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NAVIGATING INTELLECTUAL PROPERTY AND COPYRIGHT IN THE DIGITAL ERA: CHALLENGES AND LEGAL PERSPECTIVES

Manasy Hariharan[1], *Sreejith B*[2]

ABSTRACT

As technology is racing to this new digital age, the relationship between Intellectual Property (IP) and Copyright is becoming increasingly more complex. Artificial intelligence, blockchain, and digital media are being recognized today as newly emerged technologies that place unprecedented challenges before the law in enforcing and protecting copyright. These new developments brought with them new dilemmas and mainly centered around online piracy, AI-generated content, and even redefining what fair use means. This is working to reshape the traditional notions of copyright protection, demanding new legal frameworks that are better suited to cope with the realities of a global digital economy.

This paper analyses the shape-shifting nature of copyright law, traced in its development from the Statute of Anne to the Berne Convention and, most recently, the TRIPS Agreement. It tracks other significant legislative measures, especially the U.S. This is compared to the Digital Millennium Copyright Act (DMCA) where the successes and failures of current law in relationship to digital platforms and content creation are put. Here, the authors argue that only an adaptive legal framework can be set between innovation, public access, and the rights the creators earn economically so that copyright law evolves toward protecting intellectual property yet foster technological advancement. The paper lastly gives policy recommendations that will ensure copyright runs in tandem with technological changes to always ensure and strengthen the rights of the creators while promoting innovation for all players in a globalized digital economy.

Keywords: Artificial Intelligence, Copyright, Digital Age, Fair Use, Intellectual Property.

INTRODUCTION

Intellectual Property, or IP, encompasses inventions, literary and artistic works, designs,

1 Student, School of Law, Presidency University, Bengaluru.

2 Student, Manipal Law School, MAHE, Bengaluru.

symbols, names, images, and more-anything used for commerce[3]. It encompasses all the technical subject matter that one can put into categories as a broad kind of law. This law grants creator's exclusive rights to their inventions or works for a given time. The aim of IP law is to promote innovation, because for a certain period, legal protection is accorded to the creations to enable them to control the use made of those works in return for commercial benefits from such work[4].

General IP law ordinarily includes the Patents-Inventive details and new technical creations, Copyright Literary, artistic, and musical works etc. are protected. Trademarks are protected to safeguard a brand name, logo, and other such identifiers in commerce. Trade Secrets Confidential business information from being disclosed or misused. Industrial Designs The aesthetic designs of an object. Intellectual property is thus sometimes conceived as an attempt to meet the public interest in accessing innovations on the one hand with the rights of creators to benefit from their efforts on the other[5]. Copyright is a part of intellectual property law which grants the copyright owner, that is, the author of original works of whatever kind and nature, special rights to his creation: the right to reproduce it, distribute copies, and communicate the work to the public. It protects an extended series of works that include, literary works such as books, articles, poems; Musical compositions; Sound recordings; Artistic works such as paintings, photographs, sculptures; Films; Broadcasts; Software codes; Dramatic, musical, and choreographic works. The rights granted by copyright law include reproduction of the work; Distribution of copies; Execute the work in public; and create derivative works of the original work, such as adaptations or translations. The key elements of copyright protection are as follows:

Originality: The work was the product of the author's creative mind, not a reproduction or adaptation from someone else.

Fixation: The work was fixed in any tangible form of expression, such as writing or recording.

Duration: Generally, copyright protects a work for the life of the author plus an additional 50 to 70 years depending upon the country.

Copyright automatically exists whenever an original work is created, and registration is not required. However, it can be useful documentation for enforcement purposes in case the need ever arises.

IMPORTANCE OF INTELLECTUAL PROPERTY IN CREATIVE ECONOMY AND KNOWLEDGE INDUSTRIES

Intellectual Property (IP) is a critical component of the creative economy and knowledge-based industries because it provides a legal structure to protect and encourage innovation, creativity, and sharing of knowledge. Such sectors depend on intellectual capital rather than material assets, and IP rights transform such intangible creations into valuable assets that can be legally protected, traded, or licensed[6].

The key ways in which IP supports the creative economy and knowledge industries:

1. Economic Rewards for Creators

IP rights give the creators and innovators the exclusive rights to use and distribute their work so that they can derive any form of financial recompense from their creativity[7]. For example, through royalties and licensing, an artist, writer, or

3 Peter S Menell, *Economic Analysis of Copyright Notice: Tracing and Scope in the Digital Age*, 96 Boston University Law Review (2016).

4 S. Shukla, Patents: An Introduction, Indian Pharm. (2004)

5 *Id*

6 Jajpura, L., Singh, B. and Nayak, R., 2017. An introduction to intellectual property rights and their importance in Indian Context.

7 Emily Rennie, Blockchain, Copyright, and the Future of Content Distribution, 2 Intellectual Prop. Q. 33 (2023).

musician can monetize his work[8]. Analogously, an inventor can reap financial rewards from his patent in either direct commercialization or by licensing it to third parties.

Inventions are protected by intellectual property, and the creators can recover their investments in terms of time, resources, and effort. It attracts investments into research and development, forms a hallmark of industry segments, including pharmaceuticals, technology, and entertainment, among others.

Balancing Public Access and Innovation: Intellectual Property law serves to balance public access to knowledge with innovation by giving creators exclusive rights for a specified period. It allows for the continuous cycle of innovation as older works eventually go into the public domain, thereby permitting others to build on other people's ideas.

2. Supporting Economic Growth

Growth in IP-Intensive Industries: In fact, IP-intensive industries—high technology, media, pharmaceuticals, and software—contribute significantly to global GDP[9]. These industries thrive because IP protection ensures the ability to take new products, services, and creative content to market while preventing unauthorized copying or exploitation.

Job creation: Intellectual property-based industries contribute to employment through innovation and entrepreneurship. It includes a broad spectrum of professionals, from creative artists to designers, engineers, and scientists who are engaged in producing, developing, and marketing creative goods and services supported by intellectual property protection.

Global Trade and Competitiveness: Strong IP regimes attract more FDI[10] and boost cross-border trade. The protection of brands, patents or creative works gives companies more confidence to expand into international markets because their IP is better protected against infringement.

3. Enhancement of Cultural Diversity and Preservation

Creative Arts Support: Intellectual property rights promote artistic innovation as it opens up avenues for individuals to benefit financially through their work. This can particularly be highlighted in movie, music, and literary lines where non-stop creative operation relies on copyright, among other sources of intellectual property. An artist can have ownership of his or her creation while at the same time releasing new material through royalties and licensing.

Encouraging cultural exchange: Intellectual property law fosters the circulation of cultural products across national borders but treats creators' rights. For instance, the framework for international copyright law - Berne Convention[11] permits creators to obtain protection in many countries and, therefore, encourages cultural product exchange worldwide, including films, music, and literature.

Preserving Traditional Knowledge and Cultural Heritage: Intellectual property protection has also been expanded in many regions to cover traditional knowledge, indigenous practices, and folklore. This serves as a form of protection against cultural heritage misappropriation and exploitation so that communities may realize benefits on their own cultural assets.

8 Nair, M.D., 2011. GATT, TRIPS, WTO and CBD–Relevance to Agriculture, vol 16 (2011)

9 Tamboli, Firoj & Zade, Manasi & Salunkhe, Apurva & Kore, Monali & More, Amruta & Ghadge, Yash. (2023). Intellectual property rights (IPR): An overview. International Journal of Pharmaceutical Chemistry and Analysis. 10. 156-163. 10.18231/j.ijpca.2023.028.

10 Foreign Direct Investment (FDI), Invest India, https://www.investindia.gov.in/foreign-direct-investment (last visited Jun. 26, 2024).

11 Berne Convention for the Protection of Literary and Artistic Works, WIPO, https://www.wipo.int/treaties/en/ip/berne/summary_berne.html (last visited Jun. 26, 2024)

4. Improving Innovation in Knowledge Industries.

Technology and Software: Patents, trade secrets, and copyright in the technology and software sectors protect the otherwise wide domain of inventions driving the global knowledge economy. Patents encourage various breakthroughs in areas like artificial intelligence, biotechnology, and clean energy by making innovators eligible to claim a temporary right to a monopoly over their invention. Copyright protects the code of software development, so the developers can have control over the use and distribution of what has been created.

Educational resources and research are protected by copyright as it prevents unauthorized use of others' writings and promotes production of new materials, texts, papers, and teaching devices. In doing so, authors and publishers are secured in their rights over how it is disseminated and monetized.

The licensing of intellectual property rights significantly promotes collaborative innovation as it allows collaboration between creators, inventors, and firms. This collaborative use of intellectual property assets accelerates the development of new technologies and creative works, as seen in areas such as pharmaceutical, where patent pooling can help with research, and media, were content licensing fosters innovation on different platforms.

5.Facilitating Entrepreneurship and Market Development

Building Brands and Businesses Trademarks and other IP rights help businesses build strong brands that consumers recognize and trust. Trademark protection enables a company to create a well-defined product differentiation in the marketplace as well as to prevent counterfeits from spoiling their hard-earned reputation.

Small Businesses and Startups: Intellectual property protection is fundamental to small businesses and start-ups that create and operate in the knowledge and creative sectors. Patents and copyrights are critical assets that increase an organization's ability to obtain funding, enter markets, and balance threats from larger, more established players. To most start-ups, intellectual property comprises the primary asset and may be leveraged as a source for licensing agreements or even as collateral for investments.

Facilitating Global Expansion Intellectual Property Rights--especially through international frameworks such as the World Intellectual Property Organization (WIPO)[12]--furnish mechanisms that enable businesses to safeguard their intellectual assets across national boundaries. This capability allows for companies to expand their global market presence while simultaneously protecting their creative works, innovations, and brands.

Intellectual property is of significance to both the creative economy and knowledge industries because it gives the legal frameworks needed to protect creativity, encourage innovation, and ensure that creators and innovators can benefit from the fruits of their labor. As a tool which spurs innovation, spurs economic growth, fosters cultural diversity, and engages entrepreneurship, intellectual property rights is key in the progression and sustainability of key sectors in the global economy. As these industries continue to evolve in response to the impact of technology, the importance of intellectual property in protecting and promoting innovation will only be on the rise.

OVERVIEW OF CHALLENGES IN THE DIGITAL AGE

Copyright law, among others, is facing unprecedented challenges in the digital era. Online piracy is among such challenges that involve the unauthorized sharing of copyrighted products such as music, films, and software through torrents as well as other unauthorized streaming services, threatening creators' ability to monetize their work[13]. Because infringement in one country can easily cross borders and be accessed worldwide,

12 WIPO, https://www.wipo.int/about-wipo/en/, (last visited on 26 Jul. 2024).

13 David Bainbridge, Copyright in the Metaverse: An Emerging Paradigm, 17 J. Intellectual Prop. L. & Prac. 654 (10th ed 2022).

globalization has significantly complicated the enforcement of IP rights. AI also begs new questions concerning the copyrightability and ownership of the content that it generates for itself, most of which under current law would be considered as having human authors. As a middleman, the social media platform and content-sharing websites face the tension of reconciling their obligation to prevent copyright infringement with their position as a middleman[14]. These rely on outdated legal frameworks, such as the Digital Millennium Copyright Act (DMCA)[15], which critics say is insufficiently effective against infringement. In addition, modern fair use in the digital era, particularly regarding transformative works such as memes and remixes, is becoming more complex, with courts drawing increasingly broader limits of acceptable use. These problems make the modernization of intellectual property laws necessary for conformity with technological advancement and the requirement of adequate protection to creators within the digital economy.

HISTORICAL DEVELOPMENT OF COPYRIGHT LAW

This tradition of modern copyright law traces its roots to the Statute of Anne[16] in 1710, enacted in England. This statute is considered the first statutory law that granted exclusive rights to authors instead of publishers, making it a very landmark shift from earlier systems that were predominantly serving the interests of the printing industry, like in the case of the Licensing Act. The Statute of Anne granted exclusive rights over the reproduction of a work for a number of 14 years to its authors, but such rights could be renewed for a further period of 14 years. In effect, its purpose was to strike a balance between the need to protect authors' rights and the public's interest in acquiring knowledge, thus paving the way for modern copyright law.

It was during the 19th and 20th centuries that the construction of copyright laws evolved in reaction to technological innovations that revolutionized the production and dissemination of creative works. Though the invention of the printing press had already influenced early copyright laws, photography, the phonograph, radio, and finally, cinema posed new challenges to the limits set by copyright.

The most transformative force on copyright has come through digital technology, particularly the internet and digital media. Digital reproduction made reproducing and disseminating works without ado around the globe, thereby prompting more emphatic legal frameworks created to control piracy and the production of copies through unauthorized channels. The United States Digital Millennium Copyright Act of 1998 is among such examples of how copyright law responds to existing threats posed by the digital era.

Harper & Row Publishers, Inc. v. Nation Enterprises[17] is an important case that illustrates the contours of fair use and copyright protection in the U.S-immediately germane to each of several sections of your paper canvassing historical context, digital challenges, and future legal frameworks.

COPYRIGHT RELATED TO THE BERNE CONVENTION AND THE TRIPS AGREEMENT

Today, international harmonization of copyright law has come into center stage because of the expansion of global trade and communication[18]. The first important international treaty that deals with copyright was the Berne Convention for

14 Davina Gorham, Navigating Copyright in the Metaverse: Legal Implications for Creators and Users, New Media & Soc'y (2023).

15 Digital Millennium Copyright Act, 17 U.S.C. § 512 (1998),.

16 WILLIAM F. PATRY, COPYRIGHT LAW AND PRACTICE 43 (1994); see also Statute of Anne, 8 Anne, c. 19 (1710) (Eng.).

17 Harper & Row, Publishers, Inc. v. Nation Enters., 471 U.S. 539, 542 (1985).

18 Berne Convention for the Protection of Literary and Artistic Works, Sept. 9, 1886, as revised at Paris on July 24, 1971, and amended in 1979, 828 U.N.T.S. 221.

the Protection of Literary and Artistic Works[19], established in 1886. It established the principle of "automatic protection," meaning that copyright protection does not need registration, and at the same time standardizes protection within member countries. The Berne Convention made birth to the notion of moral rights which protects the personal relationship of an author with his creation, even though the rights for economic appropriation have been transferred.

International trade agreements during the latter half of the 20th century formalized copyright's role worldwide. This put copyright protection into the context of the new framework of global trade established by the WTO in its TRIPS Agreement adopted in 1994[20]. The TRIPS aims at making sure that the minimum standards of copyright protection[21] will be applied by the member countries-these standards have to be set in accordance with the Berne Convention, as well as mechanisms of enforcement and resolution of disputes. This development made copyright protection not only a cultural concern but also a critical part of international economic relations, whereby rules of international trade are meant to benefit the creators and the industries engaged in IP-intensive industries.

From the first form of law produced by the Statute of Anne, where the rights of the creators were weighed against the necessities of public access to copyrights, to the latest international treaties such as Berne and TRIPS, technological revolutions have energized copyright law with a dynamic legal regime that only continues to evolve each day to adjust to new realities born out of new technology and its increased role in the world's economy.

DIGITAL TRANSFORMATION AND ITS IMPACT IN COPYRIGHT LAW

The emergence of digital media and internet technologies has significantly changed the ways in which people create, disseminate, and consume information. Digital media encompasses such a vast variety, including texts, sounds, images, and videos, all of which can be easily produced, transformed, and disseminated over digital channels. The internet is more of a global distribution network whereby the user can easily access any content from every corner of the world. This technological transformation democratized content production wherein individuals and smaller entities could produce and release their works without the framework of traditional publishing or broadcasting infrastructures. This has led to a very diverse creative landscape, with new opportunities for creators but also creates a complex legal universe when it comes to copyright protection.

The Internet has fundamentally changed paradigms concerning the dissemination and sharing of content. Content was previously disseminated through physical media, such as books, CDs, and DVDs, which take great efforts to produce and distribute. With the emergence of digital platforms, which instantly provide access to content, consumer behaviour and their expectations of the media are changing in unprecedented ways.

1. Ease of Distribution: YouTube, Spotify, and social media open avenues for creators to now directly communicate their works with audiences instead of going through these gatekeepers. These platforms put more power and control in the palms of the creators but throw wrenches into copyright enforcement.
2. User-Generated Content: The internet has promoted a culture of user-generated content where individuals remix, adapt,

19 *Ibid*

20 Marrakesh Agreement Establishing the World Trade Organization, Apr. 15, 1994, 1867 U.N.T.S. 3, Annex 1C, 33 I.L.M. 81 (1994).

21 Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994.

and distribute the works of others. While this encourages creativity and cooperative effort, in most cases, it often blends lines between copyright infringement and, therefore, authorship and ownership rights.

3. Global Accessibility: The internet has transcended geographical limitations by allowing content to be shared and accessed across the globe. It has led to increased consumption of foreign works, a scenario which has enriched cultural exchanges but also challenged copyright enforcement across jurisdictions.

GREATEST CHALLENGES FOR COPYRIGHT ENFORCEMENT

Digitalization has introduced several greatest challenges for copyright enforcement, doing away with the power of creators and rights holders to protect their works:

- Online Piracy: The existence of online piracy disperses copyrighted works beyond the extent permitted by legitimate dissemination. There are various websites that harbor pirated films, music, and software, which makes the content accessible to consumers quickly. This ultimately results in a huge loss to the creators and industries that depend on such protection of copyrights[22].
- Torrents and File Sharing: P2P file-sharing technologies like BitTorrent allow users to anonymously and quickly share large files. These technologies have useful applications, but the flexibility has allowed it to be used for illegal copyrighted material distribution. Such users are difficult to enforce against because of their nature anonymous[23].
- Digital Content Streaming: Access to content has already been drastically transformed with streaming services. Although legitimate streaming providers typically receive licenses for the contents they are streaming, the ease with which content can be streamed or recorded and shared raises issues of piracy rights. In addition, instances where streaming services hold infringing content without appropriate monitoring also hamper efforts at enforcement.
- Fragmented Legal Frameworks. Globality of the internet poses challenges for enforcing copyrights because copyright laws vary significantly between jurisdictions. While international agreements such as the Berne Convention and the TRIPS Agreement help outline some level of cooperation, enforcement of cross border copyrights has been very weak, raising issues in form of jurisdictional conflicts and inconsistent implementation of copyright protection.
- It thus offers an opportunity but also challenges copyright law in ways that the new digital age has opened content creation, distribution, and consumption. The online environment has complicated the enforcement of copyright protections in an environment marked by rampant piracy and evolving distribution models, yet internet-enabled creators have empowered others to obtain access to diverse works. With technology continually advancing, law surrounding copyrights must begin to grapple with the challenges, giving rights of authors a new tone to fit the new digital reality of today.

ARTIFICIAL INTELLIGENCE AND COPYRIGHT

A joint ownership model might work very well for human creators who might collaborate

22 Rochelle C. Dreyfuss & Justine P. Dunlap, *The Law and Economics of Intellectual Property in the Digital Age* (Edward Elgar Publishing 2018).

23 James B. Jackson, *Intellectual Property and the Internet: A Guide to the Law* (Oxford University Press 2019).

with an AI system[24]. Here, the owner might be shared between the human and the developer or operator of the AI system. The situation may work best when the human provides major creative input or direction, and the AI executes the work[25]. The foundation of joint ownership in law is rooted in pre-existing copyright law where rights may be divided among co-authors when there are several parties that attribute to a work.

Joint ownership brings complications. There would need to be clear legal standards for determining the share of human contribution and AI contribution, for attributing rights, and for dividing financial rewards. For example, if an artist uses an AI platform in the creation of art, how much human input should that be entitled to joint ownership?[26] Courts would have to explain this ambiguity by developing legal tests or guidelines that assess the degree of human control over creations assisted by AI[27].

Another is the "work for hire" doctrine[28], which is applied quite commonly in employment relationships. Under this doctrine, copyright belongs to the employer or the party that commissioned rather than to the person who created it. Applying that approach to AI, it would mean that in most cases, the person or entity who commissioned the AI-generated work would be the owner of copyright to it, whether a firm, individual, or a platform, since they are the ones paying for it and "owning" it, even though the actual creative work was performed by AI.

This solution delivers the case where AI works with little human intervention. If, for instance, a company hires an AI developer to come up with specific algorithms for music production, the company would have a case for ownership under the "work for hire" principles. It might, however, not apply universally, for in copyright law, the classification of AI systems also depends on the terms of usage agreed between developers and users of AI.

A more classical perspective views AI more as an assistant to human creativity or an extension of it, such as using a paintbrush or a camera. In this perspective, the human operator would be the "author," as it's initiated by them perhaps initializing the creative process, guiding AI parameters, or curating data. The results of AI are merely the amplification of the creative control and ownership of the human creator.

While this model does extremely well in cases where human input is involved, it raises problematic issues whenever the AI is performing a role by itself. Whenever the AI is generating content with minimal human involvement and less or no human intervention, the theory doesn't come anywhere near to broaching the complexity of the issue concerning authorship and brings about a need for new legal definitions and standards. The most radical and controversial legal theory would be to treat the author as AI itself. Copyright law would need extreme modification in that regard, because it grants authorship only to natural persons or legal entities. If AI were considered an author, again, there would be a need for a comprehensive legal framework delineating how AI may potentially have ownership and exercise rights for the benefit of whom. This theory can be traced to make AI systems liable for some form of "ownership" or rights be ascribed to the creators or operators of the AI. However, many jurisdictions are unwilling to acknowledge a non-human entity as the author because this goes against the established legal concepts of creativity and originality standing on human intellect.

24 Nat'l L. Rev, Recent Developments in Copyright Law: AI, Blockchain, and Beyond (2023).

25 U.S. Copyright Office, Copyright and Artificial Intelligence https://www.copyright.gov/ai/ (last visited Dec. 17, 2024).

26 Harper & Row Publishers, Inc. v. Nation Enters., 471 U.S. 539 (1985).

27 U.S. Copyright Office, Copyright and Artificial Intelligence: A Report of the U.S. Copyright Office (2023).

28 Patricia Aufderheide & Peter Jaszi, *Reclaiming Fair Use: How to Put Balance Back in Copyright* 104 (University of Chicago Press 2011).

DEVELOPMENTS IN AI COPYRIGHT LAW ACROSS JURISDICTIONS

Several countries are beginning to grapple with problems related to AI-produced content, though there is no international agreement:

United States: In 2020, the U.S. Copyright Office decided that a work created by AI solely, without any human intervention, is not eligible for copyright protection[29]. However, it recognized that more development must be made in the law to take into account these aspects, particularly where AI becomes self-governing in the creative process[30].

European Union: The EU has been considering possible regulatory frameworks through the European Copyright Directive[31] and AI-specific legislative proposals. The White Paper on Artificial Intelligence by the European Commission underlines the need for specific guidance on works generated using AI, to which authorship and liability can be attributed.

United Kingdom: Under UK law, it is possible to copyright "computer-generated works" when there is no human author, and a copyright subsists in the person who "makes the necessary arrangements" for the preparation of the work. It is one of the very few jurisdictions that do give at least some degree of copyright for works with minimal human intervention, but it still does not tackle AI autonomy[32].

Japan and China: Japan examines copyright laws to take an even clearer position on AI. China is working hard to push forward new policy regarding AI, though much more of its content is centered around ethical rather than copyright reform.

CHALLENGES AND CALL FOR A NEW FRAMEWORK

This poses the need for regulatory frameworks that are more encompassing than copyright, and urgent in dealing with the complexity of AI-generated works. These regulatory frameworks must define clearly regarding the role of human involvement: define when a work should be ascribed to a human author and when not, but when AI should be an independent creator or tool. Clearly demarcate ownership rights in autonomous AI systems: Determine who owns the rights when an AI is acting independently, especially when the AI system is created by one party but used by another. International consistency across jurisdictions: AI is a global tool; there is increasing cross-border development and creation of content. International harmonization of copyright laws on AI-generated works would avoid inter-jurisdictional conflicts and streamline border enforcement[33].

The more that AI technologies alter the content creation process, the more that copyright law must change to address fundamental questions of authorship and ownership[34]. The best approach may involve joint ownership models, the "work for hire" doctrine, or even entirely new legal frameworks: there is an acute need for laws that reflect the actualities of AI-generated content. Striking the balance of doing this, policymakers must protect the rights of creators, foster innovation, and ensure AI-generated works falls in established structures of copyright law or benefit from new legal standards designed to accommodate the technological revolution.

Copyright enforcers are not much of a worry in the digital realm because video sharing sites such as YouTube, Facebook, and Instagram all utilize automated content management systems like Content ID by YouTube and Rights Manager

29 Annemarie Bridy, Copyright Enforcement in the Digital Age, 28 Berkeley Tech. L.J. 367 (2013).

30 Digital Millennium Copyright Act of 1998, 17 U.S.C. § 512 (2018).

31 Directive 2019/790, on Copyright in the Digital Single Market, 2019 O.J. (L 130) 92 (EU).

32 Jennifer E. Rothman, The Hovering Landscape of Digital Copyright Law, 54 B.C. L. Rev. 1085 (2013).

33 Michael A. Carrier, Digital Copyright and the Safe Harbor Provisions, 66 Rutgers U. L. Rev. 339 (2014).

34 Jack Balkin, The Promises of Digital Copyright Reform, 66 Stan. L. Rev. 253 (2014).

by Facebook that can identify and manage copyrighted materials.

Under the DMCA, safe harbour provisions protect these service providers from liability regarding the contributory infringement activities of their users as long as they respond to takedown notices within a reasonable period of time. This notice-and-takedown system puts teeth in the hand of copyright owners but creates an avenue by which users can challenge wrongful takedowns via counter-notifications.

Furthermore, streaming services such as Spotify and Apple Music have changed music[35] forever since it is possible to access a million songs at the click of a button, allowing one to listen to it to their hearts' content and play any song at any time[36]. These new sources of revenue most certainly make life easier for musicians, but at the same time, for example, they criticize the underpaying of artists due to low payouts per stream, so many diversify in merchandise and live performance[37]. In addition, these streaming services provide data analytics that assist in changing marketing tactics so artists can reach a global constituency, thus encouraging intercultural exchange and cooperation[38]. The album, as we know it, is evolving too; more and more artists are releasing singles or EP[39]s to help artists continue to engage with listeners in different ways. These changes have generally created a more dynamic and connected music environment[40].

EMERGING TECHNOLOGIES AND COPYRIGHT LAW

The rapid advancement of emerging technologies has had a multifaceted impact on copyright law by both creating opportunities and challenges in the protection of creative works[41]. New technologies often come with new content formats and ways of distribution, thus complicating the given legal framework. Some of the most important areas where emerging technologies meet copyright law include:

1. Artificial Intelligence (AI) and Machine Learning

AI and machine learning have taken the whole process of creating content in a completely different direction, raising the questions of authorship of the created works[42] and who holds rights[43]. AI may quite well be able to create music, art, and literature on its own, but debates arise on whether such work deserves copyright and, if so, by whom: the creator of the AI, the user, or even the AI itself?[44] The more AI is used, the greater is the need for the legal framework that deals with how the copyright would handle some unique challenges machine-generated works would introduce in the world[45].

2. Blockchain Technology

Application of the blockchain technology[46] can, therefore, disrupt the management of copyrights and in turn help maintain transparent systems of keeping track of ownership and usage rights over creative works. Smart contracts on blockchain can thus help automate licensing

35 Peter K. Yu, The Challenges of Streaming Music, 45 Fordham Intl L.J. 83 (2022).

36 Daniel J. Gervais, The Digital Performance Right in Sound Recordings, 35 Colum. J.L. & Arts 273 (2012).

37 Kristelia Garcia, Licensing Digital Music, 27 Harv. J.L. & Tech. 443 (2014).

38 Michael Carrier, Music Streaming and Copyright Law, 67 Duke L.J. 1379 (2018).

39 EP extended play (EP) is a musical recording that contains more tracks than a single but fewer than an album or LP record.

40 Amanda Levendowski, How Copyright Law Can Fix the Spotify Problem, 92 N.Y.U. L. Rev. 1550 (2017).

41 Jane C. Ginsburg, Copyright and Artificial Intelligence, 44 Colum. J.L. & Arts 247 (2021).

42 Pamela Samuelson, Artificial Intelligence and Copyright, 106 Minn. L. Rev. 987 (2022).

43 Ryan Abbott, The Reasonable Robot: Artificial Intelligence and the Law, 86 U. Chi. L. Rev. 1239 (2019).

44 Oren Bracha, Artificial Intelligence's Legal and Ethical Challenges, 72 Stan. L. Rev. 1305 (2020).

45 Mark Lemley & Bryan Casey, Remedies for Intelligent Agents, 100 Cornell L. Rev. 153 (2015).

46 Ying Zhao, Blockchain Technology: Implications for Copyright Law, 35 Harv. J.L. & Tech. 1 (2022).

agreements, where creators will receive a fair share for their works by paying royalties automatically. However, when one talks about the adoption of blockchain in copyright law, it questions whether existing copyright regimes will still be effective or if new regulations are needed to accommodate this technology[47].

3. Virtual Reality (VR) and Augmented Reality (AR)

The creation of VR and AR technologies represents new, immersive forms of content that call into question traditional copyright concepts. The development of virtual settings and interactive experiences plus digital assets raises copyright ownership and the use of existing copyrighted materials in the new contexts[48]. Thus, the development of VR and AR requires appropriate adaptation of copyright law to protect its special features and the new types of creative expressions it brings about[49].

4. Streaming and Digital Distribution

As emerging technologies profoundly transform content distribution and, in the process, make streaming services the new norm, this has led to an increase in music, films, and other creative works becoming accessible. It also makes copyright enforcement complicated. Issues relating to fair compensation to the creators have mushroomed[50]. Then there are problems of how copyright law will adapt to the digital distribution models to secure the rights of creators in this era of constant content sharing and remixing.

5. Content Sharing Platforms and User-Generated Content

Platforms like YouTube, TikTok, and social media stages substantially shifted user behavior in the production and dissemination of content, often at the edge of copyright infringement. The ease of remixing and repurposing work complicates matters for proper application of the traditional tenets of copyright. Balancing the interests of original creators with those of users who make transformative use of copyrighted material presents serious challenges to copyright law, often requiring new legal interpretations and frameworks.

6. Deepfakes and Synthetic Media

Important copyright and ethical issues thus arise because this deepfake technology involves the use of artificial intelligence to create quite convincing but completely fabricated audio or visual content, often in the absence of consent from the people whose likeness or voice is being used. As such, it creates specific hurdles for copyright law in trying to balance intervention in such issues as misinformation and consent on individual rights of people.

Changes are coming in the face of copyright law with emerging technologies. Along one axis, new opportunities in creativity emerged, while at another, unprecedented challenges to protection arose. Accompanying the rise of AI, blockchain, VR, and streaming technologies, these issues have forced copyright law to bend further so as to protect the creators and give them fair compensation. This demands a collaborative approach from legal experts, technologists, and policymakers that might point towards developing newer frameworks such that they account for the specifics related to the complexities of copyright in the digital world, thereby gradually creating an environment that encourages innovation with respect to the rights of original creators.

POLICY AND FUTURE DIRECTIONS IN COPYRIGHT LAW

The changing nature of the digital environment are of utmost importance and needs to be taken into account by copyright law as it meets the emerging challenges and opportunities created

47 Dan Svantesson, Blockchain and Intellectual Property Rights, 38 Cardozo Arts & Ent. L.J. 215 (2020).

48 Aaron Wright & Primavera De Filippi, Decentralized Blockchain Technology and the Rise of Lex Cryptographia, 10 Harv. Bus. L. Rev. 359 (2020).

49 Peter Yu, Intellectual Property and Blockchain, 64 Wm. & Mary L. Rev. 1040 (2023).

50 Michael Carrier, Blockchain and Intellectual Property, 82 Brook. L. Rev. 1125 (2017).

by new technologies[51]. Policymakers, legal professionals, and other key stakeholders involved in the creative industries are getting increasingly intent on finding solutions that align innovation with rights protection[52]. Here are the main focuses of legislative responses, proposals for reform, and future trends in copyright law:

1. Legislative Responses to Digital Copyright Challenges

DMCA: This chapter instituted a regime of addressing online copyright infringement in the US under the DMCA. The process set by the DMCA is termed as the notice-and-takedown regime, whereby people are supposed to takedown content if they receive a valid DMCA notice. It has been suggested that in the United States, the law has weaponized to muzzle speech and stifle creative freedom all under the ensnared robe of fighting piracy and enforcing copyrights.

Reform introduction through the EU Copyright Directive[53] The European Union has taken measures of reforms in adjusting its copyright law with the digital economy. It provides provisions to enhance the obligations of the platform against copyright infringement and the new set of rights for creators, which can be a right to fair remuneration. This directive makes it clear that various platforms are supposed to enter into discussions for licensing agreements with the rights holders with an effort to bring up the reward for artists.

International Treaties: International frameworks such as the Berne Convention and the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) have been and continue to be re-evaluated to understand the effect that these new digital technologies may have on enforcement and protection of copyright.

2. Proposals for Reform: Balancing Innovation with Rights Protection

This call is for flexible licensing models and proposals to adapt new content creation forms, including user-generated content and AI-generated works, into new flexible licensing frameworks. Such may offer the ability to better negotiate licenses, adequate compensation for creators, and innovation[54].

Transformative use is also central in many digital remixes, memes, and generally all user-generated content cases. In US copyright law, fair use is balanced on four factors, but in most of such creative reinterpretations, transformative use becomes the most significant factor for determining fair use[55]. The degree of the work's transformation—that is, whether it has some component of new meaning or commenting—generally serves as the determining factor for fair use.

Perhaps the most well-known case involving transformative use is Campbell v. Acuff-Rose Music, Inc. (1994)[56], in which the U.S. Supreme Court held that parody is a fair use. In this regard, 2 Live Crew, which is a rap group, made a parody of the song "Oh, Pretty Woman" by Roy Orbison[57]. When it sued for copyright infringement, the appellate court ruled in favour of the rap group because it held that the rap group was transformative in that it provided social commentary and gave the original song a new meaning.

Campbell established an important precedent for the transformative use doctrine when he interpreted that if the work represents transformation, parody, or criticism, even commercial uses-even the recording of what would eventually become known as "Oh Pretty Woman,"

51 Campbell v. Acuff-Rose Music, Inc., 510 U.S. 569 (1994).

52 Cariou v. Prince, 714 F.3d 694 (2d Cir. 2013).

53 Directive (EU) 2019/790, OJ L 130, 17.5.2019, p. 92–125.

54 Global Intellectual Property Trends Report (2023).

55 Matthew Rimmer & Alison McLennan, Intellectual Property and Emerging Technologies: The New Biology (Hart Publishing 2014), p. 15.

56 Campbell v. Acuff-Rose Music, Inc., 510 U.S. 569 (1994).

57 "Oh, Pretty Woman", or simply "Pretty Woman", is a song recorded by Roy Orbison and written by Orbison and Bill Dees

marketed to make a profit by 2 Live Crew-had a shot at fair use.

Data Transparency and Artist Compensation: The need for absolute transparency about the methods of computing royalties by streamers and then distributing the generated revenues is key. Proposals must embrace making the various platforms disclose their revenue-sharing models and compensation for fair practices to the artist.

3. Digital Remixes and Memes

The most common types of transformative works in this digital generation include remixes and memes. Remixes are copyrighted works, such as music and video, or images, which are altered in a way that creates new forms of creative expression. Memes use copyrighted images but could potentially be considered transformative by the addition of captions or jokes in an effort to make social commentary.

For example, a reworking of elements from a song, taken and reprocessed with new beats or layers or with entirely different contexts, could be considered transformative. So too could a meme lend additional meaning or humor to an image and thus change the context or message of the work.

Cariou v. Prince (2013)[58]: Here the using of Patrick Cariou photographs by Richard Prince in creating art court recognized it to be transformational, as those images had altered so extensively that they became new art expressions. This was held to be fair use by the court.

4. Future Trends in Copyright Law: AI, Metaverse, and Beyond

With the dawn of content created by AI, new legal frameworks will be needed to establish authorship and ownership. Policy makers will have to draw lines on whether AI can be recognized as an author and how rights are allocated among the creators, users, and developers of AI.

Regulating the Metaverse: Since the popularity of the metaverse is increasing, copyright law needs to evolve to deal with novel issues in virtual reality. For example, questions abound about who owns digital assets, whether copyright should cover materials in virtual spaces, and issues of individual rights regarding immersive experiences.

The crossing of borders: International copyright enforcement by its very nature, the distribution of digital content will require improved international cooperation in enforcing copyrights. In the coming years, copyright law around the globe will be harmonized to facilitate cross-border protection and enforcement of rights in an increasingly interdependent world.

Education and awareness on contemporary issues of the digital technology front would form the emphasis among creators and consumers in the future. Understanding copyright laws and the implications of these emerging technologies would thus be made available to the stakeholders to help them navigate complexities within the digital landscape.

Copyright law intersects with emerging technologies in certain challenging yet opportunistic ways. Where policymakers need to embark on legislative reforms to attend to the digital challenges affecting copyright, attention to balancing innovation with rights protection will be critical. Flexibility in licensing models, strengthening fair use, and improvement in artist compensation transparency are important steps towards equalizing the ground for creators. Copyright law must adapt to these new trends relating to AI, the metaverse, and cross-border enforcement with a view toward protecting creators' rights while unleashing innovative creative processes in the digital world.

CONCLUSION AND SUGGESTIONS

The evolving digital landscape of copyright law presents tremendous opportunities for creators, consumers, and policymakers, while also posing significant challenges to the existing legal framework. This study highlights core areas where emerging technologies and societal changes intersect with copyright, emphasizing the need to

58 Cariou v. Prince, 714 F.3d 694 (2d Cir. 2013).

move beyond the reconceptualization of existing frameworks. Platforms like Spotify and Apple Music have transformed the consumption and distribution of music, provided easy access but raised concerns about artist compensation and the sustainability of revenue models. As streaming replaces traditional album sales, artists must adapt their strategies to thrive in this environment.

Emerging technologies such as artificial intelligence, blockchain, and virtual reality introduce unique challenges for copyright law. AI-generated content raises questions about authorship and ownership, while blockchain offers potential solutions for transparent rights management. Immersive technologies like virtual reality and augmented reality add new dimensions to copyright enforcement, requiring a more nuanced understanding of how users interact with virtual spaces. Legislative responses, such as the U.S. DMCA and the EU Copyright Directive, reflect efforts to adapt copyright laws to the digital world. However, these frameworks often fall short in addressing issues related to user-generated content, fair use, and the dynamic nature of creative works.

Reform proposals call for more flexible licensing models, enhanced provisions for fair use, and greater transparency in revenue-sharing mechanisms. These reforms aim to strike a balance between protecting creators' rights and fostering innovation and creativity. In the future, copyright law will need to address the challenges posed by artificial intelligence, the metaverse, and cross-border enforcement. As the global digital economy expands, international cooperation will become essential to harmonize copyright laws and ensure effective rights protection.

Copyright law must evolve to address the implications of emerging technologies and shifting consumer behaviours. Going forward, collaboration among creators, technology developers, legal experts, and policymakers will be essential to develop new solutions that protect creators' rights while embracing new forms of artistic expression. Such collaboration will pave the way for a dynamic and adaptive copyright framework, allowing creative industries to flourish in the digital age and enrich the cultural landscape for future generations.

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