

## **Digital Rights Management and Fair Use**

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### **Abstract**

The recent controversies surrounding Amazon's removal of George Orwell's '1984' from Kindle readers, the BBC's proposal to encrypt Freeview High Definition (HD) content and Microsoft's permanent ban on Xbox Live users who have modified or 'chipped' their consoles have all served to highlight the debate over Digital Rights Management (DRM) and digital copyright. In the past, DRM measures have been embedded in the content they are designed to protect; however, importantly, these incidents highlight the emerging and novel possibility of 'remote' content management resulting from an arbitrary decision made by the relevant right holder(s). The blocking of content to users in particular raises important tensions between the application of DRM and the fair use defences under copyright law which enable users to make use of copyrighted content for certain purposes. Fair use is dependent on access to content and is serves to facilitate the dissemination of information and ideas that arise from interacting with copyrighted works. Interaction, by its very definition, involves making 'use' of a work and increasingly, this use now occurs on networks. A commonly pleaded goal of copyright law, and the fair use doctrine contained therein, is the advancement of knowledge and the creation of new works. Copyright's exclusive rights facilitate this by providing incentives to create, while fair use allows users to engage with creative content; thus forming the basis for inspiration and creation of new works. As such, this amounts to recognition of the role existing works play in the creation of new content. However, these divergent interests have been exacerbated by digital technology. The issue of whether DRM is an appropriate method for regulating digital copyright is open to debate. Indeed, when the idea that 'the answer to the machine is the machine' was proposed in 1995, it is questionable whether such prevention of access and use was envisaged. The fair use doctrine has been crucial in mediating the tension between copyright law and technology, and has an inherent degree of flexibility in its application. Arguably, with DRM, no such flexibility exists and there is an innate conflict between the vagueness of the doctrine and the precise nature of the technological code required for DRM's implementation. The overall aim of this article is to demonstrate how the current implementation of DRM can have a negative effect on users. Firstly, a definition of DRM will be proposed, followed by a brief outline of its scope and rationale. Following this, the fair use doctrine will be examined in light of DRM and having regard to the economic underpinnings of copyright law; specifically adopting a market-based approach. Finally, some practical problems of effectively implementing DRM will be highlighted.

## 1. Introduction

The recent controversies surrounding Amazon's removal of George Orwell's '1984' from Kindle readers [2], the BBC's proposal to encrypt Freeview High Definition (HD) content [3] and Microsoft's permanent ban on Xbox Live users who have modified or 'chipped' their consoles [4] highlight that the issue of Digital Rights Management (DRM) hasn't gone away. In the past, DRM has always been closely associated with content to which it has been attached [5]. Stromdale [6] believes the origins of DRM can be traced back to 1976 and the Sony Betamax [7] case. Here, it was argued that Sony should build in sensors in their video recorders that would detect special broadcast signals preventing recording and thus could be seen as an early DRM solution (although not 'digital' as such). During the 1980s, software vendors experimented with copy protection technologies, but eventually abandoned the idea [8] and in the early 90s, the US Home Recording Act of 1992 [9] provided for a serial copy management system in all digital audio recording devices that allowed first generation copies only [10].

However, it can be argued that it is no longer as closely intertwined with the content it is designed to protect. In the past, prior technological advances had facilitated and promoted the acquisition of physical copies of works [11]. This has changed with digitisation and now, every act of perception or of materialisation of a digital copy requires a prior act of access and as a result, if the right holder can control access, they can condition how a user apprehends the work [12]. The blocking of content to users in particular raises important tensions between the application of DRM and the fair use [13] defences under copyright law which enable users to make use of copyrighted content for certain purposes. Fair use is dependent on access to content and is serves to facilitate the dissemination of information and ideas that arise from interacting with copyrighted works. The provisions of the Digital Millennium Copyright Act 1998 [14] (DMCA) govern the circumvention of technological measures that control access and this can now be seen as a separate issue to 'use' [15] (for which 'access' is a pre-condition). Indeed, when the idea that 'the answer to the machine is the machine' was proposed in 1995 [16], it is questionable whether such prevention of access and use was envisaged. It was the case that DRM technologies primarily operated to restrict *uses* of copyrighted content, whereas now they have shifted to controlling *access* to such content.

Significantly, these incidents highlight the emerging possibility of 'remote' content management resulting from an arbitrary decision made by the relevant right holder(s). As such, DRM can be viewed as a separate mechanism, or a latent technology, that can be effectively 'switched-on' by right holders following the sale of content to users. As a result, there has been a key shift from protecting content itself to an application of DRM on distribution networks. Similarly, it could be argued that content providers have also become service providers through providing the sale of technology and content associated with it. For example, purchasing Microsoft's Xbox allows access to their 'Xbox Live' online gaming network. Likewise, Amazon has released its 'Kindle' e-reader and correspondingly supplies digital e-books. These examples also demonstrate the very real possibility of retrospective DRM control on networks; where previously they were open, they now have

the ability to be closed off through DRM.

Furthermore, this trend also threatens to turn the traditional 'arms race' [17] between DRM developers and 'hackers' [18] on its head. DRM measures have always carried the risk that they may be circumvented (despite the illegality of such practices); users could 'crack' the DRM protection on content and enjoy unrestricted access and use. With the application of DRM now, greater control rests with the right holder who can permit unrestricted access or use, but who now have the power to then restrict it [19]. This is especially important given the amount of content that is now streamed and/or which is dependent on a network (controlled by the right holder) to access such content.

The application of DRM deprives users of access to creative content and as such, the opportunity to engage with it on their own terms. Fair Use is founded in providing access to content that is protected by copyright and allows use of copyrighted work for certain purposes. Such measures threaten to amount to a 'digital lockup' of content and networks as a result of arbitrary decisions made by right holders, and also in cases such as these, service providers.

This shuts off one of the most important doctrines in copyright law; that of fair use. A commonly pleaded goal of copyright law, and the fair use doctrine contained therein, is the advancement of knowledge and the creation of new works [20]. Copyright's exclusive rights facilitate this by providing incentives to create, while fair use allows users to engage with creative content; thus forming the basis for inspiration and creation of new works. As such, this amounts to recognition of the role existing works play in the creation of new content. The application of DRM prevents copyright exceptions even being an issue when in the past it has been an important mediator of tension between copyright and new technologies [21]. Having had a traditionally wide approach, no opportunity can now arise for this to be challenged in the courts and may have the effect of increasing the monopoly power of right holders at the expense of users. Fair use acts as a restriction on this monopoly power in circumstances where treatment of the work is 'fair'; it now appears that it is not the treatment of the content, but of the user that is unfair and the right holders' monopoly is being extended to networks.

The overall aim of this article is to demonstrate how the current implementation of DRM can have a negative effect on users. Firstly, a definition of DRM will be proposed, followed by a brief outline of its scope and rationale. Following this, the fair use doctrine will be examined in light of DRM having regard to the economic underpinnings of copyright law; specifically adopting a market-based approach. Finally, some practical problems of effectively implementing DRM will be highlighted.

## **2. Working definition**

The features and operation of a DRM depend on the specific context in which it operates. Although its specific components vary from system to system, it is broadly designed to provide a secure distribution platform for digital content. There is a general consensus that DRM is a generic term referring to a number of different restrictive measures employed by right holders to restrict unauthorised access to, or copying of, content [22]. Crucial to any system is the ability to make the use of digital content dependent upon authorisation and

to express the terms of condition and use in a computer interpretable way [23]. DRM involves the use of technology to control digital content, as Felten puts it: "All various types of DRM systems operate by restraining a work with some kind of technological lockbox..." [24] What these specific measures are depends on the system employed by the right holder. The most commonly deployed is encryption [25], but can also include the use of metadata and watermarking or fingerprinting [26]. These methods are bespoke and vary greatly between systems [27]. These can be distilled down to a set of trusted 'rules' attached to a digital file. DRM systems must also offer a means to identify and manage content in addition to providing a secure distribution platform [28]. Crucial to any system is the ability to make the use of digital content dependent upon authorisation and to express the terms of condition and use in a computer interpretable way [29].

Angelopoulos differentiates between DRM and Technical Protection Measures (TPMs) which is more confined to the purely technological tools designed to serve the same purpose [30]. Operating as TPMs, it will mainly come into play at the last stage of the value chain i.e. before delivery to the commercial user or consumer [31]. It can also involve Rights Management Information (RMI); forms of digital identification and description that vary in complexity [32]. DRM is not necessarily synonymous with technical protection as it can also involve usage contracts, technology licence agreements and anti-circumvention legislation [33]; it can be seen as encompassing intertwining technologies, including TPMs, as well as a of mixture technical and legal mechanisms that limit access and use of digital content [34]; it could arguably be seen as a form of 'merged control' as the technologies involved simultaneously qualify as an access and a copy control [35].

Samuelson believes that DRM technologies are not really about the management of digital 'rights' at all, rather they are about the management of certain 'permissions' [36]. According to her, they are more aptly described as 'code as code', or 'digital restrictions management' given their use by copyright holders to restrict user rights [37]. Their primary purpose is that of control; mapping the physical property restrictions into the digital world. DRM could arguably be seen as a form of 'merged control' as the technologies involved simultaneously qualify as an access and a copy control [38].

Some broad similarities can, however, be identified. Firstly, DRM can be said to be a mixture of technical and legal measures; as such, the technical and legal measures may be referred to as 'code' [39]. Secondly, it is applied to digital content and thirdly, it is applied for the purposes of controlling that content. The legal code forms a basis for such an approach and also provides protection for the technical code, which in turn, protects the content it is attached to. As a result, I propose the following definition:

*DRM is technical code, backed up by legal code, for the purposes of identifying, distributing and protecting digital content and that works by acting as a constraint against unauthorised uses of such content.*

### **3. Protection, scope and rationale**

From Charles Clark's assertion that the answer to the machine is the machine, he had in mind not so much computers' abilities to block copying, as its capacity to connect authors and users [40].

From this somewhat humble and even noble beginning, the issue has grown and been clouded by the fear of copyright holders that they would ultimately pay the price for putting copyrighted works online. The perceived lack of copyright's enforceability in the online world is probably the reason why right holders began to act in ways which suggest they do not trust copyright laws and as a result, have turned to private ordering measures [41].

As soon as technology had been envisaged to enhance the effective exercise of copyright, it has been feared that similar technology might be used to defeat the technological protection and it was felt that legal protection was additionally required; *"In other words, the fence had to be electrified: acts of disabling the technical barriers had to be punished."* [42]

The first attempt to conclude an international agreement to respond to digital challenges was made by the World Intellectual Property Organisation (WIPO) and led to the adoption of two treaties setting up a common basis for DRM protection [43]: The Copyright Treaty (WCT) [44] and the Performances and Phonograms Treaty (WPPT) [45]. The Treaties established for the first time that technological measures used by authors and related right holders to protect their works enjoy an independent protection [46]. They contain provisions concerning the protection of rights management information and importantly, provisions on the protection of technological measures [47].

The anti-circumvention provisions are the most interesting battlefield between the traditional vision of copyright law and the dictates of technology [48]. It appears the latter has prevailed with the scope of copyright now decided according to what technology can do [49]. Technological measures effectively prevent access not only to copyright material, but also to other information and ideas that may not be subject to copyright, but are still protected by technological measures:

*"The most obvious diminution of the public's privileges in the digital age are in the category where exceptions or limitations to copyright cannot be exercised because a work is 'fenced off' by a technological protection measure."* [50]

Fair use is dependent on access to content and is serves to facilitate the dissemination of information and ideas that arise from interacting with copyrighted works. Interaction, by its very definition, involves making 'use' of a work [51] and increasingly, this use occurs on networks such as online gaming and the transmission of content on digital networks.

Additionally, the locking up of protected content has the consequence that unprotected elements in the public domain are also being locked up [52]. However, it no longer appears as if the focus is on content anymore; it is the networks across which content is being delivered that can be affected. Where networks have previously been 'open', there is now the very real threat that they may closed off through the application of retrospective DRM thus affecting the ability of the consumer to both access new and pre-existing content. Furthermore, where there used to be opportunities to bypass DRM on content, this has now been surpassed by the more latent nature of the rights management technology which can operate through the 'back door' of hardware connected to a network, and the user of which is dependent on the network for access.



Technological measures have the advantage of being self-enforcing and through the measures implemented through the DMCA [53] and in Europe through the Information Society Directive [54], the act of circumventing such a measure has become a crime in itself apart from actual copyright infringement [55]. For Foged:

*"Providing sanctions of technological measures ... bolsters the effectiveness of such measures - copyright owners get an extra 'layer' of copyright protection. Thus such anti-circumvention legislation serves as technological adjuncts to the exclusive rights granted by copyright law ... it has created a new exclusive right for the copyright owners, namely an 'access' right."* [56]

This new scope of copyright protection is not even limited by fair use exceptions; they do not now excuse acts of circumvention or acts of trafficking in circumvention devices:

*" Armed with technological measures and anti-circumvention laws, the right holder is now entitled to prevent the users from making fair use of copyrighted works."* [57]

## 4. Analysis of the Fair Use Doctrine

Copyright law, both past and present, is founded on the fundamental principle that adverse economic incentives are created if unrestricted copying of intellectual products is permitted [58]. If adverse incentives exist, society will not have as much creative innovation as it wishes to encourage [59]. Intellectual property presents a classic 'free-rider' problem which copyright recognises and aims to solve through the allocation of certain exclusive rights. How broad one views the right of fair use is typically related to how broad one believes the copyright monopoly has become with the expansion of copyrights over the years [60]. For those who hold that the monopoly is too broad, it is important to have an even broader right of fair use, while for those who believe the copyright monopoly is not broad enough, fair use should be a narrow exception.

In addition, there is also the recognition that new works can be based on pre-existing works that may still be under copyright protection. This is acknowledged with exceptions to copyright, namely the fair use doctrine. Both the exclusive rights and corresponding exceptions reflect the benefits to society of creative works. As a result, the emphasis of copyright law is on the benefits derived by the public from the creative endeavours of authors while reward to copyright owners is a secondary, although necessary, consideration [61].

Case law has identified several approaches to the issue of whether fair use should apply in a given case, or not [62]. They involve:

- Product substitution [63];
- Evidence of a 'permission system' [64]; and,
- Market failure [65].

## **4.1 Product Substitution**

It can be argued that the four factor statutory test outlined in the US Copyright Act retains the central focus of preventing possible substitution of the original work with the secondary work [66]. Depending on the case, some factors may be more illustrative than others, but they should be understood to provide different perspectives on the central test of whether use by the defendant serves as a market substitute for the original [67].

Clearly, the ability of non-DRM protected content has massive potential to act as a substitute to DRM protected content. The BORA (break once run anywhere) principle holds where once content is retrieved from a protected system and re-encoded in non-DRM protected form, duplication of the content becomes very easy [68]. This means that the costs of breaking DRM on a particular piece of content need only be borne once, with the effect that duplicating the content will have an almost zero marginal cost and consumers need not expend any further resources in breaking DRM protection [69]. Thus, the availability of such content has the potential to act as a substitute for the original product and DRM erodes fair use under this analysis. However, this no-longer seems appropriate. The example of Microsoft's Xbox Live network illustrates that whilst content, i.e. the computer games, is still widely available, once mechanisms on the hardware (the games console) was 'broken', it was then the access to the secondary service provision of online gaming that was denied; at best devaluing the content and at worst, rendering it useless.

## **4.2 Evidence of a 'Permission System'**

Furthermore, DRM arguably removes the case for fair use where there is no 'permission system' in place. A permission system only remedies the market failure that occurs because of high-transaction costs and does nothing to remedy the kind of market failure that is more central to the purpose of fair use: that market failure occurs when there are significant external benefits associated with a particular use that cannot be internalised in any bargained-for exchange [70].

The ability of content owners to restrict access to their works may lead to a greater number of specialised options and a wider range of consumer choices [71]. DRM provides the ability to design different services and offers producers to price discriminate with regard to buyer tastes potentially enabling greater revenue recovery [72], which in turn could help remedy a market failure (see below).

## **4.3 Market failure**

From an economic perspective, fair use can be explained as uses that should be permitted where the facts of the case give reason to mistrust the market [73]. Adopting a market-based approach can serve as a means of applying fair use to newly emerging uses of copyrighted works made possible by developing technologies [74]. The existence of DRM measures may, in fact, create a market failure, as it could impose higher transaction costs on users. As a result, they may seek alternatives and turn to non-legitimate sources of content in order to maximise benefit. In such a case, copyright and DRM has failed the market and fair use in this scenario may survive.

DRM is seen as an important mechanism for protecting copyrights in a free market [75]. The widespread availability of copyrighted content available online for free has led the creative industries to present the message that they 'can't compete with free'. However, even with DRM-free content, consumers still face social and technical transaction costs in exchanging content [76]. Such costs suggest that if the industry were willing to compete with 'free' services, market mechanisms could achieve the goals that DRM systems were supposed to [77]. In addition, critics of DRM fear a loss of consumer uses and economic analysis demonstrates that content providers who overly hinder customer control actually reduce the value of their product causing reduced market demand, prices, and profits [78].

From looking at the doctrine of fair use, it can be said that its goal is to advance knowledge, learning and to act as a limit or balance to the copyright monopoly. The market accepts copyright as monopoly to guarantee authors a return for their creative endeavour and to act as an incentive to produce from which the public as a whole will benefit. As such, a similar approach can be adopted to fair use; based on incentives to create and benefits to the public. However, the monopoly as envisaged by copyright law exists over content or, copyright 'works'. This can be distinguished from the monopolistic control over networks that has been exercised by Amazon and Microsoft, and which could result should Ofcom approve the deployment of industry-agreed content management on the BBC HD television service. It is difficult to envisage how this approach can be justified under this principle.

## **5. The internalisation of benefits at the expense of users**

Proponents of DRM systems argue that it can rectify the market while opponents argue that it fails the market. This can be seen through examining the way in which DRM is seen to 'internalise' benefits for right holders while at the same time, creating negative 'externalities' for users. Depending on one's point of view, the internalisation of benefits can solve market failure (for right holders), or create negative externalities thus failing the market (for users/consumers). This is explained below.

### **5.1 'Internalisation'**

DRM represents an attempt by right holders to 'internalise' benefits resulting from the market transactions involving digital content as it allows for more effective fencing of content and thus is seen as being able to cure some of the market failure that results from creative digital works [79].

However, internalising benefits to right holders can have the effect of creating negative externalities for consumers and users of content. Externalities can be defined as:

*"... the costs and benefits that a particular regime of entitlements and resource distribution imposes on individuals vs the constraints it places on their choices."*  
[80]

Arguably, the trend could be argued as an internalisation of networks which could be seen



as having no further benefits to right holders as use of networks is dependent on having content in the first place. There is no economic justification for this course of action since revenue has already been gleaned from consumers who have purchased the relevant hardware and associated content. There is no further economic benefit to be had from retrospectively excluding users from a network service that is bundled with the content and that users are dependent on in order to access and engage with new content. At best, this course of action could be seen as economically misguided, and at worst, callous.

DRM will allow right holders to internalise benefits that they believe are rightfully theirs, however copyright exceptions also have social benefits that are difficult to internalise and classify in a market-based context. Such exceptions can be seen as a mechanism for correcting two types of market failure [81]:

1. Worthwhile uses where the value of the use is exceeded by the transaction costs of negotiating a licence which enables uses that would otherwise be frustrated; and,
2. Where the value of socially beneficial uses of copyrighted work is not fully internalised where use of the work gives a substantial, but diffuse value and yields positive externalities which increase social welfare.

## **5.2 Externalities**

Fair use in the copyright regime can be seen as having positive externalities, in other words, benefits to society generated from particular uses of copyrighted content. These can be generated in two ways [82]:

- Society realises the benefits from the content of creative works; and,
- Social benefit accrues from the rights and access to use unprotected public-domain works.

These cannot be captured by market transactions, but through DRM, such benefits can at least in part be internalised by the right holder. However, by maximising the economic return to the right holder and thus externalising the costs of decreased availability and accessibility to members of the public, DRM may create or exacerbate other more significant types of market failure [83] and increase costs to society through non-access.

By maximising their return by internalising transaction costs through DRM, external costs are created for consumers, for example, having to re-purchase content again (Orwell's '1984'), replace hardware (Microsoft) or potentially have to find alternative sources of output (BBC). Furthermore, this has already been proven to be the case following the introduction of DRM-free music available on the Apple iTunes service in 2007 [84]. Here, DRM-free music was introduced for download at a cost of 20 pence more per track than DRM-protected music. In addition, customers could upgrade their DRM-protected tracks for 20 pence each [85].

However, despite this attempt to internalise as much benefit as possible from transactions, it is important to remember that benefits to consumers cannot be judged purely from looking at the market:

*"The choice between more flexible access policies and digitally metered, fully-*

*commodified usage rights is not a simple choice between market failure and (by implication) market success."* [86]

In addition to this, fair use poses problems for DRM in a technical nature. Despite the fact that the doctrine has been realised in legislation, several aspects of it are problematic from a DRM-perspective [87].

## 6. Practical considerations

The doctrine is very fluid and it is important to remember the potentially wide-range of activities that depend on fair use for legitimacy. As such, it has often been described as a 'safety valve' [88] and serves a crucial role in limiting the reach of what would otherwise be an intolerably expansive grant of rights to copyright holders. A major problem for code writers is the doctrine's ambiguity, in the US: *"The legal definition of fair use is, by definition, maddeningly vague."* [89]

In order to preserve fair use exceptions, DRM systems would need to accommodate for unauthorised uses of copyrighted works, but the fluidity of the doctrine means that it cannot be defined with precision. As such, difficulty lies in expressing the variables that may arise in each case in computer code; from a technological perspective, there is no precise algorithm for deciding whether a use is fair or not:

*"To a computer scientist such imprecision is a bug; to lawyers, it is a feature since it allows judges to take into account the unique circumstances of each case."* [90]

It poses a challenge for the Rights Expression Language (REL) used by DRM technologies:

*"Perhaps the most challenging issue yet to resolve in the field of policy expression languages is the tension that arises naturally when attempting to represent liability-based systems such as copyright law through explicit expressions of rights or permissions."* [91]

This also raises the question of whether these are decisions a 'computer' should even be required to make if a test of fair use cannot be adequately expressed in computer code. In practical terms, an approximate algorithm would have to be used that ignores these factors and replaces them with crude proxies. It would make errors in both directions i.e. allowing some uses the law would forbid and forbidding some the law would allow [92].

As such, despite being viewed by code writers as a 'bug', the ambiguity of fair use can actually be seen as its crucial feature. It has allowed the doctrine to evolve through the courts interpretation, for example in the Sony Betamax case [93] where it was held to apply. This was, at the time, revolutionary and unprecedented as the court found a use to be fair where the entire work was copied and for a purely consumptive purpose. This case demonstrates both the ability of the doctrine to evolve in light of technical innovation, and its importance to the continuing evolution of copyright in relation to new technologies. It is vital this is allowed to continue; it provides flexibility and an adaptability that would not be possible with a more precisely defined rule [94]. Through allowing the courts an

opportunity to apply copyright law, it serves to mediate the tensions between copyright and new technology; now however, new uses cannot evolve.

Any attempt to encapsulate fair use provision would have drawbacks for right holders and users, and, as Felten puts it:

*"There has been no satisfactory solution to these problems, though it may be because most of the development effort has been (mis)directed towards the effort to build all-encompassing DRM systems."* [95]

Such a situation is one of the starkest examples of the mismatch between what the law requires and what technology can do; and is perhaps demonstrative of a fundamental incompatibility between DRM technologies and copyright exceptions. Furthermore, it no longer appears that where DRM was previously directed towards restricting the uses that may be made of content, it has now been transformed into a mechanism that more so restricts access to works.

## **7. Conclusion**

The main argument of this paper is that the application of DRM is changing and that this has important consequences for the doctrine of fair use. DRM has traditionally been attached to content, however, the examples given suggest that it can now be seen as having a 'remote' application on networks. There is now the very real possibility of retrospective DRM control on networks; where previously networks were open, they now have the ability to be closed off through DRM. This also represents DRM as a latent technology on networks rather than being included with content. It is something that can now be separately implemented by a 'flick of a switch' on the part of an arbitrary decision by a right holder or network controller. This development marks an important shift in the operation of DRM from controlling 'use' to controlling 'access'.

It can be argued that content providers are also becoming service providers; it appears that networks and associated content are converging and now right holders have the ability to control networks on which their content is either available on, or that they provide. Such applications afford right holders much greater control, especially given the increasing tendency for content to be streamed or delivered over a network which they control. As a result, this could have the effect that users are deprived of access to content. Furthermore, it relieves consumers of the ability to choose between content; presenting them with a stark choice of breaking the law, pure unavailability of service/content, negotiating a complex and expensive licensing process, or lobbying the service provider for a better (or improved) product [96].

In addition to having negative effects on users, these examples and analysis of the fair use doctrine demonstrate that it may end up becoming a redundant aspect of copyright law. Copyright and the fair use doctrine serve to provide authors with incentives to create whilst also allowing users to engage with creative content and inspiring the creation of new works, thus benefitting society overall. Three scenarios in which fair use operates were identified; 'product substitution', evidence of a 'permission system', and 'market failure'. With regard to product substitution, the ability of non-DRM protected content to

act as a substitute for protected content (and the resultant erosion of this head of the fair use doctrine) continues to exist, although its appropriateness is now questionable. Applied on a network, there is little if any opportunity for substitution; networks cannot be substituted when they are included as part of a content package. Although content continues to be available, access to it can be restricted. This is especially relevant in the case of the BBC where licence fees are compulsory for televisions; although other broadcasting services are available, a licence is still required for any television. DRM further removes the case for fair use where there is no permission system in place as it offers the right holder the opportunity to tailor different services and pricing options to the market. Whilst this could be seen as remedying market failure, it may in fact exacerbate market failure, at the expense of consumers, by not providing a proportionate gain for right holders and resulting in a net welfare loss for all parties involved. The 'internalisation' of benefits by right holders can create consequent negative externalities and costs for users. Such internalisation of networks has arguably no further benefits to right holders since the use of their networks is dependent on users having content in the first place. In such cases, DRM could be said to fail the market and fair use in such scenarios may continue.

In addition to the legal problems presented by the development of DRM in these cases, there are also important practical considerations that are problematic from a DRM-perspective. The wide ambit and fluidity of the doctrine are in direct contradiction to the necessary technical preciseness of computer code required for DRM and it is by no means certain whether these can be reconciled.

As has been shown, the application of DRM technologies to operate over networks is problematic for fair use from a consumer, social welfare and technical perspective. The result is that DRM as it operates now threatens to leave even less room for fair use exceptions, so integral to copyright law, to breathe.

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[1] University of East Anglia

[2] Johnson, B., *'Amazon Kindle users surprised by "Big Brother" move'*, 17<sup>th</sup> July 2009, available from: <http://www.guardian.co.uk/technology/2009/jul/17/amazon-kindle-1984>

[3] BBC News, *'Ofcom knocks back BBC DRM plans'*, 10<sup>th</sup> November 2009, available from: <http://news.bbc.co.uk/1/hi/technology/8352241.stm>

[4] Arthur, C., *'Microsoft cutting off up to 1m gamers with modified Xbox 360 controls'*, 11<sup>th</sup> November 2009, available from: <http://www.guardian.co.uk/technology/2009/nov/11/xbox-modded-consoles-live-cut-microsoft> .

It is worth noting that the modification of Xboxes may also serve the purpose of facilitating 'cheating' in online gaming. As such, the blocking of chipped consoles helps maintain the network by ensuring that the gaming environment is fair for all players. However, this raises other issues such as whether the practice of cheating would cause complaints from other users and the 'social etiquette' associated with virtual gaming

communities. Although interesting, they are beyond the scope of this paper.

[5] For example, the aggressive 'XCP' and 'MediaMax' software released on albums by Sony-BMG.

[6] Stromdale, C., *'The problems with DRM'*, (2006) Ent LR 17(1) 1-6, p1

[7] Sony Corp. of America v. Universal City Studios Inc. (1984) 464 US 417

[8] Kretschmer, M., *'Digital copyright: the end of an era'*, (2003) EIPR 25(8) 333-341, p335

[9] US Audio Home Recording Act, 106 Stat. 4237 (1992), to amend title 17, United States Code, to implement a royalty payment system and a serial copy management system for digital audio recording, to prohibit certain copyright infringement actions, and for other purposes.

[10] Kretschmer, M., *'Digital copyright: the end of an era'*, (2003) EIPR 25(8) 333-341, p335

[11] Ginsburg, J.C., 'From Having Copies to Experiencing Works: the Development of an Access Right in US Copyright Law', p1, available at: [http://papers.ssrn.com/paper.taf?abstract\\_id=222493](http://papers.ssrn.com/paper.taf?abstract_id=222493)

[12] Ibid, p2

[13] This paper refers exclusively to the American position of fair use. Although copyright limitations also exist in UK law under the fair dealing doctrine, the position in the US is broader as opposed to the 'catalogue' system adopted in the UK.

[14] Digital Millennium Copyright Act, to amend title 17, United States Code, to implement the World Intellectual Property Organization Copyright Treaty and Performances and Phonograms Treaty, and for other purposes (1998)

[15] Meaning, for example, purchasing or receiving the digital work, watching it, running it or copying the work on the relevant device or hardware.

[16] Charles Clarke, quoted in Goldstein, P., 'Copyright's Highway: From Gutenberg to the Celestial Jukebox (Revised Edition)' (2003), pp165-170

[17] The colloquial term for the competition between DRM developers and users seeking to circumvent such measures.

[18] The term 'hacker' has powerful connotations in the IT/IP world; it is used here to represent home computer hobbyists and not those driven by more cynical or criminal motives.

[19] This could presumably have the somewhat absurd effect that DRM circumvention now motivates users to protect their access and use privileges from DRM, as opposed breaking DRM measures; users would seek to 'protect' rather than 'circumvent'. The act of circumvention useless if one has already been deprived of content.

[20] As stated in Article 1, section 8 of the US Constitution: Congress shall have the power 'to promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries'. This reflects the greater importance placed on 'reward theories' used to justify copyright in

the US. See also the Statute of Anne (1710): "An Act for the Encouragement of Learning ..."

[21] von Lohmann, F., 'Fair Use and Digital Rights Management: Preliminary Thoughts on the (Irreconcilable?) Tension between Them', p3, available from: [http://w2.eff.org/IP/DRM/fair\\_use\\_and\\_drm.html](http://w2.eff.org/IP/DRM/fair_use_and_drm.html)

[22] See for example, Angelopoulos, C.J., 'Modern intellectual property legislation: warm for reform', (2008) Ent LR 19(2) 35-40, p36 and Bechtold, S., 'Digital Rights Management in the United States and Europe', (2004) 52 American Journal of Comparative Law 323-382, p331

[23] Ganley, P., 'Access to the Individual: Digital Rights Management Systems and the Intersection of Informational and Decisional Privacy Interests', (2002) International Journal of Law and Information Technology, Vol. 10, 241, available from: [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=876905#](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=876905#)

[24] Felten, E. W., 'A Skeptical View of DRM and Fair Use', Communications of the ACM, April 2003/Vol 46, No. 4, p57

[25] Herman, B.D., 'Breaking and Entering My Own Computer: The Contest of Copyright Metaphors', (2008) Communication Law and Policy 13(2) 231-274, p231

[26] For these and others, see for example Bechtold, S., 'Digital Rights Management in the United States and Europe', (2004) 52 American Journal of Comparative Law 323-382, pp326-331, and Dusollier, S., 'Electrifying the fence: the legal protection of technological measures for protecting copyright', (1999) EIPR 21(6) 285-297, pp285-286

[27] Hanbidge, N., 'DRM: can it deliver?' (2001) Ent LR 12(5) 138-140, p138

[28] Bechtold, S., 'Digital Rights Management in the United States and Europe', (2004) 52 American Journal of Comparative Law 323-382, p327

[29] Ganley, P., 'Access to the Individual: Digital Rights Management Systems and the Intersection of Informational and Decisional Privacy Interests', (2002) International Journal of Law and Information Technology, Vol. 10, 241, available from: [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=876905#](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=876905#)

[30] Angelopoulos, C.J., 'Modern intellectual property legislation: warm for reform', (2008) Ent LR 19(2) 35-40, p36

[31] Koempel, F., 'Digital rights management', (2005) CTRLR 11(8) 239-242, p239

[32] Ibid, p240. These are also not necessarily embedded within the work, but may be stored elsewhere in the form of metadata.

[33] Ottolia, A., 'Preserving users' rights in DRM: dealing with "juridical particularism" in the information society', (2004) IIC 35(5) 491-521, p496

[34] Chang, Y-L., 'Does Lessig's criticism of digital rights management target one technology that the information industries desire more than they can actually provide?', (2005) 19 International Review of Law, Computers & Technology 3 235 -252, p242

[35] Ibid, p242



[36] Samuelson, P., 'Digital Rights Management {and, or, vs.} the Law', available from: <http://people.ischool.berkeley.edu/~pam/papers/acm%20on%20drm.pdf>

[37] Ibid. See also, Lessig, L., 'Code Version 2.0', (2006) p116 on DRM: "This restriction is effected through code ... It is thus a classic example of code being deployed to restore control..."

[38] Chang, Y-L., 'Does Lessig's criticism of digital rights management target one technology that the information industries desire more than they can actually provide?', (2005) 19 International Review of Law, Computers & Technology 3 235 -252, p242, and see generally Reese, R.A., 'Will Merging Access Controls and Rights Controls Undermine the Structure of Anticircumvention Law?' (2003) 18 Berkley Technology Law Journal 619-666

[39] See generally, Lessig, L., 'Code Version 2.0', (2006)

[40] Goldstein, P., 'Copyright's Highway: From Gutenberg to the Celestial Jukebox (Revised Edition)' (2003), p184

[41] Foged, T., 'US v EU anti circumvention legislation: preserving the public's privileges in the digital age?' , (2002) EIPR 24(11) 525-542, p525

[42] Dusollier, 'Technology as an imperative for regulating copyright: from the public exploitation to the private use of the work', (2005) EIPR 27(6) 201-204, p202

[43] Barczewski, M., 'International framework for legal protection of digital rights management systems', (2005) EIPR (27)5 165-169, p165

[44] WIPO Copyright Treaty, adopted in Geneva on December 20, 1996

[45] WIPO Performances and Phonograms Treaty adopted in Geneva on December 20, 1996

[46] Braun, N., 'Interface between the protection of technological measures and the exercise of exceptions to copyright and related rights: comparing the situation in the United States and the European Community', (2003) EIPR 25(11) 496-503, p496

[47] Specifically Articles 11-12 WCT and Articles 18-19 WPPT . See Barczewski, M., 'International framework for legal protection of digital rights management systems', (2005) EIPR (27)5 165-169, p165

[48] Dusollier, 'Technology as an imperative for regulating copyright: from the public exploitation to the private use of the work', (2005) EIPR 27(6) 201-204, p202

[49] Ibid, p202

[50] Foged, T., 'US v EU anti circumvention legislation: preserving the public's privileges in the digital age?' , (2002) EIPR 24(11) 525-542, p527

[51] As per note 15: purchasing/receiving/watching/running/copying the work on the relevant device or hardware.

[52] Foged, T., 'US v EU anti circumvention legislation: preserving the public's privileges in the digital age?' , (2002) EIPR 24(11) 525-542, p528

[53] Digital Millennium Copyright Act, to amend title 17, United States Code, to implement

the World Intellectual Property Organization Copyright Treaty and Performances and Phonograms Treaty, and for other purposes, 112 Stat. 2860 (1998), s.1201

[54] Directive 2001/29 of the European Parliament and of the Council of May 22, 2002 on the Harmonisation of Certain Aspects of Copyright and Related Rights in the Information Society, art.6

[55] Foged, T., 'US v EU anti circumvention legislation: preserving the public's privileges in the digital age?' , (2002) EIPR 24(11) 525-542, p525

[56] Ibid, p526

[57] Dusollier, 'Technology as an imperative for regulating copyright: from the public exploitation to the private use of the work', (2005) EIPR 27(6) 201-204, p203

[58] Anderson, M.G., and Brown, P.F., 'The Economics Behind Copyright Fair Use: A Principled and Predictable Body of Law', (1993) 24 Loy U Chi LJ 143-177, p158

[59] Ibid, pp158-159

[60] Loren, L.P., 'Redefining the market failure approach to fair use in an era of copyright permission systems', (1997) 5 J Intell Prop L 8-58, p25

[61] Anderson, M.G., and Brown, P.F., 'The Economics Behind Copyright Fair Use: A Principled and Predictable Body of Law', (1993) 24 Loy U Chi LJ 143-177, p158

[62] These were identified in the US jurisdiction, and as such, fall under the fair use doctrine.

[63] *Folsom vs. Marsh*, 9 F.Cas. 342 (1841)

[64] For example, *Princeton University Press vs. Michigan Document Services*, 99 F.3d 1381 (1996)

[65] For example, *Williams & Wilkins Co. v. United States*, 487 F.2d 1345 (1973) and generally, Gordon, W.J., 'Fair Use as Market Failure: A Structural and Economic Analysis of the Betamax Case and its Predecessor', (1982) 82 *Columbia Law Review* 8 1600-1657

[66] Anderson, M.G., and Brown, P.F., 'The Economics Behind Copyright Fair Use: A Principled and Predictable Body of Law', (1993) 24 Loy U Chi LJ 143-177, p165

[67] Ibid, p165

[68] Lewis, S.R., '*How much is stronger DRM worth?*', 2nd Annual Workshop on Economics and Information Security, 29<sup>th</sup> May 2003, available from: [www.cpppe.umd.edu/rhsmith3/papers/Final\\_session1\\_lewis.pdf](http://www.cpppe.umd.edu/rhsmith3/papers/Final_session1_lewis.pdf)

[69] Lewis, S.R., '*How much is stronger DRM worth?*', 2nd Annual Workshop on Economics and Information Security, 29<sup>th</sup> May 2003, available from: [www.cpppe.umd.edu/rhsmith3/papers/Final\\_session1\\_lewis.pdf](http://www.cpppe.umd.edu/rhsmith3/papers/Final_session1_lewis.pdf)

[70] Loren, L.P., 'Redefining the market failure approach to fair use in an era of copyright permission systems', (1997) 5 J Intell Prop L 8-58, p6

[71] Einhorn, M.A., and Rosenblatt, B., 'Peer-to-Peer Networking and Digital Rights Management - How Market Tools Can Solve Copyright Problems', (2005), p3

[72] Ibid, p3

[73] Gordon, W.J., 'Fair Use as Market Failure: A Structural and Economic Analysis of the Betamax Case and its Predecessor', (1982) 82 *Columbia Law Review* 8 1600-1657, p1627

[74] Ibid, pp1601-1602

[75] Einhorn, M.A., and Rosenblatt, B., 'Peer-to-Peer Networking and Digital Rights Management - How Market Tools Can Solve Copyright Problems', (2005), p2

[76] Lewis, S.R., '*How much is stronger DRM worth?*', 2nd Annual Workshop on Economics and Information Security, 29<sup>th</sup> May 2003, available from:  
[www.cpppe.umd.edu/rhsmith3/papers/Final\\_session1\\_lewis.pdf](http://www.cpppe.umd.edu/rhsmith3/papers/Final_session1_lewis.pdf)

For example, the costs of forming the social networks necessary to support the exchange of content, the time spent searching for, and downloading quality content, and the usage of technical bandwidth quotas implemented by many ISPs.

[77] Ibid

[78] Einhorn, M.A., and Rosenblatt, B., 'Peer-to-Peer Networking and Digital Rights Management - How Market Tools Can Solve Copyright Problems', (2005), p2

[79] Cohen, J.E., 'Lochner in Cyberspace: the new economic orthodoxy of "rights management"', (1998) 97 *Mich L Rev* 462, available from:  
<http://www.law.georgetown.edu/faculty/jec/lochner.pdf>, p9

[80] Ibid, p74

[81] Burk D.L., and Cohen, J.E., '*Fair use infrastructure for rights management systems*', (2001) 15 *Harvard Journal of Law & Technology* 1, 42-83, p44

[82] Cohen, J.E., '*Lochner in Cyberspace: the new economic orthodoxy of "rights management"*', (1998) 97 *Mich L Rev* 462, available from:  
<http://www.law.georgetown.edu/faculty/jec/lochner.pdf>, p80

[83] Ibid, p91

[84] Where EMI's entire digital catalogue (about 5 million songs) was made available for purchase on iTunes, '*Apple Unveils Higher Quality DRM-Free Music on the iTunes Store*', 2<sup>nd</sup> April 2007, available from:

[http://www.apple.com/uk/pr/library/2007/04/020407\\_emihighqualitydrmfree.html](http://www.apple.com/uk/pr/library/2007/04/020407_emihighqualitydrmfree.html)

[85] Ibid. Although the DRM-free tracks were of a higher quality (bitrate), this, perhaps tenuously, suggests the value of DRM to be 20 pence in this instance.

[86] Cohen, J.E., 'Lochner in Cyberspace: the new economic orthodoxy of "rights management"', (1998) 97 *Mich L Rev* 462, available at:  
<http://www.law.georgetown.edu/faculty/jec/lochner.pdf>, p91

[87] von Lohmann, F., 'Fair Use and Digital Rights Management: Preliminary Thoughts on the (Irreconcilable?) Tension between Them', p1, available from:

[http://w2.eff.org/IP/DRM/fair\\_use\\_and\\_drm.html](http://w2.eff.org/IP/DRM/fair_use_and_drm.html) pp2-3

[88] Ibid, p2

[89] Felten, E. W., '*A Skeptical View of DRM and Fair Use*', Communications of the ACM, April 2003/Vol 46, No. 4, p58

Although more fully codified in UK law, courts have applied the doctrine expansively suggesting that more types of activities may be covered by the exceptions than their wordings suggest.

[90] Ibid , p58

[91] LaMacchia, B.A., 'Key Challenges in DRM: An Industry Perspective', (2002) available from: <http://www.farcaster.com/papers/drm2002/drm2002.pdf>

[92] Felten, E. W., '*A Skeptical View of DRM and Fair Use*', Communications of the ACM, April 2003/Vol 46, No. 4, pp58-59

[93] *Sony Corp. of America v. Universal City Studios Inc.* (1984) 464 US 417 where it was alleged that because Sony was manufacturing a device that could potentially be used for copyright infringement, they were thus liable for any infringement that was committed by its purchasers. It was held that the practice of 'time-shifting' (recording for later viewing) was permitted under the fair use doctrine provided it was done by private individuals for personal use. Sony had shown their product was "*susceptible of a significant non-infringing use.*" This has also been codified in UK law under section 70 of the Copyright, Designs and Patents Act 1988.

[94] Felten, E. W., '*A Skeptical View of DRM and Fair Use*', Communications of the ACM, April 2003/Vol 46, No. 4, p58

[95] Ibid, p59

[96] As suggested by Steve Jobs in '*Thoughts on music*', 6<sup>th</sup> February 2007, available from: <http://www.apple.com/hotnews/thoughtsonmusic/>