Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Issue 4/2023

DIGITAL RIGHT MANAGEMENT: SAFEGUARDING COPYRIGHT IN THE CYBER ERA

Irina ATANASOVA[1]
[1] ***South-West University "Neofit Rilski", Blagoevgrad, Bulgaria, Email: irina_atanasova@yahoo.com, tel. 00359899250650***

How to cite: Atanasova, I. (2023*).* "Digital Right Management: Safeguarding Copyright in the Cyber Era*"*. *Annals of Spiru Haret University. Economic Series, 23*(4), 281-290, doi: https://doi.org/10.26458/23413

Abstract

Copyright infringement is commonly perceived as a private economic transgression, typically addressed through private legal actions and remedies. The advent of digitalization, encompassing copyrighted works such as text, music, and video, has enhanced the unauthorized reproduction. The ubiquity of the Internet enables infringers to replicate thousands of copyrighted works at minimal cost.

This article outlines the methodologies of digital rights management (DRM), clarifying its protective mechanisms and highlighting the adverse consequences associated with DRM implementation. As a technological framework, DRM is specifically engineered to prevent unauthorized copying of digital content. It assumes a pivotal role in safeguarding content exchanges within the digital landscape, thereby minimizing copyright infringement and plagiarism. The paper further explains potential future trends in copyright protection and the evolving landscape of DRM.

Keywords: *internet; copyright protection; copyright infringement; digital age; digital right management (DRM)*

JEL Classification: *K14, K24 O32, O31, O30*

Introduction

Since the enactment of the world's first copyright law in 1710 in England, copyright has played a significant role in shaping human history. Nowadays the

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

increasing reliance on computers and the Internet for information retrieval reflects a paradigm shift in our daily lives. The dynamic landscape of the digital world has introduced both opportunities and challenges. As electronic interactions become ubiquitous globally, governments and legal authorities are handling with the task of effectively regulating the new cyberspace. One of the paramount challenges lies in the regulation and control of electronic data processing, given the inherent difficulty in supervision of the vast online world (Dong & Wang, 2010).

Digital Rights Management (DRM) emerged as a technological solution to protect copyright. However, its effectiveness has come under scrutiny, necessitating legal protection. Paradoxically, in many jurisdictions, the legal safeguards for DRM often surpass those granted to the copyrighted works it seeks to protect (Hofman, 2009). This paper explores the intricate interplay between copyright, cyberspace regulation, and the evolving complexities of Digital Rights Management in the contemporary digital age.

Literature Review

Overprotection of copyright could threaten democratic traditions and impact on social justice principles by unreasonably restricting access to information and knowledge. If copyright protection is too strong, competition, innovation and creativity is restricted. Thus, there arises a critical need for equilibrium—an intricate balance must be maintained. This equilibrium should harmonize the rightful interests of copyright owners in securing fair remuneration for their endeavors with the legitimate interests of copyright users in obtaining reasonable access to copyrighted materials. In doing so, a delicate equilibrium can be achieved, fostering an environment that nurtures both the rewards of creative efforts and the broader societal imperative of unfettered access to knowledge and information.

Ben Depoorter argues that technology, by creating an environment of rapid and unpredictable change, establishes two major conditions that have a profound effect on copyright law: legal delay and legal uncertainty. In copyright law, breakthrough technologies make it more difficult to apply existing rules by analogy. Even when courts seek to apply the relatively bright line rules of copyright doctrine, the exact entitlement of rights may be surprisingly uncertain when applied to a novel technology (Depoorter, 2010).

John Perry Barlow wrote that the application of traditional copyright laws to the digital environment was a fundamental misunderstanding and mistake. According to him copyright was designed to protect ideas as expressed in fixed form, but not

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

the ideas or bits of information them. Barlow did not prescribe a solution to the digital dilemma; he only outlined the problems that the global economy can experience the next years. He predicted that copyright would not survive in the digital age (Barlow, 1994).

The Stanford law professor Paul Goldstein in his book "Copyright highway" (Goldstein, 2019) outlined an optimistic view of the digital moment and its potential for both producers and consumers. Goldstein saw on the horizon a day when all cultural content –text, music, video, software, and video games could be streamed into our homes through one wire and out of one box. Each consumer would have instant access to huge and substantive private libraries of culture and information.

Two prevailing perspectives in the discourse on copyright can be identified as minimalist and maximalist. Advocates of the minimalist approach, as articulated by Lessig (1996), posit that optimal conditions for innovation, economic growth, and creativity are fostered by a more limited scope of copyright protection. On the opposing end, maximalists, exemplified by Paul Goldstein (2019), contend that achieving these same objectives necessitates fortifying and expanding copyright protection comprehensively, encompassing every facet where consumers extract value from literary and artistic works.

The maximalist viewpoint assumes that existing constraints on copyright stem primarily from the perceived impracticality and expense of enforcing property rights against marginal users. Proponents of this stance argue that implementing robust rights management systems provides producers with sharp control over content usage. This, in turn, facilitates more precise price discrimination, bolstering production efficiency and overall economic efficacy. The ongoing debate between these two ideological camps underscores the complexity inherent in balancing the interests of content creators, consumers, and the broader objectives of fostering innovation and creativity within the framework of copyright law.

Theoretical Background

The landscape of copyright law is undergoing rapid transformations in response to the digitization of content and the expansive reach of the Internet. These changes present numerous challenges in how copyright-protected material is safeguarded, licensed, and managed. A seminal milestone in establishing the principle of national treatment in the realm of international copyright agreements is the Berne Convention, tracing its origins back to 1886. Despite subsequent revisions, the Berne Convention remains the preeminent international treaty in this domain. The

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

United States, recognizing the evolving nature of copyright, acceded to the Berne Convention in 1989. Prior to this, the U.S. advocated for countries to endorse the Universal Copyright Convention (UCC), either as a supplement to or, more commonly, in conjunction with the Berne Convention. This historical context underscores the dynamic nature of international efforts to address the complexities arising from the intersection of copyright law, technological advancements, and global connectivity. Later the challenges of digitisation resulted in the two latest international copyright treaties: the WIPO Copyright Treaty and the WIPO Performances and Phonograms Treaty, both of December 1996 (Stokes,2005)

Cyberspace produced also new intellectual property items as computer graphics, electronic literature, software, databases with a great amount of useful information and even such notion as domains that are acknowledged as an intellectual property and are protected by the World Intellectual Property Organization. The two World Intellectual Property Organisation (WIPO) Treaties of 1996 dealing with copyright, related rights and new technology gave fresh legislative impetus to efforts in Europe to adapt and harmonise copyright law to the challenges of the information society. The result was the 2001 Copyright Directive (the Information Society Directive).

In 1998 the US Congress enacted the controversial Digital Millennium Copyright Act (DMCA). Passed in part to comply with international treaty obligations, the DMCA prohibits the circumvention of copyrigh tprotection systems. These systems are technologies that control access to copyrighted works. People may violate the DMCA simply by unlocking an “electronic lock” to gain access to a work even if they do not subsequently infringe the copyright in that work – for example, by copying for the purposes of “fair use.” These provisions may be enforced by both civil and criminal sanctions. Criminal penalties are limited to persons acting “willfully and for purposes of commercial advantage or private financial gain” (Law Commission of Canada, 2004). The DMCA includes protection for online service providers and creates limited immunity to the computer repair services.

An evident divergence between European and U.S. copyright legislation lies in the historical treatment of moral rights within the respective legal traditions. European copyright norms, rooted in the Berne Convention of 1886, have consistently embraced the inclusion of moral rights for authors. In contrast, American copyright law has traditionally omitted explicit provisions for moral rights. This dichotomy experienced a noteworthy shift with the advent of the WIPO Performances and Phonograms Treaty in 1996, marking a significant milestone in U.S. copyright law. For the first time, the legislation incorporated a codification of

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

moral rights specifically pertaining to composers. Moral rights, situated within the framework of copyright theory, encapsulate the notion that authors, composers, or directors wield considerable authority over the presentation and manipulation of their works. This legal evolution underscores a convergence between European and U.S. copyright practices and reflects an acknowledgment of the intrinsic rights of creators in shaping the destiny of their intellectual creations. Thus European law has for the last hundred years served the interests of artists and publishers, while the American law has purported to serve the interests of the public at large (Marke, 1997)

Copyright Dynamics in the digital age

Copyright serves as a protective framework for various categories of works, shielding them against unauthorized copying. These works may manifest in either analog or, under certain circumstances, digital formats. Notably, certain copyright works exclusively exist in digital form, exemplified by computer programs, constituting a distinct class termed 'digital copyright' works. Conversely, there are copyright works that exhibit the flexibility to exist in both analog and digital forms. This includes computer-generated literary, dramatic, musical, or artistic works, as well as musical compositions, sound recordings, and movie broadcasts.

The evolution of technology has consistently influenced copyright law, with digitization representing the latest transformative advancement. This novel technology has already demonstrated and is anticipated to exert a significant impact. Digital technology facilitates seamless, cost-effective, and flawless duplication of copyrighted works. Moreover, it enables the swift and widespread "one-to-many" distribution of content on a global scale through digital networks. The implications of digitization underscore the ongoing dynamism within copyright law as it endeavors to address the challenges posed by emerging technologies.

The digital moment has collapsed the distinctions among the three formely distinct processes: gaining access to a work; using (reading) a work; and copying a work. One cannot gain access to a news story without making several copies of it by clicking on the website that contains the news story and making a copy attached to an email. Copyright was designed to regulate only copying and not supposed to regulate ones right on read and share. Nowadays copyright policy makers have found themselves faced with the challenge to expand copyright to regulate access and use, despite the effect this might have on creativity, community, and democracy (Vaidhyanathan, 2005)

In the digital landscape, civil enforcement mechanisms for copyright face notable inadequacies. The ease of mass digital copying, facilitated by widely

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

available technology and peer-to-peer file-sharing software, undermines the efficacy of conventional enforcement. The Napster phenomenon serves as a paradigm, demonstrating how individuals with basic resources—personal computers, broadband Internet connections, and file-sharing software—can engage in large-scale piracy globally, often for noncommercial motives, such as obtaining copyrighted content for free.

The accessibility and affordability of copying technology contribute to a proliferation of potential infringers, expanding the pool of individuals engaged in copyright infringement. The simplicity of Internet-based file sharing further worsens the challenge, as individuals may infringe copyright without a comprehensive understanding of the legal consequences, often driven by the opportunity for free access to copyrighted works. Digitization thus gives rise to a substantial unit of new copyright infringers who may avoid conventional civil enforcement mechanisms.

The discourse surrounding digital copyright protection is multifaceted. Some argue that robust digital copyright protection jeopardizes free expression and democratic participation. Alternatively, proponents of "fair use rights" advocate for the reinforcement of these rights in the digital milieu, emphasizing the need for "fair access" rights. Another perspective posits that digitization obviates the necessity for copyright as a motivator for distribution, contending that, at least for certain types of works, copyright is not indispensable to incentivize production. The evolving landscape of digital copyright protection prompts a nuanced examination of how legal frameworks can effectively balance the preservation of intellectual property rights with broader considerations of freedom, democracy, and fair access.

Copyright protection in the digital age should remain as extensive as it was in the analog era. However it should respond to the challenges of digital copyright with increased criminalization. The scope of copyright protection depends on the availability and effectiveness of enforcement mechanisms. Copyright crime is as much about criminal law as copyright law. This does not mean that increased criminalization is always a bad idea or that the criminal law should remain immutable in the digital era. It does mean, however, that proposals to protect digital copyright through criminal sanctions should be scrutinized through the lens of criminal law as well as copyright law (Law Commission of Canada, 2004).

In many respects, the push to criminalize copyright infringement is understandable. The effectiveness of traditional civil-enforcement mechanisms is truly threatened by digitization. Peer-to-peer file-sharing networks, broadband connections, file compression formats, circumvention applications, and other

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

technologies have dramatically expanded the scope of copyright infringement. Whether this represents a net benefit or loss to the public interest is not clear. However, it tends to be skeptical whether criminal sanctions have the capacity to solve complex social problems, especially those lying outside the traditional core of the criminal category. Criminal law is too blunt instrument to mediate adequately between the complicated, conflicting interests facing the modern regulatory state. This leaves policy makers with two alternatives. They can attempt to live with the effects of digitization, hoping that the copyright minimalists are correct. Or they can attempt to bring into action noncriminal mechanisms to prevent infringement (Gasaway, 2001)

The Role of Digital Rights Management (DRM) in Safeguarding Copyrighted Material

DRM, a multifaceted set of hardware and software technologies, serves as a crucial instrument in controlling the utilization, modification, and distribution of content and information assets, both in online and offline domains. Widely recognized as Technological Protection Measures (TPM), DRM is specifically engineered to fortify copyright protections pertaining to technology-enabled content (BasuMallick, 2020).

As consumption of digital content increases, complexities around copyright management grow with it as well. Nowadays the definition of digital rights management took on new dimensions with the rise of OTT and cloud-based content sharing. Almost every piece of content we consume, from iTunes to Netflix, carries a specific DRM protocol.Most of the DRM tools operate through encryption, or computer code embedded in the digital content, to limit access or use. These tools can control the number of times, devices, people, or the time periods that the content can be accessed.

DRM finds application in a diverse array of copyrighted materials, encompassing software (games, operating systems, applications), multimedia content (audio, video, images), licensed eBooks (online libraries, eBook stores, digital subscriptions), and confidential documents (bank statements, financial records) (BasuMallick, 2020). Key restrictions imposed by DRM on digital content include:

- Copy Prevention: A longstanding DRM type where users can view or consume content from the primary channel but are prohibited from making copies. This is commonly employed by online publishers to deter plagiarism.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

- Copy Restrictions**:** Similar to copy prevention, users are allowed to make a specified number of copies under certain conditions, such as a limited number of eBook copies for personal use.
- Password Protection: A straightforward yet effective DRM technique requiring a unique password for document access, often employed by financial services providers to secure consumer transactions.
- Watermarks: A cost-effective DRM method preventing the reuse of visual content by incorporating distinctive watermarks. This is prevalent in stock photographs, GIFs, and videos to discourage commercial misuse.
- Device Control: An advanced DRM technology that restricts file access to approved devices. Enterprise DRM and certain OTT media platforms heavily rely on device-based control, necessitating DRM certification for device manufacturers seeking compatibility with platforms like Netflix.

However, the effectiveness of Digital Rights Management (DRM) raises two critical concerns, as highlighted by Hofman (2009). The first affects the potential deprivation of users' legal rights to access copyright-protected works or works that are not subject to copyright. The second concern revolves around the invasion of individual privacy.

An intriguing question emerges regarding the removal of DRM by users to exercise their legal rights—does it constitute a breach of legislation safeguarding DRM? International agreements do not provide a clear stance on this matter, leaving the answer contingent upon the legislation of the respective country. Additionally, the interpretation may center on the significance attributed by the courts in that country to education and access to knowledge. In jurisdictions where constitutional rights prioritize access to knowledge and education over legislation, courts may rule that DRM protection does not apply when users are exercising these fundamental rights.

However DRM software, while apparently aiming to protect copyright, can inadvertently infringe on an individual's privacy by monitoring their usage of software or other copyrighted works. Moreover, the unintended consequences of robust DRM protection have been observed. For instance, in 2006, the Electronic Frontier Foundation published a paper highlighting how stringent DRM protection under the U.S. Digital Millennium Copyright Act impeded academic research and curtailed business competition. Similar consequences are likely to emerge in other countries adopting robust legal protections for DRM. The ubiquity of the Internet further complicates matters for copyright holders, making it increasingly challenging to collect royalties for works in digital formats.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

Conclusion

The law has never granted copyright owners an absolute monopoly. Instead, the laws strike a balance between granting a certain level of protection and guaranteeing a certain level of access and use (Loren, 2010). In a very real sense, we are in the midst of an intellectual, moral, and legal struggle over the future of copyright-the struggle over the future of the rights to duplicate and transform information (Lawrance, 2005).

Indeed, Digital Rights Management (DRM) does not provide perfect protection against piracy. The hacking community demonstrates an adept ability to circumvent technological protection measures, rendering them inherently penetrable. From the perspective of the average internet user, such measures pose substantial impediments to the seamless utilization of purchased content. The legal fortification of DRM tools, while ostensibly aiming to combat piracy, has proven to be a rapidly applied legislative action. Presently, it is evident that this legal approach produces numerous unintended consequences. The efficacy of technological protection measures, as argued by Breimelyte (2014), should be gauged based on their technical capabilities and ongoing innovation rather than relying solely on legislative mandates. Recognizing the evolving landscape of technology and the inherent adaptability of determined hackers is crucial in framing effective strategies for content protection.

Copyright serves a dual role by ensuring the quality of information and preventing piracy, thereby contributing to the organization of the electronic publishing market. It provides a crucial financial incentive for individuals to create copyrightable materials, fostering innovation and creativity. Despite the evolving digital landscape, copyright remains indispensable in contemporary society, serving as a cornerstone for incentivizing and compensating creative activities.

As expressed by Laura Gasaway (Gasaway, 2001), the demise of copyright would be harmful to both users of copyrighted works and copyright holders. Recognizing its relevance, copyright is not expected to fade away in the new digital environment. Instead, its constant existence is vital for maintaining order, promoting creativity, and sustaining the economic ecosystem. However, it is acknowledged that copyright law should be subject to frequent revisions to adapt to the dynamics of the new digital era. This ongoing adjustment is imperative to ensure that copyright legislation remains effective, relevant, and responsive to the evolving challenges and opportunities presented by the digital environment.

Annals of Spiru Haret University.
Economic Series
Since 2000
ISSN:2393-1795 ISSN-L:2068-6900

References:

[1] Balrlow, John Rerry (1994), The Economy of Ideas, *WIRED, March 1st 1994*, https://www.wired.com/1994/03/economy-ideas/
[2] BasuMallick, Chiradeep (2020), What Is Digital Rights Management? Definition, Benefits, and Best Practices, https://www.toolbox.com/it-security/identity-access-management/articles/what-is-digital-rights-management/
[3] Breimelyte, Jurate (2014), The Goals and Unintended Consequences of Digital Rights Management (October 1, 2023). Available at SSRN: https://ssrn.com/abstract=2538146 or http://dx.doi.org/10.2139/ssrn.2538146
[4] Depoorter, Ben (2009). TECHNOLOGY AND UNCERTAINTY: THE SHAPING EFFECT ON COPYRIGHT LAW, *University of Pennsylvania Law Review 157, no. 6 (June 2009): 1831-1868. Academic Search Premier, EBSCOhost*
[5] Dong, Elaine, and Bob Wang (2002). Copyright of electronic publishing, *Information Services and Use 22, no. 1 (2002): 27-31. E-Journals, EBSCOhost*
[6] Gasaway, Laura, (2001). *Is copyright dead?*, Information-Outlook 5(3), 38, 40.
[7] Goldstein, Paul (2004), *Copyright's Highway*, Stanord Univrsity Press 2004, Paperback ISBN: 9780804747486
[8] Hofman, Julien (2009), *Introducing Copyright: A plain language guide to copyright in the 21st century*, Commonwealth of Learning, Vancouver, 2009
[9] Law Commission of Canada (2004). What Is a Crime? : Defining Criminal Conduct in Contemporary Society, *Vancouver, BC, Canada: UBC Press, 2004. p 65.*
[10] Lawrance, S. (2005). *The future of Copyright*. Texas Law Review vol. 83, University of Illinois, p. 2011
[11] Lessing, Lawrance (1996). Revising copyright law for information age (1996), 75 Or. L. Rev. 19
[12] Loren, L. (2010). Technological Protections in Copyright Law: Is More Legal Protection Needed?. *International Review of Law, Computers & Technology 16, no. 2 (July 1, 2010): 133-148. E-Journals, EBSCOhost*
[13] Marke, Julius (1997). Database protection act and the 105th congress, *New York Law Journal(March 18, 1997)*
[14] Stokes, Simon (2005). *Digital Copyright : Law and Practice,* Oxford, GBR: Hart Publishing, 2005. p 7.
[15] Vaidhyanathan, Siva (2001). Copyrights and copywrongs-the rise of intellectual property and how it threatens creativity, New York University press 2001