely that of allowing its users to record a television program and view it later, also referred to as “time-shifting”. This argument resulted in the dual purpose technical protection argument which was invoked in the case of Sony Corp of America v Universal City Studios, Inc 464 U.S. 417, 442 (1984).

### 7.3 The Right of Fair Use and the Digital Millennium Copyright Act

The fair use issue is of particular importance in the digital arena due both to the ease with

which copies can be made and distributed, and also because of the Digital Millennium Copyright Act, 17 U.S.C. of 1998 (DMCA). Furthermore, the issue is of importance when looking at DRM and whether or not the systems can be used effectively to stop copyright infringement. The question which needs be asked is whether or not DRM systems can be utilized within a legal framework that allows appropriate access to protected material and to the use thereof by public consumers (Burk, 2001). In other words, the question can be simply rephrased to ask; can DRM systems accommodate and recognise fair use?

Copyright holders in the recording industry have started using digital means to prevent piracy of their digital works. One of these means is producing CD's that won't play on computers or other digital devices. This not only contravenes fair use provisions but also practically prevents any use at all. Many of the CD's manufactured with such anti-piracy measures will not even play on actual CD players meaning that the consumer is actually paying for the privilege of having no rights at all. Copyright was developed as and has always been meant to protect a system of rights and limitations, neither of which is ever absolute. What DRM and the Digital Millennium Copyright Act are doing is creating is a system of protections which operate in terms of the absolute rights of the copyright holder and the grant of rights in different circumstances to the consumer based upon a fee payable to the Copyright Holder.

In essence what has happened is that the technological protections implemented go far beyond the ambit of the actual legal position laid down in copyright law. The

recording industry claims that they have been forced into taking such harsh actions because piracy has eroded the sale of CD's and is in fact making it almost impossible for them to continue to produce any CD's at all. More likely is the argument that they are concerned about their profit margins (as will be discussed further on in this paper) (Adkinson and Eisenach, 2002). In fact the rationale for the drop in CD sales has been mooted as being the greed of the recording industry in steadily increasing the price of CD's. BBC News states in an article entitled 'Efforts to stop music piracy pointless' (British Broadcasting Corporation, 2002), that in late September of 2002, several music companies were fined for more than $143 million after having been found guilty of fixing prices. So not only are rights of fair use being eroded into non-existence, but also the actual paid for use of the CD is being eroded too. This is because in order to try and create a CD that only played on CD players and not on computers, CD manufacturers created a CD that was actually of inferior quality by corrupting the CD format normally used (Peters, 2002). What is more, last year the CD protect mechanism that Sony used on their release of the Celine Dion CD "A New Day" actually crashed one's hard-drive if one tried to play the CD on one's computer. Surely that is not only contrary to copyright legislation but should also render Sony liable for damages? Either way this is certainly not how WIPO envisaged the protection of digital content should be or what protection it should result in. In fact the music industry is becoming more and more unconcerned with user rights. In an article published in The Register (http://www.theregister.co.uk), that was based on a letter, Bertelsmann Music Group was quoted as saying, in response to a user complaint that the CD they had legally purchased would not play, 'all CD's will be copy protected, it's not our problem that they won't play on some devices, so tough.'

(Lettice, 2002). Whilst EMI Germany, in response to a complaint of the same nature, wrote a letter to the user in which they explained the reasons for their use of such (extreme) measures and finished off with this gem of a statement from a customer relations officer 'But we fear that these facts don't interest you at all. Because these measures mean the end of free music, something that must cause you much grief.' (Lettice, 2002). To add insult to injury they called the user a liar by saying that his statement that the CD would not play in multiple CD players 'can, in our experience, only originate from the realm of fairytales.' (Lettice 2002). This demonstrates how totally unconcerned the music industry is about user rights and the reason great care should be taken in whatever solution, technical or legislative, is proposed and implemented. As Lettice states about the music industry and DRM, 'they really are looking forward to the day when you have no rights.'(Lettice, 2002).

Not only are the technological measures utilised flawed, but also legislative measures implemented thus far seem to be equally riddled with booby traps for the unwary and innocent user. The DMCA mooted as a brilliant solution to the concerns of the digital content copyright holder has created more problems than it has solved due to it being overly zealous in its concern for the copyright holder, especially in the area of technological copy protection mechanisms.

### 7.4 The Digital Millennium Copyright Act and its Anti-Circumvention Provisions

The DMCA has created a law which now makes it illegal to break anti-circumvention

measures on your legally purchased digital content product even if the reason for such circumvention falls squarely within the concept of fair use and would not have been illegal prior to the DMCA coming into being. Piracy is a relevant and serious concern in the digital arena, but digital rights protection technology and legislation seems to be focusing solely on the limiting of consumer rights (and the right of fair use in particular) (IT GlobalSecure Inc, 2002) and not on maintaining the careful balance that should exist between the rights of copyright holders and the rights of the users of copyright works. The DMCA does not stop at preventing fair use but in fact goes further to prevent even a method or device for breaking such technological anti-circumvention measures from being created should the primary purpose of the device be '…to enable circumvention of technical protection systems' (Samuelson, 1999).

The DMCA, which deals with copyright issues arising in the digital arena, has two anti-circumvention provisions. The first of these provisions is a major threat to the user right of fair use. The second of these provisions has a major impact on fair use as well as on academic freedom and on innovation within the IT sector which will have a knock-on effect of being bad for e-commerce and the digital economy generally. The first provision contained within Section 1201 (a) (1) (A) the act of circumventing an anti-circumvention technological device is prohibited. The section states that it is illegal to circumvent 'a technological measure that effectively controls access to a work protected under this title.' (17 U.S.C.A. 1201 (a) (1) (A)). This effectively removes many of the uses of the product as it prevents the user from being able to use the product on multiple devices and prevents copying of the product for personal and non-infringing uses. The

second provision contained in Sections 1201(a) (2) and 1201 (b) (1) both restrict the manufacture and provision of any device which can circumvent access controls on a copyrighted work and any device that circumvents a copy control mechanism. Both of these sections apply if the device has the primary purpose of circumventing digital protection technologies. These provisions provoked the ire of many people in academic and industrial circles mainly due to their criminalising previously non-criminal activities and restricting academic freedom. (cf. Felton Case). And the effect of that is that many activities critical to the growth of the digital economy would have been outlawed (Samuelson, 1999). The problem arose that those who were in control of copyrights - equally vocal in their support for the anti-circumvention provisions - dismissed any claims made about the disadvantageous effect on the digital economy and the erosion of fair use, as spurious and lacking any foundation in truth or actual fact supported by solid data. The result of the objections to these provisions was that a closed list of exceptions was added to the statute. The problem with the closed list was that it contained no general-purpose circumvention exception. This may result in the statute continuing to criminalise and stifle what might have been perfectly legitimate activities.

The United States Congress did heed the advice of certain opponents to the extremely broad nature of the anti-circumvention provisions of the DMCA by drafting certain exceptions into the provision. However, the exceptions are unclear and do not give any clarification to the issue of whether or not it is permissible under the DMCA to develop technological devices specifically for the purpose of breaking anti-circumvention protection measures for the sole purpose of exercising rights of fair use. This is

particularly worrying due to the effect that the DMCA is having in rapidly eroding user rights of fair use and the impact that this may have in future upon further creativity, notwithstanding the arguments voiced to the contrary. In an article aptly entitled 'Beyond DRM: The Consumer is not the Enemy' (IT GlobalSecure Inc, 2002) posted on the IT Global Secure Inc website, it is asserted that the '…most disturbing implication of the entire approach is the view that the audience (consumer) is inherently criminal.'

### 7.5 The History and Rational for the Enactment of the Digital Millennium Copyright Act

The DMCA was initially enacted due to the United States adhering to provisions of the World Intellectual Property (WIPO) Treaty. However, rather than having the provisions of WIPO being the guiding force in determining the content and breadth of the DMCA, the DMCA became an opportunity for copyright industries in America (and particularly in Hollywood) to try and assert and maintain the status quo of their profits and the IT sector, mainly situated in Silicon Valley, trying to oppose this monopolistic move by Hollywood and attempting to protect their ability to create new technology and to engage in lawful reverse engineering of current technology, encryption research and systems security tests (Samuelson, 1999). Thus what exists is "a paradigm of rights users versus rights holders" (Parrott, Honious *et al*., 2000), both diametrically opposing the point of view of the other. Users need to be able to access content in order to decide if they want to purchase such content and, in order to be able to fully enjoy the fruits of their purchase, to access an unprotected copy of the content so that they are able to utilise the

content in all of their own devices for the purposes of private and non-infringing enjoyment thereof.

### 7.6 Digital Rights Management as a Property Fencing Mechanism

An analogy has been drawn between the protection of intellectual property through the application of DRM systems to the fencing off of real estate. In the situation of the fencing off of land, it is clear that a public right of way over the property, owned by a landholder, would trump the right of the landowner to fence off his private property from the general public (Burk, 2001). The legal position at the time allowed the landowner to prevent illegitimate traversing of his/her private property and allowed the public to prevent illegitimate fencing off of public land. Therefore, should a person with the right of way come across a fence they would be legally entitled to cut such fence. In the same way, anti-circumvention provisions in the DMCA should operate in such a way that circumvention is prohibited insofar as "private land" or rights adhering solely to the copyright owner are concerned. However, circumvention of DRM technology should be considered legitimate and permitted by law in instances where public goods or rights are being illegally fenced off by copyright holders.

As will be seen later in this paper, it is essential that some measure be introduced to curb the overbroad language and scope of the anti-circumvention provisions, particularly due to the substantial and unintended consequences that this legislation has and may still have on the digital economy, academic freedom and fair use. The problem

in the arena of the digital economy is that the technology is changing so often and so rapidly that it is important for the legal framework to be flexible enough to allow for these changes. The danger in a too restrictive and unyielding framework is that it can inhibit new developments with detrimental effects on the economy as a whole.

## 8. THE CONCERNS SURROUNDING DIGITAL RIGHTS MANAGEMENT AND THE RIGHT TO PRIVACY

Privacy is a flexible concept meaning different things and affording people different protection and rights in various situations. Privacy has become a problem in connection with the Internet for three reasons:

- Undetected collection of personal data is easy to achieve (By software tools such as referrers, search strings, smart browsing features and web bugs. See generally William McGevern, Programmed Privacy Promises: P3P and Web Privacy Law 76 N.Y.U.L. Rev. 1812);
- The interactive data medium makes web surfers more likely to divulge personal data;
- Cookies and other tools provide a mass of useful and readily available data that other methods would be unable to achieve; and
- Software is already in place on our computers which is capable of 'reporting back to base' so to speak. Microsoft's Windows Media Player has since version 7 had a file which is stored and periodically this file's contents are transmitted to Microsoft's servers informing them of exactly which CD's and DVD's the user of the program accesses. This is done by means of an embedded, globally-unique identifier which helps create a log file that stores and sends the content information. This not only impinges on the user's privacy but also totally cancels out any prospect of anonymity.

In short it is easier to invade into someone's privacy now than ever before.

Since privacy has become an endangered species as a result of the electronic age, it is useful to start by examining the core expectations of privacy that people have.

## 8.1 Three Expectations of Privacy

There are three main expectations that can be examined when one is discussing the right of privacy. These three expectations are:

- the expectation of confidentiality,
- the expectation of anonymity, and
- the expectation of fairness and control over one's personal information.

### *8.1.1 The expectation of confidentiality*

The expectation of confidentiality typically involves the expectation that a message sent to a particular recipient will only be read by that intended recipient. The problem with this expectation and the Internet is that an unencrypted email is as vulnerable to being read by an unintended recipient as a postcard. Whilst the Internet's decentralised nature helps it to deal with problems such as failures in computer networks by re-routing mail messages through an alternative network, this re-routing also leaves the messages at a greater risk of being intercepted (Berman, 1999). This sharing of computer networks by different individuals leaves messages and data sent by different users at risk to both exposure and corruption.

### *8.1.2 The expectation of anonymity*

If people do not disclose information about themselves, they have an expectation that their identity will remain anonymous. On the Internet, with the lack of face-to-face communication and the ability to transact and communicate via an alias or anonymously, this expectation has been more prevalent than offline. Ironically, nowhere are you less likely to be anonymous than on the Internet. The technology stored within the web sites you visit and on your own web browser routinely leaves a trail of personal information about you and where you have been surfing called a “clickstream” (Defined as a list of links requested by a site visitor). This clickstream creates a personal profile about the user’s online activities. Small text files known as “cookies” are stored on your computers hard drive to collect information about your surfing habits and store them for later use or retrieval by the website. These cookies have been adopted by websites to enable the proprietors thereof to create a portfolio of your online habits. With the globally unique identifier embedded in Microsoft’s Media Player, which is a standard program with Microsoft’s most recent Office packages, your actual digital content preferences are recorded, stored and relayed back to Microsoft. This has created a valuable market in personal profiles, of interest to both commercial bodies and government (Tessler, 2001). Demographic statistics gained by means of the cheap and easy technology of cookies can be very valuable to technology companies who are not coping with the current downturn in technology stocks. (A good example of this is the sale of Egghead to Fry’s Electronics where it was part of the terms and conditions of the sale that Egghead would sell its

customer list, in spite of promising not to divulge this information to a third party) (Wolverton, 2001).

### *8.1.3 The expectation of fairness and control over personal information*

This concept is based on the premise that an individual discloses information to a third party for that third party's use only and for a specific purpose. That said, it is becoming more and more evident that with the growing market in personal information, information disclosed by an individual as outlined above is routinely being transferred to other parties for uses other than that with which the disclosure was given. This has resulted in massive databases being created which collect and compile information about individuals which is then "mined" by a corporation for their own benefit. With the growth of the capabilities of technology, individuals are having less control over their personal information than ever before. Furthermore, not only are individuals losing control over who sees the information and what is done with the information, but also they are losing the ability to judge whether the information about themselves which is being disseminated is true and or fair.

## 8.2 How privacy is traditionally protected

### *8.2.1 The Fourth Amendment*

Privacy is traditionally protected by the 4th Amendment to the United States Constitution. The Fourth Amendment provides that:

> The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no warrants shall issue, but probable cause, supported by oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized.

In order to be afforded the protection of the Fourth Amendment, an individual must pass a test to establish such legitimate expectation of privacy. The individual must show that a) they had an actual, subjective expectation of privacy, and b) this expectation was a reasonable one. There is an important rider to this expectation of privacy in that it is limited:

> what a person knowingly exposes to the public, even in his own home or office, is not a subject of Fourth Amendment protection. But what he seeks to preserve, even in an area accessible to the public, may be constitutionally protected.(Katz, 389 U.S. at 351-52)

### *8.2.2 The Common Law Tort of Invasion of Privacy*

The origins of the common law tort of invasion of privacy arose out of a discussion on the invasion of privacy by Warren and Brandeis in 1890. The authors proposed the birth of a common law tort based on the disclosure of private facts to the public (Brandeis, 1890). A later review of several years of tort jurisprudence led Dean Prosser to declare

that the single right of privacy as enumerated by Warren and Brandeis was actually a conglomerate right comprising four individual components, namely:

1) The tort of appropriation of one's name and/or likeness for the commercial benefit of another, without the permission of the person;
2) The public disclosure of private facts;
3) The tort of intrusion into seclusion, a form of trespass;
4) The tort of false light which protects against inferences onto the subject views and or circumstances that are not applicable (Prosser, 1960).

Prosser's seminal work on the tort of privacy resulted in its codification into the Restatement (Second) of Torts.

It is however, generally accepted that the privacy torts are inadequate to deal with the current problems surrounding privacy, mainly because there is little falsity of the facts disclosed or disseminated and most of the facts disseminated are already, in one form or the other, within the public domain. This however, is not to say that the privacy tort can play no further role in the protection of online privacy, but that it is not useful in its current form and/or application.

## 8.3 The problems posed by the Internet and in particular by DIGITAL RIGHTS MANAGEMENT.

There are several problems posed by the Internet that create new challenges for the protection of privacy. These problems are associated both with the manner in which

information is disseminated and with the technology involved in the dissemination of such information. It can be seen that there is an increase of data, a globalisation of communication across territorial boundaries together with a decentralisation, and lack of a central control mechanism. There is a flood of information being transmitted easily and rapidly to more people than was previously possible. This leaves an ever-greater quantity of data open to privacy infringement and the traditional mechanisms for dealing with privacy and ensuring privacy protection are proving to no longer be adequate or effective. The growth in technology and the speed with which that growth has occurred means that there must be an amalgamation of both legal and technical solutions in order for privacy to be adequately protected.

These problems are inherent in DRM technologies. Current PKI protocols require user authentication for the simple reason that the identity of the user is required in order to prosecute an infringement and furthermore user tracking is part and parcel of the DRM package so that any fraudulent use of the digital product can be prevented. Privacy advocates state that this is not a necessary consequence of DRM and that consumers should be involved in how much tracking occurs. Utopia in this situation would be that all transactions are explicit and with consumer participation (Parrott, Honious *et al*., 2000). What is even more worrying is that DRM could require all purchasers of media content to identify themselves. Thus the standard of anonymous consumption of content would be totally eroded and a consumer-modelling, based on consumption patterns, would be easily ascertained and readily sold for a profit to the highest, and certainly not necessarily the most scrupulous, purchaser. User profiling could also be used to prevent

access to certain information by certain users and/or as a means to fix prices according to user profiles (Yale University, 2002). Traditionally, content could be accessed and consumed without the disclosure and transfer of personal information. In fact there were statutory and ethical measures in place to ensure that this was so when one accessed content, for example, at the local library.

### 8.4 Approaches to privacy protection and the Internet

Whenever one looks to regulate the Internet and digital content there are two competing and equally compelling rights which need to be considered. These rights are the right to privacy and the rights involved in the accessing of information. Furthermore, there is the commercial need to divulge information in order to conclude transactions. After all one must be able to know with whom one is contracting.

It is essential that a mechanism is developed which will effectively protect the individual's right to privacy and ensure that it is not eroded whilst maintaining an arena where copyrighted information is plentiful and easily accessible by the public yet still providing due compensation to the holder of the copyright. These opposing approaches are often referred to as the libertarian approach versus the market opportunists' (Belgum) approach. The former favours a free flow of information while the latter ensures privacy protection through stricter legal regulation.

The other difference in approach to privacy protection comes in the form of the nature of the right that is being protected under the mantle of privacy. Samuelson argues that the right is akin to that of a property right and thus should be treated in the same manner that property rights are dealt with and confer ownership of their personal data onto the individual. Samuelson goes further and refers to a 'quasi-religious war to resolve whether the nature of a person's interest in her personal data is a fundamental civil liberty or (a) commodity interest.' (Samuelson, 2000). Others argue that privacy is a tort right akin the right of dignity or the tort of breach of confidence.

One of the major issues with the property approach to personal data is exactly that it does confer ownership of facts, something that is specifically removed from the realm of traditional intellectual property protection. (See generally William McGevern, Programmed Privacy Promises: P3P and Web Privacy Law 76 N.Y.U.L. Rev. 1812). A further problem of the property approach is that it implies transferability of ownership and with that ultimately a loss of control over one's personal data, something which privacy rights advocates are seeking to prevent. Rather, privacy advocates would see one's personal data as inalienable.

Most of the solutions posed in respect of the protection of privacy are good and do go a long way to protecting just that. However, what is clear is that none of the DRM solutions, with or without privacy protection measures, go very far to protecting anonymity. The argument put forward by DRM advocates is that only people with something to hide would have a problem with not being able to consume digital copyright

protected material (Szynol, 2003) . This argument is very thin and totally without foundation, logic or merit. It is also particularly unpalatable to most liberally-minded people not wishing to occupy a big brother state.

In this discussion of the various rights issues involved in DRM it is quite clear that there are competing interests at play. The next chapter will look at the various interest groups and the effect they are having on the debate surrounding DRM in the United States of America.

## 9. MONOPOLISTIC INTERESTS IN THE DEBATE SURROUNDING DIGITAL RIGHTS MANAGEMENT

There are many interested parties involved in the debate over DRM and the protection of digital intellectual property rights. However, the question is whether or not these parties should have as much sway over the debate as they seem to have.

Traditionally there has always been lobbying by various interest groups when legislation is proposed, however, it is not generally the particular and self-serving interests of the various groups that is catered for in legislation, but the accommodation of all the various parties so that an equitable solution is arrived at through the implementation of the legislation to the problem at hand.

In the United States the legislative process generally works in the following way. The Constitution empowers federal government. No law may conflict with the Constitution and any conflict between the state and federal law is governed by the Supremacy Clause in the Constitution. Thus federal law enacted in terms of the Constitution is superior to state law.

Similarly to South Africa, the American Constitution distinctly outlines and allows for the principle of the separation of powers. Thus the separate powers allocated to the executive, the judiciary and the legislature are clearly defined. The executive has the

power of administration and regulation; the legislature has the power to make laws; and the judiciary has the power to interpret the law.

The separation of powers allows a system of checks and balances to be built into the legal and governmental system of the United States of America and South Africa.

### 9.1 A Closer Examination of the United States' Legislative Process

The United States Constitution creates a bicameral legislature known as Congress. Congress is divided into two chambers, namely, the House of Representatives and the Senate (see Article 1, Section 1), each having equal legislative powers to create laws. In order for a bill to be passed to the President for signature into law, a majority approval must be reached in each chamber. The Senate is composed of 100 members (two members from each of the 50 States). Each member is elected to the Senate for a term of 6 years. In contrast, the House of Representatives has 435 members, each serving 2-year terms.

Legislation is drafted by standing committees. Each chamber has such a committee to prepare legislature for approval and enactment. Legislation is introduced into either chamber of Congress in one of the following four manners, as a:

- Bill (public/private)
- Joint resolution
- Concurrent resolution

- Simple resolution

When a bill is introduced, it is numbered. Once it is referred to one of the standing committees, the following process occurs once in front of Congress. Congress will:

- Table/continue drafting, or
- Hold hearings, or
- Debate/amend, or
- Vote.

If positive vote is cast, it is referred to the other chamber. If accepted by the other chamber it passes through to the president. If it is not accepted by the other chamber it is referred back to the original chamber with amendments for a revote. Both houses must agree on a bill before it becomes enrolled for presidential action.

The president is presented with a bill once it has been agreed upon by both chambers. He can either sign it (the bill becomes an act) or veto it. If he veto's it, it will be returned to the original house with his objections. A presidential veto can be overruled by a $^{2}/_{3}^{rd}$ vote of both houses. A bill is in effect also enacted by default if it is returned within 10 days to Congress without objections – a so-called "pocket veto".

Once the President signs a law, it is given a Public Law number. When this Public Law is first printed, such first printing is referred to as a Slip Law. The control and

preparation of laws falls into the hands of the office of the Federal Register National Archives Records Administration.

At the end of each congressional session, the Slip Laws are collated in chronological order and bound together to form the US Statutes at Large. (The official publication of laws and resolutions enacted by Congress).

The Law Revision Council of the House of Representatives prepares an official compilation (arranged by subject) of all permanent and general laws. This compilation is known as the US Code.

When draft legislation is not voted through but referred back to the original House for debate and vote, a report is drawn up to analyse the purpose and scope of the proposed bill by a standing committee. The report will shed light on the committee's rationale in referring the bill back to the originating House.

When standing committees feel that public input is needed, either with regard to outlining the need for specific legislation or to discuss controversial matters of public concern, a public hearing is held whereby a written statement is filed. Transcripts of such hearings are printed and distributed. This is normally when any aggressive lobbying by the various interest groups takes place. A record of congressional proceedings is published for each day Congress is in session.

### 9.2 Lobbying and the Legislative Process in the Argument For or Against DRM

There is quite clearly a strong place for lobbying by interest groups in the process of legislative drafting, however, it seems that in the instance of DRM the various interest groups are having a powerful effect on the legislative process and the balance between public and private rights is getting set off-kilter. Perhaps the most worrying move is that by major recording industry interest groups who have stated that they will not be seeking government intervention in their attempts to prevent digital piracy, but are rather willing to enter into a compromise with the major computer companies as to how this issue should be resolved. This approach certainly serves the interests of these giant industry groups but the consumer is most certainly not going to be fairly represented, if in fact represented at all, by this compromise. But perhaps more sinister is the fact that a major industry sector is being sidelined by this compromise, namely the movie industry that has also been lobbying extensively for its own anti-piracy measures to be adopted (Harmon, 2002). One must question this sudden move by the recording industry to side with the computer industry, thereby breaking a long history of being allied with the movie industry. The move quite clearly demonstrates that neither group is allied with the other whether by means of a common goal to be achieved or a common policy standpoint from which they operate. Not only has the intention of the computer and recording industries to enter into a compromise been publicised but also, Jack Valenti, President of the Motion Picture Association of America (MPAA), has gone on record in clear opposition to the views propounded by the recording industry by saying that: ‘ We (the MPAA) are

not prepared to abandon the option of seeking technical protection measures via the Congress or appropriate regulatory agency, when necessary…' (Harmon, 2002).

It seems that rather than trying to find a workable solution to the problems posed by the digital age in the area of copyright protection, the various industry giants affected by DRM issues are attempting to secure themselves a monopoly in the area of copyright protection, be it in the means for protecting the valuable digital content or the control of the actual content itself. The compromise, therefore, smacks of an ousting of any and all parties that might threaten either the economic power of the groups or their ability to future dictate the process of DRM. Copyright protection has traditionally been a legislative protection measure designed to balance the interests of the owners of the copyright and the users of the copyrighted material.

Hollywood itself has stated that it is not totally reliant on the technical or legislative protections but has also been known to engage in a little bit of "spoofing". Spoofing can be termed a technical means of undermining the current technological measures used on peer-to-peer (P2P) networks to illegally copy and transfer digital content. Possibly the most famous - or infamous - of these P2P networks is that of Napster. However, there are a plethora of other similar systems. What Hollywood has allegedly taken to doing is posting incorrect information on these networks so that when users of the networks attempt to search for and download illegal copies they will receive inaccurate information and so the efficacy and accuracy of the network is undermined. Accordingly the users' trust in the ability of the networks to deliver the correct goods is

eroded. The reason that this works is because it is very hard for P2P networks to be shut down. In order to prevent legal liability, P2P systems rely on a very loose system of control, especially as far as controlling the actual content that is uploaded onto the system. In order for any network to eliminate the problem posed by spoofing they would have to build greater controls into what goes onto the system and thus create an increased means for holding the creators of the P2P network legally accountable.

But even in the face of Hollywood's purported lack of desire to rely on technical solutions, it has recently been using technical measures designed by the software giants like Microsoft to protect its copyright interests. Enter the copyright protection tools known as DRM. In its use of DRM, Hollywood will essentially not be selling a product to the consumer but a license to use the product in a specified manner. This has been touted by Hollywood as a massive benefit to the consumer because it will allow an adaptable license to use to be delivered as opposed to a one size fits all type of license. But this so-called bespoke license actually limits the consumer's traditional rights in terms of copyright law. Users of DRM software claim that it enables a plethora of business models to emerge (Harmon, 2003). The question looms though, what will the expense to the consumer be? This type of business model raises the issues of pay-per-use billing which has been demonstrated above to reduce the consumer's traditional fair use rights.

Unfortunately, Hollywood itself does not seem to be sure of how they want to implement DRM. In an incisive article posted on the LawMeme website entitled "Hollywood's Short-sighted Follies" (Miller, 2002), Hollywood's recent efforts to

persuade Congress to pass legislation that will require DRM into all aspects of the digital arena are discussed. Not only will this result in Microsoft being afforded certainly a temporary monopoly in this area as its DRM software already incorporates most of the regulations mooted, but also any innovative developments by competitors to Microsoft in this area would be subdued. There is an old saying that Hollywood and all other self-interested industry players in this debate would be well advised to heed, be careful what you wish for…it may have consequences which were not intended and are hard to reverse. As DRM is already going beyond the ambit of the law and in effect is becoming a new kind of law in the arena of copyright protection in digital products, imagine a world where Microsoft becomes the new lawmaker through the use of one of its DRM packages like Palladium. This could be very real if limits on consumer behaviour are built into the technical standards governing new technology because the technical standards will become, in effect, new law. Copyright holders will in essence be able to create their own intellectual property law through codification, not in statute, but in a software or hardware design. The decision can effectively be made by creators of DRM software and copyright holders as to what users can or cannot do with their purchased product, irrespective of copyright law. The implications of this are frightening and very real in the face of a possible situation of dialogue and détente between the music and computer industries, as they seek to find a solution in the absence of legislative input (Burk, 2001).

Valenti feels that Silicon Valley is to blame for the purported drop in the sales revenue of the Motion Picture Association of America (due to their building and

development of devices which facilitate illegal copying) and accordingly feels that DRM software solutions are the least that computer manufacturers can do (Lessig, 2002). He in fact goes further to suggest that Congress should pass legislation compelling computer manufacturers to build so-called 'theft-proof machines' (Lessig, 2002). Valenti believes that the computer industry has no interest in self-regulation on this front stating that what is needed is a 'cleansing redemption' (Lessig, 2002) apparently best afforded by federal regulation. Lessig makes an interesting point in the article he writes discussing this particular debate. Hollywood was loath for Congress to intervene in any regulation of the content that they showed on television, spouting forth on the rights enshrined in the constitution and the privilege these rights afforded them to program according to market forces. The irony of this is perfectly summed up by Lessig when he states that 'Apparently the souls of America's youth don't justify regulation, but protecting Hollywood's profit does.' (Lessig, 2002). Possibly the most important statement made though was by Vadasz, founder and vice president of Intel: 'To inject regulatory process into the design of [computer] products will irreparably damage the high-tech industry…Congress should instead be listening to the consumer…. and be the consumer's voice.'(Lessig, 2002).

The very same debate raged around the development of the VCR. (cf. The earlier argument of a device having a substantial non-infringing use). Once again, and equally vitriolic in his descriptions, Valenti described the VCR as 'the Boston Strangler of the American film industry' (Lessig, 2002). Congress in this instance rebalanced the law to accommodate the development of technology with the dual technology doctrine. Now,

industry players are acting with very short memories and instead of requesting that the law once more be re-looked at to accommodate the technological developments of the last 20 years, they are fighting to protect their market share from natural competition brought about by burgeoning technological developments and are now asking Congress to instead force technology backwards. Congress would be well advised to examine the motivation behind the lobbying for regulation of the digital device and PC industry. Lessig agrees that a problem does exist with new content in an unprotected form, but he states that law, and not code, should protect this content. Consumer rights of fair use should always be considered and protected. He goes further to state that "Copyright Laws should of course give artists and creators an adequate return for their creativity; but they should not become a tool for dinosaurs to protect themselves against evolution." (Lessig, 2002).

After having looked at DRM, its function and purpose, the effect it is having in the United States and the vicious debate between the various interest groups that has ensued, this essay now seeks to look at the applicability of DRM to South Africa. The following chapters will look at whether DRM is currently a problem in South Africa, whether South Africa should be concerned about the issues surrounding DRM and if so, what the approach taken should be. This is an area of law that has not undergone much rigorous discussion and analysis at all. The approach of the writer has therefore been to look at the social and economic situation in South Africa, the regulatory environment surrounding law and information and communications technology and compare this to

the situation arising in the United States. Conclusions are drawn from the writer's perception of what the issues are likely to be with regard to DRM in South Africa.

## 10. THE SOUTH AFRICAN SITUATION: WHY IS IT DIFFERENT?

DRM does not appear to be the issue on the forefront of people's minds when the impact of digital advancement is discussed in South African circles. Does this mean that we do not need to be concerned about DRM? And if not, why should we be concerned and how pressing should our concern be?

There is no single answer to the questions raised about DRM. Firstly, as the digital economy does not so easily confine itself to traditional jurisdictional borders, South Africa certainly needs to be concerned about activity in this regard in Europe and the United States of America. Secondly, as the trend has demonstrated, the development of digital technology, its impact on law and society and the problems associated therewith in the United States of America have inevitably seemed to follow to South Africa in time. South Africa certainly does need to be concerned about DRM for the simple reason that although currently only having any real impact in the United States in the movie and recording industry, the impact of DRM is going to grow to the protection of any valuable digital content transferred over digital networks and thus its application is virtually limitless. But is digital piracy going to prove to be a major issue in South Africa? This is questionable for reasons which we will look at below, namely the differences in the legal framework and that of bandwidth and the telecommunications system in South Africa.

## 10.1 The Legal Framework in South Africa Surrounding the Issue of Digital Rights

The legal framework in South Africa surrounding the protection of intellectual property, in this instance copyright protection, and digital communications is governed by a number of pieces of legislation, in particular the Copyright Act 98 of 1978 and the Electronic Communications and Transactions Act, No 25 of 2002. Perhaps more important in the South African situation is the regulatory framework governing the telecommunications network.

## 10.2 Social and Economic Realities in South Africa

Since the rapid growth and absorption of the Internet into everyday life, be it for reasons of social, economic or political inequalities in South Africa, the historical divide between those who have and those who have not has been highlighted. In the burgeoning arena of information and communications technologies, this divide or gap has been nominated as the digital divide (Gillwald, 2001). The regulatory framework therefore should take into account alleviating the problem that this divide can cause insofar as widening the gap between the haves and the have-nots is concerned. In addition, furthering South Africa's ability to capitalize on the access to markets and utilisation of new technologies that an efficient information and communications system can provide in their interaction with the global economy and especially that of the developed world. However, and particularly due to the socio-political climate in South Africa and the heightened awareness of the need to address past imbalances and to guard against possible future imbalances caused

by an inequitable socio-economic situation in the past, South Africa must also strive to create an information and telecommunications system that is both equitable and accessible. Thus one of the issues that must arise in this debate is that of broadband.

### 10.3 Bandwidth and its impact on the Digital Economy

Broadband can be defined in simplistic terms as any technological means allowing the rapid transfer of large amounts of information, be it in the form of text, audio, video or data. In the context of this thesis, the important characteristic of broadband is that it allows vast quantities of digital content to be transferred rapidly, and in the context of South Africa at a cheaper rate than is currently offered by telecommunications licensees.

There are broadly five infrastructural requirements for piracy to be able to occur in the case of a peer-to-peer network. These are:

1. Facilities for injecting new objects into the network utilised for piracy (input);
2. A distribution network that carries copies of objects to users (transmission);
3. Devices which allow users to consume the objects (output);
4. A search mechanism to enable users to find objects (database);
5. A storage facility that allows the objects to be retained for an extended period of time (Biddle, England et al.).

This is where South Africa's bandwidth issues make a difference.

The United States Telecommunications Act of 1996, section 706(c)(1) defines in its content, advanced telecommunications ability as “the High-Speed [meaning upload and download speeds of over 200mb per second], switched, broadband telecommunications facility that enables users to originate and receive high-quality voice, data, graphics and video telecommunications using any technology.” From this we can deduce that broadband capabilities of a network imply that the network has advanced capabilities and having such, are thus also convergence networks.

Convergence is a term used to depict the blurring of the traditional defining lines between what was traditionally broadcasting and telecommunications (Gillwald, 2001). It also, in the opinion of the writer, refers to the removal of the dividing line between the technologies used in order to facilitate both broadcasting and telecommunications. Where once a television would have been used to pick up and display broadcast signals and a telephone would have been used to pick up and transmit telecommunications signals, now a personal computer and even a mobile telephone can perform both functions. So there is a technological convergence that, in order to be fully appreciated and enjoyed, requires a network upon which it can flow, which brings us full circle back to broadband and “convergence” networks.

In the United States of America, the body in charge of regulation of telecommunications and broadcasting, the Federal Communications Commission, assumed the position of proactively encouraging the growth of broadband and in fact facilitating the implementation of broadband amongst the public (Federal

Communications Commission, 1999). They thus took an executive decision not to regulate the use of broadband in an attempt to foster competition and encourage growth and acceptance of the new technology into the economy and public use.

Is this the best solution for South Africa whose socio-economic reality is vastly different to that of the United States of America? It has been argued that in terms of market realities for countries with a strong history of monopolistic control and ownership in the telecommunications and broadcasting industries (and it is more often than not the infrastructures which are owned by these industries will have to be utilized by the broadband networks in order for them to be affordable) regulation is imperative in order to prevent free market competition degenerating into the furthering of existing monopolistic interests, thereby perpetuating a system not effective in self-regulation. As Gillwald states in the article Convergence and Broadband Implications for South Africa (Gillwald, 2001):

> Despite many regimes, especially in developed economies, espousing market self-regulation as the catalyst for broadband services, evidence from around the world strongly indicates that the introduction of competition and market access to broadband or other services is worth nothing without regulation.

It is important to note, however, that there is a vast difference between regulation and over-regulation by government. South Africa's telecommunications regulations have a notable tendency to facilitate monopolistic structures and these structures have a marked government interest and shareholding.

## 10.4 The Solution for South Africa?

In the light of the historical situation surrounding telecommunications in South Africa, the issue is perhaps not whether to regulate but how and whom to regulate. It is imperative that Telkom's monopoly stranglehold over the telecommunications system in South Africa is loosened so that the lifeblood of new technologies can flow into a system so desperately in need of a transfusion rather than being diverted back into the bodies affecting the stranglehold.

### *10.4.1 The Telecommunications Act, No103 of 1996*

The legislation governing telecommunications in South Africa is the Telecommunications Act, Act No. 103 of 1996. This Act ushered in a new era in South Africa of a more equitable and competitive market surrounding the telecommunications industry. Although, that said, the Act is totally unworkable and inadequate in the area of rapidly expanding telecommunications especially in light of the issues of convergence and accordingly the need to rethink the separation between broadcasting licensing and telecommunications licensing. The Act and the concordant Amendment Bill of 2001 (The Telecommunications Amendment Bill 2001) created a regulatory body, currently the Independent Communications Authority of South Africa, to govern issues relating to telecommunications such as licensing and how such licenses would operate.

This all seems like a very good idea in the context of South Africa which has been operating with a monopolistic incumbent for too long. However, and although this hasn't been thoroughly tested, in light of the initial purpose of the establishment of a regulatory body separate from government, the major stumbling block for this new legislation is the fact that there is far too great a degree of Ministerial authority and governance issues which should be dealt with by the regulatory body that are actually being dealt with by the Minister of Communications. The net effect of this creation of Ministerial decision-making, above that of the regulatory body, is to result in the Independent Communications Authority of South Africa (ICASA) being effectively hamstrung in any effective and necessary transformation of the current telecommunications system.

### *10.4.2 Regulation, Telkom and Monopolistic Control*

The purpose stated in the Memorandum of Objects of the Telecommunications Amendment Bill, 2001 is that it creates "…the legal framework for the South African telecommunications landscape following the end of Telkom's exclusivity period…to bring it in line with technological, regulatory and industry developments over the past five years in South Africa and comparable international jurisdictions." However, this is in essence totally contradicted in the clause 2.9 that follows which deals with the decision-making process on application for a license. This clause relates to the current section 35 in the Telecommunications Act, No. 103 of 1996. The Memorandum states that:

> in accordance with international best practice, the Bill confirms the presumed validity of licensing decisions pending litigation related to such decisions, such that litigation does not delay the licensing process. The Minister is empowered to properly access the recommendation by the Authority and either accept, reject or alternatively request further information or clarification from the Authority in relation to a recommended applicant. The main aim is to eliminate the previous limitations to the Minister's ability to address the Authority's recommendations to the extent of fully applying his or her mind.

Obviously the importance of a limitation on Ministerial Power and the need for this power to remain with ICASA has eluded the government, or possibly it is just such an effect that they sought to achieve. Government has decided that it will decide who does or does not get a license and this power it has attempted to write into the legislation in the form of the amendment bill (All Africa News Inc, 2002). In effect they are in the process of eroding and usurping the powers allocated to ICASA in terms of the Telecommunications Act. Although with the Initial Public Offering of Telkom shares to the public it would seem that government interest in Telkom and its monopoly would be lessened, it may not be so. In fact it would seem that in order to make Telkom more successful in its offering of shares to the public, the government has protected its own interests in trying for as long as possible to prevent the dilution of Telkom's monopoly whilst attempting to maintain the appearance of divesting itself of its interest in Telkom and of opening up the telecommunications system in South Africa to competition for the benefit of the public and the economy. Furthermore, Government has insisted that every step taken, both in terms of drafting and applying telecommunications legislation, has been after ascertaining best practice in international jurisdictions. I do not dispute that Government may well have delved into best practice as it is defined internationally in this arena, but I do believe that this has been done to the detriment of South Africa, both in terms of the economy and in terms of provision of service to the public, in that very few of the developed telecommunications jurisdictions have for so long had a monopoly

power, linked to government, with total say over the regulation and application of the telecommunications system and as to ownership of the system both in terms of service delivery and infrastructure. In fact, as was demonstrated above, the Federal Communications Commission in the United States has adopted the stance that regulation is not desirable in the arena of telecommunications especially surrounding the issues of convergence and broadband. The United Kingdom, whilst still maintaining the distinction between telecommunications and broadcasting, not yet collapsing the distinction, does recognize that premature regulation or over-regulation could result in a retardation of growth in an area of great economic importance. Canada has attempted to avoid regulation surrounding broadband in particular as well, feeling, like the United Kingdom, that regulation prior to understanding the exact impact and effect of this technology would be detrimental to the telecommunications industry as a whole.

The important point to reap from this situation is that the telecommunications regulatory is not in itself bad, but that an independent regulatory body should have the final decision and that such decisions should be made carefully and with cognizance of the impact they could have on a growth industry. The fact is that regulation is often mooted as a possible panacea for the prevention of monopolistic control in a nascent environment, and yet in an ironic twist in South Africa this is exactly what regulation is perpetuating. What is patently clear is that the development of broadband is essential for the development of the information and communications industry in South Africa if it is to stay in line with international developments: this in itself is necessary for the South African economy to develop further. Not in the least because massive foreign investment

is needed for the development of the telecommunications infrastructure in this country and without the unbundling of Telkom's monopoly regime and the provision of fair licenses for broadband networks and associated wireless technologies, the lack of confidence in the situation will do nothing to attract the investment and everything to erode investment in South Africa.

### 10.5 The Effect of a Lack of Effective or Sufficient Bandwidth in South Africa

In the arena of innovative technologies and the products that surround them, the regulatory environment can, unwittingly often, determine the success or otherwise of the technology and products. The regulatory environment in South Africa is important for the discussion surrounding DRM as, without the access to a telecommunications and Internet infrastructure for massive amounts of data to be transferred digitally across digital networks at a reasonable cost to the majority of the population, the issues concerning owners of valuable digital content will not emerge as people simply will not have the means to "rip-off" someone else's intellectual property and valuable content. Recently an internet speed record was set transferring 6.7 gigabytes of data over 10 978 kilometers from Sunnyvale in the United States to Amsterdam in Holland. It took less than 60 seconds (cf. http://news.bbc.co.uk/1/hi/technology/2822333.stm). Accepting that the average United States user would not have bandwidth of this capability, the average speed of a home broadband connection in the United States would be approximately 3500 times slower (Stevenson, 2003). The average dial-up modem speed for transferring data in South Africa is not even comparable being a dial-up connection without broadband

and so is much slower than even the average broadband connectivity in the United States. When you consider that, for example, most DVD's are 3.4 gigabytes in size, it is unlikely due both to the instability of the network and the time involved (and thus accordingly the cost of the telephone call) that a large amount of people in South Africa would rather pay for valuable content than pirate it as, aside from any moral issues and on a purely economic analysis based on actual cost and transactional cost, it would work out easier and cheaper for most consumers.

It is worth noting that third world DRM is something to prepare for and perhaps we should take advantage of the time lag between South Africa and the United States, to learn from their experiences and to decide what technologies to adopt. Right now the adoption of CD and DVD technology is unlikely to change and the mass import of mass-produced (in China for example) CD's and DVD's being sold at flea markets is a far greater threat to copyright issues. Although this issue has not been studied or tested yet, the writer is of the opinion that DRM itself is going to have a larger influence on government issues such as the revamp of the national identity card system to provide all citizens with a digital identity documents. This is more an issue of the privacy and rights side of DRM (for example what happens to illegal aliens) the media issue, i.e. the concerns surrounding pirating of CD's and DVD's is most likely going to be pushed aside as technology companies push new player standards down into the market. In fact it is important to realize that a significant number of people in South Africa still use analog tapes and not yet CD's.

## 11. PROPOSED SOLUTIONS

In the discussion of the possible solutions, most analysis and exploration will be undertaken with regard to the situation in the United States. This being mainly because the United States is at the forefront of the DRM debate and the debate is currently undergoing numerous transformations and is growing more and more heated. It is most likely that any DRM solution will likely emerge from within the United States and furthermore, it is also most likely that the rest of the world will be guided by the developments there. There is no strikingly obvious or single solution presenting itself in the United States at current but there are many steps being taken by various interest groups to resolve the need to protect valuable digital content whilst still balancing the equally compelling needs to guarantee a protection of privacy and the right of fair use to the consumer.

What is clear is that any solutions will have to be careful not to over-regulate while clarifying the situation with regard to user rights, especially that of fair use which will have to be entrenched in whatever solution is adopted or tried out, be it technological or legislative.

In the United States of America there have been moves by industry, both through technological measures to lobby for legislative assistance or to adopt a solution through negotiation. Currently, the most interesting have been a series of Bills in front of Congress which seem to seek to amend the Digital Millennium Copyright Act.

### 11.1 The Digital Choice and Freedom Act (DCFA)

The Digital Choice and Freedom Act of 2002 is an attempt to rectify the erosion of fair use rights that seems to be occurring through the application of the Digital Millennium Copyright Act and in the interpretation of other copyright legislation. The Bill seeks to amend USC section 107 of title 17 to incorporate digital works into the sections dealing with fair use (Ruiz, 2002). What is even more critical perhaps, is the fact that the Bill also amends section 123 of title 17 of the USC so that making a copy of a digital work for non-public display of the digital work or non-public performance thereof work on a digital media device, provided that the person effecting the copying and utilizing the copy is in possession of a lawfully purchased product. This basically allows digital works to fall within the traditional fair use provisions of copyright legislation (Ruiz, 2002). What is important is not only that this type of copying would no longer be an infringement of copyright law but that it would invalidate attempts by music and/or the film industry to force purchasers of digital products to accept unfair and unduly restrictive license terms by rendering the licenses unenforceable and therefore invalid.

In fact it seems that one of the intentions of Representative Zoe Lofgren in introducing this Bill was to put the spotlight on harsh and limiting licensing conditions and to render them subject to public and legislative scrutiny (Fleming Phillips, 2002). The main impact of this on DRM would be that a creator of content attempting to restrict the transfer of such content to a digital device would not be able to do so by merely

amending various licensing terms and conditions. This would, in a sense, limit the efficacy or attractiveness of DRM as a package to protect digital content. This is good for the consumer but bad for companies such as Microsoft and the producers of creative digital content. The writer is not sure if this is the type of redress that is needed as the writer is uncertain if this achieves the balance required in copyright issues. This Bill also suggests that the right incorporated in the first sale doctrine of traditional copyright materials is developed to include digital copyright materials. This doctrine allows that a valid owner of purchased copyright material may sell their rights to such validly purchased material provided that no copy of the work, be it for use or backup, remains with the original owner. In terms of the Digital Millennium Copyright Act this would be restricted as it would often require transferral by means of copying the digital work.

### 11.2 A Balancing Act

The main problem with the measures introduced by DRM and legislation surrounding the protection of DRM is that the balance has swung too far in favour of the copyright holder. So where previously it was a case of the consumer being innocent until proven guilty, it is now the case that every consumer is treated as if they are guilty. No alternative. The question that needs to be addressed and satisfactorily answered is that of how to prevent and punish piracy without treating every consumer as a felonious pirate(Ruiz, 2002). The DCFA does attempt to achieve this balance. Section 1201 of title 17 of the DMCA is amended and deals with the notorious anti-circumvention provisions. What this section tries to achieve is the right to circumvent technological measures

designed to prevent copying, if the copying one intends to engage in would otherwise be legal but for the anti-circumvention provisions in the DMCA. This Bill is by no means flawless, but it is laudable in its attempts to enshrine the fair use doctrine in any measure intended to protect digital copyrighted content, be it by means of technological or legislative measures. Fair use must be protected in order for the traditional balance between copyright holders and copyright users to be maintained and this balance is necessary for the copyright system to be effective, fair and long lived.

On the technological side, RealNetworks Inc, a software company and competitor to Microsoft, has recently released its proprietary code for the Helix DNA Server which will essentially enable people to send and receive digital media safely(Reuters Inc, 2003). A major reason for this initiative on their part was to prevent Microsoft from obtaining a further monopoly in the area of DRM. This was in essence to prevent Microsoft potentially owning all the DRM, which is a worrying issue when one considers that DRM could in effect be the "owner" or certainly controller of a vast amount of copyrighted digital content.

As a matter of policy, it is critical that copyright protection in respect of digital media is afforded sufficient protection. That is undisputed and recognized as a valuable and necessary measure to be taken in order to ensure that creativity is protected and rewarded. However, how this is done is critical and the debate at the moment tends to revolve around the "how we should" rather than the "should we" question. In a speech by FCC Chairman, Powell, it was stated that: 'Much of the broadband-intensive content that

is likely to be the core of broadband applications is in the hands of major copyright holders that are unlikely to make it widely available without stringent protections and a way to profit from its distribution. This will take some hard work and time.' (Adkinson and Eisenach, 2002). This demonstrates that aside from rewarding creativity, big business will need to be assured that the marketplace is viable and profitable on a sustainable basis. This is understandable. No business is going to put effort into developing a system that will ultimately be of no benefit to them financially. Moreover, this protection needs to be carefully balanced against the need for the digital economy to be widely accepted and for digital products to be more rapidly disbursed. It is mooted that perhaps the best approach to the problem is not to consider serious amendments to current legislation, neither to impose restrictions on technology nor enforce building into technology DRM packages, but for the copyright holders themselves to analyse their business models and attempt to derive a model designed on a new paradigm that will both encourage the adoption of digital technology and media whilst at the same time protecting their interests. Owners of the copyrighted works would argue that the consumer is too unreliable and dishonest and that they would never cover their costs sufficiently for there to be any motivation for artists or creators to continue creating. Users of copyright protected works would argue that the copyright holders, especially when copyright resides not with the creator but with big industry (which is so often the case), are merely greedy and attempting to enlarge their ever increasing profit margin. The music and film industries have been claiming that their profits have decreased by about 10% due to piracy. The truth of the matter is that the American economy has been reduced by 10% over the last year due to a recession. The film and music industries have for too long had

excessive profits. In the music industry this had been due to the fact that the cost of producing a compact disc was initially quite high and so the sale price too was quite high, but while this cost of production dropped rapidly, the sale price has remained the same. The music industry could be viewed as pirates themselves. In fact it has been posited that as long as the margin between sale price of an item and the cost to produce such item is so large, as in the case of music compact discs, there will always be a market for pirates and so piracy shall thrive in this enlarged profit margin. Not necessarily a defense to digital piracy but perhaps an explanation of why it is so rife. So many consumers who do pirate material state that they would actually prefer to pay for the use of the digital rights so long as they felt the price was commensurate with what they receive and the system was efficacious.

## 11.3 Recent Bills Presented to Congress

Currently there are two important and quite diverse Bills sitting before Congress, representing two different points of views, which fairly accurately seem to represent the views espoused in the paragraph above.

### *11.3.1 The Music Online Competition Act*

The Music Online Competition Act requires copyright holders of music to license on a more equitable and in a less self-interested manner. In explanation, there is a strong

history of allegiance between music distributors and copyright holders. This is not an allegiance formed out of loyalty but out of an interest in the profit-making ability of the music distributor, normally a factor of their ability to distribute music more effectively than their competitors. Copyright holders often will have an equity share in the music distribution company (here we see the self-interest emerging) and thus have more than a casual interest in the success of the company: they have a direct financial interest. The music copyright holder will thus tend to provide licensing rights to distribute their copyrighted material on more favorable terms than they would to competitor music distribution companies. This is not good for the industry because once again it encourages and fosters a monopolistic environment which neither benefits industry growth nor innovation. This Bill requires a type of compulsory licensing. Compulsory licensing in itself is nothing unusual. In fact there are have been several instances in which governmental agencies have required that compulsory licenses be awarded, be it in the pharmaceutical, music or any other intellectual property-driven industry. What is unusual about this Bill is that it does not have reference to any governmental agency or legislative directive. Rather, the licensing terms which will become compulsory should this Bill be passed will be drawn from existing or new licensing agreements entered into with the music distributors "allied" to the copyright holders.

### *11.3.2 The Consumer Broadband and Digital Television Promotion Act*

The second Bill sitting before congress is the Consumer Broadband and Digital Television Promotion Act. This Bill, when presented to Congress, caused a great deal of

discussion, not all of it complimentary. The Bill requires that all digital media devices carry standard security devices. These would prevent piracy. The Bill would also make it illegal for consumers to tamper with such devices. This smacks of the DMCA anti-circumvention provisions, security devices and prohibitions in place to prevent consumers attempting to override such protection mechanisms. The difference in this Bill is that there is a clear and explicit reference made to user rights, specifically the fair use provisions of copyright law. It is made quite clear that the mandatory security measures to prevent digital piracy shall not erode and render valueless a consumers rights of fair use. This limitation on the exclusive rights of the copyright holder is a step in the right direction, albeit one small step (Adkinson and Eisenach, 2002). This Bill demonstrates quite clearly a technological solution enforced by legislation. The problem with this Bill is that it could be creating a monopoly in who owns the DRM. Microsoft currently has operating systems on the market which already incorporate DRM applications, be it in their .Net or Palladium ventures. This of course all rests on the supposition that DRM and not a straight technical solution will be what is used. The question as to which route is followed will depend more on at which end the rights are protected than anything else. If the rights of copyright are protected on the device itself and incorporated into the device prior to sale thereof, it is likely that the solution will be a technical one. If the user is required to have certain software installed on their digital media device in order to access certain digital media then the solution will more likely be one of straight DRM. Of course a monopoly situation could arise even if the solution is a technical solution. Current press has shown that Sony and Phillips are in the process of buying a software company called InterTrust (InterTrust Inc, 2002). InterTrust claims to be the true patent holder of most of

the DRM software that Microsoft has in place in its most recent operating systems and applications. In other words, instead of Microsoft and the computer industry being the monopolistic driving force in DRM, perhaps the portable telecommunications industry will be the owner of the DRM. Frankly, neither of these situations is particularly satisfactory for the consumer nor for a balanced solution for DRM and copyrights in the digital millennium. In fact allowing a monopoly on DRM would be in effect allowing a one or maybe a few major industries to control DRM and so control the information and content distributed across digital networks protected by such DRM. It has been asserted by some that this could in essence be deemed to be tantamount to private totalitarianism. The leap, and perhaps such leap could be considered a quantum leap, is that this could allow DRM to be manipulated to become a political tool. This is especially so if DRM becomes embedded in all computer systems, as DRM can and does function as a type of surveillance facility, thus the issues with privacy and DRM. When stated like that, DRM can if not carefully implemented, begin to smack too much of an Orwellian Big Brother. This is a criticism that has been leveled at Microsoft for their Palladium system. But not all computer companies feel the same way about DRM. In fact until DRM sufficiently sophisticated to be able to recognize issues such as privacy and fair use, it is better not to use it at all. Apple Computing actually is working on a DRM package although they have not implemented it with any of their other software applications. Apple in fact is seen to encourage using computers to promote creativity and their advertising campaign actually instructs consumers to “Rip, mix, burn…after all it’s your music” (Lessig, 2001). In order to do this, one needs broadband. And lots of it. In fact, it is being seen that the availability of illegal digital content is in fact driving consumer demand for broadband. It is no use to

the consumer if the content is available but their bandwidth capabilities prevent them from being able to effectively download any of the content. This is not to say that the writer thinks broadband should be made available in order to facilitate digital piracy, but merely demonstrates one of the reasons why the writer feels South Africa does not yet have a major problem with digital piracy and accordingly does not yet have a pressing need for DRM. Given that this issue is a relatively new topic and has not had much legal scrutiny in South Africa, there is no literature supporting this view. However, and in light of the way problems in this area have progressed in the United States, the writer feels that should the issue of bandwidth and Internet connectivity be resolved, the problem would emerge in South Africa.

## 12. CONCLUSION

Now that we know what the issues are, and the various interest groups informing these issues, we have a better idea of what is at stake and how difficult it is going to be to determine a satisfactory, workable and relatively lasting (in technological terms) solution to the problems posed in copyright law for digital copyrighted content. We know that there needs to be a shift in policy and a revisiting of the legislation. In the United States this revisiting may require a great deal of amendment to current legislation which deals with digital copyright. In South Africa, it is more the regulatory and legislative framework that will need a drastic re-look in order to deal with issues such as bandwidth and convergence of broadcasting and telecommunications; issues which are intimately connected to digital copyright and the ability to actually access digital content. South Africa certainly will need to assess the copyright legislation to determine whether or not it is felt that the legislation is robust enough to deal with digital technologies, or whether an amendment should be drafted to deal specifically with the digital medium. This is especially true in light of the fact that South Africa has addressed a number of electronic law issues in other legislation, such as the most recent Electronic Communications and Transactions Act of 2002, but has chosen to leave the copyright issues until the end. South Africa, as a signatory to the World Intellectual Property Organisation, also needs to address the Copyright Treaty requirements, which could be done relatively easily with a few minor changes to the Copyright Act 98 of 1978.

The whole area of digital rights is fraught with conflicting issues. There is the pressing need to create an environment where the digital economy will be easily accepted and will take root and flourish. Within this broader objective there is the need for a balance between copyright holder's rights and those of the copyright user, namely the rights of fair use, the first sale doctrine and the privacy rights of the individual. Furthermore, none of this will be possible without the correct regulatory framework and infrastructure surrounding the telecommunications and broadcasting industry. The reason it is so difficult to find a workable solution is, aside from the various interests that need to be addressed, the fact that in a rapidly changing environment such as the technological environment, it would be advisable for all legislators and proponents of regulated technological solutions to tread carefully. Nobody wants a solution to be developed and put through the rigor of acceptance via legislative or regulatory means only to have it be rendered useless by a new technology in two years' time. (And perhaps more realistically in this environment, in six months' time.) Property rights need to be clearly defined in this area. Furthermore, there is a danger that cryptographic or DRM systems used in the here and now to protect current or past intellectual property, even that which is already in the public domain and should not be DRM protected, might at some later stage become defunct and unusable in a new technological interface environment (which is not totally inconceivable). If this happens, and if the mechanism used to protect valuable content actually becomes the cage holding the value and the key is no longer working or has been lost, there is the danger that valuable intellectual property and information could be lost to future generations. This may seem extreme and possibly merely scaremonger tactics employed by proponents of the Electronic Frontier Foundation, but it is something that

should be looked at when determining a solution involving DRM. One of the problems is the way copyright is being viewed in the digital arena. It is being seen as a property right akin to that of owning a physical object when traditionally copyright has been viewed as more of a personal right. Copyright is being manipulated and constrained so that it begins to act as a tool for maintaining the status quo of the business models (hear profit margins) of large industry rather than as a mechanism to reward creators for their creative efforts. In the past a solution to upheavals has been to wait and see how the situation pans out and deal with it on a piecemeal basis rather than running in guns blazing and reforming the whole copyright system. The reason that this approach may not be taking off is due to the nature of the digital environment and its impact on society. Never before have the media industry's rights been so challenged by the development of a new technology. So what is agreed is that a solution does need to be found. What is also agreed is that such solution must broker a compromise between user rights and rights of the copyright holder. What is not certain is whether the solution should be technical, legislative or both in conjunction with each other. The writer does believe that there does need to be a legislative element to the solution but this must be minor and more in the form of amending existing copyright legislation so that it equally gives copyright holders the tools to protect and enforce their rights of copy against potential digital pirates. It must also entrench user rights such as fair use. Furthermore, legislative measures need to be taken to address the potential for privacy invasion posed by DRM systems such as Microsoft's Palladium. These controls need to be strict enough to constrain even the state from abusing the information that these systems could obtain to further their own interests. Finally, and very importantly for South Africa, the regulatory infrastructure surrounding

telecommunications and broadcasting needs to be sufficiently well developed and open for digital networks, which require a great deal of bandwidth, to function efficaciously and at an affordable cost to the consumer.

Almost more than anything the writer would recommend that legislators and/or regulators of technology should stop and think about the original policy and purpose informing the drafting of copyright legislation and bear in mind two well-known proverbs:

"Look before you leap", and, "More haste, less speed".

After all, what must always be borne in mind is the impact that any legislation can have on both the economy and the development of technology. The economic, legal and technological developments within any marketplace operates as a kind of mini ecosystem, co-dependant on one another for progress and survival. Some solution to the problems posed by DRM and piracy is obviously necessary. What that solution will be is not yet certain or even foreseeable. What is certain though is that DRM is becoming a part of our daily lives, with or without the sanction of law or our consent.

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Correspondence and Requests for materials should be addressed to: Lovers Walk, Rondebosch, 7701. E-mail: sian.stevenson@uct-innovation.co.za, Telephone: +2721 6504713, Fax: +2721 6505778.

**References**


Adkinson, W. F. and Eisenach, J. A. (2002). 'The Debate Over Digital Content: Understanding the Issues.' *Progress on Point: Periodic Commentaries on Policy Debate*. **9**.

All Africa News Inc (2002). '*State's Telecoms Policy Does ICASA No Favours'*, URL: http://www.allafrica.com (accessed on 10/03/2003).

Belgum, K. D. 'Who Leads at Half-Time? Three Conflicting Visions of Internet Privacy Policy.' *Richmond Journal of Law and Technology* **6**(1).

Berman, J. and Mulligan. (1999). 'Digital Privacy in the Digital Age: Work in Progress.' *Nova Law Review* **23**(2).

Biddle, P. and England, P. *et al.* 'The Darknet and the Future of Content Distribution', URL: http://peerfear.org (accessed on10/03/2003).

Brandeis, S. D. and Warren, L. D. (1890). 'The Right to Privacy.' *Harvard Law Review* **5**(193).

British Broadcasting Corporation (2002). 'Efforts to stop music piracy "pointless"', URL: http://new.bbc.co.uk/2/hi/technology/2502399.stm (accessed on22/11/2002).

The United States of America Federal Communications Commission, (1999). 'Report of the Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996.' URL: http://www.fcc.gov/Bureaus/Common_Carrier/Reports/fcc99005.txt (accessed on12/12/2002)

Burk, D.L. and Cohen, J.E. (2001). 'Fair Use Infrastructure For Rights Management Systems.' *Harvard Journal of Law* **15**(1): 42-83.

Fleming Phillips, H. (2002). *'New bills aim to protect consumers' use of digital media.'* URL: http://www.siliconvalley.com/mld/siliconvalley/4193841.htm (accessed on 10/12/2002).

Gillwald, A. (2001). *'Convergence and Broadband Implications for South Africa*.' URL: http://links.wits.ac.za/papers/convergence-broadband.pdf (accessed on 12/12/2002).

Harmon, A. (2002). *'Music Industry Won't Seek Government Aid on Piracy'*. URL: http://www.nytimes.com/2003/01/15/business/15PIRA.html (accessed on 15/01/2003).

Harmon, A. (2003). *'Studios Using Digital Armor to Fight Piracy'*. URL: http://www.nytimes.com/2003/01/05/busines.html (accessed on 05/01/2003).

Howe, J. (2001). 'Licensed to Bill'. *Wired Magazine*.(140)

InterTrust Inc (2002). *'About Digital Rights Management'*. URL: http://www.intertrust.com/main/overview/drm.html (accessed on 01/09/2002).

IT GlobalSecure Inc (2002). *'Beyond Digital Rights Management: The Consumer is not the Enemy'*. URL: http://www.itglobalsecure.com/en/vertically/v_media.htm (accessed on 12/11/2002).

Lessig, L. (2001). *'The Future of Ideas'*. New York, Random House pp9-11.

Lessig, L. (2002). *'Hollywood v. Silicon Valley: Make New Code, Not War'*. URL: http://www.cioinsight.com (accessed on 22/12/2002).

Lessig, L. (2002). *'May the Source Be With You'*. URL: http://www.wired.com/wired/archives/lessig.html (accessed on 09/12/2002).
Lessig, L. (2002). *'Who's Holding Back the Broadband*?' Washington Post **(**01/08/2002**)**.
Lettice, J. (2002). *'All CD's will be protected and you are a filthy pirate'*. URL: http://www.theregister.co.uk/content/54/28009.html (accessed on 18/11/2002).
Levine (2002). *'Case Against Intellectual Monopoly'*. URL: http://levine.sscnet.ucla.edu/papers (accessed on 27/01/2003).
Miller, E. (2002). *'Hollywood's Short-Sighted Follies'* URL: http://research.yale.edu/lawmeme/ (accessed on 13/12/2002).
Parrott, D. and Honious, J. *et al.* (2000). *'DRM Workshop Minutes*.' URL: http://www.w3.org (accessed on 19/11/2002).
Peters, J. (2002). *'Corrupt audio discs, aka "Copy-Protected CD's*"'. URL: http://ukcdr.org/issues/cd/ (accessed on26/11/2002).
Prosser (1960). 'Privacy.' *California Law Review* **383**.
Reuters Inc (2003). *'Real releases digital media source'*. URL: http://news.com.com/2100-1023-981522.html (accessed on 21/01/2003).
Ruiz, P. (2002). *'A New Digital Bill for Fair Use'*. URL: http://research.yale.edu/lawmeme/ (accessed on11/10/2002).
Samuelson, P. (1993). 'Fair Use for Computer Programs and Other Copyrightable Works in Digital Form: The Implications of Sony, Galoob and Sega.' *Journal of Intellectual Property Law* **49**.
Samuelson, P. (1999). 'Intellectual Property and the Digital Economy: Why Anti-Circumvention Regulations Need to be Revised.' *Berkman Technology Law Journal* **Spring 1999**: 59.
Samuelson, P. (2000). 'Privacy as Intellectual Property?' *Stanford Law Review* **52**: 1157-1158.
Stevenson, G. (2003). Senior IT Specialist, IBM Business Consulting Services Cape Town: Personal Interview, 31 July 2002 and 30 January 2003.
Szynol, P. (2003). *'ACLU's Big Brother Predictions'*. URL: http://research.yale.edu/lawmeme/ (accessed on 12/02/2003).
Tessler, J. (2001). *'Some Bankrupt Dot-Coms Ask Customers For Permission to Sell Information'*. URL: http://www.globalarchive.ft.com/globalarchive/articles.html (accessed on08/11/2002).
University of Delaware (1998). *'Fair Use Explained'*. URL: http://www.udel.edu/topics/techtalk/Issue/Current/fairuse.html (accessed on 14/03/2003).
Wolverton, T. (2001). *'Egghead Sale Could Crack on Privacy Issues'*. URL: http://www.nytimes.com/cnet/CNET_0-1007-200-6962164.html (accessed on 08/07/2002).
Yale University (2002). *'A New Bill For Digital Fair Use'*. URL: http://research.yale.edu/lawmeme/modules/ (accessed on 14/12/2002).

Statutes:

Telecommunications Amendment Act, No. 12 of 1997

Telecommunications Act, No. 103 of 1996

Independent Communications Authority Act of South Africa, No. 13 of 2000

Electronic Communications and Transactions Act, No. 25 of 2002

The Constitution of the Republic of South Africa, No. 108 of 1996

Copyright Act no. 98 of 1978

Copyright Act 17 U.S.C. 1994

Berne Convention September 9, 1986, S. Treaty Doc. No.99-27

Digital Millennium Copyright Act, 17 U.S.C. (1998)

The Constitution of the United States of America