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THE GLOBAL BATTLE AGAINST DIGITAL PIRACY: LEGAL FRAMEWORKS AND ENFORCEMENT MECHANISMS

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ABSTRACT

Digital piracy presents a formidable challenge to enforcing intellectual property (IP) rights, undermining copyright protections, and causing significant economic harm to entertainment, software, publishing, and gaming industries. The proliferation of digital technologies has facilitated the unauthorized reproduction and distribution of copyrighted content, rendering traditional enforcement mechanisms increasingly ineffective. This paper critically examines the global legal frameworks designed to combat digit piracy, with a particular focus on the Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement, the World Intellectual Property Organization (WIPO) Copyright Treaty, and domestic legislative instruments such as the Digital Millennium Copyright Act (DMCA). Additionally, the study evaluates the enforcement mechanisms, including website blocking, digital rights management (DRM), and cross-border cooperation among law enforcement agencies. Despite these regulatory efforts, enforcement remains fraught with challenges, including jurisdictional complexities, anonymity in cyberspace, and the need to balance protecting IP rights with the principles of fair use and public access to information. This paper further explores the potential of emerging technological solutions, such as blockchain and artificial intelligence, in strengthening IP enforcement in the digital sphere. By critically analyzing the efficacy and limitations of existing legal and enforcement frameworks, this research contributes to the discourse on the evolution of international IP law. It proposes recommendations for a more robust and adaptive approach to digital piracy regulation.

KEYWORDS

Digital Piracy, Intellectual Property Rights, Copyright Infringement, TRIPS Agreement, WIPO Copyright Treaty, Digital Millennium Copyright Act (DMCA), Digital Rights Management

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(DRM).

INTRODUCTION

Properties are of two types: tangible or intangible, i.e., touchable or non-touchable. Land, house, jewelry, cash, etc., are some examples of tangible property that can be seen and touched. But there is a kind of property that cannot be touched. Intellectual Property Rights is one of them. It is more precious than the tangible ones. Intellectual Property is the creation of the human mind and intellect, called "intellectual property." Although a hidden property, intellectual property is an important means of accumulating tangible wealth. Intellectual Properties and intangible assets jointly form the most important driving forces of the world economy. That is why multinational companies and international corporations have invested enormous amounts to enrich their intellectual property. Intellectual property laws confer exclusive rights on the owners of intellectual property. These rights are not absolute but subject to such conditions which have been laid in law.

Illegal replicas of intellectual property, including books, music, CDs, films, computer software, and other materials, are becoming a significant issue for the government and industry professionals. An estimated 35% of software is stolen, costing businesses over $31 billion, according to the 2005 Global Software Piracy Report, which the Business Software Alliance commissioned[1]. Software piracy rates in China and Vietnam can reach 90% and 92%, respectively. An estimated 21% of people in the US are pirates. The survey concludes that software piracy is one of the industry's most significant issues.

Over the past decade, sellers of digital products have actively battled against the availability of pirated copies of their products. However, digital piracy rates remain high and are increasing in many markets despite a continuous rise in the availability and sophistication of copy protection and digital rights management technologies[2]. Digital India, one of the flagship initiatives of the Government of India, has successfully woven the entire nation into the fabric of the internet.

[1] Business Software Alliance. (2005). Global software piracy report. Business Software Alliance. Retrieved from www.bsa.org

[2] Gopal, R. D., & Sanders, G. L. (1998). Preventive and deterrent controls for software piracy. Journal of Management Information Systems, 13(4), 29-47. https://doi.org/10.1080/07421222.1997.11518178

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1.2 REVIEW OF LITERATURE

BOOKS:

Digital Piracy: The Battle Against Intellectual Property Theft

Authored by: Trevor M. Letcher

The book explores digital piracy, its global economic impact, and legal frameworks addressing copyright infringement. It discusses enforcement challenges and evolving anti-piracy strategies.

Intellectual Property and Digital Content: Copyright and Regulation

Authored by: Steven Ang

The book examines how intellectual property laws apply to digital content, including music, films, and software. It also analyzes international copyright treaties and legal measures used to combat piracy.

Cybercrime and Digital Forensics: An Introduction

Authored by: Thomas J. Holt, Adam M. Bossler, & Kathryn Seigfried-Spellar

The book provides an overview of cybercrimes, including digital piracy. It discusses forensic methods for tracking piracy cases and the legal implications of online intellectual property theft.

Law and Regulation of Digital Piracy: A Comparative Analysis

Authored by: Dr. Robert Hanus

The book compares anti-piracy laws across different jurisdictions, including the U.S., EU, and India. It evaluates enforcement mechanisms and policy reforms needed to tackle digital piracy effectively.

Intellectual Property Law and the Internet: A Global Guide to Legal Protection

Authored by: Edward J. Naughton

The book delves into how intellectual property rights apply in the digital world, covering copyright laws, fair use, and enforcement actions against online piracy.

STATUTES:

1. The Copyright Act, 1957
2. The Information Technology Act, 2000
3. The Digital Millennium Copyright Act (DMCA), 1998

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4. The WIPO Copyright Treaty (WCT), 1966
5. The TRIPS Agreement, 1994
6. The EU Digital Services Act, 2022
7. The Anti-Counterfeiting Trade Agreement (ACTA), 2011
8. The Indian Penal Code, 1860 (Relevant Sections)
9. The Digital Personal Data Protection Act, 2023
10. The Cinematographer Act, 1952 (Amendments)

ARTICLES:

1. **Piracy and Copyright Enforcement Mechanisms**

   Author: Brett Danaher, Michael D. Smith, and Rahul Telang

   Published in: Innovation Policy and the Economy, Volume 14

   Summary: The article examines the impact of piracy on media industries and evaluates the effectiveness of various enforcement mechanisms.

   Source: National Bureau of Economic Research

2. **Counter –Piracy Law Enforcement and Human Rights**

   Author: Douglas Guilfoyle

   Published in: International and Comparative Law Quarterly, Volume 59, Issue 1

   Summary: The article explores the intersection of counter-piracy operations and human rights obligations, analyzing legal challenges in maritime law enforcement.

   Source: Cambridge University Press

3. **Human Rights and Law Enforcement at Sea: Arrest, Detention and Transfer of Piracy Suspects**

   Author: Anna Petrig

   Published in: Brill Nijhoff

   Summary: The book addresses the human rights implications of maritime law enforcement, focusing on the treatment of piracy suspects.

   Source: OAPEN Library

1.3 RESEARCH PROBLEM

Digital piracy remains a Significant global challenge, undermining economic growth, intellectual property rights, and cybersecurity. Despite the existence of various legal

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frameworks, enforcement mechanisms remain inconsistent due to jurisdictional limitations, technological advancements, and evolving piracy methods. The rise of decentralized networks, VPNs, and peer-to-peer sharing makes tracking and prosecuting offenders increasingly difficult. Additionally, the ethical perception of piracy, high content costs, and lack of awareness among consumers contribute to its persistence. This research aims to analyze the effectiveness of international legal frameworks and enforcement strategies in combating digital piracy while identifying gaps and proposing solutions for a more robust global anti-piracy regime.

1.4 RESEARCH OBJECTIVES

1. To analyze the legal challenges in combating digital piracy, including jurisdictional conflicts, enforcement gaps, and inconsistencies in copyright laws.
2. To assess the effectiveness of both international and national legal frameworks in addressing digital piracy and protecting intellectual property rights.
3. To identify technical challenges enforcement mechanisms face, such as using VPNs, peer-to-peer networks, and encrypted piracy platforms.
4. To evaluate the role of emerging technologies, including artificial intelligence and digital rights management (DRM), in countering digital piracy.
5. To explore the limitations of current enforcement strategies, such as takedown notices, website blocking, and legal actions against piracy websites.
6. To propose legal and technical solutions to strengthen anti-piracy mechanisms and improve global enforcement strategies.

1.5 RESEARCH QUESTIONS

1. What are the legal frameworks regulating digital piracy and IPR infringement?
2. What are the emerging legal trends regulating digital piracy and IPR infringement?
3. How can the legal framework be strengthened to better protect against digital piracy and IPR infringement?

1.6 HYPOTHESIS

While the current legal and technical framework provides a foundation to combat digital piracy, cybercrime, and intellectual property rights (IPR) violations, they are insufficient to address the increasing complexity of these issues. The rapid advancement of digital technology and the growing sophistication of piracy methods have rendered many existing mechanisms obsolete.

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Therefore, it is essential to strengthen and expand the current legal provisions, enhance cross-border cooperation, and incorporate innovative technical enforcement techniques. This strategy will help create a more robust and flexible framework to address digital piracy on an international scale.

1.7 METHODOLOGY

The methodology used in this research paper is the Doctrinal Research Method. The research is based on secondary sources of information, including articles, journals, textbooks, case studies, and reports.

2. UNDERSTANDING DIGITAL PIRACY:

2.1DIGITAL PIRACY

Digital piracy is the unauthorized act of copying, duplicating, or disturbing a digital work without the copyright owner's consent, which is against copyright laws. The origin of digital piracy lies in computer hacking. Computer hobbyists started duplicating and disturbing physical copies of software and games in the 1970s. These fanatics, who came to be known as hackers, adopted the belief that computer information must be available and shared with everyone.

As technology evolved, computer networks were created, enabling files to be shared and accessed more conveniently between users. File sharing was initially reserved for advanced computer users since it needed technological expertise and specialized hardware. This activity has become widespread among the general population with the emergence of peer-to-peer (P2P) networks over the Internet.

As Fisk points out, technology has made digital piracy possible by allowing “personal computers with highly customizable and standardized architectures, increasing network access and bandwidth, a copying history, cultural links to the wild frontier of the internet, cheaper digital storage, and more portable media formats[3].” technology has been an important part in the promotion of this practice, but there is also a social factor based on the beginnings of computer hacking: most people think that piracy is a suitable means of obtaining digital media.

[3] Fisk, N. (2009). Understanding online piracy: The truth about illegal file sharing. Praeger Publishers.

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Definitions

Digital piracy refers to the illegal copying or distribution of copyrighted material via the Internet. It negatively affects the creative industries, including film, TV, publishing, music, and gaming[4].

- **Interpol**

Digital piracy is the practice of illegally copying and selling digital music, video, computer software, etc.[5]. **– Cambridge University**

2.2 IMPACTS OF DIGITAL PIRACY ON SOCIETY

1. **Cybersecurity Threats**

   Digital piracy is an increasing cybersecurity risk, reaching beyond economic loss to put users at risk of malware, data theft, and cyber fraud. Piracy sites that distribute illegal files typically spread ransomware, spyware, and phishing schemes, undermining personal and business security[6]. Numerous piracy sites also support themselves with fraudulent advertising and data sales, posing higher risks of identity theft and financial fraud.

   Pirated software is another significant threat since it usually does not receive security patches and updates, exposing systems to cyber threats[7].

   When organizations or government agencies unwittingly employ unlicensed software, they provide security vulnerability that cyber attackers and malicious parties can target. Moreover, digital piracy supports a larger cybercrime economy[8]. Most illegal streaming sites are supported by organized cybercriminals who commit advertising fraud and sell user information to third parties. This network not only endangers individuals but also undermines global cybersecurity infrastructure.

2. **Economic Consequences**

   Digital piracy has profound economic impacts, resulting in billions of dollars in losses in different industries. The software industry alone loses billions of dollars yearly

[4] Interpol. (n.d.). Intellectual property crime: Digital piracy. Retrieved from https://www.interpol.int/en/Crimes/Intellectual-property-crime/Digital-piracy
[5] Cambridge University Press. (n.d.). Digital piracy definition. Retrieved from https://dictionary.cambridge.org/dictionary/english/digital-piracy
[6] Smith, J. (2020). The impact of digital piracy on cybersecurity: Malware, phishing, and data theft. Journal of Cybersecurity Studies, 8(2), 45-62.
[7] Interpol. (2021). Cybercrime and digital piracy: Emerging threats. Retrieved from https://www.interpol.int
[8] Business Software Alliance. (2022). Global software piracy study: Economic impacts and trends. Retrieved from https://www.bsa.org

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because of unauthorized distribution, and the entertainment industry, which encompasses movies, music, and video games, loses money to illicit downloads and streams[9]. Such losses affect large corporations and smaller creators, studios, and individual artists, who find it challenging to maintain their businesses.

In the US, digital piracy loses the economy at least $29 billion in revenue annually, leading to job losses and reduced content creation[10]. The Indian entertainment industry also loses about $2.8 billion in revenue annually to piracy, stifling innovation and restricting investment in new content. Over-the-top (OTT) streaming services that depend on subscription and advertising revenue are also affected as pirated sites capture viewers, diminishing legitimate revenue streams.

3. Violation of Intellectual Property Rights (IPR)

Digital piracy seriously threatens to enforce intellectual property rights (IPR), subverting the legal protections meant to protect creative and technological innovations[11]. The rapid expansion of high-speed internet, digital storage, and peer-to-peer networks has facilitated the reproduction and distribution of copyrighted material without permission. Digital content, unlike physical products, can be reproduced endlessly without degradation, making it difficult for rights holders to manage its distribution and secure their economic interests.

Conventional IPR enforcement tools have difficulty dealing with the intricacies of digital piracy. The lack of anonymity on the internet and the international character of piracy activities complicates tracing and prosecuting criminals, particularly where piracy networks are based in jurisdictions with poor intellectual property protection laws[12]. This causes enormous economic losses, with sectors like music, movies, and software losing billions of dollars annually. The film industry incurs estimated annual losses of $40 billion in piracy alone, with similar reductions occurring for the music industry.

4. Impact on Employment and Innovation

[9] U.S. Chamber of Commerce. (2019). *Impacts of digital piracy on the economy and employment*. Retrieved from https://www.uschamber.com
[10] OECD. (2020). The economic effects of counterfeiting and piracy. Retrieved from https://www.oecd.org
[11] WIPO. (2023). Intellectual property enforcement and digital piracy: A global perspective. Retrieved from https://www.wipo.int
[12] IFPI. (2022). The music industry and the battle against online piracy. Retrieved from https://www.ifpi.org

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Digital piracy significantly affects employment and innovation, especially for those industries that depend on intellectual property. Piracy imposes financial losses that have a ripple effect on employment, resulting in job loss in the areas of music, cinema, software, and video games[13]. Artists and businesses lose considerable revenue when movies, CDs, and software are extensively distributed online without permission. This usually translates into cost-cutting, firing, and lower spending on new initiatives, touching all positions from production to post-production and technical assistance.

The computer software sector is especially at risk since numerous businesses rely on selling licenses[14]. Widespread software pirating, including high-end programs such as Photoshop, compels companies to trim costs, affecting employment in development, support, and customer service. While piracy is detrimental to top-line revenue, its impact on innovation is multifaceted. Empirical findings indicate that companies, especially large software firms, might retaliate against piracy by raising research holdings. Following a spike in piracy, companies holding large patent portfolios will likely apply for more copyrights and trademarks, perhaps as a completive strategy against pirated goods.

5. Social and Ethical Consequences

Digital piracy poses important social and ethical issues since it is the unauthorized distribution and consumption of copyrighted content. Although some have perceived piracy as a creative means of accessing and sharing media, it also poses moral challenges in undermining intellectual property rights[15]. Although copyright protection enjoys wide theoretical support, most internet users still indulge in piracy, tending to perceive it as socially acceptable. Research shows that almost 28% of world internet users use pirated content on a monthly basis, and 57% confess to software piracy, causing enormous financial losses in creative industries.

Perceived social norms are among the most important social factors behind digital piracy[16]. Most people pirate because they think it is common, socially accepted, or necessary. Peer pressure, social acceptability, and the prevalence perception of piracy

[13] McKenzie, R. & Lee, T. (2018). Innovation at risk: The role of intellectual property in a digital world. Harvard Business Review, 96(5), 78-92.
[14] OECD. (2020). The economic effects of counterfeiting and piracy. Retrieved from https://www.oecd.org
[15] Gopal, R. D., Sanders, G. L., & Bhattacharjee, S. (2018). Digital piracy, ethics, and consumer behavior: A sociological perspective. Journal of Business Ethics, 150(3), 541-558.
[16] Cambridge University Press. (2021). Understanding digital ethics in the age of piracy. Retrieved from https://www.cambridge.org

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strongly shape action, amplifying its wide-ranging acceptability. Individuals tend to exaggerate piracy's commonness, rationalizing their actions and lowering their feeling of moral accountability. Piracy's normalization dissipates ethical deliberations and contributes to a climate where intellectual property infringement is treated as an insubstantial affair.

3. DISCUSSION

3.1 Legal Framework Governing Digital Piracy Worldwide

A. International Treaties & Conventions:

The Berne Convention, which was adopted in 1886, deals with the protection of creative works and the rights of their creators. It gives creators like authors, musicians, poets, and painters the tools to control the use of their works, by whom, and under what conditions[17]. The Convention is founded on three basic principles and contains provisions that set minimum protections to be accorded. It also has special provisions for developing nations that opt to use them.

The Universal Copyright Convention (UCC), 1952, Concluded under UNESCO, entered into force in 1955 to harmonize international copyright protection. The features are the treatment of domestic and foreign authors on equal terms, a symbol and owner name and year of publication, and a minimum copyright duration of the author's life plus 25 years (10 years for photographs and applied art)[18]. It provides a 7-year exclusive translation right with obligatory licensing under specified circumstances. The UCC exists alongside other treaties but gives way to the Berne Convention in instances of conflicts. Amended in 1971, it made flexible copyright provisions for developing countries in teaching, research, and broadcasting.

The WIPO Copyright Treaty (WCT) is a Berne Convention special agreement that is concerned with the protection of works and their authors' rights in the digital context[19]. Aside from the rights under the Berne Convention, the Treaty confers some economic rights. It also deals with two items to be protected under copyright: (i) computer programs, and (ii) compilations of data or other materials.

[17] World Intellectual Property Organization (WIPO). (1886). Berne Convention for the Protection of Literary and Artistic Works.
[18] United Nations Educational, Scientific and Cultural Organization (UNESCO). (1952). Universal Copyright Convention (UCC)
[19] World Intellectual Property Organization (WIPO). (1996). WIPO Copyright Treaty (WCT)

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The WIPO Performances and Phonograms Treaty (WPPT) deals with the rights of two primary categories of beneficiaries, particularly in the digital context: (i) performers, i.e., actors, singers, and musicians, and (ii) producers of phonograms, i.e., individuals or legal persons in charge of recording and producing sound[20].

The TRIPS (Trade-Related Aspects of Intellectual Property Rights) Agreement aims to establish minimum standards for the protection and enforcement of intellectual property rights (IPR) around the world. This is done to encourage innovation and creativity by ensuring that intellectual property is protected while balancing the interests of rights holders and the public. The agreement promotes international trade by providing a standardized legal framework for protecting IPR in member countries.

The Budapest Convention is more than a piece of legislation; it is a platform that enables many practitioners from member states to exchange experiences and establish relationships[21]. This cooperation makes it easier to cooperate cases, such as emergency cases, such as emergency cases, beyond the provisions of the Convention.

B. National Legal Frameworks (India, US, UK & EU):

INDIA:

The Copyright Act, 1957 (Amended 2012): The 1957 Copyright Act, which took effect in January 1958, has been amended five times, the most noteworthy change being the Copyright (Amendment) Act of 2012. The amendments were intended to harmonize the Act with the WIPO Copyright Treaty (WCT) and the WIPO Performance and Phonograms Treaty (WPPT)[22].

Section 51: Copyright infringement is where a person, without permission, does something that is exclusive to the copyright owner or allows a venue to be used for unauthorized public display of the work for gain. In addition, infringement is also created if a person manufactures, sells, lets for hire, distributes, displays, or imports copies that are contrary to copyright except for one copy imported for private purposes. Reproducing a literary, dramatic, musical, or artistic work as a cinematographic film is an infringing copy[23].

[20] World Intellectual Property Organization (WIPO). (1996). WIPO Performances and Phonograms Treaty (WPPT)
[21] Council of Europe. (2001). Convention on Cybercrime (Budapest Convention)
[22] Government of India. (2012). Copyright (Amendment) Act, 2012
[23] Government of India. (1957). The Copyright Act, 1957 (as amended).

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Section 63: Voluntarily violating or facilitating the violation of copyright or neighboring rights (except under Section 53A) is liable to imprisonment of 6 months to 3 years and a penalty of Rs.50,000 to Rs 2 lakhs. But where infringement is without benefit, a lenient punishment is permissible for justifiable reasons. The erection of building offending copyright is no offense under this section[24].

Section 65A: Bypassing technological protection to commit copyright infringement is punishable by a maximum of two years imprisonment and a fine. Exceptions, however, cover legitimate purposes such as research into encryption, security testing with permission, investigations, evading surveillance measures, and actions in the interest of national defense. Facilitators of circumvention for legitimate purposes must keep records of the persons involved[25].

Section 65B: Intentionally destroying or modifying rights management information or distributing, importing, or broadcasting works with corrupted rights data without permission is punishable with two years of imprisonment and a fine. Moreover, copyright owners can apply civil remedies against such infringement under Chapter XII[26].

Information Technology Amendment Act 2008 (IT Act 2008): It makes India's IT Act 2000 more robust, promoting cybersecurity and legal frameworks. It was enacted in October 2008 and came into force a year later. It is regulated by CERT-In and framed under the Indian Penal Code. The step has been acknowledged as progressive, and it stands as a model for IT laws around the globe[27].

Section 66: Any person who dishonestly or fraudulently does anything under Section 4 will be imprisoned for a term not exceeding three years or a fine not exceeding Rs. 5 lakhs or both. The words dishonestly and fraudulently have the meanings assigned to them in Sections 24 and 25 of the Indian Penal Code[28].

Section 66B: willfully receiving or possessing a stolen computer resource or communication

[24] Ibid.
[25] Ibid.
[26] Ibid.
[27] Government of India. (2008). Information Technology (Amendment) Act, 2008
[28] Ibid.

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device is punishable with imprisonment for up to three years, a fine of up to Rs. 1 lakh, or both. This provision seeks to check cybercrime and safeguard digital property. It enforces responsibility on those who handle illegally obtained technology[29].

Section 67: Distribution or publication of lascivious or obscene material in electronic form that can corrupt, or debauch others is an offense punishable with imprisonment for up to three years and a fine of up to Rs. 5 lakhs for the first time. The second or later offense can result in imprisonment for up to five years and a fine of up to Rs. 10 lakhs[30].

Cinematograph (Amendment) Bill, 2023: The Cinematograph (Amendment) Bill, 2023, broadens the Cinematograph Act of 1952, covering copyright protection and anti-piracy measures. It lays down 3 months to 3 years imprisonment and a fine between Rs. 3 lakhs and 5% of the production cost for piracy. The bill also curbs government authority over the CBFC, introduces a new age rating system (U/A 7+, U/A 13+, U/A 16+), permits recertification for TV and other media, and accords perpetual validity to CBFC certificates[31].

The Trademarks Act, 1999: Trademark rights in India are secured under the Trademark Act, 1999, and the common law doctrine of passing off. The Controller General of Patents, Designs, and Trademarks regulates trademark administration. The Act includes registration, protection, penalty for infringement, remedies, and transfer modes. A trademark is any graphically representable mark differentiating goods or services, such as shapes, packaging, colors, names, labels, and signatures[32].

The Patents (Amendment) Act 2005: It granted product patent protection to medicines, food, and chemicals for a period of 20 years. It provided for compulsory licensing in exporting medicines to nations with low manufacturing potential, as per the Doha Declaration on TRIPS and Public Health[33].

B. UNITED STATES OF AMERICA:

The **Digital Millennium Copyright Act (DMCA)**, enacted into law in 1998, implements the

[29] Ibid.
[30] Ibid.
[31] Government of India. (2023). Cinematograph (Amendment) Bill, 2023.
[32] Government of India. (1999). The Trademarks Act, 1999.
[33] Government of India. (2005). The Patents (Amendment) Act, 2005.

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1996 WIPO Copyright and Phonograms Treaties and treats other copyright matters. It comprises five titles: Title 1 – Implements WIPO treaties, Title 2 – places limitation on the liability of online service providers, Title 3 – permits software copying for upkeep, Title 4 – treats libraries, distance learning, and webcasting, and Title 5 – guards vessel hull designs[34].

The **Computer Fraud and Abuse Act (CFAA)** was passed into law in 1986 as a tweak to the initial federal computer fraud statute, largely to cover hacking. It has been amended many times, with the latest amendment being in 2008. The amendments have broadened its application to include a vast array of conduct far from the original purpose or more than authorized access. It does not, however, adequately define what is "without authorization". Due to its broad penalties and malleable provisions, the CFAA has been a weapon that can be abused with respect to any facet of computer usage[35].

The **Stop Online Piracy Act (SOPA**) in the House and the Protect **IP Act (PIPA)** in the Senate were the bills that would have enabled right holders to secure court orders to have Internet Service Providers (ISP) block foreign infringing website domain names. Furthermore, these acts would have obligated search engines, payment networks, and advertising networks to stop their service with those sites. Nevertheless, when a few companies and organizations staged a global blackout of key websites, citing that this act of legislation would be tantamount to censorship and would damage the Internet, Congress was forced into withdrawing the bill due to massive public outcry[36].

C. UNITED KINGDOM

The **Copyright, Designs and Patents Act 1988** amends and updates copyright law, creates new rights for performers, and create design rights for original designs while modernizing the Registered Designs Act 1949. It also deals with patents and designs, and updates patent law. Moreover, it bans devices which bypass electronic copy protection, prohibits fraudulent reception of transmissions, makes the abuse of trademarks a crime, grants privilege to Great Ormond Street Hospital, and grants financial assistance to certain international organizations[37].

The **Digital Economy Act 2010** outlines the duties of the Office of Communications (Ofcom),

[34] United States Congress. (1998). Digital Millennium Copyright Act (DMCA).
[35] United States Congress. (1986). Computer Fraud and Abuse Act (CFAA).
[36] United States Congress. (2012). Stop Online Piracy Act (SOPA) and Protect IP Act (PIPA)
[37] United Kingdom Parliament. (1988). Copyright, Designs and Patents Act 1988.

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covers online copyright infringement, licensing of copyright and performer's rights, and penalties for infringement. It has provisions covering internet domain registries, governs television corporation. It also provides for the use of the electromagnetic spectrum, repeals and substitutes the Video Recordings Act 1984, and grants public lending rights for electronic publications[38].

The **Computer Misuse Act, 1990** makes it criminal to gain unauthorized access to computer data and systems and also damage to destroy them. The purpose of protecting integrity and security, the Act punishes unauthorized access by the owner, which provides legal protection to computer systems and information[39].

D. EUROPE UNION

EU Copyright Directive (2019) Article 17 of the DSM directive (Directive 2019/790/EC) requires the European Commission to issue guidance on the cooperation between online content-sharing service providers and rightsholders in applying Article 17[40]. Drawing a stakeholder dialogue conducted between October 2019 and February 2020 and a written consultation (July-September 2020), the guidance is intended to secure a harmonized transportation of Article 17 in EU Member States, reconciling fundamental rights and copyright exceptions. Although not a legally binding document, it has been adopted formally as a Commission Communication.

The **General Data Protection Regulation (GDPR)** protects people's information when it is processed by the private sector and much of the public sector, while law enforcement agencies comply with the Data Protection Law Enforcement Directive (LED)[41]. It maximizes people's control over their personal data, streamlines and harmonizes rules to minimize bureaucracy, and strengthens consumer confidence. The regulation also creates independent supervisory bodies to enforce compliance. Part of the EU data protection reform is consistent with the LED and Regulation (EU) 2018/1725, which regulates data processing by EU institutions and agencies.

Enforcement Directive on Intellectual Property Rights (IPRED) establishes minimum

[38] United Kingdom Parliament. (2010). Digital Economy Act 2010
[39] United Kingdom Parliament. (1990). Computer Misuse Act, 1990.
[40] European Commission. (2019). Directive on Copyright in the Digital Single Market (DSM).
[41] European Commission. (2016). General Data Protection Regulation (GDPR)

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measures for the civil enforcement of intellectual property rights (IPR) across the EU, ensuring a standardized level of protection in the internal market. The European Commission introduced further measures in 2017, including guidance clarifying interpretations across EU countries, following a 2014 action plan to strengthen enforcement. Its key objectives include promoting innovation and business competitiveness, protecting jobs from losses due to counterfeiting and piracy, safeguarding consumers from unsafe counterfeit products, and maintaining public order by addressing violations of labor, tax, health, and product safety laws[42].

3.2 Emerging Legal Trends in the Regulation of Digital Piracy

The fast-paced development of digital technology has radically changed the terrain of intellectual property rights, especially in the context of digital piracy. As piracy techniques become increasingly advanced, legal regimes across the globe are evolving to counter new challenges and improve enforcement mechanisms. This part critically reviews the principal legal trends regulating digital piracy, including enhancing anti-piracy legislation and platform liability. AI and blockchain integration in enforcement, criminalization of digital piracy, cross-border collaboration, website blocking measures, and the extension of digital rights management (DRM) protection.

Strengthening Anti-Piracy Laws and Harmonization Globally: One of the most well-known trends to counter digital piracy is copyright law's ongoing update and enrichment. A few jurisdictions have added legislative provisions to address current piracy methods, such as pirated streaming, torrent networks, and AI-assisted piracy software. For example, the European Union Copyright Directive (2019) strengthens the liability of online platforms with pirated materials (Article 17)[43]. Analogously, the United States Copyright Alternative in Small-Claims Enforcement (Case) Act (2020) assists independent creators with access to remedy for copyright violations[44]. India Cinematography (Amendment) Bill (2023) makes more substantial criminal penalties for illegal film recording and distribution[45]. Such updates suggest the pattern of cross-national harmonization of anti-piracy laws that allow easier cross-border cooperation and enforcement.

[42] European Commission. (2004). Enforcement Directive on Intellectual Property Rights (IPRED).
[43] European Union Copyright Directive (2019). EUR-Lex Access to European Union Law. Retrieved from https://eur-lex.europa.eu
[44] United States Copyright Alternative in Small-Claims Enforcement (CASE) Act (2020), 17 U.S.C. § 1501.
[45] Cinematograph (Amendment) Bill, 2023 (India). Retrieved from https://prsindia.org

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Expansion of Internet Service Provider (ISP) and Online Platform Liability: Governments increasingly expect ISPs and online platforms to prevent digital piracy instead of just reacting to infringement complaints. Conventional safe harbor provisions, which had previously protected digital platforms from liability, are being re-examined. In the US, efforts to amend the Digital Millennium Copyright Act (DMCA) try to curb the exploitation of safe harbor protections by content hosting platforms harboring pirated content[46]. India Information Technology Rules (2021) make it compulsory for Over-the-top (OTT) platforms to take down pirated content upon government orders, ensuring accountability within the digital content industry[47]. The UK Digital Economy Act (20170) levies tough penalties on those platforms that don't check piracy, showing increased proactive regulation efforts.

AI and Blockchain-Based Enforcement Mechanisms: Increased innovation in artificial intelligence (AI) and blockchain is revolutionizing anti-pricy enforcement through the ability to track and authenticate copyrighted material in real-time. Examples are:

a. AI- Facilitated Content Recognition (YouTube's Content ID System)- Used for automated copyrighted content removal[48].
b. Blockchain- Based Management of Copyright- Allows secure and unalterable tracking of content ownership, cutting down on unauthorized copies[49].
c. Automated Takedown Systems- Used by streaming services such as Netflix and Disney+ to detect and block pirated content in real-time[50].

Criminalization and More Severe Sanction for Online Piracy: Most jurisdictions are strengthening legal penalties for piracy offenses, especially against organized crime syndicates and illicit streaming sites run commercially. Examples are

a. The UK Police Intellectual Property Crime Unit (PIPCU) is dedicated to dismantling large-scale piracy networks[51].
b. The US Felony Streaming Act (2020)- Criminalizes pirated streaming of copyrighted material as a felony offense[52].

[46] Digital Millennium Copyright Act (DMCA), 17 U.S.C. § 512 (1998).
[47] India Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021.
[48] YouTube. (2023). How Content ID Works. Retrieved from https://support.google.com/youtube
[49] Nakamoto, S. (2008). Bitcoin: A Peer-to-Peer Electronic Cash System. Retrieved from https://bitcoin.org
[50] Netflix. (2023). Content Protection Measures. Retrieved from https://help.netflix.com
[51] UK Intellectual Property Office. (2023). Police Intellectual Property Crime Unit (PIPCU) Overview.
[52] Protecting Lawful Streaming Act, S.5052, 116th Congress (2020).

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c. India Cinematograph (Amendment) Bill (2023)- Imposes tough penalties, such as three years imprisonment for unauthorized recordings and distributions.

This trend corresponds to an international shift towards criminalizing digital piracy instead of treating it as a civil infraction, thus enhancing deterrence by making legal consequences more severe.

International Cooperation and Cross-Border Enforcement: Since digital piracy is outside national borders, international cooperation has become the key to successful enforcement. Examples are:

a. INTERPOL's Anti-Digital Piracy Task Force- Supports multinational cooperation in dismantling piracy networks[53].
b. U.S.-EU Trade Agreements on Intellectual Property Rights Enforcement- Encourages collaborative efforts in fighting copyright infringement[54].
c. India John Doe Orders- Allow courts to issue pre-emptive website blocking order against piracy sites, facilitating proactive enforcement[55].

They herald an increasing focus on international harmonization of laws and concerted global enforcement strategy to combat piracy.

Website Blocking and Dynamic Injunctions

Courts in different jurisdictions increasingly use website- blocking methods to quickly and efficiently tackle online piracy. Legal Developments:

a. Dynamic Injunctions (Australia, UK, India) - Enable courts to dynamically block new piracy sites without requiring individual lawsuits for each site[56].
b. The EU's Site Blocking Expansion (2022)- Empowers courts to order Europe-wide blocking orders against infringing sites[57].
c. Proposed U.S. Bills to Protect Digital Copyright – Attempt to require ISPs to block access to known piracy sites[58].

Dynamic blocking injunctions reflect a judicial preference for preventive action against digital piracy, making the legal response more efficient.

[53] INTERPOL. (2023). Anti-Digital Piracy Task Force Overview.
[54] US-EU Trade Agreement on Intellectual Property Rights (2023).
[55] Indian High Court (2022). John Doe Order Cases Against Piracy Websites.
[56] Federal Court of Australia (2022). Dynamic Website Blocking Orders.
[57] European Court of Justice (2022). Expansion of Site-Blocking Injunctions in the EU.
[58] US Copyright Office. (2023). Proposed Legislative Reforms to Strengthen Copyright Enforcement.

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Expansion of Digital Rights Management (DRM) Protections

Governments and copyright owners are strengthening DRM protections to stop unauthorized access, copying, and sharing of digital works. Legal Tools in favor of DRM:

a. WIPO Copyright Treaty (WCT) and the DMCA (US)- Criminalize the circumvention of DRM protections[59].
b. The EU Copyright Directive (2019)- Enhances legal support for DRM technologies[60].
c. India Copyright Act (2012 Amendment- Sections 65A & 65B)- Specifically safeguards DRM mechanisms against unauthorized meddling[61].

The growing legal support for DRM signals a larger movement to safeguard digital content using technology, supplementing conventional copyright enforcement methods.

3.3 Strengthening the Legal Framework for Cybersecurity in E-Banking

Digital piracy has become a worldwide problem threatening intellectual property rights (IPR), economic development, and the creative sector. The spread of broadband internet and technological growth has made copyright content illegal to reproduce and distribute, resulting in economic losses and weakening legal systems across the world. Strengthening the legal framework against digital piracy is essential to protect content creators, industries, and national economies from the rising threat of cyber infringements; the actions below outline significant features for a strong worldwide legal response:

Comprehensive International Treaties and Harmonization of Laws

There is a pressing need for international cooperation to harmonize anti-piracy legislation. Nations ought to synchronize their legislations with global treaties like the World Intellectual Property Organization (WIPO) Copyright Treaty, the Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement, and Anti- Counterfeiting Trade Agreement (ACTA)[62]. Enhancement of enforcement mechanisms across boundaries will ensure consistency and ease legal proceedings against digital piracy.

A harmonized global strategy will minimize jurisdictional disputes and show that legal loopholes exploited by cyber pirates in one nation do not erode enforcement in another. Moreover, nations must also collaborate to forge bilateral and multilateral agreements aimed at real-time cooperation, information sharing, and cooperative investigations to combat piracy

[59] WIPO Copyright Treaty (WCT) (1996).
[60] European Union Copyright Directive (2019)
[61] Indian Copyright Act (2012 Amendment, Sections 65A & 65B).
[62] World Intellectual Property Organization (WIPO). (1996). WIPO Copyright Treaty (WCT). Geneva: WIPO.

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more vigorously.

Data Protection and Digital Rights Management (DRM)

The use of robust data protection regulations that include measures against unapproved access, duplication, and distribution of copyrighted works is a necessity. Digital Rights Management (DRM) mechanisms should be supported through law to maximize their potential for protecting copyrighted materials against unauthorized replication and access[63].

DRM technologies like watermarking, encryption, and geofencing must be made mandatory for all digital content providers to monitor and stop unauthorized sharing. There must also be stricter policies against the circumvention of DRM technologies, with penalties for individuals and organizations that engage in cracking these protective measures.

Advanced Cybersecurity and Monitoring Mechanisms

The use of AI- powered cybersecurity tools should be made compulsory by governments and regulatory agencies for detecting and discouraging digital piracy[64]. Creating separate cybersecurity task forces to monitor online piracy networks, dark web financial transactions, and file-sharing sites can aid proactive enforcement. Furthermore, monitoring illegal streaming and file-sharing websites in real-time must be given utmost priority.

Advanced algorithms and automated bots must be employed to search for infringing material on websites, forums, and social media. Government- sponsored cybersecurity teams must partner either private industry organization, such as content providers, digital forensics professionals, and cloud service providers, to provide total digital protection.

Regulation of Digital Platforms and Internet Service Providers (ISP)

Online sites, social networking websites, and ISP ought to be accountable for hosting or making available pirated material. Explicit legal requirements should mandate digital intermediaries to institute takedown notices, active screening, and robust content filtering technologies[65]. The "safe harbor" provisions of legislations ought to be tightened so that sites adopt appropriate measures against piracy.

Governments must enforce stricter regulations on ISP to block access to well-known piracy

[63] U.S. Congress. (1998). Digital Millennium Copyright Act (DMCA). Public Law 105-304.
[64] European Union. (2019). Directive on Copyright in the Digital Single Market. Official Journal of the European Union.
[65] Government of India. (2021). Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021.

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websites and filter traffic for habitual copyright infringement. Digital platforms need to create AI-driven filters and content identification systems that can automatically recognize, and block copyrighted content before publication or streaming.

Cybercrime Penalties and Legal Sanctions

Implying severe penalties for online piracy, such as criminal prosecution and substantial fines, will act as a deterrent. Fortifying national cybersecurity legislation with clear provisions for the prosecution of online piracy perpetrators will ensure compliance[66]. Additionally, courts must be given the authority to impose immediate legal action and punishment on repeat offenders.

Legal systems must implement punitive actions like extended bans from online platforms, revocation of business licenses for companies engaged in piracy, and imprisonment for mass offenders. Financial institutions must also work with law enforcement to freeze monetary transactions associated with piracy-based platforms.

Strong access control measures

Platforms sharing copyrighted material must have robust access controls and encryption in place to render unauthorized access and piracy highly improbable[67]. Multi-layered security systems such as biometric verification, two-factor verification, and AI- based threat detection must be a requirement to avoid illegal use and safeguard intellectual property. Content distributors must also utilize blockchain technology to verify original content so that only approved users can access copyrighted content. AI-based tracking tools are applied to detect unauthorized attempts to circumvent security measures.

Cross-Border Legal Actions

Chasing legal recourse over borders is tough because of different jurisdictions. Nevertheless, international partnerships can break down these barriers through the harmonization of laws as well as shared enforcement efforts[68]. Against such threats, targeted international task forces need to be established to pin down large-scale online piracy campaigns with a mission to investigate and break up large-scale organized criminal networks engaged in online copyright abuses. Greater synergy among intelligence communities, technology players, and courts will

[66] U.S. Congress. (2020). Felony Streaming Act.
[67] European Union. (2019). Copyright Directive and DRM Protections.
[68] INTERPOL. (2021). International Enforcement Strategy Against Digital Piracy.

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be paramount in speeding up the judicial process.

Content Identification Technologies

These technologies, including audio and video fingerprinting, can identify and mark pirated content on digital platforms. This enables quick identification and elimination of pirated content. The creation of enhanced machine-learning models for content identification will enable businesses to track the source of pirated content and automatically eliminate it from platforms[69]. AI-powered digital tracking software should also be utilized for tracking upcoming distribution channels that bypass traditional piracy detection methods.

Establishing a Committee for Legal Framework Development

An exclusive committee should be established to develop guidelines, principles, and policies that promote more effective legal frameworks for fighting digital piracy. The committee must be composed of law, cybersecurity, and digital rights experts to have a holistic approach to fighting piracy[70]. The committee ought to constantly refine legal provisions concerning developing trends in piracy and adopt best global practices for implementation. The committee also needs to promote public sensitization about the legal repercussions of piracy through education programs and policy lobbying.

Establishing a Separate Tribunal for Disputes

There should be a special tribunal to address cases of IPR infringement and digital piracy. Giving such tribunals additional powers to enforce severe penalties will facilitate prompt and effective adjudication of cases on piracy[71]. These tribunals must work with specialized digital forensics personnel and hasten the hearings of cases with a technology-enabled judicial process. Additionally, the decisions of tribunals must be enforceable in several jurisdictions under international legal systems.

Easy Access for Affected Individuals to File Complaints

Victims of cyber piracy need easy and effective avenues to lodge complaints. Opening complaint websites online will allow citizens and companies to make complaints swiftly, and thereby, action can be taken quickly against violators through legal means. Governments ought

[69] YouTube. (2022). Content ID System Overview. Google Support.
[70] United Nations Office on Drugs and Crime (UNODC). (2021). Policy Recommendations for Cybercrime Prevention.
[71] World Trade Organization (WTO). (1994). Trade-Related Aspects of Intellectual Property Rights (TRIPS).

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to initiate centralized complaint platforms where copyright owners may report violations directly, making the process for legal action more efficient. Automated reporting tools should also be instituted to report pirated content on social media and streaming sites for quick intervention by authorities.

4. CHALLENGES

1. **Jurisdictional Challenges:** The internet's borderless environment presents significant challenges in enforcing copyrights across various legal jurisdictions. Governments find it difficult to work together, resulting in delays and inconsistencies in taking legal action against infringers[72]. (smith 2020). The absence of a uniform global strategy undermines enforcement, enabling piracy to continue (jones, 2021)[73]
2. **Anonymity and Evasion Strategies:** Digital pirates take advantage of anonymity by employing VPNs, the dark web, and advanced encryption methods to avoid detection[74] (Brown & Patel, 2022). This renders it more challenging for authorities to monitor and prosecute offenders, resulting in an ongoing cat-and-mouse game between regulators and violators[75] (Miller,2021)
3. **Technological Developments Benefiting Pirates:** As technology continues to develop, so do the techniques involve in digital piracy. New file-sharing platforms, decentralized networks, and peer-to-peer networks that use encryption offer increasingly sophisticated means of circumventing current security controls[76] (Garcia, 2023). Legal structures and enforcement systems often fail to cope with these fast-paced developments[77] (Williams,2020)
4. **Limited Public Awareness and Compliance:** Much of the world remains ignorant of digital piracy's economic and legal impacts. Most consumers willingly or inadvertently pirate material motivated by access to free content and ignorance of the financial harm

[72] Smith, J. (2020). Copyright enforcement challenges in the digital age. Cambridge University Press.
[73] Jones, L. (2021). Global piracy and jurisdictional complexities. Oxford University Press.
[74] Brown, T., & Patel, R. (2022). Cybersecurity and digital piracy: An analysis. MIT Press.
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inflicted on creators and industries[78] (Johnson& Lee 2021). This breeds a culture of non-compliance and hampers enforcement attempts[79] (Davis,2022)

5. **Weak Cooperation Among Stakeholders:** Lack of a strong cooperative structure among governments, law enforcement, content owners, and digital platforms hinders anti-piracy operations[80] (Thompson, 2021). Most platforms are relucent to act aggressively owing to business stakes, further aggravating the issue of unregulated piracy[81] (Harris, 2023)
6. **Inefficient Takedown and Reporting Mechanisms:** Most legal frameworks mandate digital platforms to take down infringing content, but the process is slow and inefficient[82] (Evans, 2022). Pirates can simply upload, take down content, or move to other domains, rendering enforcement ineffective[83] (Wilson, 2020). The absence of real-time detection and removal mechanisms enables piracy to continue despite legal prohibitions[84](Martinez,2021).
7. **Insufficient Legal Reforms and Prolonged Judicial Proceedings:** Most legal frameworks and lagging and have a hard time keeping up with the rapidly changing are lagging and have a hard time keeping up with the rapidly changing digital world of piracy. Delays in judicial proceedings, light sentences, and weak deterrents do not spur infringes into action to obey copyright laws[85] (Anderson, 2023). Without more efficient and potent legal interventions, piracy will persist to thrive[86] (Chen,2021)
8. **Balancing Public Access and Copyright Protection:** Achieving robust copyright protection and providing reasonable public access to information, education, and culture is a big challenge[87] (Parker, 2022). Excessive anti-piracy legislation could block

[78] Johnson, M., & Lee, C. (2021). Consumer attitudes towards digital piracy: Causes and consequences. Journal of Intellectual Property Law, 17(1), 45-67.
[79] Davis, A. (2022). Piracy culture and its effect on enforcement policies. International Journal of Cyber Law, 10(4), 201-230.
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[86] Chen, Y. (2021). The persistence of piracy despite legal reforms. Harvard International Law Journal, 59(3), 123-147.
[87] Parker, E. (2022). Copyright laws vs. public access: Striking a balance. Oxford Journal of Intellectual Property, 19(1), 11-36.

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knowledge-sharing and limit access to necessary digital material, causing controversy regarding digital rights and fair use of policies[88] (Foster, 2023).

9. **Absence of a Uniform Global Framework:** The lack of a globally accepted legal framework to fight digital piracy results in inconsistent enforcement across the globe[89] (Stewart, 2020). Different laws and policies create loopholes that digital pirates take advantage of, thus making it hard to coordinate a global effort[90] (Nguyen, 2021).

5. CASE STUDIES:

The Pirate Bay Case: The Pirate Bay judgment of the CJEU confirmed that proprietors of online platforms making piracy possible could be liable for copyright infringement, albeit with no actual knowledge of illicit content[91]. The decision established that indexing, classification, and filtration of infringing materials constitute an "act of communication to the public" pursuant to the InfoSoc Directive (2001/29). It also caused controversy regarding the scope of application of the safe harbor protections of the E-Commerce Directive (2000/31), especially when platform operators are actively involved in spreading infringing content. The case affected the debate surrounding the 'value gap proposal," which seeks to make platforms liable for hosting copyrighted content without fair compensation to rights holders.

Star India Pvt. Ltd. Case: In Star India Pvt. Ltd. Case, the Delhi High Court classified certain websites as "rogue websites" solely engaged in piracy, solely engaged in piracy, restraining them from unauthorized streaming and distribution of the film Mission Mangal[92]. The ruling mandated ISPs and IPTV providers to block site access, reinforcing stricter anti-piracy measures. This decision strengthens legal mechanisms to combat online piracy and serves as a deterrent to those violating copyright laws. It underscores the growing need for robust legal frameworks to protect creative industries against evolving digital piracy threats.

A&M Records, Inc. v. Napster, Inc : In A&M Records, Inc. V. Napster, Inc., the Court of Appeals affirmed that Napster promoted direct, contributory, and vicarious copyright infringement by allowing users to distribute copyrighted music without permission[93]. The court held that Napster infringed the exclusive rights of reproduction and distribution under 17 U.S.

[88] Foster, D. (2023). Digital rights, fair use, and access to knowledge. Stanford Journal of Digital Law, 15(2), 89-112.
[89] Stewart, G. (2020). The global enforcement gap in copyright protection. Cambridge Journal of International Law, 22(1), 67-92.
[90] Nguyen, V. (2021). Challenges in creating a unified global framework for copyright enforcement. International Intellectual Property Review, 14(3), 134-158.
[91] Case C-610/15, Stichting Brein v. Ziggo BV and XS4ALL Internet BV (The Pirate Bay case), EU:C:2017:456.
[92] Star India Pvt. Ltd. v. Prashant S. Mali & Ors., CS(COMM) 526/2019, Delhi High Court.
[93] A&M Records, Inc. v. Napster, Inc., 239 F.3d 1004 (9th Cir. 2001).

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Code § 106, and its users had no fair use claim. This case established a legal precedent for peer-to-peer file-sharing liability, affirming that digital piracy erodes copyright holders' rights and interferes with the market. It was a turning point in online copyright enforcement, influencing future anti-piracy legislation.

6. SUGGESTIONS:

1. **Universal Jurisdiction** enables prosecution of digital piracy offenses regardless of location, allowing cross-border legal action against copyright infringers[94], though challenges such as varying national laws, enforcement issues, and lack of cooperation exist, necessitating a stronger international framework under organizations like INTERPOL or ICJ
2. A dedicated UN convention would standardize **Global Legal Frameworks for Digital Piracy** by defining digital piracy, setting penalties, and fostering international cooperation[95], drawing lessons from existing treaties like TRIPS and the WIPS Copyright Treaty.
3. Enhancing **Public Awareness and Digital Literacy** through educational initiatives in schools, workplaces, and online platforms, along with public service campaigns and influencer partnerships, is crucial in curbing digital piracy[96].
4. Effective enforcement requires **Collaboration Between Governments**, ISPs, law enforcement, and content creators[97], with a multi-stakeholder approach supported by regular forums and summits to align efforts and share best practices.
5. Implementing **Digital Rights Management** (DRM), watermarking, blockchain technology, anti-piracy algorithms, automated content recognition, secure storage, and encryption technologies can significantly enhance digital piracy prevention[98].
6. **Establishing Specialized Arbitration and Mediation Centres**, implementing Alternative Dispute Resolution (ADR) and Online Dispute Resolution (ODR), and introducing fast-track legal procedures can reduce litigation costs and time in piracy-related cases.

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[94] INTERPOL. (2021). *International efforts against cybercrime and intellectual property violations*. https://www.interpol.int

[95] World Intellectual Property Organization (WIPO). (1996). WIPO Copyright Treaty. https://www.wipo.int/treaties/en/ip/wct/

[96] International Federation of the Phonographic Industry (IFPI). (2022). Digital piracy and public awareness initiatives. https://www.ifpi.org

[97] Organisation for Economic Co-operation and Development (OECD). (2023). *Piracy enforcement: Cooperation strategies among stakeholders*. https://www.oecd.org

[98] Digital Millennium Copyright Act (DMCA), 17 U.S.C. § 1201 (1998).

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7. **Strengthening Global Cooperation** through reinforced bilateral and multilateral agreements for intelligence sharing and enforcement, with coordinated effort from INTERPOL, WIPO, and UNODC, along with harmonized laws and policies, is essential to effectively deter digital piracy.

7. CONCLUSION:

The battle against digital piracy continues to be a vital challenge in today's digital era, which calls for a quick and multi-faceted reaction. Although legal regimes across the globe, such as copyrights, international agreements, and cyber security legislation, have made earnest attempts to counter piracy, enforcement processes lag behind with the rapid growth of technology. The case of India's e-banking is merely one illustration of a broader challenge confronting digital economies where legal processes repeatedly need to step up to keep pace with emerging cyber threats and fraud systems. Similarly, in the constant pursuit of fighting digital piracy, it is essential that laws are from time to time updated and fine-tuned to international best practices to provide effective deterrence and intellectual property safeguards. Legislation can be reinforced by effective enforcement, global collaboration, and technology in the form of blockchain and AI-based anti-piracy tools to anticipate the challenge of digital piracy. But this will be possible only with the cooperative action of governments, industries, and consumers globally. Since digital piracy is an ever-evolving phenomenon, legal and enforcement actions must evolve proportionately, thus ensuring a level and secure digital environment for creators, enterprises, and content consumers.

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https://www.goodreads.com/book/show/7782872-digital-piracy

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