

Legal Protection of Works in the Digital Platform Environment: A Legal Study Within the Framework of the Algerian Legislature

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Abstract---This study examines the legal protection of digital works within digital platforms, focusing on the legislative framework established by the Algerian legislator to safeguard intellectual creations. It highlights the extent to which these provisions align with the rapid technological transformations of the digital age and with international conventions ratified by Algeria in the field of intellectual property. The research adopts a descriptive-analytical and comparative methodology, analyzing both national and international legal instruments. The findings reveal that, although Algerian legislation provides a degree of protection for authors, it remains insufficient to address the challenges of the digital environment. The study concludes with recommendations for updating definitions, strengthening evidentiary mechanisms, enhancing cooperation with digital platforms, and developing both legal and technical infrastructures.

Keywords---Legal protection, digital platforms, intellectual property rights, Algerian legislature, Order No. 03-05.

Introduction

In the current world, information is considered the fundamental pillar of progress and advancement of nations in various fields. It represents the creation of the human mental effort, and is transformed into a knowledge resource from which humanity draws, which it needs to facilitate and develop human life. With the emergence of the internet, it has become the most prominent means of promoting services and products, including the works of authors and related rights holders, who have been quick to capitalize on its potential by creating websites to promote their creations and disseminate them widely.

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3056

However, these advantages have been accompanied by the emergence of complex legal challenges, particularly in the area of intellectual property rights protection. The digital environment has produced new types of digital works, which are vulnerable to repeated attacks due to the ease of copying and distributing them online at low cost. This has negatively impacted authors' rights and the way they are handled.

In this context, international efforts have intensified over the decades to provide effective copyright protection, starting with the Berne Convention for the Protection of Literary and Artistic Works, through the TRIPS Agreement, and finally the treaties of the World Intellectual Property Organization (WIPO), which have responded to modern technological developments. In an effort to keep pace with these challenges, the Algerian legislator has also regulated this area through Order No. 03-05 on copyright and related rights.

Significance of the study

The importance of this study lies in the following points:

- Legal protection for digital works represents a fundamental guarantee for creators, enabling them to develop their intellectual production without fear of hacking.
- It provides a general overview of the nature of copyright attacks in the digital environment.
- It reveals the national and international mechanisms established to protect copyright and related rights.
- It emphasizes that protecting intellectual property can stimulate the national economy by supporting new industrial and commercial sectors.

Study problem

This study aims to answer the following questions:

What is a "digital work"? What protection has the Algerian legislature provided for works published in the digital environment?

Study methodology

This study relies on the descriptive approach to clarify the concept of digital works and their characteristics, and the analytical approach by analyzing relevant legal texts, both in Algerian legislation and in international agreements and treaties, to identify shortcomings and propose appropriate solutions.

1. Digital works

Copyright and related rights have undergone fundamental transformations due to the developments of information technologies, which have had a profound impact on the intellectual property system, particularly concerning the protection of works created in light of the digital revolution. This revolution has produced new forms of intellectual creativity, closely linked to modern technologies, which primarily rely on the dissemination of creative content across digital spaces. This has necessitated a reconsideration of traditional legal frameworks to ensure effective protection for these works.

The study is organized as follows: Section 1 defines the concept of digital works, and Section 2 explains the rights to digital works and the different attacks against them.

1. The concept of digital works

1.1. Definition and characteristics of digital works

Given the recent appearance of the concept of digital works and its close connection to rapid technological developments, there exists no precise legal definition of this type of work. Some researchers have tended to consider them an extension of traditional works, but one that takes on a new form that is more in line with the digital environment, without creating a complete break with previous conceptual frameworks.

1.1.1. Definition of digital works

- a. **Linguistic definition:** “Classifier” linguistically means “to classify something”, meaning to classify it to distinguish it from others (Al-Zawahra, 2013). It is said that the word “classifier” is a word derived from the verb “classify”, so the phrase “classify something” is used, meaning to classify it, meaning to distinguish one thing from another. The term “digital” refers to digitization, i.e., everything that relies on numbers (Abdul Amir, 2008).
- b. **Technical definition:**

Jurisprudential definition: Some jurists have defined a digital work as any creative work resulting from the information technology environment. This includes a wide range of works, most notably software, databases, and integrated circuit topographies. This type of work contrasts with that produced in traditional paper form, where the work is classified according to its expressive media: “If it is written, it is considered a literary work; if it is audio, it is an audio work; if it is limited to images, it is a visual work; and if it combines both audio and images, it is an audiovisual work” (Badr, 2006). Adjja (2012) defines it as “an intellectual product characterized by creativity and originality resulting from a digital information technology environment.”

Despite the multiplicity of opinions and different viewpoints regarding establishing a unified definition of digital work, whether traditional or modern, the term is generally used to refer to every mental production, regardless of the means of expression, whether it is written, sound, drawing, photography, or movement, and whatever its subject whether in the fields of literature, a art, or science (Abdul Amir, 2008).

Legal definition of digital works: Despite the significant development in the digital field and the emergence of new types of creative works, national and international legislation, particularly legislation about intellectual property, has not provided a precise legal definition of digital works. These legislations are limited in including this type of work within the general framework of literary and artistic works, without specifying its characteristics or distinguishing it from other traditional works. The 1886 Berne Convention (joined by Algeria in 1997), which pertains to the Protection of Literary and Artistic Works, is a model of this approach. Article 2 states that the term “literary and artistic works” includes all productions in the literary, scientific, or artistic field, whatever the form of their expression.” This is a general and flexible definition that theoretically allows digital works to be included within the scope of protection. However, it does not provide a specific legal framework that addresses their complex technological nature or the challenges they pose.

This ambiguity results in several legal problems, including: Difficulty defining the terms of protection in digital environments; Lack of standards for establishing ownership and usage rights; Increasing need for judicial interpretation or legal reasoning to adapt digital works to traditional texts. Thus, the lack of a specific legal definition of a digital work represents a legislative loophole that must be addressed, either by amending international agreements or by enacting national legislation that takes into account the specificity of digital works and provides them with effective legal protection.

The Algerian legislator did not provide an explicit definition of the work in Order No. 03-05 of July 19, 2003, relating to copyright and related rights (Official Gazette No. 44, 2003). Rather, it merely mentioned the types of protected works as examples and not as an exhaustive list. This is what is inferred from the second paragraph of Article 3 of this order, which states the following: “Protection is granted regardless of the type of work, its mode of expression, its degree of entitlement and its destination, as soon as the work is deposited, whether or not the work is fixed on any medium that allows it to be communicated to the public.”

1.1.2. Characteristics of digital works

- a. **Digital works are based on a digital medium:** Digital works differ from traditional works in the medium on which they are displayed or stored. While traditional works rely on a paper medium, digital works are based on an electronic or digital medium, which justifies their name (Haqqas, 2012). A work may originally be in paper form and then converted into a digital work using

technologies such as scanning, which enables it to be republished or circulated in digital form across various electronic media.

- b. **Digital works are complex:** Digital works are among the most complex from a legal perspective, given their modern technological nature and their connection to the rapid development of information technology. This complexity reflects the difficulty of defining a precise and unified concept of a digital work, as legal doctrine has referred in defining its types and limits, which in turn has impacted the level of legal protection granted to it. This ambiguity has led legal professionals to face practical difficulties in investigating crimes of infringement against digital works. This often requires the assistance of technical experts specializing in the electronic field, given that these crimes are often committed via computers and digital means that are difficult to track using traditional means (Haqqas, 2012).
- c. **Digital works are among the works protected by copyright and related rights:** Digital works are among the works that have legal protection within the framework of copyright and related rights. The Algerian legislator took the initiative to enshrine this protection through Order No. 03-05 on copyright and related rights. Articles 4 and 5 explicitly stipulate that databases and computer software are included in the protection provided for by this law, as they are digital works that require special protection in the modern technological environment (Order 03-05, 2003). In contrast, some international legislation and agreements, particularly the European Patent Convention (European Patent Convention, 2000, Article 52), stipulate in Article 52 that computer programs are excluded from patent protection unless they are part of a technical innovation capable of industrial application. Software, by contrast, is protected under European Union Directive 91/250/EEC, which considers software to be literary works under copyright law. This approach thus reflects the European Union's commitment to protecting software through a more flexible and less complex system than the patent system. In contrast, the Algerian legislator has adopted a different position, explicitly excluding the possibility of protecting computer programs under patent law in Order No. 03-07 on patents. Article 7, paragraph 6, stipulates that computer programs are not considered patentable inventions under this legislative text (Order 03-07, 2003).

1.1.3. Digital works covered by legal protection

In light of the transformations imposed by the digital environment, legal protection is no longer limited to traditional works stored or made available online. Rather, it has expanded to include purely digital works, created in the information technology environment. The Algerian in the information technology environment. The Algerian legislator, similar to many Arab and international legislations, has adopted a flexible approach to defining the literary and artistic works covered by protection, citing examples, not limited to the. This opens the way for the inclusion of digital works within the scope of legal protection, particularly computer programs, databases, and multimedia works.

First – Computer software: Computer software is among the most prominent digital works that have received extensive legislative and legal attention, due to its technical nature and vital role in the operation of information systems. Software represents the moral entity of a computer system, as the physical components cannot perform their functions without the presence of these programs that regulate and direct their operation. The International Copyright Association defines computer software as “all programs, methods, rules, and even documents related to the operation of a data set, considered as an indivisible and protected whole.” It is also defined as an electronic system designed by a person called a programmer and used to perform specific tasks based on a deductive logic approved by specialists (Mazzoni, 2008).

Second – Databases: Databases are among the most prominent digital works that national and international legislation has given special attention to, as they are included among the works protected under copyright law, given their organizational nature and importance in preserving and retrieving information. A database is defined as a collection of information collected on a specific topic, stored on a physical medium connected to a computer, and arranged in an innovative or organized manner, such that it is inferred that there is personal effort deserving of legal protection, provided that it possesses elements of originality or creative arrangement (Shalkami, 2009). French law also stipulates in Article

L112-3 of the Intellectual Property Code that a database is “a collection of works or data arranged systematically, accessible individually by electronic or non-electronic means” (Code de la propriété intellectuelle, 1998). The Algerian legislator implicitly referred to databases in Article 5/2 of Order No. 03-05 on copyright-related rights, considering them to be works exploitable by machine or other means, and their originality is achieved by the method of their arrangement or the selection of their content. International agreements have confirmed this trend, as Article 10/2 of the TRIPS Agreement stipulates the protection of databases when they are original (World Trade Organization, 1994). The WIPO Treaty of 1996 also enshrined this principle in Article 5, considering that databases that show innovation in arrangement or selection deserve protection under copyright (World Intellectual Property Organization, 1996).

Third, Multimedia Work: Multimedia works are among the newly developed digital works that now have legal protection accorded to traditional literary and artistic works, given their interactive nature and complex technical composition. A multimedia work is a work that combines more than one type of media, such as text, images, sounds, and hyperlinks, and is usually displayed via computer programs or web pages, giving it a unique dynamic and interactive character. French jurisprudence defines it as “a composition containing a variety of texts, sounds, images, and data, embedded on CDs or other electronic media, and displayed interactively via digital media” (Bouzidi, 2009). In the Algerian context, Executive Decree No. 98-257 of August 25, 1998, relating to the conditions and methods of establishing and exploiting internet services, referred to the web page as a multimedia work, consisting of texts, graphics, and images linked via electronic links known as hypertexts (Hawas, 2004). Although the Algerian legislature did not explicitly include multimedia works in the list of protected works, Order No. 03-05 on copyright and related rights came in a non-exclusive form, allowing these works to be included within the scope of legal protection, provided they meet the condition of originality or creativity.

1.2. Conditions for protecting digital works

Protecting digital works is one of the prominent challenges facing copyright and related rights law in the modern era. To legally protect these works, a set of general controls is required, which constitutes the basic foundation of most legislation. The first of these conditions is originality. No work is protected unless it is the product of an original intellectual creation that distinguishes its author from others. This creation must also be expressed in a tangible, physical form, such that it can be perceived or circulated in a manner that allows for its legal protection. The law also requires that the work be prepared for publication or circulation, regardless of the means used, whether paper, digital, or via multimedia (Order 03-05, Article 3).

1.2.1. Originality

Originality is an essential condition for protecting the rights of the author. It represents the personal imprint the creator leaves on their work, making it a distinct intellectual product. Despite the difficulty of establishing a comprehensive definition of originality, legal jurisprudence considers it the impressive style that highlights the author’s personality and distinguishes their work from other works. Originality is not limited to intellectual efforts expended; it is also manifested in the method of expression, as the work is completed through the formulation that gives it its final form (Al-Sanhouri, 1998). Originality refers to the creativity and innovation resulting from intellectual or mental effort, whether in the essence of the idea, its presentation, its arrangement, or its style of formulation. Therefore, a work does not have to be new in the absolute sense; rather, it is sufficient for it to be distinct from previous works to be considered original. Therefore, originality is not necessarily linked to the element of novelty (Belkacemi, 2022). The Algerian legislator stipulated in Order No. 03-05 relating to copyright and related rights the protection of every original literary or artistic work, without setting a specific definition of originality, as is the case with most comparative legislation. The importance of this condition lies in encouraging intellectual creativity and ensuring the distinctiveness of the author’s intellectual production, while leaving the issue of assessing the availability of originality to the nature of each work and the circumstances of the infringement thereof.

1.2.2. Form protection

The form of a work refers to the expression of an idea in a tangible material form, i.e., bringing it from the realm of abstract thought to the realm of reality. Form protection includes various forms of expression of literary and artistic works, whether in the form of a book, a disc, or even digital publications on the internet (Sharifi, 2014). An abstract idea does not have legal protection unless it is embodied in a material form that allows its circulation and perception. For example, if an idea addresses a human subject, such as the phenomenon of goodness, and is not embodied in a written work, and then another author embodies it in a novel or film, then the latter author is the one who benefits from the legal protection provided for copyright (Adjja, 2012). In this context, the Algerian legislator did not refer to the protection of ideas in themselves, but rather stipulated that they be embodied in a material form. Article 7 of Decree 03-05 relating to copyright and related rights stipulates that ideas, concepts, principles, approaches, and working methods are protected only in the manner in which they are incorporated, arranged, or expressed in a protected work.

1.2.3. The work must be prepared for publication

Preparing a work for publication is one of the essential conditions for the legal protection of copyright. A publishing contract is concluded between the author and the publisher, with the latter assuming responsibility for printing and distributing the work to the public according to the agreed-upon terms, in exchange for a financial return paid to the author (Shalqami, 2009).

It should be noted that the Algerian legislature did not establish a specific definition of publication, but stipulated that the work must be prepared for publication by any means that allows it to be communicated to the public. Publication represents the "birth certificate" of the work, as it entails all other moral and financial rights. It also specifies the starting date for calculating the duration of legal protection for literary and artistic works. Decree 96-16, relating to legal deposit, stipulates that the deposit does not affect the author's ownership of his work, and that violating it does not entail any punitive sanctions. Furthermore, deposits are limited to certain works, such as printed documents, audio and video recordings, software, and databases (Official Gazette of the Algerian Republic, 1996, No. 41). Article 3 of Decree 03-05, relating to copyright and related rights, affirms that protection is granted to a work upon its birth, regardless of its form or type, reflecting the independence of protection from formal procedures.

2. Rights and protection mechanisms of digital works

The author's right to a work published in cyberspace is closely linked to the author's identity. This has prompted most international legislation and agreements to enshrine this right in its moral and financial dimensions, as an extension of the rights established for traditional literary and artistic works. However, technological developments and the accompanying expansion of attacks on information systems have made digital works vulnerable to increasing violations, whether through direct methods such as piracy and illegal copying, or indirect methods such as unauthorized disclosure and unauthorized modification.

2.1. Rights contained in digital works and attacks against them

2.1.1. Types of rights of digital works

The author has a set of legal rights over his work, rights enshrined in international treaties, foremost among them the Berne Convention for the Protection of Literary and Artistic Works and the World Intellectual Property Organization Copyright Treaty. Algerian legislation also approved them in Order No. 03-05 on Copyright and Related Rights. These rights are divided into two main types:

- a. **Moral rights:** The author's moral or literary right occupies a central position within the copyright system. It protects the author's identity as a creator and ensures the preservation of the work itself as an intellectual product of value independent of its owner. This right constitutes a fundamental basis for the rights of authors, whether writers, artists, or researchers. The law grants authors the right to respect their thoughts and style expressed in their literary, artistic, or scientific work, and grants them legal authority to counter any

infringement of their intellectual imprint or creative personality. The moral right is divided into a group of subsidiary rights that constitute legal privileges allowing the author to protect their intellectual production, including the right to attribute the work to themselves and the right to object to any distortion, modification, or mutilation that affects the essence of the work or compromises its integrity. This right is also characterized by several characteristics, including its inalienability, its non-transferability, its non-renunciation, its perpetual nature, and its transfer to heirs. The Berne Convention enshrined this principle in Article 6(ii)/1, which states that “the author, regardless of economic rights, and even after the transfer of those rights, shall have the right to claim authorship of the work and to object to any distortion, modification or other deformation of the work likely to be prejudicial to his honor or reputation” (WIPO, 1971).

- b. **Financial rights:** In parallel with the moral rights associated with the author's identity, the author has financial or material rights, which are among the most prominent forms of legal protection for intellectual works. These rights aim to enable the author to exploit his production to generate direct economic benefit. These rights are enshrined in national legislation and international agreements and are characterized by a number of essential characteristics. They also branch out into a set of subsidiary rights exercised within a structured legal framework.

Characteristics of Financial Rights:

- **Temporary Right:** A financial right is a temporary right linked to the author's lifetime and is transferred to his heirs after his death for a specified period. Most legislations have unanimously agreed to specify this period. The Algerian legislator stipulated in Article 54 of Decree No. 03-05 that the term of protection of financial rights extends to fifty years, starting from the beginning of the calendar year following the date of the author's death. This period is considered sufficient to guarantee the financial interests of the heirs.

- **Alienability:** A financial right is characterized by the possibility of disposing of it, either in whole or in part, for a fee or without a fee, according to what the author or his heirs determine. Computer programs may be rented, as stipulated in Article 27/2 of the same decree. In each case, written permission specifying the type, method, and duration of exploitation is required, in accordance with Articles 62 and 65 of the same decree (Brahimi, 2013).

- **Non-seizability of financial rights:** The author's financial rights, including the exploitation right, may not be seized, given their connection to the authority to decide on publication. During the author's lifetime, seizure is only permitted for published copies, without prejudice to the right to publish itself, which remains the exclusive right of the author.

- **Transferability to heirs:** The financial rights are transferred to the heirs after the author's death, in accordance with the general rules of inheritance or will (Article 61 of Order No. 03-05). They are granted the authority to approve the publication of the work if it was not published during the author's lifetime. In the absence of heirs, the rights are transferred to the state, as stipulated in Articles 54 and 55 of Order No. 03-05.

The content of financial rights:

- **The right to reproduction:** Reproduction refers to the author's copying of his work on a physical medium that allows its transmission to the public. This includes computer programs and databases. Any illegal reproduction constitutes an infringement of copyright. Article 41 of Decree No. 03-05 prohibits reproduction, even for personal use, with the aim of strengthening the legal protection of these digital works.

- **The right to communicate the work to the public:** This right allows the author or his representative to broadcast the work to the public, with or without compensation, via wired or non-wired means. Article 27 of Decree No. 03-05 stipulates that the transmission of databases and computer programs shall be via various technical media. The author has the authority to designate the persons authorized to exercise this right after his death, reflecting the personal and economic nature of this privilege.

2.1.2. Forms of Infringement on Digital Works

a. Direct Infringement

Comparative legislation, including Algerian legislation, does not include a precise definition of the concept of "counterfeiting digital works." Rather, it merely outlines the forms of this infringement within relevant legal texts, particularly in Articles 151 to 155 of Decree No. 03-05 on Copyright and Related Rights. Direct infringement requires that it be directed against a legally protected work and takes three main forms: unlawful disclosure of the work, compromising its integrity, and copying it in the form of pirated copies.

- **Unlawful disclosure of the work:** Unlawful disclosure refers to a third party making the work available to the public without obtaining explicit permission from the rights holder (Sharifi, 2014). This constitutes a double violation of the author's moral and financial rights. The right to disclosure is one of the moral rights inherent in the author's personality and grants him the authority to decide when and how to publish his work. Therefore, any action by a third party that deprives the author of exercising this right constitutes a misdemeanor of counterfeiting and entails legal liability. The forms of this infringement vary depending on the nature of the work, particularly in the digital environment through the unauthorized disclosure of computer software or databases (Mazzouni, 2008).

- **Infringement of the integrity of the work:** Infringement of the integrity of the work is a form of infringement that affects the essence of moral rights, as the law grants the author alone the authority to modify or alter his work, or to authorize others to do so. The Algerian legislator has affirmed this principle, considering any modification or distortion of the work without the author's permission to constitute a clear violation of his right to respect the integrity of his intellectual production. This form of infringement appears in the digital realm through the publication of protected works by some websites without the permission of their owners, or the introduction of modifications to them without the author's consent.

- **Reproduction of the work in the form of pirated copies:** Illegal reproduction means reproducing the work in the form of pirated copies, whether in whole or in part, using various technical means, with the aim of communicating it to the public without the permission of the right holder. The right to reproduce is one of the exclusive financial rights of the author, and it may not be transferred to others except by virtue of a legitimate legal transaction, such as a contract of sale, assignment, or license. This type of infringement entails criminal liability, and the matter may reach the point of considering the author himself as committing the misdemeanor of imitation if he sells his work and then re-disposes of the copyright without referring to the new owner, which violates the principle of respecting contracts and legal transactions.

b. Indirect Infringement

The Algerian legislature has approved a set of actions that constitute indirect infringement on digital works. These actions are legally classified as counterfeiting, as they involve the illegal exploitation of protected works. These actions include importing or exporting pirated copies, selling or renting them, and placing them in circulation. These actions are included in the provisions of Article 151 of Decree No. 03-05 on Copyright and Related Rights.

- **Importing or exporting pirated copies of a work:** This refers to the offending party copying multiple copies of a work for the purpose of commercial exploitation, either by exporting them abroad or importing them from other countries. Algerian legislators have taken care to prohibit the import of works published abroad without the permission of their owners, to protect foreign authors from the phenomenon of cross-border counterfeiting (Mazzouni, 2008). The material element of the crime is fulfilled through the actual import or export process, while the moral element is assumed to be the importer or exporter's act in bad faith, i.e., with knowledge that the copies are counterfeit.

- **Selling counterfeit copies of a work:** This form involves the commercial exploitation of counterfeit copies, either by selling them directly or offering them for public circulation. Article 151/4 of Order No. 03-05 criminalizes the offering of counterfeit copies for sale, as it constitutes an infringement on the author's right to financially exploit his work. This act is considered a form of counterfeiting that entails criminal liability.

- Renting or placing in circulation pirated copies: Renting means enabling others to use the pirated copy for a specified period in exchange for their benefit. A single rental transaction is sufficient to constitute a crime, without requiring repetition of the act, except in the case of recidivism after a final judgment has been issued. The rental process need not be formally regulated; it is sufficient for it to be conducted secretly from regulatory authorities, such as opening an unlicensed shop for this purpose. Trading, on the other hand, includes disposing of pirated copies for a fee or without a fee, whether through transfer of ownership or granting the right to exploit or benefit, such as a gift or assignment. This act constitutes a violation of the author's right to the exclusive exploitation of his work, as stipulated in Article 27 of Order No. 03-05, which defines the forms of legitimate exploitation. The legislator affirmed in Article 27/2 that renting computer programs without the owner's permission constitutes an infringement of copyright. In the digital context, publishing a work online without the author's permission constitutes an infringement of the author's moral rights. This requires an explicit license to publish, whether in written form or in digital form. This highlights the importance of respecting the moral and financial rights of the author in the electronic environment.

2.2. Mechanisms for Protecting Digital Works

The Internet is one of the most prominent media facilitating the transmission and retrieval of information. This often leads to violations of the author's moral rights, such as compromising the integrity of the work or attributing it to someone other than its owner. This also leads to violations of financial rights through the illegal exploitation of digital content. These challenges have accelerated international cooperation in regulating copyright and related rights, through the conclusion of several agreements, most notably the Berne Convention for the Protection of Literary and Artistic Works, as well as agreements to combat cybercrime. At the national level, the Algerian legislature has taken the initiative to establish institutional and legislative protection mechanisms for digital works, aimed at combating attacks and ensuring copyright in the digital environment. Accordingly, the legal protection of digital works will be addressed in the following two sections.

2.2.1. International Protection of Digital Works

a. Protection of Digital Works Under International Conventions:

- Protection Under the Berne Convention: The Berne Convention for the Protection of Literary and Artistic Works, concluded on September 9, 1886 in Berne, Switzerland, is the first comprehensive international instrument in the field of intellectual property rights protection. This Convention has undergone a series of successive revisions and amendments, the last of which was on September 13, 1997, reflecting its dynamic nature and its ability to keep pace with legislative and technical developments. The Convention aims to establish an international legal system that ensures effective protection of works by establishing a set of fundamental principles, defining the mechanisms and procedures to be followed in the event of copyright infringement, and specifying the moral and economic rights covered by protection (Berne Convention, 1979).

- Protection under the TRIPS Agreement: The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), adopted within the framework of the World Trade Organization in 1994, stipulated a set of fundamental provisions relating to the protection of intellectual property rights in general.

The agreement established fundamental principles for ensuring the protection of literary and artistic works by adopting the minimum standards stipulated in the Berne Convention. It also explicitly referred to a number of other relevant international agreements, emphasizing the integrity of the international system for the protection of intellectual property. Furthermore, it included provisions related to digital works, as one of the most prominent emerging challenges in the modern technological environment, addressing the issue of electronic piracy and cross-border attacks on digital rights (World Trade Organization, 1994).

- Arab Conventions for the Protection of Copyright: The Arab Convention for the Protection of Copyright, signed in Baghdad from November 5 to 22, 1981, represents a significant regional step toward establishing a unified Arab system for the protection of copyright. The draft of this convention

was prepared by the Arab League Educational, Cultural and Scientific Organization (ALECSO) to complement relevant international conventions, most notably the Berne Convention and the Universal Copyright Convention (WIPO). The convention includes thirty-four articles that address: the general objectives of enhancing the protection of literary and artistic works and encouraging creativity; the rights enjoyed by authors over their works, whether literary or artistic; and the legal and institutional means to ensure this protection (Arab Convention for the Protection of Copyright, 1981).

b. Protection of Digital Works under International Organizations:

- The United Nations Educational, Scientific and Cultural Organization (UNESCO): UNESCO is one of the most prominent international actors in the field of copyright protection. It has dedicated its efforts, in cooperation with the World Intellectual Property Organization (WIPO) and other relevant international organizations, to developing the legal and institutional framework for the protection of literary and artistic works. UNESCO oversees the administration and implementation of several international copyright agreements, monitors emerging developments in this field, and works to study issues related to intellectual property and propose model laws to enhance protection. The organization also plays a pivotal role in encouraging respect for copyright and combating intellectual piracy, considering this a prerequisite for achieving cultural and educational development. It also contributed to the development of protection at the Arab level by preparing the first Arab convention for the protection of copyright in 1981. UNESCO continues its efforts to support authorship and translation, and to enhance developing countries' access to protected works, in addition to proposing model provisions for national laws, ensuring a balance between copyright protection and encouraging the circulation of knowledge (UNESCO, PARIS 2005).

- World Intellectual Property Organization (WIPO): The World Intellectual Property Organization (WIPO) is a specialized agency of the United Nations system. It was established by the Stockholm Convention signed on July 14, 1967, and entered into force in 1970 (WIPO, 1967; WIPO, 2023). Its headquarters are located in Geneva, Switzerland, and its membership currently includes approximately 193 countries, representing more than 90% of the world's countries, including 16 Arab countries, including Algeria, which ratified the Convention by Order No. 75/2 bis dated January 19, 1975. The primary objective of the organization is to promote the protection of intellectual property rights worldwide by encouraging cooperation among member states and coordination with relevant international organizations. WIPO also plays a pivotal role in settling disputes arising from intellectual property through arbitration and mediation mechanisms, as well as developing legal frameworks and international treaties that ensure a balance between protection and Rights and the Promotion of Innovation (WIPO, 2023).

- Cybercrime Treaties: Cybercrime has posed significant challenges to the international community, necessitating the conclusion of international treaties aimed at deterring it and mitigating its negative effects. The most prominent of these legal instruments are the European Convention on Cybercrime and the Budapest Convention on Cybercrime.

- European Convention on Cybercrime: Since the 1980s, the Council of Europe has initiated projects to combat computer-related criminal activities, such as hacking, data manipulation, and information fraud. These efforts culminated in the conclusion of the European Convention against Cybercrime in 2001, which entered into force in 2004. This treaty aims to assist countries in establishing minimum national laws to combat cybercrime, including unauthorized access to networks, computer forgery, and infringement of digital copyright. The treaty also established a common criminal policy and obligated member states to enact procedural legislation that facilitates investigation and prosecution, while enhancing international cooperation in this area (Hawas, 2016).

- The United Nations Convention against Cybercrime: Adopted by the United Nations General Assembly in December 2004 (Resolution 79/243), it is considered the first comprehensive global instrument aimed at criminalizing criminal acts committed through information and communications technology and enhancing international cooperation in the areas of investigation and exchange of electronic evidence, thus filling a long-standing global legal gap. Although it primarily focuses on traditional forms of cybercrime such as hacking, electronic fraud, and malware, its scope extends directly and indirectly to the protection of digital works. On the one hand, it criminalizes acts that violate copyright in the digital

environment, particularly electronic piracy and the unauthorized distribution of protected works. It provides countries with mechanisms to criminalize these acts and exchange evidence, thus enhancing the enforcement of intellectual property laws at the international level. On the other hand, the agreement provides an indirect framework for the protection of digital works by regulating the preservation and exchange of electronic evidence in copyright infringement cases and establishing rules for cooperation, which is essential given the global nature of digital content distribution. The success of this protection remains dependent on the extent to which countries incorporate the provisions of the agreement into their national laws and their actual commitment to enforcing copyright, especially since the agreement was not specifically designed for this area but rather provides a broader framework for combating cybercrime that implicitly includes digital piracy.

2.2.2. National Protection of Digital Works

The Algerian legislator has paid special attention to works (in general, whether in their traditional or digital forms) against various forms of attacks that may affect them, by adopting an integrated institutional and legal system. From an institutional perspective, the task of protecting these works has been assigned to specialized bodies, most notably the National Office of Copyright and Related Rights, along with the Customs Administration, which plays a preventive and supervisory role in combating counterfeiting and piracy. From a legal perspective, the Algerian legislator has adopted a variety of measures, including civil protection by enabling authors to claim compensation for damages resulting from infringement of their rights; criminal protection by criminalizing acts of counterfeiting and piracy and imposing deterrent penalties on perpetrators; and technical protection, which enables authors to take precautionary measures and utilize modern technological means to limit digital attacks.

a. Institutional Protection of Digital Works

- **The National Office of Copyright and Related Rights:** The Algerian legislator has recognized the need to establish institutional protection for digital works, through the establishment of specialized bodies entrusted with the task of protecting the rights of authors and related rights holders from various forms of infringement. The National Office of Copyright and Related Rights (ONDA) is the most prominent of these bodies, having been established pursuant to Executive Decree No. 05-356 of September 21, 2005, which includes the Office's basic law, subsequently amended and supplemented. The Office is classified as a public institution of an industrial and commercial nature, having legal personality and financial independence. It is subject to the rules applicable to the administration in its relationship with the state, while being treated as a merchant in its relationship with third parties. It is also placed under the supervision of the Minister of Culture and is headquartered in Algiers (Articles 2, 3, and 4 of Executive Decree 05-356). In terms of powers, Article 5 of Executive Decree 05-356 stipulates that the Office shall undertake several duties, the most prominent of which are:

- Protecting the material and moral interests of authors, their right holders, and holders of related rights.
- Protecting traditional cultural heritage works and national works.
- Receiving authorizations for literary and artistic works and performances.
- Protecting the rights of foreign authors and holders of related rights related to works exploited within the national territory.
- Issuing legal and compulsory licenses for the exploitation of works.
- Conducting a census of right holders and determining financial dues (royals).
- Encouraging creativity, promoting social work, and managing the social fund for members.
- Joining international organizations and participating in their activities.

- **Customs Administration:** Customs administration is one of the effective institutional mechanisms adopted by the Algerian legislature in the field of protecting intellectual property rights in general, and digital works in particular. In addition to its traditional role in monitoring the movement of goods across borders, it is entrusted with combating various forms of counterfeiting and piracy by seizing counterfeit goods upon import or export and confiscating counterfeit foreign or domestic goods (Ben Taïbi, 2020).

The most prominent tasks assigned to the Customs Administration in this area are:

- Protecting the national economy by preventing the entry of counterfeit products that weaken the competitiveness of national products.
- Protecting consumers from the risks posed by the circulation of counterfeit products that may harm health, safety, or economic rights.

Thus, the Customs Administration is not limited to being a regulatory body for commercial transactions; it is also an essential legal and procedural tool in combating attacks on copyright and related rights, including digital works.

b. Legal Protection Measures for Digital Works

- **Civil Protection:** This is one of the most important means established by the Algerian legislature to enable the author or rights holder to protect their digital works from various forms of infringement. The legislature has granted the author the right to file a civil lawsuit after taking precautionary measures, provided the elements of the lawsuit are met, in order to obtain compensation for the damages suffered.

- *Precautionary Measures:* This is a proactive measure that gives the author the ability to address and stop an infringement before its effects worsen. It allows the author to prevent infringement and seize suspicious items. Article 144 of Order No. 03-05 on Copyright and Related Rights stipulates that "the aggrieved rights holder may request the competent judicial authority to take measures to prevent infringement of his rights or to put an end to the ongoing infringement."

- *Precautionary Seizure:* Precautionary seizure means placing property or pirated copies under judicial control to prevent their owner from disposing of them. This procedure is considered an effective means of protecting the author from imitation or illegal copying, as the author may request the seizure of documents or pirated copies even in the absence of prior judicial authorization. Article 146 of Decree 03-05 stipulates that "judicial police officers and sworn agents of the National Office of Copyright and Related Rights are legally authorized to implement precautionary seizure, provided that the request is decided within three days."

- *Basis of Civil Liability:* Civil liability in the field of digital works protection is based on three basic pillars:

- **Fault:** This refers to a breach of contractual obligations (such as a publisher's delay in publishing the work) or the commission of an illegal act (such as software imitation or illegal copying).
- **Damage:** This refers to the material or moral harm inflicted on the author as a result of an infringement on his work.
- **Causal relationship:** meaning the existence of a direct link between the error committed and the resulting damage, such that the mere occurrence of the error or damage is not sufficient, but rather the damage must be a direct result of that error (Ben Halima, 2022).

- **Criminal Protection of Digital Works:** Despite its importance, civil protection of digital works alone is not sufficient to deter aggressors. Therefore, the Algerian legislator has reinforced it with criminal measures that criminalize copyright infringements and impose deterrent penalties.

- *The Crime of Counterfeiting:* The crime of counterfeiting is defined as any infringement on the rights of an author, artist, or creator, whether through copying or imitating works in a manner that makes them appear identical to the original when circulated in the market (Belkacem, 2009). Within the context of digital works, counterfeiting involves copying any intellectual product in digital form without the owner's permission, which constitutes an infringement on the author's material and moral rights (Khalfi, 2014). For the crime of counterfeiting to be established, three elements must be present:

- **The legal element:** There is no crime or penalty without a legal text.
- **The material element:** The act of counterfeiting, such as publishing, modifying, or distorting without permission.
- **The moral element:** bad faith, i.e., the perpetrator's knowledge and will.
- *Prescribed penalties:* According to Articles 153 to 155 of Order 03-05, the Algerian legislature has established two types of penalties:

Principal penalties:

- Imprisonment from 6 months to 3 years, and a fine of 500,000 DZD to 1,000,000 DZD.
- In the event of a repeat offense, the penalty shall be doubled.

The amended and supplemented Penal Code (Articles 394 bis and 394 bis 7) also stipulates crimes involving damage to automated data processing systems, such as unauthorized access, deletion or alteration of data, system sabotage, or fraudulent data entry, with penalties ranging from 3 months to 3 years in prison and fines of up to 10 million DZD.

Supplementary penalties:

- Confiscation: Confiscation of the proceeds or equipment used in counterfeiting (Order 03-05, Article 157).
- Publication of the judgment: Publishing the convictions in newspapers or posting them in public places (Order 03-05, Article 158).
- Closure: Temporarily or permanently closing the establishment exploiting counterfeit works (Order 03-05, Article 156)

Conclusion

The study concluded that, given the inadequacy of traditional legal rules to accommodate the specificities of the digital environment, there is an urgent need to develop new and effective legal mechanisms that can provide redress for those harmed by attacks on digital works. In this context, various countries have sought to establish integrated legal systems that guarantee the protection of intellectual property rights. International agreements and specialized organizations have established binding rules in this area, with some even going so far as to criminalize these acts and consider them cybercrimes.

The TRIPS Agreement is among the first agreements to pay attention to digital works, particularly computer programs and databases, albeit indirectly by including them among literary and artistic works. At the national level, the Algerian legislature has adopted a series of measures to protect copyright and related rights under Order No. 03-05. This allows authors to benefit from preventive measures before filing a civil lawsuit, as well as enabling them to claim compensation in the event of damage. The legislature has also adopted modern technological means, such as encryption and digital marking, as additional mechanisms to enhance protection. However, these measures remain limited and insufficient to keep pace with rapid technological development, which has negatively impacted the effectiveness of legal protection for digital works.

Based on the above, the following conclusions can be drawn:

- Algerian legislation on copyright and related rights (Order 03-05) provides general protection for works, but it is not initially designed to address the specificities of the digital environment, including software and databases. Evidence of this is that the legislator does not provide a precise definition of a digital work and does not distinguish between it and a traditional work. This renders the provisions general and vague regarding the specificities of the digital environment (such as instant copying or sharing via social media platforms). This provides legal protection in principle, but is insufficient in terms of technical suitability.
- Difficulty in identifying the infringer in the digital environment due to its complexity.
- The ongoing need to amend legislation to keep pace with the rapid development of digital works.
- The rise in cross-border attacks requires broader international cooperation.
- The impossibility of achieving effective copyright protection in the absence of a societal awareness that believes in the value of intellectual property as a moral right before it is a legal one.

Based on these findings, the following recommendations can be proposed:

- Developing a comprehensive legal framework that keeps pace with technological developments and addresses various forms of digital attacks.
- Amending national intellectual property legislation to comply with relevant international agreements.
- Introducing amendments to Order 03-05 to criminalize acts harmful to authors in the digital environment, based on international standards.

- Train legal and technical experts in the fields of digitization and modern technologies.
- Develop the capacities of judicial and oversight bodies through specialized training programs in the field of modern technology.

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