

Legal and technological protection of digital creations and its limitations

الحماية القانونية والتكنولوجية للإبداعات الرقمية وضوابطها



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Abstract:

Intellectual property has undergone significant changes in recent years, keeping pace with the information age and advanced communication technologies. Authors, rights holders, and producers are now seeking new mechanisms to protect their works in the digital environment, which has facilitated the use and exploitation of diverse creations. These mechanisms also guarantee authors the collection of their royalties for any online use by third parties. The WIPO Copyright Convention has thus established new legal and technical mechanisms to support the protection of digital works. It urges States to adopt measures and mechanisms that guarantee adequate legal protection and effective sanctions against all forms of infringement in the digital world. This includes prohibiting the circumvention of technological protection measures.

Keywords: Technical Protection; Copyright; Intellectual Property; WIPO Treaty; Digital Environment.

ملخص:

عرفت الملكية الفكرية تطورات كبيرة في السنوات الأخيرة تماشياً مع عصر المعلوماتية والتكنولوجيات المتطورة في مجال الاتصالات. حيث أصبح الجميع من مؤلفين، أصحاب الحقوق ومنتجين يبحثون عن آليات جديدة تضمن لهم حماية مصنفاتهم الفكرية في البيئة الرقمية، التي سهّلت عمليات استعمال واستغلال الإبداعات المختلفة، وتضمن لهم تحصيل حقوقهم المالية عن كلّ استغلال لها من طرف الغير عبر الشبكة. وهكذا كرّست المنظمة العالمية للملكية الفكرية آليات قانونية وتقنية جديدة لدعم حماية المصنفات الرقمية، وحثّت الدول على اتخاذ التدابير والآليات التي من شأنها أن تضمن حماية قانونية ملائمة وجزاءات قانونية فعالة ضد كل عمليات المساس بالملكية الفكرية في العالم الرقمي عن طريق حصر التحاليل على التدابير التكنولوجية لحماية المصنفات.

كلمات مفتاحية: التدابير التكنولوجية، الملكية الفكرية، إدارة الحقوق، حقوق المؤلف، الحقوق المجاورة.

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INTRODUCTION

The profound impact of information and communication technologies (ICTs) on intellectual property is not surprising, given the considerable potential of the digital world to facilitate access to and reproduction of intellectual property. The search by rights holders for new ways to strengthen their rights constitutes the greatest challenge facing intellectual property law today, and also explains the successive amendments to intellectual property laws, both nationally and internationally.

Legal texts alone are no longer sufficient to protect intellectual property in the digital environment. Rights holders are increasingly resorting to technological measures and mechanisms to protect their creations against counterfeiting and unauthorized use. However, reality has shown that these measures, while initially very effective in preventing the infringement of protected intellectual works, are quickly circumvented by network and digital users, who often manage to replace these technical

measures with the unauthorized use of others' creations and works.

Thus, legislative intervention became essential to address the copyright protection crisis in the digital environment. This principle was enshrined in the 1996 WIPO Copyright Treaty and the WIPO Related Rights Treaty, marking a significant shift towards recognizing new levels of protection for digital works, in addition to the traditional legal protection afforded to authors and holders of related rights under copyright law. For the first time, technologies and technical measures for the protection of digital works, known as Level 2 protection, were recognized.

In addition to recognizing the technical and technological protection of intellectual works, the legislature ensured compliance with these measures by criminalizing any act that infringes upon them or attempts to suppress them. This constitutes Level three protection, initially established by the WIPO treaties.

This raises a question: does the dual protection offered by WIPO treaties guarantee effective protection of works in the digital environment and contribute to achieving the objective of intellectual property, namely, to encourage creativity and innovation? We will first examine the technical protection of intellectual works by studying the different types of technological measures used and the legal issues they raise. In the second part of this article, we will examine the criminalization of the invalidation of these measures and its impact on the dissemination of knowledge and creativity. We will adopt an appropriate descriptive and analytical approach to clarify the new concepts introduced by the WIPO treaties and to analyze their texts relating to the levels of protection they establish.

1. Technology to protect digital creations:

Faced with the rapid evolution of information and communication technologies in recent years, which has significantly increased intellectual property rights violations, authors and producers have begun to use digital technologies to compensate for the lack of legal protection. In other words, they are relying more heavily on technical protection methods, favoring the technical exclusivity offered by various technological measures widely used by authors and rights holders, including publishers, producers, and other industry players. These measures, in their various forms, have seen remarkable development, both in terms of their scope and the constant innovation of the technologies themselves. While their initial use was solely aimed at preserving the material rights of rights holders, for example through anti-copying or anti-downloading technologies, it has evolved over time to restrict access in terms of quantity and duration, in addition to protecting moral rights, such as technologies preventing the modification of works and counterfeiting. Thus, technologies that prevent the modification of works support the author's moral right to the integrity of their work, while technologies that restrict access to a work support their right to express their creativity. Furthermore, the continued emergence of new technologies, such as live streaming, has fundamentally altered the relationship between the "public"—that is, users—and "digital works." Consequently, the key issue becomes the technical protection of intellectual property rights.

With the development of information and communication technology and the increasing ease with which infringement of

intellectual works occurs, authors and producers have begun to resort to digital technologies to compensate for legal protection, which they now see as inadequate and completely inadequate. That is, they rely on technical means of protection and replace legal exclusivity with technical exclusivity. There has been a significant development in the technical means used for protection and their types, as their effect has been extended on the one hand, in addition to the continuous renewal of the types of these technologies themselves. While the use of technical means was initially aimed specifically at preserving the material rights of their owners (using copy-prevention technology, for example), over time the use of technologies has developed, which now provide new possibilities that also allow for the consideration of moral rights, such as technologies that prevent changes in works, which enshrine the moral right of the author to respect the integrity of his work, or technologies that prevent access, which enshrine the author's right to disclosure. This is in addition to the emergence of new technologies each time, such as streaming technology¹ also known as live broadcasting, which has radically changed the relationship between the "audience," i.e., users, and "digital works."

Exploiting modern technologies to protect works is a logical and almost inevitable outcome, given the threat that has become looming over intellectual property, both its acquisition and distribution, with the revolution brought about by information and communication technology.

The technologies that authors and rights holders can exploit to protect their works and performances in the information society are

truly diverse. Some were developed specifically to protect intellectual property rights in the digital world, while others were developed to protect all digital content, regardless of its nature, whether subject to copyright or not. Since it is difficult to enumerate all of these existing technologies, we will only discuss the most important: conditional access technologies, tagging and identification methods, and electronic rights management technologies. Technical protection measures, also known as digital rights management, digital restrictions management, or digital rights management (DRM), are all terms that refer to the means used to monitor the use of digital works. These technical means are placed on all types of digital media: whether physical, such as CDs, software, etc., or non-physical, which are transmitted in various ways, such as audio-visual broadcasting or the Internet².

These technical measures can:

- Restrict the reading of the media to a specific geographical area, as is the case with DVDs.
- Restricting the reading of the media to specific devices only (where certain applications (automation software) can only be read or used on the latest version of a specific smartphone or a specific brand of smartphone, such as the iPhone
- Restricting the reading of the media to a specific person, such as a specific dealer or seller, in order to prevent competition.
- Restricting or preventing the "private copy" of the media to another device (external, for example.)

- Digital identification and marking of works and all means used for reading and recording, which allows for the identification of unauthorized copies.

These technical means use a numbering of works accompanied by conditional access, as the publisher or distributor who exploits this access control will not grant the key to the protected file until they have obtained proof of purchase or subscription. This is because the reading or copying of the protected file is only authorized after programmatic identification has been confirmed by the service distributor.

Technical protection measures have been recognized in several legislations, such as those of European countries and the United States. The United States of America³, in addition to its recognition under international agreements that criminalize fraud or assistance in doing so⁴.

However, the use of these technological measures has raised numerous legal problems, particularly regarding the disruption of the balance of copyright law by preventing users from benefiting from legally established exceptions such as private copying, citation, and legal deposit. Furthermore, it has led to monopoly situations and a disruption of fair competition, particularly in cases where the publication of certain content is exclusively linked to the owners of products (content-product owner), as we will see below.

These measures can be divided into three main categories, which we will discuss below:

1.1 .Measures used to restrict access to and exploitation of digital works:

Numerous methods and technologies have been developed to address one of the main challenges of digital networks: linking access to information and protected content with ensuring the protection of authors' rights and the payment of their royalties. Among the most well-known and widely used technical methods is the integration of technological measures into digital works to achieve a specific protection goal. These include copy restriction technologies that prevent the production of multiple or complete copies, or those that only allow lower-quality copies, as is the case with DVDs.

This technology is considered mandatory in some legislations, such as the United States, where it must be included and integrated into all digital audio recording media⁵. There is also the "electronic key" technology, which is used especially in the field of computer programs, and which is usually a component of the hardware (the machine), in the form of a key that is connected to the latter (port) or in the form of a floppy disk, which the user inserts into the computer when he wants to exploit the program, as the latter does not work unless this key is in the user's possession. There is also the technique of encryption, or what is known as "cryptography," which is the practice of concealing data by converting it from its natural, understandable form to another, incomprehensible form, making it impossible for anyone without specific secret knowledge to discern its content. This technique is also used to limit or prevent access to intellectual works. Several types of conditional access systems have been developed that rely primarily on encryption technology. Among the techniques also used is the technique of

electronic signature, which is a special application of cryptography, used for the purpose of authenticating or identifying a document. The key that removes the encryption (cryptage) is granted either by paying royalties or by accepting the terms of the work's exploitation. In addition, there is what is known as the digital envelope: the work is placed in a digital envelope containing information related to the work and the terms of its exploitation. Only upon acceptance of these terms is this envelope opened, and the user can then access or obtain the work.

1.2. Identification and Traceability of Intellectual Works:

Methods have been developed to identify all data relating to an intellectual work, including its author, producer, publisher, and all data contributing to its identification, thus enabling its traceability. This also makes it possible to detect any alteration of the work or any breach of its integrity. This data may be explicit or implicit in the physical medium of the protected work.

Watermarking or digital tattooing: This tattooing allows for the incorporation of certain data into the digital code of the work, usually invisible and inaudible, in the form of hidden writing, typically performed using steganography, which is defined as "the art and science of communicating in a way that conceals the very existence of such communication." The use of invisible ink is an example of this science, which dates back thousands of years, and is now borrowed and inspired by the physical world. This tattooing is usually indelible, meaning it is indelible. Despite the destruction or mutilation of the work, it is found in every part of it. It is encrypted information attached to the work in digital form, or

invisible modifications or alterations associated with the work, enabling the copyright holder to identify the work, track unauthorized copies, and request their removal from the server. This method does not prevent infringement, but it does enable the tracking of illegal copies.

This technology is widely used by photo agencies, which incorporate their name and distinctive symbols on every image they produce. Tattooing can also be clearly visible, with a specific mark placed on the work, in much the same way as the word "sample" is placed on counterfeit banknotes or other official documents.

This technology is also useful in establishing evidence of counterfeiting, as each copy has a unique serial number. Each counterfeit copy then identifies the original copy used to commit the crime.

1.3. Electronic Rights Management:

Many distributors, particularly software publishers, have long favored licensing agreements with their users. This model has since expanded to other digital sectors, to the point that online electronic licenses have become the norm, with other types of transactions the exception. The internet, thanks to its interactivity which facilitates exchanges, is perfectly suited to establishing electronic licenses between rights holders, producers, intermediaries, and users.

Whether it concerns newspapers or music, software, books, etc., access to or acquisition of cultural or media content is achieved with a simple click expressing consent to the license contract. This is why we speak of "the click of the mouse" or "the click of a scroll"⁶.

" Electronic rights management systems (ERMS) encompass technologies that ensure online rights management by enabling the conclusion of online exploitation licenses and monitoring the use of works. They combine contractual and technical protection. They can also collect and distribute rights to their beneficiaries. Examples include electronic agents who negotiate and conclude contracts, renew exploitation licenses, and distribute works, in addition to monitoring the use of works.

Rights management technologies are protections that are incorporated into the transmission phase of works over the network, primarily the distribution phase. They are software that enables the electronic management and administration of intellectual property rights. An ERM tool is an automated information program or product integrated into a computer, related to intellectual works, such as a database or CD-ROM. Its role is to license the availability and exploitation of these works while simultaneously managing the related rights.

Among its most significant advantages is its interactive nature, whereby the author can enrich the content of the protected work with the simple click of a button. It also enables the monitoring of successive exploitations of works by accurately tracking and monitoring each use of digital works online.

International intellectual property legislation also encourages the adoption of electronic licensing systems. For example, the European Directive on Copyright in the Information Society at a regional level in Europe explicitly encourages the adoption of the "contractual path" in the digital environment, thus relegating the

exception system to a merely complementary and secondary role compared to the terms of contracts discussed online.

In reality, technical means do not burden themselves with the burden of addressing the limits defined by copyright laws, which allow for ensuring or maintaining a balance between the protection and development of culture and science. They can prevent all availability or access to works, even if they fall within the public domain, and prevent the normal exercise of a legally recognized exception.

Especially since users are often the weaker party in such contracts, which are often contracts of adhesion that do not allow them to negotiate the terms or conditions of the electronic contract.

This poses a highly complex and sensitive issue for legal professionals: the legal regime of exceptions. Are they considered public order, mandatory rules that individuals cannot override, or merely supplementary rules that can be violated or deviated from?

2. Legal protection of digital works technology

International law, for the first time in 1996, established, under the WIPO treaties, a higher level of protection for works in the digital environment: the legal protection of the technological protection measures themselves, also known as the third level of protection, in addition to legal and technical protection.

2.1 .Prohibition of Bypassing Technological Protection Measures:

This means protecting the technology used to safeguard digital works from any potential fraud, destruction, sabotage, or

invalidation. This came about after it became clear that the technical means used to protect intellectual property are not entirely secure, and that hackers and cybercriminals can easily circumvent them in order to obtain and exploit digital works without paying any royalties to the rights holders.

There is also software that enables the invalidation of certain technologies developed to protect digital works, such as software that allows the removal of electronic tattoos or the decoding of a digital envelope of a work without obtaining its key⁷.

During the 1996 Diplomatic Conference, the member states of the World Intellectual Property Organization were unable to agree on a precise protection regime for technological measures to protect copyright and related rights. They recognized the principle under Articles 10 (10) and 11 (11) of the WIPO Copyright Treaty and Articles 18 (18) and 19 (19) of the WIPO Performances and Phonograms Treaty, leaving states free to do so. The provisions of the two treaties urge States to adopt legal protection against any nullification of the effect of effective technological measures used by authors, performers or producers of phonograms in the exercise of their rights under this Treaty or the Berne Convention, which prevent the performance of acts not authorized by the authors, performers or producers of phonograms concerned or permitted by law in relation to their works, performances or phonograms.

Both treaties leave states free to resort to these measures and mechanisms, but require them to ensure adequate legal protection and effective legal sanctions against any attempt to nullify the effect of these technological measures. They do not specify how

this protection should be organized, nor do they specify the acts that should be prohibited in such cases.

2.2. Prohibition of software and equipment enabling the circumvention of technological measures:

The WIPO Treaty, in addition to criminalizing acts of circumventing technological measures for the protection of intellectual property, offers enhanced protection by prohibiting the manufacture, sale, and distribution of all devices used or facilitating such circumvention. This represents the highest level of protection, as the prohibition extends not only to acts of circumventing or invalidating technological measures, but also to the manufacture, sale, and distribution of devices used for this purpose.

The WIPO Copyright Treaty (WCT) stipulates obligations related to technological measures in Article 11 (11), which states: "Contracting Parties shall provide in their laws for appropriate protection and effective remedies against the circumvention of effective technological measures used by authors in the exercise of their rights under this Treaty or the Berne Convention, which prevent the performance of acts not authorized by the authors concerned or permitted by law, in relation to their works." This makes it clear that the WCT has adopted the third level of protection, imposing an obligation on contracting states to provide in their laws effective remedies against the circumvention of technological measures used to protect works if such measures prevent the performance of acts not authorized by the authors or permitted by law. This means that if accessing or copying a work is lawful due to the copyright holder's consent, or because the work

itself is not legally protected by copyright, or because the law allows others to copy it or parts of it despite it enjoying copyright protection, based on the fair use theory, then in all these cases, circumventing the technological measures associated with the work is lawful.

This obligation imposed by the Convention on States Parties constitutes the minimum level of protection, meaning that States Parties may raise the level of protection beyond the minimum level stipulated in the Convention.

Extending the author's monopoly over the availability of works effectively infringes on the right of individuals to access information and knowledge. Failure to respect this right constitutes a legally wrongful act, and an individual is liable in addition to their liability for copyright. The balance of interests in copyright law is already threatened by what has come to be called "accessibility law" through "legal protection of technical locks," or what some jurists call the third level of protection in copyright law. Technical means, as we have seen, grant rights holders the right to determine when and how intellectual works are used, and allow for censorship and control over what copyright law itself does not permit, by controlling the availability of the work and, through this, the availability of the information it contains.

Technological protection measures aim to discourage users from engaging in acts that are illegal under copyright law. Ordinary users do not attempt or master the art of resisting technical protection, and the mere existence of this obstacle discourages them from tampering with the work. However, if a user circumvents this

protection and subsequently infringes on intellectual works, this constitutes a crime of counterfeiting and is punishable under copyright law as a result of such infringement. This is a given. Why should an individual also be punished simply for evading or erasing the effects of technological measures? Especially since these measures often prevent individuals from engaging in certain actions permitted by law, for example, under legal exceptions. Therefore, individuals resort to evading these protection techniques or measures in order to exercise the legally granted rights normally.

In general, despite slight differences between laws, various legislations have attempted to protect intellectual property in the digital environment with new procedures and methods they deem necessary. Although American law is among the most stringent in this regard, it has characterized attacks on intellectual property as felonies, unlike Latin American legislation, which considers them misdemeanors. American law has placed great importance on violating copyright legislation, resorting primarily to a deterrent solution that makes the clone think twice before imitating. It has imposed harsh penalties, including imprisonment for up to five years⁸.

CONCLUSION:

The intellectual property protection system, both internationally and nationally, has witnessed remarkable developments in recent decades, characterized by significant progress thanks to the recognition of technological protection for digital works. This complements the legal protection that already enshrines them and prevents any attempt to nullify or circumvent them. However, excessive legal protection can hinder the dissemination of

knowledge and information, which contradicts the philosophy of intellectual property, whose primary objective is to foster creativity and prosperity.

Therefore, we propose the following:

□ The advantages of electronic technologies for protecting and managing intellectual works are undeniable. However, it is illogical to adopt this technology as an automatic solution without considering other equally important factors.

□ Legislators should explicitly stipulate these technological measures in copyright law and not merely rely on the WIPO Convention ratified in 2014.

□ It is essential to define the limits of this technological protection, particularly with regard to respecting fundamental rights such as the protection of personal data, the rights of internet users to access information, and the rights of people with disabilities to access knowledge, etc.

□ The issue of criminalizing the invalidation of technological measures must be addressed with precise legal provisions, particularly regarding the assertion that those who invalidate such measures are not liable in cases involving works in the public domain or the exercise of a legal exception.

□ It is essential to re-establish and reinforce the boundaries between competing interests to prevent any one interest from dominating the others. A system of boundaries and exceptions is the optimal way to achieve this.

□ There is a risk of transforming the objectives of copyright law, most importantly the widespread dissemination of culture and knowledge, into a general information security law that would effectively restrict all transfers of intellectual works and cultural products.

□ It is imperative to clarify the legal nature of the system of exceptions and boundaries in copyright law and to strive to maintain a fair balance of interests.

Indeed, copyright law has evolved very rapidly in recent years, heavily influenced by the demands of cultural lobbying groups. Will the international community succeed in finding a balance of interests, which is now one of the main challenges in the field of intellectual property?

Footnotes

¹ Streaming: It is a technology for exchanging data over the Internet in the form of a regular and continuous flow, which allows digital works to be broadcast on the Internet, directly, without the need to download the file (there is no need to download and copy for reading), as the main computer (the server) sends the user the data he requests and then erases it immediately after reading automatically.

² Antoine, A., Brochet, A.L., De Bellefonds, L., Le Guerier, M., Lestienne, A., Scalbert, C., & Garnier M. (n.d.), « numérique et droits d'auteur » : étude réalisée sous la direction de Jean-Marc Vernier, responsable des études à l'exception (groupe de réflexion sur le cinéma), p. 60, détaillé sur le site web : <http://lexception.rezo.net/IMG/pdf/NetDA.pdf>

³ Digital Millennium Copyright Act (DMCA): America adopted it in 1998 and decided to use the Intellectual Property to adapt to the number.

⁴ Just as the 1996 WIPO treaties did

⁵ Antoine, A., Brochet, A.L., De Bellefonds, L., Le Guerier, M., Lestienne, A., Scalbert, C., & Garnier M. (n.d.), « numérique et droits d'auteur » : étude réalisée sous la direction de Jean-Marc Vernier, responsable des études à l'exception (groupe de réflexion sur le cinéma), p. 60, détaillé sur le site web : <http://lexception.rezo.net/IMG/pdf/NetDA.pdf>

⁶ Bernt Hugenholtz, V. (2000), Copyright Contract and Technology –What Will Remain of the Public Domain ? Dans le droit d'auteur un contrôle de l'accès aux oeuvres?, cahier du crid n=18, Bruylant, p. 13.

⁷ Caprioli, E.A. (2002), Dispositifs techniques et droit d'auteur dans la société de l'information, www.caprioli-avocats.com, Première publication, Mélanges offertes à J. P. Sortais, Bruylant, Bruxelles, pp. 39-72.

⁸ French law follows suit, imposing a prison sentence of three years.

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