

Safeguarding Literary and Intellectual Property in the Age of Artificial Intelligence: Legal Frameworks, Opportunities, and Challenges

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Abstract---The right to privacy, a fundamental principle in global legal systems, is increasingly scrutinized amid rapid digital transformation. Enshrined in international and domestic legislation, it seeks to protect personal data from escalating cyber threats. This paper traces the evolution of privacy rights from traditional domains to digital platforms, highlighting adaptive legal and institutional responses. It calls for an integrated legal framework that combines strong safeguards, institutional accountability, and public awareness to address emerging challenges. Ultimately, the study offers strategic recommendations to align technological innovation with the protection of individual rights in the digital era.

Keywords---Intellectual Property, Electronic, Violations, National and International Legislations, Digital Environment, Counterfeiting and Piracy.

Introduction

In recent years, the exponential growth of digital technologies has intensified legal and scholarly focus on intellectual and literary property violations. The unprecedented accessibility and speed of internet-based tools have facilitated the unauthorized use, reproduction, and distribution of protected works, posing significant challenges to traditional legal frameworks. These developments have given rise to a new generation of offenses—ranging from digital counterfeiting and piracy to illicit online dissemination—undermining both the moral and economic rights of creators.

How to Cite:

Larbi, A., & Nateche, K. (2025). Safeguarding literary and intellectual property in the age of artificial intelligence: Legal frameworks, opportunities, and challenges. *The International Tax Journal*, 52(5), 2988–2998. Retrieved from <https://internationaltaxjournal.online/index.php/itj/article/view/299>

The International tax journal ISSN: 0097-7314 E-ISSN: 3066-2370 © 2025

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Submitted: 16 March 2025 | Revised: 14 July 2025 | Accepted: 01 October 2025

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As cyberspace becomes increasingly complex and decentralized, intellectual property crimes continue to diversify in scope, means, and sophistication. The rise of digital platforms has not only expanded opportunities for innovation but also opened the door to new forms of infringement that transcend national borders and legal jurisdictions. In this evolving landscape, safeguarding the rights of authors, artists, and innovators requires more than isolated national laws—it calls for coordinated international efforts, effective enforcement mechanisms, and a deep rethinking of existing regulatory models.

Accordingly, this paper aims to investigate the scope and manifestations of digital violations against intellectual and literary property, and to evaluate the effectiveness of legal and institutional responses at both national and international levels. It addresses a central question: **To what extent are current legal frameworks adequate, coherent, and adaptable enough to ensure robust protection of intellectual and literary property rights in a digitized, transnational environment?**

To address this pressing legal challenge, the present study is structured around two interrelated sections. Section One explores the various manifestations of intellectual and literary property infringements within the digital environment, highlighting the evolving nature, scope, and techniques of such violations. This part aims to map the typologies and trends of digital misconduct that threaten the integrity of creative works. Section Two critically assesses the adequacy and effectiveness of legal, institutional, and regulatory mechanisms adopted at both national and international levels to combat these infringements. It further examines the capacity of these mechanisms to adapt to the fluid and borderless nature of cyberspace, with a view to proposing coherent and actionable solutions.

Section One

Legal and Technological Patterns of Infringement on Intellectual and Literary Property in the Digital Sphere

effort, particularly in the realm of literary and artistic creation. A central category within intellectual property law, literary and artistic property confers on authors a bundle of rights collectively known as copyright and related rights. These rights are traditionally divided into two categories: **economic rights**, which grant authors exclusive, time-limited authority to commercially exploit their works; and **moral rights**, which are inseparable from the author's personality. Moral rights are perpetual, inalienable, and include the right of attribution, the right to the integrity of the work, the right to disclose or withhold it, and the right to withdraw or revise it, even after publication¹.

On the other hand, it is widely acknowledged that the broad openness to the digital space is a purposeful and creative endeavor aimed at developing human welfare and facilitating communication between individuals. However, this trend has been accompanied by parallel actions seeking to divert this noble goal toward unauthorized exploitation of the advantages of the digital space².

The expansion of access to the digital environment is widely recognized as a transformative force intended to enhance human development and foster global communication. Digital openness has enabled unprecedented opportunities for innovation, knowledge dissemination, and cultural exchange. However, alongside these constructive advances, a parallel phenomenon has emerged: the misuse of digital platforms for unauthorized exploitation of intellectual property. Such deviations compromise the foundational goals of digital progress by enabling the illicit appropriation and distribution of protected creative content³.

More narrowly, Mass defines cybercrime as a set of unlawful acts committed through information technologies to achieve a specific aim. In the context of intellectual and literary property, such crimes take various forms, including: **(1)** plagiarism and unauthorized copying of protected works; **(2)** theft of trade secrets through illicit access or use of confidential creative content; and **(3)** interactive exploitation

of digital platforms leading to copyright and related rights violations. These patterns illustrate key facets of digital infringement and serve as the basis for analysis in this section.

1. Forms of Plagiarism and Unauthorized Reproduction in the Digital Environment

Digital plagiarism stands as one of the most widespread and insidious forms of copyright infringement in the contemporary digital landscape. It involves the unauthorized appropriation of another individual's intellectual creation without due credit or acknowledgment. This transgression may take various forms, including the verbatim reproduction of content from internet or print media, the assimilation of ideas without proper referencing, or the misrepresentation of another's intellectual labor as one's own. While it undoubtedly constitutes a legal violation, digital plagiarism is equally a profound ethical offense—one that erodes the integrity of authorship and undermines the principle of intellectual honesty. A typical example is a student submitting an article retrieved from the internet without citation, an act that clearly amounts to literary theft⁴.

Unauthorized reproduction represents a distinct and serious breach of copyright law, characterized by the replication of protected content without the express permission of the rightful owner. This infringement spans a wide range of creative outputs, including literary works, scholarly publications, artistic compositions, and other forms of intellectual property, all of which are safeguarded by legal frameworks that require prior authorization for their lawful use. Such unauthorized duplication, especially when coupled with distribution, directly contravenes the exclusive rights vested in the copyright holder. A typical instance of this violation is the unlicensed copying and dissemination of a music album, which constitutes a clear infringement under established intellectual property legislation⁵. Among the multiple forms that plagiarism can take, the following represent its most notable manifestations:

1.1 Direct Electronic Plagiarism

Literary plagiarism ranks among the gravest threats to academic and intellectual integrity, often manifesting in various forms. The most prevalent involves the verbatim copying of substantial text—such as paragraphs or pages—without citing the original source or author. This practice constitutes a direct infringement of intellectual property rights, as it falsely attributes another's work to the plagiarist. Such conduct not only violates ethical standards but also distorts academic truth, amounting to full-scale intellectual theft with serious legal and professional implications⁶.

Although some instances of plagiarism may stem from ignorance or neglect of citation norms, direct copying without attribution is viewed as intentional misconduct aimed at deceiving readers or gaining undue credit. Such actions can seriously damage academic reputation and result in harsh consequences, including paper retraction or dismissal from academic and professional roles. Therefore, academic institutions stress the importance of ethical research practices and promote proper referencing methods to safeguard intellectual property and uphold scholarly integrity⁷.

Rephrasing without proper attribution involves individuals slightly rewording others' texts and publishing them under their names, often without appropriate acknowledgment. This is considered a form of literary theft even if the original text is altered.

1.2. Electronic Theft of Trade Secrets

The misappropriation of trade secrets is a major threat facing businesses globally. It involves the unauthorized access, use, or exposure of confidential business information—such as formulas, processes, designs, or methods—that are not publicly known and offer a competitive edge precisely because of their secrecy⁸.

From a business perspective, unauthorized use of these secrets can lead to substantial financial losses and weaken a company's competitive edge. For individuals accused of stealing trade secrets, there can be severe legal consequences, including criminal liability. Therefore, understanding the nuances of trade secret theft is crucial for protecting personal secrets and respecting the rights of others⁹.

From a corporate standpoint, the unauthorized exploitation of trade secrets can result in significant financial harm and erode a firm's competitive position. Individuals found guilty of such theft may face serious legal repercussions, including criminal charges. Hence, a clear understanding of trade secret violations is essential for safeguarding proprietary information and upholding the rights of others¹⁰. The main difference between the two systems, agreed upon by scholars, is that trade secrets enjoy protection without the need for registration. Unlike patents, trade secrets do not require formalities to be legally protected.

3. Interactive Exploitation of the Digital Environment in Violating Intellectual and Literary Rights

One of the most important factors in transitioning from traditional environments to digital ones is the replacement of physical publications with electronic repositories, alongside modifications to procedures and processes associated with handling this environment and storage media. The digital environment consists of a diverse set of elements differing in tasks, functional specialties, and scientific capabilities¹¹. The digital environment is cumulative, resulting from the application of varied technologies in organizations and individuals' acceptance of numerous changes. It represents a mix of digital activities where multiple technologies interact, changing the nature of services provided. It primarily depends on information networks, especially the internet, and is linked to concepts like search systems, direct communication, and areas such as digital publishing, CDs, and electronic catalogs, among others¹². Among the most notable manifestations of interactive exploitation of the digital environment to violate intellectual property rights, we mention the following examples:

3.1. Unauthorized Copying

Downloading or distributing digital content without obtaining prior authorization from the rights holders is one of the most common forms of infringement in the digital age. This includes sharing e-books, films, music, software, or any other digitally protected content. This behavior constitutes a clear violation of intellectual property laws, exposing creators and publishers to significant financial losses by undermining expected revenues from their works, potentially limiting their ability to invest in producing new content. Furthermore, this practice extends beyond individuals to sometimes involve large-scale piracy networks illegally distributing such materials, prompting many countries to strengthen laws related to intellectual property protection and impose strict civil and criminal penalties on violators¹³. In addition to economic losses, digital piracy has complex social and legal effects, weakening the culture of respecting intellectual property rights and encouraging the belief that accessing digital content should be free, even at the expense of creators and authors. Such practices may also expose users to risks like malicious software and viruses distributed via illegal download sites, as well as potential breaches of personal data. Consequently, international efforts to combat this type of violation have increased, whether through international agreements like TRIPS (Trade-Related Aspects of Intellectual Property Rights) regulating intellectual property globally or enhancing technologies used to protect digital rights, such as Digital Rights Management (DRM) systems aimed at restricting unauthorized access to digital content and ensuring legitimate use¹⁴.

3.2. Digital Piracy

Digital piracy is one of the most dangerous forms of intellectual property infringement, involving the distribution or sale of legally protected content through unauthorized means, either for personal or financial gain or to provide such content freely to the public without permission from the rightful owners. This practice constitutes a direct violation of the financial and intellectual rights of authors, publishers, and production companies, leading to substantial economic losses that hinder creators' ability to continue producing new works¹⁵.

Prominent examples of digital piracy include the distribution of films, music, e-books, or paid software on unofficial platforms, such as illegal download sites or peer-to-peer file-sharing networks. This

behavior deprives rights holders of legitimate revenue, directly impacting sectors like cinema, music, and digital publishing, which rely heavily on income generated from selling or renting these contents¹⁶. The effects of digital piracy extend beyond financial impacts to legal and security risks for those involved. Legally, many countries impose stringent measures against individuals or entities distributing copyrighted digital content without authorization, with penalties ranging from hefty fines to imprisonment, particularly in cases involving organized commercial piracy¹⁷.

From a security standpoint, many illegal websites and platforms may exploit users by spreading harmful software, such as viruses or spyware, potentially leading to the compromise of personal data or exposing devices to significant cybersecurity threats. In response to these challenges, production companies and legal bodies are developing advanced technical and legal strategies, such as DRM systems and advanced encryption, alongside tracking and shutting down piracy sites, aiming to reduce violations and ensure the preservation of intellectual property rights for their rightful owners¹⁸.

3.4. Unauthorized Modification

Modifying or altering an original work—whether text, images, or any other form of creative output—without prior permission from the rights holder constitutes a clear violation of the author's moral rights. Such modifications distort the original idea the author intended to convey, negatively impacting the legal protection of the work and exposing it to distortion in its form or meaning¹⁹.

One aspect of this violation involves republishing or using digital or printed content without crediting the rightful owner, including failing to mention the name or accurately attribute the work to the original creator. This action contradicts legal rules ensuring the author retains moral rights, which are fundamental in maintaining control over the reputation of their work and protecting it from any use that harms the original idea or alters it improperly.

3.5. Unauthorized Use of Software and Applications

Using or modifying computer programs or applications without obtaining the appropriate license or breaching their protection systems constitutes a blatant violation of intellectual property rights. Such actions exceed the legal boundaries protecting the rights of software authors and developers, threatening these rights and undermining the principle of economic justice based on compensating creators for their efforts and investments.

This violation involves unauthorized seizure of the author's right to control their programs or applications, leading to illegal exploitation that may harm the quality or distort the original characteristics of the work. Additionally, breaching protection systems reflects a serious threat to cybersecurity and negatively impacts trust in modern technologies, opening avenues for harmful or unauthorized usage and jeopardizing market stability in this sector²⁰.

These forms of violations necessitate additional legislation and legal mechanisms to protect creators and ensure the sustainability of a fair and secure digital environment.

Section Two: Effectiveness of Mechanisms to Combat Digital Infringement on Intellectual and Literary Property

Intellectual and literary property form one of the cornerstones supporting creativity and innovation, granting authors and creators legal rights to protect their works from unauthorized exploitation.

With the evolution of the digital environment, these rights have increasingly become vulnerable to electronic violations, imposing new challenges requiring effective mechanisms to protect these rapidly growing rights.

To safeguard these rights, preventive mechanisms have been developed, aiming to prevent violations from occurring in the first place, such as applying encryption technologies and using Digital Rights Management (DRM) systems that restrict access to content and control how it is used. Some institutions also rely on awareness and education campaigns to inform users about the importance of respecting intellectual property rights (1).

In cases where violations occur, remedial mechanisms are employed, including prosecuting offenders through legal frameworks that impose heavy fines and strict penalties, as well as fostering international cooperation to combat digital piracy over the internet. These measures aim to deter offenders and ensure the restoration of creators' and thinkers' rights (2).

1. Preventive Mechanisms for Protecting Intellectual and Literary Property

In light of rapid technological advancements and the expansion of the digital environment, protecting intellectual and literary property has become more critical than ever.

Preventive mechanisms focus on preventing violations before they occur through a combination of technical, legal, and regulatory measures designed to protect the rights of authors and creators, summarized in the following elements:

1.1. Digital Rights Management Systems

Digital Rights Management (DRM) systems are among the most prominent legal and technical tools reinforcing preventive protection of digital content. They aim to restrict unauthorized use of materials protected under copyright and neighboring rights. These systems employ technical measures granting rights holders actual control over how digital works are accessed, exploited, and distributed, aligning with national legislations and relevant international agreements, such as the World Intellectual Property Organization Copyright Treaty (WCT) of 1996 and the WIPO Performances and Phonograms Treaty (WPPT) of 1996. Accordingly, DRM serves as an enforcement mechanism for protective measures outlined in intellectual property laws, including the U.S. Digital Millennium Copyright Act (DMCA) and the European Directive 2001/29/EC on copyright in the Information Society²¹.

Technically, DRM systems function by imposing digital restrictions on copying, printing, and sharing through encryption, licensing systems, and digital key management, limiting unauthorized use of digital works. For instance, these systems prevent users from downloading e-books in open formats or redistributing music files without permission from the rights holders. Despite their effectiveness in reducing violations and piracy, DRM systems occasionally raise legal concerns regarding restrictions on fair use and legitimate handling of legally acquired works, prompting some legislation and judicial interventions to balance intellectual property protection with the legitimate rights of consumers²².

1.2. Digital Signatures

Digital signatures (Digital Signature) are among the most important modern technologies used as both a legal and technical mechanism to ensure the authenticity and integrity of digital content. They provide literary and artistic works with a verifiable seal that confirms their legitimate origin and prevents tampering or forgery. Based on robust encryption algorithms leveraging Public Key Infrastructure (PKI), the author or rights holder generates a unique signature linked to the original content, enabling detection of unauthorized modifications or unauthorized duplication. The legal significance of this technology lies in its adoption as reliable digital evidence in disputes over intellectual property rights, allowing proof of ownership and identification of potential violations²³.

Practically, digital signatures are implemented within regulated legal frameworks, such as the EU Directive 1999/93/EC on electronic signatures and electronic transaction laws in many countries, granting digital signatures the same legal standing as traditional signatures. Digital signatures are also employed to track unauthorized copies of digital works, aiding in combating piracy and identifying unauthorized users. Thanks to their technical features, they not only provide preventive protection for content but also enhance the ability to present conclusive digital evidence in litigation related to copyright infringement, making them essential tools in the digital protection of intellectual works²⁴.

1.3. Electronic Encryption for Intellectual and Literary Property

Electronic encryption (Encryption) stands as one of the most prominent technical and legal mechanisms used to protect data and digital content from unauthorized access. This involves converting information into encrypted formats unreadable except by authorized parties possessing the appropriate decryption keys. Based on complex mathematical algorithms like Public Key Encryption

and Symmetric Encryption, encryption ensures the confidentiality of digital content and prevents misuse or tampering by unauthorized parties. As a vital tool in protecting intellectual property, encryption is widely used to safeguard digital works such as films, software, and e-books, preventing unauthorized parties from accessing, copying, or distributing content through illegal means²⁵.

Legally, encryption enjoys widespread recognition under national and international regulations concerning data protection and intellectual property, such as the Budapest Convention on Cybercrime (2001) and national laws related to cybersecurity and digital transactions. Certain laws, such as the EU General Data Protection Regulation (GDPR) and the U.S. Health Insurance Portability and Accountability Act (HIPAA), mandate the use of encryption as a mandatory measure to protect sensitive data. Despite its effectiveness in combating piracy, encryption raises certain legal issues, particularly regarding balancing the protection of digital rights with the need for authorities to access encrypted data when necessary. This has prompted judicial and legislative bodies to regulate its use within precise legal frameworks ensuring protection without infringing on legitimate rights of individuals and organizations²⁶.

1.4. Registration of Intellectual and Literary Property

Registering literary and artistic works with relevant authorities represents a fundamental legal procedure granting rights holders additional protection and enabling them to formally establish their intellectual ownership. Through the registration process, the author or rights holder acquires a legal document confirming the protected status of the work, facilitating the assertion of rights in court in case of infringement. Registration serves as *prima facie* evidence of ownership, strengthening the rights holder's position in disputes over ownership or unauthorized use. The importance of this procedure is reflected in national and international legislations, such as the Berne Convention for the Protection of Literary and Artistic Works (1886), which, despite not mandating registration as a prerequisite for protection, encourages it as a strong means of proof. Similarly, the U.S. Copyright Act of 1976 requires registration as a necessary condition for filing lawsuits in federal courts²⁷.

Beyond its protective role, registration enhances legal awareness regarding the importance of intellectual property rights, providing official confirmation to authors and creators of their ownership, encouraging investment in innovation and creativity without fear of losing their rights. It also facilitates the creation of an official database of protected works, simplifying licensing and commercial exploitation processes and reducing disputes over intellectual precedence. In line with digital advancements, many countries and organizations have adopted electronic registration systems for works, such as the U.S. Copyright Office and the electronic registration system of the World Intellectual Property Organization (WIPO), enhancing the efficiency and reliability of this procedure in the modern intellectual property landscape²⁸.

1.5. Contracts and Agreements

Drafting clear contracts and agreements regarding the use and distribution of literary and artistic works is among the most important legal preventive mechanisms contributing to the protection of intellectual property rights and reducing the likelihood of violations. These contracts, whether licensing agreements, rights transfer agreements, or distribution agreements, specify detailed terms defining permissible use, the rights and obligations of each party, and restrictions on unauthorized exploitation. These agreements allow the author or rights holder to retain partial or full rights as agreed upon, ensuring that works are not exploited outside the agreed framework. International and national legislations recognize the importance of such contracts, as seen in the Berne Convention for the Protection of Literary and Artistic Works (1886) and the WIPO Copyright Treaty (WCT - 1996), which emphasize the necessity of clear contracts precisely defining the rights of concerned parties²⁹.

Practically, signed agreements clarify the rights and obligations between authors, publishers, distributors, and digital platforms, reducing potential disputes over unauthorized use. These contracts also serve as a strong legal basis that can be relied upon in case of breach of any contractual clause, facilitating recourse to courts or arbitration for rights protection. By obligating all parties to respect intellectual property rights, these agreements foster a stable legal environment ensuring lawful exploitation of works, whether in print or digital publishing, enhancing the sustainability of creative

industries and protecting the interests of authors and producers across various cultural and artistic fields³⁰.

1.6. Monitoring Usage and Searching Across the Digital Space

Continuous monitoring and detecting unauthorized content online is a key preventive measure for protecting intellectual property rights. Specialized software employing AI and data analysis tracks illegal content distribution across various platforms. Technologies like digital fingerprinting and watermarking help identify violations early, enabling rights holders to act before significant damage occurs.

Laws such as the U.S. DMCA (1998) and the EU Directive 2019/790 mandate online platforms to monitor and remove infringing content. These technologies empower creators to issue takedown notices and take legal action, while also encouraging proactive strategies to curb digital piracy. Strengthening digital monitoring ensures a safer environment for creators, promoting sustained investment in intellectual works³¹.

2. Therapeutic Mechanisms to Address Intellectual and Literary Property Violations

When intellectual and literary property rights are violated, it is essential to take effective therapeutic measures to protect the rights of creators and thinkers and ensure the restoration of rights to their rightful owners. These therapeutic mechanisms focus on addressing violations after they occur and include legal and technical measures to ensure compliance with laws and the protection of intellectual property rights.

2.1. Legal and Judicial Procedures

Legal procedures are one of the most prominent therapeutic mechanisms in combating intellectual and literary property violations. The legal system allows authors and creators to file lawsuits against individuals or entities involved in infringing on their rights. Courts can impose penalties, including financial fines as compensation for damages caused to the original rights holders, or even imprisonment in cases of severe violations. Strong evidence confirming the infringement helps the competent judicial body achieve justice and restore lost rights³².

2.2 Amicable Settlement Through Negotiation

In many cases, disputes can be resolved through amicable settlement and negotiation instead of resorting to courts. This process involves reaching an agreement between the aggrieved party and the infringer regarding financial compensation or terms of use of the work. Settlements provide quick and effective solutions to resolve disputes while avoiding high legal costs and the lengthy time required for litigation³³.

2.3. Investigations and Monitoring

Investigations and monitoring play a crucial role in addressing intellectual property violations. Companies and institutions use advanced technologies to monitor and analyze unauthorized use of content, such as violation detection programs that track content presence on the internet. These technologies help identify websites and individuals involved in the infringement, facilitating appropriate legal actions³⁴.

2.4. International Cooperation

Since violations can be cross-border, international cooperation is essential to combat digital piracy and global infringements. Countries must collaborate through treaties and agreements, such as the Berne Convention for the Protection of Literary and Artistic Works, and organizations like the World Intellectual Property Organization (WIPO), which support global efforts to enforce intellectual property laws and combat cross-border violations³⁵.

2.5. Technical Measures

Technical measures involve updating security and protection systems to reduce violations. These measures include using encryption technologies to ensure content protection from unauthorized access, developing tools to monitor and prevent digital piracy, and implementing periodic updates to protection software to adapt to new piracy methods³⁶.

Addressing intellectual and literary property violations requires coordination between legal procedures, settlements, monitoring, and international cooperation. By applying these therapeutic mechanisms securely and effectively, the damages resulting from violations can be minimized, ensuring the protection of creators' and thinkers' rights in a digitally connected world.

Conclusion

In conclusion, protecting intellectual and literary property in the digital age has become an urgent necessity, especially given the development of communication tools and the widespread access to the internet. While the digital world offers immense opportunities for creativity, publication, and access to information, it has also presented significant challenges related to the increasing violations of authors' and creators' rights. These violations encompass various forms, ranging from plagiarism and unauthorized copying to piracy and the infringement of trade secrets.

Through this research, we have examined in detail the manifestations of violations against intellectual and literary property in the digital environment, as well as the preventive and remedial mechanisms employed to combat these violations. Preventive mechanisms, such as Digital Rights Management systems and electronic encryption, have proven effective in protecting works before violations occur. Conversely, remedial mechanisms play a crucial role in restoring creators' rights after infringements, including legal actions, amicable settlements, and international cooperation.

Ultimately, addressing intellectual property violations in the digital world requires coordinated efforts from all stakeholders—governments, international organizations, and creators—to enact stringent laws and develop advanced technological solutions. Additionally, raising awareness among individuals about respecting others' rights and avoiding unauthorized exploitation of their works is essential. In the end, ensuring the protection of these rights benefits not only the creators but also fosters a healthy digital environment that supports innovation and sustains creativity in an ever-evolving world.

Based on the information provided above, the main findings can be summarized as follows:

First: The digital age has witnessed a noticeable increase in violations of intellectual and literary property rights, due to the widespread use of the internet and the ease of accessing content. Among the most prominent forms of violations are plagiarism, unauthorized copying, and theft of trade secrets.

Second: Preventive mechanisms, such as Digital Rights Management (DRM) systems and electronic encryption, have proven effective in reducing violations before they occur, as these mechanisms prevent unauthorized access to digital works and provide technical protection against piracy.

Third: In cases where violations do occur, remedial mechanisms such as legal actions, amicable settlements, and international cooperation serve as important tools for restoring authors' rights and deterring offenders, thereby enhancing global protection of intellectual property.

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World Intellectual Property Organization (WIPO):

WIPO is a specialized agency of the United Nations that promotes global intellectual property protection through international treaties and cooperation among countries, providing a legal framework to support creativity and innovation via agreements like the WCT and WPPT.

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European Directive 2001/29/EC:

This EU directive aims to harmonize copyright protection in the Information Society across member states, establishing rules to safeguard digital works and prohibit circumvention of technological protection measures. (European Commission Directive 2001/29/EC on Copyright, 2021, p. 22).

DRM (Digital Rights Management) systems

are technological measures designed to protect digital content by controlling how users access, copy, and share copyrighted materials. These systems use encryption, licensing, and digital keys to prevent unauthorized use, ensuring that only authorized users can exploit the content as permitted by the rights holders. Lessig, Lawrence. *Remix: Making Art and Commerce Thrive in the Hybrid Economy*. Penguin Press, 2008, p. 112.

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