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Problems of intellectual property rights protection in the digital environment

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Abstract

The purpose of the study was to conduct a comprehensive analysis of the problems of legal protection of intellectual property in Ukraine's digital environment and to propose ways to improve the national legal system. The research was based on comparative and systemic analysis methods, within which national legislation, case law, statistical data, and international experience were examined. The study revealed a significant gap between Ukraine's progressive legislative framework – harmonised with European standards – and the extremely low efficiency of its practical implementation. It was established that pirated content dominates the Ukrainian digital market, exceeding the legal segment many times over, while the level of legal response remains minimal, as evidenced by the small number of court verdicts in copyright infringement cases. The main institutional obstacle was identified as the absence of a specialised High Court for Intellectual Property, which leads to inconsistent case law, procedural delays, and a low level of trust in the justice system. The analysis of judicial practice showed that, although courts apply the principles of the presumption of authorship and proportionality when determining compensation, the process remains lengthy and complex. Ukraine continues to lag significantly behind leading international practices in areas such as online platform liability, pre-trial dispute resolution, and the fight against cross-border infringements. The results of the study can be applied in legislative activities aimed at further improving national legislation in the field of intellectual property. The formulated recommendations may also serve as a basis for the effective implementation of the Strategy for the Digital Development of Innovative Activity of Ukraine and the modernisation of law enforcement practice

Keywords: artificial intelligence; digital environment; national strategy; judicial protection; social networks

Introduction

The active digitalisation of society in the 21st century has radically transformed the field of intellectual property (IP), creating new forms of offences and raising questions about the effectiveness of traditional mechanisms for its legal protection. The ease of copying, distributing, and modifying digital content requires legal systems to develop new approaches to law enforcement and to review existing regulatory frameworks. This issue is particularly relevant for Ukraine, which is in the process of integrating into the European legal space and aims to build a digital economy, the core of which is the institution of intellectual property. The research problem lies in the significant gap

between Ukraine's formally progressive IP legislation – harmonised with EU norms – and the extremely low efficiency of its practical application. This gap is manifested in the institutional incompleteness of judicial reform, particularly in the absence of a specialised IP court, the dominance of digital piracy, the ineffectiveness of sanctions, and the fragmented regulation of online intermediaries. As a result, Ukraine exhibits a low culture of IP consumption and a lack of an effective rights management system, which creates significant legal risks and hinders economic development.

The scientific discourse on IP protection in the digital environment is extremely broad and

multifaceted. A.S. Zolotar (2023) conducted a comprehensive study analysing the doctrinal foundations, in which she draws an important distinction between protection as a static legal regime and protection as a dynamic activity aimed at restoring violated rights. This distinction is key to understanding the Ukrainian problem: formal protection of rights exists at the legislative level, yet mechanisms for active protection remain ineffective. She also examines modern concepts such as *lex informatica* and *code is law*, arguing that, in the absence of effective state law enforcement, the *de facto* regulator in Ukraine's digital space is the "code" of pirated platforms rather than formal law.

Similar issues were addressed by Ya.A. Malykhina (2023), who identified key challenges for Ukraine's IP system, particularly the low culture of creation and consumption of intangible goods. She linked this problem not only to economic factors but also to the absence of supporting instruments grounded in the principles of social justice, allowing piracy to be viewed not only as an offence but also as a complex socio-cultural phenomenon. In the international context, R. Ajabe-Alhat *et al.* (2024) examined the legal aspects of copyright in the era of digital platforms and emphasised the urgent need for a strong and balanced legal framework that simultaneously protects property and promotes creativity. The problem of balancing interests was also analysed by O.J. Aroba and M. Ramchander (2024), who, using the example of South Africa, explored the tension between protecting creators' rights and ensuring access to knowledge – an issue that is particularly relevant in the context of the digital divide.

The need for a global approach was emphasised by D.A. Niemichev and S.A. Petrenko (2025), who analysed key international documents such as the TRIPS Agreement and the WIPO treaties. Their work presents a detailed comparative analysis of approaches to copyright protection in leading countries, particularly Switzerland and

Poland, and highlights the role of international institutions such as WIPO, WTO, and UNESCO in shaping a global coordination system. The problem of digital piracy as a global phenomenon was examined in detail by G. Androshchuk (2023), who characterised it as one of the largest criminal activities in the world, in which organised networks exploit weaknesses in law enforcement systems. He also identified the economic reasons behind the spread of this phenomenon: high profitability for offenders and low fines that fail to produce a deterrent effect. I. Bedratyi *et al.* (2025) addressed the need for systemic legislative reform, substantiating the necessity of recodifying Ukraine's civil and information legislation to adequately respond to the challenges of the digital age. Finally, W. Zhang and Y. Zhang (2023), in their empirical study, demonstrated a significant positive correlation between the level of intellectual property protection and the development of the digital economy, emphasising that weak IP protection constitutes a direct obstacle to economic growth.

Despite the significant number of studies analysing general problems, international norms, and the need for legislative changes, the area of practical law enforcement in Ukraine under the new legislation remains insufficiently researched. Most works focus on the analysis of legal norms, neglecting a comprehensive examination of contemporary judicial practice, statistical indicators, and the real effectiveness of legal mechanisms. Consequently, a scientific gap exists in the systematic analysis that would combine the study of Ukraine's latest legislative framework with an in-depth assessment of its practical implementation and comparison with specific, successful international models.

The purpose of this study was to conduct a comprehensive analysis of the effectiveness of the legal and institutional mechanism for intellectual property protection in Ukraine's digital environment, with a view to identifying the gap between

the formal harmonisation of national legislation with European standards and the actual practice of its application.

Materials and Methods

The study is based on a comprehensive analysis of regulatory documents, statistical data, and international experience in the field of intellectual property protection in the digital environment. An analytical approach was employed to examine in detail the legislative acts of Ukraine regulating the field of IP in the digital space, in particular: the Civil Code of Ukraine (2003), which establishes the general principles and classification of intellectual property rights; the Law of Ukraine No. 2811-IX "On Copyright and Related Rights" (2022), which implements the provisions of Directive of the European Parliament and of the Council No. 2019/790 "On Copyright and Related Rights in the Digital Single Market" (2019) and elaborates the conceptual framework and procedures for notice and takedown; the Law of Ukraine No. 675-VIII "On Electronic Commerce (E-Commerce)" (2015), which establishes the principle of "safe harbour"; Article 176 of the Criminal Code of Ukraine (2001), which provides for liability for copyright infringement; and the Order of the Cabinet of Ministers of Ukraine No. 1351-2024-p "On Approval of the Strategy for the Digital Development of Innovative Activity of Ukraine for the Period until 2030 and Approval of the Operational Plan of Measures for its Implementation in 2025-2027" (2024).

The comparative analysis method was applied to compare Ukrainian legislation and practice with international legal mechanisms for the protection of digital rights. The regulatory and legal models of the European Union were examined, particularly those based on Regulation of the European Parliament and of the Council No. 2022/2065 "On a Single Market for Digital Services (Digital Services Act)" (2022). Article 17

of Directive of the European Parliament and of the Council No. 2019/790 (2019), which redefines the liability paradigm for digital platforms, was also analysed. The approaches of individual EU Member States were further explored, including: Germany, with the Act on the Copyright Liability of Online Content Sharing Service Providers (2021); France, with its graduated response model and the activities of ARCOM (The graduated response, 2025); Spain, through the work of Sección Segunda; Sweden, with its judicial precedent model (Gregersen, 2025); and Poland, which places emphasis on the protection of authors' personal non-property rights.

In addition, the study included an analysis of the United States model, incorporating the safe harbour and fair use doctrines (17 U.S. Code §512, 2010), as well as the Canadian notice-and-notice model (Government of Canada, 2025). To assess the effectiveness of law enforcement in Ukraine, statistical data provided by the Intellectual Property Office of Ukraine (IP Office) (The state of intellectual..., 2025), statistics on Internet piracy in Ukraine (Shargorodsky, 2024), and analytical data from MUSO TNT (2023) were utilised. The study also took into account Ukraine's international obligations, which have driven legislative modernisation, including the Association Agreement between the European Union and its Member States, of the one part, and Ukraine, of the other part (2023); the Agreement on Trade-Related Aspects of Intellectual Property Rights (1994); and the WIPO Copyright Treaty (1996). The problem of the absence of a High Court for Intellectual Property (IP Court) in Ukraine (IP Court in Ukraine..., 2025) and its impact on the practical application of legislation was analysed separately. In addition, case law on copyright protection was examined, including the courts judgements No. 754/6613/22 (2024), No. 113071618 (2023), No. 97343839 (2021). This methodological approach provided a

comprehensive and in-depth understanding of the issues under study and formed the basis for the conclusions drawn.

Results

Legal regulation in Ukraine in the field of intellectual property. Legal regulation in Ukraine in the field of intellectual property protection in the digital environment has undergone fundamental legislative changes during 2020-2025, primarily stimulated by the country's obligations within the framework of its European integration course. However, the study reveals a significant gap between the progressive legislative framework and the effectiveness of its practical application. The foundation for the protection of intellectual property rights remains the Civil Code of Ukraine (2003), which establishes general principles, defines the list of objects of intellectual property rights, and enshrines the inalienable division of rights into personal non-property rights (the right to be recognised as an author; the right to the inviolability of a work, the right to a pseudonym, etc.) and property rights, which include the exclusive right to use the work and to authorise or prohibit its use by others in any form, including reproduction, public communication, translation, or adaptation. This civil law foundation is developed by special legislation, the key element of which is the new Law of Ukraine No. 2811-IX (2022), which entered into force in 2022, replacing the

outdated act of 1993. This law implements the provisions of several European directives, in particular Directive of the European Parliament and of the Council No. 2019/790 (2019), significantly expanding and clarifying the conceptual framework to adapt it to the digital reality.

In particular, computer programs are now explicitly recognised as literary works, while databases have been granted a dual protection regime: their structure is protected by copyright, and their content is protected by a special *sui generis* right. Alongside defining the objects of protection, the law provides an exhaustive list of cases of free use of works, following the continental model of law. These include important exceptions such as temporary reproduction of a work as an integral part of a technological process (caching), reproduction for personal purposes (balanced by a system of private copying levies on devices and media), use as a quotation, and use for educational and scientific purposes. At the same time, each such use must now strictly comply with the "three-step test" established by the Berne Convention for the Protection of Literary and Artistic Works (1979); that is, the use must not conflict with the normal exploitation of the work or unreasonably prejudice the legitimate interests of the author. For further details on the main legislative acts of Ukraine in the field of intellectual property protection in the digital environment and their key provisions, see Table 1.

Table 1. Main Legislative Acts of Ukraine in the Field of Intellectual Property Protection in the Digital Environment and Their Key Provisions

Legislative Act	Year of Adoption/ Update	Key Provisions in the Field of Digital IP
Civil Code of Ukraine (2003)	2025	Establishes general principles and a list of objects of intellectual property rights, establishes the division of rights into personal non-property and property rights.
Law of Ukraine No. 2811-IX "On Copyright and Related Rights" (2022)	2022	Implements the provisions of Directive No. 2019/790 (2019) on copyright in the Digital Single Market. Expands the conceptual framework to adapt to the digital reality, protects computer programs as literary works, databases have a dual protection regime. Details the cases of free use of works in accordance with the "three-step test" of the Berne Convention for the Protection of Literary and Artistic Works (1979). Regulates the notice and takedown procedure (Article 52)

Table 1. Continued

Legislative Act	Year of Adoption/Update	Key Provisions in the Field of Digital IP
Law of Ukraine No. 675-VIII "On Electronic Commerce (E-Commerce)" (2015)	2017	Establishes a "safe harbour" principle for information society service providers
Criminal Code of Ukraine (2001)	2025	Provides for liability for copyright infringements that have caused significant material damage

Source: compiled by the authors

One of the most significant practical tools is the procedure for terminating infringements on the Internet, which is regulated in detail by Article 52 of the Law of Ukraine No. 2811-IX (2022), and is similar to the international notice and takedown mechanism. It enables the rightholder, by submitting a properly executed application to the website owner or hosting provider, to have access to pirated content disabled within 24 hours. This mechanism also provides for a balanced counter-notification procedure for the person who posted the content, requiring the applicant either to withdraw the claim or to initiate court proceedings within 10 business days. The protection of IP rights in the digital environment is further supplemented by the provisions of related branches of law.

The Law of Ukraine No. 675-VIII (2015) establishes the principle of a "safe harbour" for information society service providers, while Article 176 of the Criminal Code of Ukraine (2001) provides for liability for copyright infringements that have caused material damage in a significant amount (calculated on the basis of the non-taxable minimum income of citizens). In practice, however, criminal proceedings are rare and generally concern large-scale cases of commercial piracy. According to the analysis conducted by the Intellectual Property Office of Ukraine (IP Office) (The state of intellectual..., 2025), in 2024, 33 criminal proceedings were registered under Article 176 of the Criminal Code of Ukraine. Following investigations carried out by detectives

of the Bureau of Economic Security (BEB), the courts issued six verdicts. These figures confirm that the number of cases reaching a final verdict remains extremely low nationwide. The key factor driving such large-scale legislative modernisation has been Ukraine's international obligations.

An analysis of case law, in particular the Judgement of the Desnyanskyi District Court of Kyiv in Case No. 754/6613/22 (2024), illustrates key problems in the enforcement of legal norms in disputes concerning the co-authorship of digital content. The subject of the dispute was the recognition of the right of co-authorship for 294 audiovisual works (video clips) created for a YouTube channel, and the cessation of their unlawful use. After the termination of cooperation, the defendant, in whose name the channel was registered, continued to monetise the joint content independently, thereby violating the rights of the plaintiff-expert. The court established the fact of joint creative activity, on the basis of which the plaintiff was recognised as a co-author. The key legal position involved the application of the provision stipulating that, in the absence of an agreement between co-authors, the disposal of an intellectual property object shall be carried out only with their joint consent. Accordingly, the sole public display and monetisation of the works were qualified as violations of the plaintiff's property and non-property rights.

As a result, the claim was partially satisfied: the right of co-authorship was recognised, further unauthorised use of the works was

prohibited, and part of the income – calculated on the basis of YouTube platform analytics requested by the court – was recovered from the defendant. This case is illustrative as it demonstrates the application by courts of general jurisdiction of the provisions of the Law of Ukraine No. 2811-IX (2022) to digital objects. At the same time, it highlights systemic shortcomings in law enforcement practice: the ineffectiveness of out-of-court settlement mechanisms (such as complaints to platform administrations), the difficulty of proving the amount of damage – which requires the use of coercive measures to obtain evidence – and the significant duration of judicial proceedings. This supports the conclusion of the study regarding the existence of a gap between the legislative framework and the effectiveness of its practical implementation, thereby underscoring the need to establish a specialised IP court.

An examination of case law also reveals the complexity of evidence in disputes concerning the use of copyrighted works in commercial portfolios. An analysis of Judgement of the Suvorovsky District Court of Odessa No. 113071618 (2023) provides insight into judicial approaches to such situations. The dispute arose between the owner of rights to a work of fine art (a logo) and a web design agency that had displayed the logo in the “Portfolio” section of its website as an example of work performed for the plaintiff’s company. The principal difficulty in the case lay in the plaintiff’s proof of ownership, as the defendant contested the authenticity of the 2003 copyright agreement, as well as in determining a fair amount of compensation. The court based its decision on the presumption of the legality of the transaction, noting that the defendant, although alleging forgery of the copyright agreement, failed to provide appropriate evidence and did not file a counterclaim for its invalidation. The fact of unauthorised use of the work on the website was not disputed by the defendant. The most significant aspect of this

case is the court’s approach to calculating compensation. The plaintiff demanded UAH 600,000, justifying this amount as triple the remuneration under a licence agreement previously concluded with a third party.

However, the court rejected such a calculation, finding it disproportionate and contrary to the principles of reasonableness and fairness. The court took into account that the infringement was not long-term, that the defendant removed the work immediately upon receiving the claim, and that the scope of use (in a portfolio) was much narrower than that provided for in the licence agreement. As a result, the court awarded compensation amounting to 30 subsistence minimums (UAH 80,520), which, in its view, ensured effective and proportionate protection of the plaintiff’s rights. This case demonstrates that courts not only establish the fact of infringement but also actively intervene in assessing the amount of compensation, applying fairness criteria. At the same time, it highlights the high cost and duration of such disputes, emphasising the need for more effective, particularly pre-trial, mechanisms for their resolution. The case law on the unauthorised use of digital content by online media, which constitutes one of the most common types of infringement, is also illustrative. In Judgement of the Darnytskyi District Court of Kyiv No. 97343839 (2021), an Internet provider (plaintiff) filed a lawsuit against a major news portal (defendant) for the unlawful use of an audiovisual work – a video recording from a surveillance camera that had gained public attention.

The defendant not only copied the video published on the plaintiff’s YouTube channel but also superimposed its own logo on it and distributed it in the news without permission or a reference to the original source. Since the defendant neither submitted a response nor participated in the hearings, the court delivered a default judgment based on the plaintiff’s evidence. The court confirmed

the plaintiff's rights under the presumption of authorship, recognising the initial publication on YouTube with the plaintiff's logo as sufficient proof. The actions of the news portal were qualified as a complex infringement, including illegal reproduction, modification of the work (through the addition of the logo), and communication to the public. Importantly, the court recognised the infringement as intentional, as the addition of the defendant's own logo indicated an intent to present the work as its own. This allowed the court to apply the maximum sanction: it ordered the defendant to pay compensation amounting to three times the remuneration (UAH 5,000) publicly stated by the plaintiff as the standard licence fee on his YouTube channel. This case demonstrates the effectiveness of the compensation recovery mechanism and the importance of the presumption of authorship in the digital environment. It also illustrates how courts interpret the rebranding of another's content as evidence of intent.

Ukraine consistently ranks among the world leaders in the consumption of pirated content. According to international rankings, in 2023 the country ranked sixth globally in terms of the number of visits to illegal online resources (MUSO TNT, 2023). The peculiarity of the situation lies in the fact that, despite a smaller population compared to leading countries such as the USA, India and Russia, per capita pirate traffic in Ukraine is among the highest in the world (3%). According to statistics from the SimilarWeb platform (Sharгородsky, 2024), the monthly traffic of the largest pirate websites in Ukraine in 2024 amounted to tens of millions of views. In particular, UAKino recorded over 122 million visits, HDRezka about 83 million, and Filmix over 40 million, while legal services demonstrated significantly lower figures: Netflix only 4.3 million and Megogo 6.2 million visits. Thus, the audience of pirated platforms exceeded that of licensed services by 15–20 times. Research data from MUSO TNT (2023), which

specialises in monitoring pirate traffic, indicate that the global number of visits to pirated sites in 2020–2023 ranged from 216 to 229 billion per year, and Ukraine consistently remained among the countries with the highest intensity of visits per user. Hence, statistical indicators demonstrate that pirated content dominates the Ukrainian digital market, and the scale of its consumption exceeds that of the legal segment many times over. This creates significant challenges for copyright holders and the state, as potential profits from legal services are lost and the national budget does not receive corresponding tax revenues.

The Association Agreement between the European Union and its Member States, of the One Part, and Ukraine, of the Other Part (2023), requires ensuring a level of intellectual property protection equivalent to that of the European Union. Participation in the Agreement on Trade-Related Aspects of Intellectual Property Rights (1994) and the WIPO Copyright Treaty (1996) also obliges Ukraine to protect not only the works themselves but also the technical means of their protection from unauthorised circumvention. However, despite a significant update of the legislative framework, the main problem that offsets many of the positive changes remains its practical application. The most critical institutional challenge is the delay in launching the High Court for Intellectual Property (IP Court). Its absence, even after a competition for judges was held, creates a legal vacuum, as cases requiring in-depth technical and legal expertise are considered by courts of general jurisdiction. This leads to contradictory judicial practices, lengthy proceedings, and, as a result, a low level of trust in the judicial system among innovative businesses and authors (IP Court in Ukraine..., 2025). Thus, the Ukrainian model of digital rights protection appears modern and harmonised with the European one on paper, but in practice its effectiveness is significantly reduced due to weak law

enforcement and the critical institutional incompleteness of judicial reform in this vital area.

International legal mechanisms for the protection of digital intellectual property rights. The analysis of international experience in the field of digital intellectual property rights protection begins with a review of the regulatory and legal model of the European Union (EU). The main ideological guideline of this model is the creation of the Digital Single Market, which aims to ensure the free movement of goods, services, capital and persons in the digital space while maintaining high standards of copyright protection (What is the digital..., 2025). The EU's legal framework is based on the principles of preventive regulation, strict liability of platforms, and the priority of rightholder's interests over the technical or economic interests of intermediaries. A key stage in the evolution of this system was the adoption of Directive of the European Parliament and of the Council No. 2019/790 (2019). Article 17 of this act, known in legal practice as the "value gap provision", is of particular significance. Its importance lies in the paradigm shift regarding the liability of digital platforms – from passive hosting providers, not directly responsible for content, to active participants in information circulation, recognised as those performing "communication to the public" (Al Azzam *et al.*, 2023).

This legal reclassification resulted in online platforms (such as YouTube, Facebook, TikTok, etc.) that provide users with the technical capability to upload content being recognised as entities responsible for copyright infringements, even when such infringements are committed by third parties. To avoid legal liability, platform operators must demonstrate that they have made all possible and "best efforts" to obtain appropriate licences from copyright holders, as well as to implement effective technological monitoring measures and upload filters to prevent the posting of unauthorised content (Sultanbayeva *et al.*, 2025).

At the same time, the legislative framework incorporated balancing mechanisms, particularly to preserve users' rights to make legitimate use of protected works – within the scope of freedom of expression, quotation, parody, or scientific criticism (Iskakova *et al.*, 2023). Thus, Article 17 embodies a complex compromise between the interests of the creative industry, digital platforms and users. Additional emphasis in this directive is placed on strengthening the rights of the press in the digital environment, as reflected in Article 15. This provision grants press publishers a new related right, enabling them to demand licence fees from news aggregators and search engines for the use of fragments of journalistic materials.

The strengthening of the legal regime for digital liability has also been reflected in the provisions of Regulation of the European Parliament and of the Council No. 2022/2065 (2022). This regulation establishes mandatory notice-and-action mechanisms – procedures for reporting illegal content and ensuring an appropriate response by the platform. In addition, it introduces transparency standards, the obligation to provide users with clear explanations when their content is removed, and mechanisms for external auditing of moderation algorithms. Considering the intra-European specifics of law enforcement, it should be emphasised that within the framework of the single regulatory system (the *acquis communautaire*), the implementation of directives is carried out through national implementing acts, which, in turn, largely depend on the characteristics of the Member States' legal systems.

Consequently, even under conditions of formal harmonisation, in practice there are significant variations in the scope of enforcement, the degree of effectiveness, and the approaches to balancing the interests of digital market participants. In the Federal Republic of Germany, a special role in the field of digital intellectual property is played by the judiciary, which traditionally assumes an

active role in interpreting the rules. The doctrine of *Störerhaftung* (What is *Störerhaftung*, 2025) – liability as a disturber of the peace – has become the foundation for holding Internet intermediaries liable even in cases of indirect involvement in an infringement, for example when they technically facilitate the distribution of illegal content. Following the implementation of Article 17 of Directive of the European Parliament and of the Council No. 2019/790 (2019), the German legislator adopted the Act on the Copyright Liability of Online Content Sharing Service Providers (2021), which formalised the obligation of platforms to implement upload filters while simultaneously introducing restrictions on excessive censorship through a system of “correct proportionality” (*richtige Verhältnismäßigkeit*), intended to prevent the blocking of legitimate content.

France, with its traditionally centralised administrative system, introduced the graduated response model in 2009 (The graduated response, 2025), initially implemented by the Haute Autorité pour la Diffusion des Œuvres et la Protection des droits sur Internet (HADOPI), and now by the unified structure of the “Autorité de régulation de la communication audiovisuelle et numérique” (ARCOM). Its activities include warning users about violations, maintaining registers of infringers, and cooperating with law enforcement agencies regarding repeat offences. A distinctive feature of the French approach is the preservation of the administrative nature of the response to most violations, without involving judicial proceedings at the initial stage. The Spanish model is characterised by a formalised administrative response mechanism, particularly through the work of the Sección Segunda, a structural unit of the Intellectual Property Commission under the Ministry of Culture. This body is authorised to decide on the blocking of web resources that systematically violate copyright, following a simplified procedure that does not require judicial involvement.

Although such a mechanism ensures rapid response, it has been criticised for potential threats to freedom of expression and for the risks of automated intervention without adequate judicial oversight. In Sweden, regulation is clearly oriented towards the judicial precedent model. In addition to the landmark Pirate Bay case (Gregersen, 2025), subsequent court decisions that established strict criteria for holding online intermediaries liable are also of great importance. The Supreme Court of Sweden has repeatedly emphasised in its jurisprudence that, even where an intermediary role exists, digital platform operators may be found complicit in copyright infringement if they actively participate in the technical organisation of content exchange. In Poland, where the legal system reflects a combination of the continental tradition and European integration imperatives, the adaptation of European norms was carried out in several stages. Particular efforts were made to specify the norms governing the protection of authors’ personal non-property rights, which are absolutely protected, perpetual, and non-transferable. This creates a specific structure in the relationship between the author and the publisher, especially in the digital environment. It is important to note that Polish legal doctrine tends to prioritise the protection of authors in their relations with large platforms, avoiding the over-delegation of monitoring functions to users themselves.

The US model, in turn, is based on the maximum preservation of freedom of speech and the minimisation of state interference in content moderation mechanisms (Syzykov *et al.*, 2025). The safe harbour doctrine, enshrined in 17 U.S. Code §512 (2010), allows platforms to avoid liability if they provide a functional mechanism for removing content upon a complaint by the copyright holder (notice-and-takedown). While this system maintains a balance between innovation and legal protection, it has been criticised for its

inefficiency in addressing the mass distribution of infringements, given the absence of a preventive filtering obligation. At the same time, the fair use doctrine, also enshrined in 17 U.S. Code, permits the use of copyrighted content without a licence for certain purposes, which are interpreted by courts in each specific case according to the criteria of transformability, proportionality, commercial harm, and public interest. In Canada, by contrast, a compromise notice-and-notice model has been implemented.

Under this approach, an Internet provider, upon receiving a complaint from a copyright holder, is obliged to notify the end user but is not entitled to remove content without a court decision. This system focuses not only on the protection of rights but also on promoting legal awareness among users. It is considered effective in preventing minor infringements but demonstrates limited effectiveness in combating professional pirate resources operating within closed networks or outside the jurisdiction. Consequently, comparative analysis reveals a heterogeneous spectrum of approaches to the protection of digital intellectual property rights. Although there is a general tendency towards unification and cross-border enforcement, the specific features of national legal traditions, administrative capacities, and judicial practices ensure the preservation of unique regional models that are in a constant process of adaptation to new digital challenges.

As a result of the comparative analysis of digital legal regulation in the field of intellectual property, it is possible to identify key features that are both common and distinct in the approaches of Ukraine and leading international jurisdictions. The European Union legal model is characterised by a high degree of harmonisation, detail, and institutional stability. The implementation of Directive of the European Parliament and of the Council No. 2019/790 (2019) and Regulation of the European Parliament and of the Council

No. 2022/2065 (2022) introduced clear obligations for digital platforms, including the use of technological filters, responses to infringements (notice-and-action systems), transparency in moderation, and user protection mechanisms. Ukrainian legislation, particularly Law of Ukraine No. 2811-IX (2022), largely adapts these provisions but remains declarative in terms of institutional support, notably due to the absence of an IP court and insufficient secondary legislation regulating procedures. Germany demonstrates an example of a highly developed judicial doctrine, where the liability of platforms is recognised even in cases of indirect participation in rights infringements (What is Störerhaftung?, 2025).

The Act on the Copyright Liability of Online Content Sharing Service Providers (2021) introduces a balance between the protection of authors and the right to freedom of expression by regulating the limits of filter application. Ukraine borrows certain concepts but has not yet developed its own model of proportional intervention. France is distinguished by a preventive administrative model implemented through the ARCOM body, whose powers include warning users, controlling access to content, and cooperating with law enforcement agencies. Ukraine lacks an equivalent institution, and all actions concerning infringements are conducted through the judicial system, which complicates prompt response. Spain applies a similar administrative model through the Sección Segunda under the Ministry of Culture, which has the authority to block access to websites that systematically infringe rights. A comparable mechanism in Ukraine is formally established but lacks the organisational infrastructure required for implementation.

Sweden follows a judicial model with a strong emphasis on case law enforcement. The precedent case of *The Pirate Bay* (Gregersen, 2025) established a high standard of liability even for indirect intermediaries. Ukrainian courts

dealing with intellectual property disputes lack narrow specialisation and sufficient technical expertise, which reduces the quality of judgments and generates inconsistent practices. In Poland, emphasis is placed on the protection of authors' personal non-property rights, which are considered perpetual and inalienable. Polish law demonstrates a delicate balance between the interests of authors and publishers in the digital environment. In Ukraine, such balance is not always maintained, and mechanisms for protecting personal rights are often reduced to formalities. The United States implements a model focused on freedom of speech, under which platforms benefit from the "safe harbour" protection provided by 17 U.S. Code §512 (2010), provided that notice-and-takedown procedures are followed. However, this system does not impose an obligation for preventive filtering.

Furthermore, 17 U.S. Code §512 (2010) provides a judicial mechanism for legalising secondary use of content based on transformability, purpose of use, scope, and market impact. There is no equivalent doctrine in Ukraine, although its adaptation could help balance the interests of users and copyright holders. Canada applies the notice-and-notice model (Government of Canada, 2025), designed to inform infringers through the provider without an obligation to block content immediately. This approach contributes to enhancing legal awareness and prevents excessive censorship. In Ukraine, the implementation of a similar information and educational mechanism would be feasible, particularly through state digital services.

As a result, the Ukrainian model normatively gravitates towards the European one, but its effectiveness is largely undermined by insufficient institutional development, weak judicial infrastructure, the absence of a specialised pre-trial response body, and the slow formation of case law. Modernisation requires not only the renewal of

legal norms but also their practical implementation through the establishment of an IP court, the introduction of ARCOM-like supervisory instruments, the incorporation of balancing doctrines (such as fair use), and the development of digital monitoring and warning tools. Only in this way will Ukraine be able to transform formal compliance with international standards into effective law enforcement mechanisms.

Recommendations for improving the legal mechanism for protecting digital intellectual property rights in Ukraine. Based on a comparative analysis of international practice and Ukrainian legislation, a number of systemic recommendations can be formulated to improve the legal mechanism for protecting digital intellectual property rights in Ukraine. Although the regulatory framework is already largely harmonised with European law – primarily through the adoption of the Law of Ukraine No. 2811-IX (2022) – further efforts should be directed towards the effective implementation of norms, institutional modernisation, and technological support for law enforcement. A key step should be the launch of the High Court for Intellectual Property, which will ensure the high-quality and timely consideration of cases related to infringements of intellectual property rights in the digital environment. Such a court should include an expert council involving specialists in IT, digital security, and copyright, which would facilitate the formation of consistent and technically sound judicial practice.

An important element should be the improvement of the mechanism for addressing copyright infringements on the Internet (notice-and-takedown), which is already enshrined in the Law of Ukraine No. 2811-IX (2022). It is proposed to create a digital automated response platform that will ensure the rapid submission of complaints, integration with IP rights registries, communication with hosting platforms, and monitoring of procedural progress. Such a system should employ

artificial intelligence to classify infringements, identify repeat cases, and automatically generate reports. At the same time, it is necessary to develop unified instructions for Internet intermediaries clearly defining their obligations regarding the processing of complaints, timeframes for content blocking, formulation of counter-notice, and transparency in moderation. In this context, the provisions of Regulation No. 2022/2065 (2022) should serve as a basis, particularly concerning mechanisms for protecting users from excessive interference. The instructions should also include safeguards against the automatic blocking of lawful content – for instance, in cases of educational, scientific, satirical, or critical use.

In the future, an important step will be the introduction of the fair use doctrine, similar to that applied in the United States. This flexible construct allows the court, based on specific circumstances, to determine the limits of permissible secondary use of a work without a licence. The introduction of such a doctrine in Ukraine would contribute to balancing the interests of copyright holders and users, particularly in the fields of innovation, digital art, generative AI, and research initiatives. In addition, there is a need to intensify the application of criminal legislation in the field of digital piracy. Article 176 of the Criminal Code of Ukraine (2001) should be supported by special methodological recommendations for investigators and prosecutors. It is advisable to establish specialised departments within the cyber police, the Bureau of Economic Security, and prosecution bodies. Judges hearing IP-related cases should have continuous access to technological expertise, including on peer-to-peer protocols, content delivery networks (CDNs), and virtual private networks (VPNs). In parallel with legal measures, it is important to implement information and educational initiatives. Ukraine could adopt the Canadian notice-and-notice model, which involves informing users about

a potential infringement without immediately blocking the content. This approach contributes to enhancing digital literacy and legal awareness, particularly among young people and novice authors. Educational programmes on digital ethics and copyright should become mandatory in educational institutions and be integrated into national e-government services.

The key direction should be the effective implementation of the already approved Order of the Cabinet of Ministers of Ukraine No. 1351-2024-p (2024). Within its framework, priority should be given to the objectives related to the implementation of the latest European regulations and laws, the modernisation of state IP registers through the use of blockchain technologies and NFT identification, the development of digital environment monitoring, connection to international platforms (such as WIPO Alert), and support for innovative IP startups. Enhancing the level of international integration of Ukraine in the field of intellectual property is also a priority. Representatives of Ukraine should actively participate in the working groups of the World Intellectual Property Organization (WIPO), the World Trade Organization (WTO), UNESCO, and other institutions.

In particular, it is necessary to engage in the formation of new global copyright mechanisms in the digital era, such as the development of a unified international copyright database, the creation of cross-border licensing platforms, and the expansion of provisions on technical means of protection. It is equally important to ensure transparency and accountability in the activities of the bodies responsible for regulating intellectual property. This should include the regular publication of reports by the IP Office with open analytical data, the creation of a platform for analysing case law, the public accessibility of decisions with expert commentary, and the establishment of a mechanism for external auditing of strategy implementation. All these steps should be

accompanied by an update of the legislative terminology base. Collisions between the Civil Code of Ukraine (2003), the Law of Ukraine No. 2811-IX (2022), the Law of Ukraine No. 675-VIII (2015), the Criminal Code of Ukraine (2001), and relevant by-laws should be eliminated through the development of a unified glossary and correspondence map, which will enhance the predictability and effectiveness of law enforcement.

Discussion

The results of this study, which reveal a fundamental gap between Ukraine's progressive legislative framework – harmonised with European law – and the weak effectiveness of its practical implementation, find confirmation and further development in the works of other scholars. This gap is not merely technical but systemic in nature, hindering the development of creative industries and the digital economy as a whole. Further discussion will demonstrate how this central problem manifests itself in specific aspects, such as the absence of specialised judicial institutions and technological lag. Comparing the identified challenges with the international academic discourse allows us to conclude that the difficulties faced by Ukraine form part of broader global trends but possess distinct national specificity, which lies in institutional and law enforcement immaturity. The principal conclusion regarding the modernisation of Ukrainian legislation, particularly through the adoption of the new Law of Ukraine No. 2811-IX (2022), is consistent with the analysis conducted by K. Militsyna and L. Maidanyk (2023). They confirm that the new law is ambitious, largely inspired by EU legislation, and introduces such modern concepts as a clear definition of the criterion of originality, an expanded list of objects of protection, and new *sui generis* regimes for non-original databases and computer-generated works. At the same time, their concerns that outdated case law –

particularly the presumption of originality – may nullify the progressive intentions of the legislator directly echo this study's conclusion regarding the deep gap between formal norms and their practical implementation.

This process of harmonisation is unfolding in a global context, where, as noted by K. Sanjaya and P.R.L. Rajavenkatesan (2023), key international conventions themselves face new challenges in the digital age. Their conclusion concerning the urgent need to maintain a constant balance between the interests of rights holders and society underscores that Ukraine's adoption of progressive legislation represents only the first step. The true challenge lies in the practical realisation of this balance, which, as this study has demonstrated, has not yet been achieved. The key institutional problem identified in this study – the absence of a specialised High Court for Intellectual Property (IP Court) in Ukraine – is also the subject of scholarly attention. T.A. Frantsuz-Yakovets *et al.* (2024), in their research on constitutional guarantees for IP protection, emphasise the decisive role of specialised courts in ensuring such guarantees within the context of digital transformation. The conclusions of this study, that the absence of an IP Court results in contradictory practices, procedural delays, and a low level of trust, are fully consistent with their thesis regarding the need for institutional strengthening of the judiciary to ensure adequate protection of digital rights. When state institutions remain weak, rights holders are compelled to resort to self-protection mechanisms, such as the notice-and-take-down procedure (Oklander *et al.*, 2023).

However, as E. Egamberdiev (2025) noted, such self-protection of rights in the digital space itself requires clear legal boundaries and proportionality, which can only be determined by a competent and consistent court through its decisions. Thus, the absence of an IP Court not only slows down the consideration of cases but also

creates risks of abuse within the sphere of extrajudicial regulation. The large-scale spread of piracy in Ukraine, recorded in the results of this study, forms part of a global problem analysed by N.A. Okene *et al.* (2025). They observed that the rapid growth of digital platforms and streaming technologies has intensified the need for reliable and adaptive IP laws worldwide, highlighting the tension between protecting the rights of creators and ensuring public access to knowledge. Hence, the high level of piracy in Ukraine indicates not only deficiencies within the national system but also its vulnerability to global trends, exacerbated by the weakness of law enforcement agencies.

In this context, the works of H. Hudz (2025) and A.S. Grewal *et al.* (2023) emphasise that intellectual property is a key economic asset in the modern knowledge economy, and its protection constitutes a fundamental prerequisite for investment and sustainable development. Accordingly, the inefficiency of law enforcement and the dominance of the pirate market identified in this study are not merely legal issues but also significant economic challenges that directly hinder the transformation of Ukrainian “ideas into assets” and the country’s integration into the global innovation system. There is also a pressing need to address the adaptation of legal systems to new technologies (Franchuk *et al.*, 2020). The results of this study concerning Ukraine’s lag in regulating content created by artificial intelligence and the use of blockchain technologies are directly confirmed by the works of other scholars.

A. Mahala and B. Chauhan (2025), analysing global challenges related to AI, conclude that there are significant gaps in existing IP protection mechanisms and propose new framework solutions integrating blockchain and smart contracts. This confirms that the recommendations on modernising registries proposed in this study align with a global trend towards technological responses to technological challenges. A similar

view is expressed by N. Baadzhy (2025), who directly indicates the absence of a clear legal mechanism for the operation of blockchain registries for IP objects in Ukraine, which hinders the implementation of innovative protection technologies capable of ensuring transparency and trust.

D. Shi’s (2023) research on the protection of “virtual IP” (digital avatars) further demonstrates that legal systems are constantly forced to catch up with technological development, and the lack of clear definitions and standards for new digital objects creates legal uncertainty – a characteristic feature of the Ukrainian context, as shown in this study. Finally, the conclusion that Ukraine needs to introduce more flexible and balanced protection mechanisms – such as the doctrine of fair use and alternative dispute resolution (ADR) – is consistent with international scholarship. Although A. Pandey’s (2025) work concerns the agricultural sector, it raises the universal issue of balancing innovation incentives with the protection of users’ rights, which is central to any modern IP system.

The absence of an effective fair use doctrine in Ukraine, as demonstrated in this study, reflects the inability to achieve the “harmonious balance” that A. Pandey advocates. Similarly, G. Bhagyamma’s (2023) analysis of the effectiveness of the international domain name dispute resolution system (UDRP) created by ICANN supports this study’s conclusion that the absence of effective ADR mechanisms in Ukraine overburdens the judicial system and reduces the accessibility and efficiency of rights protection, particularly in cross-border disputes. The ethical dimension of this balance is underscored by V. Dan *et al.* (2024), who highlight the need to uphold ethical norms to protect human dignity and individual rights in the digital environment – an aspect that must also be considered in the development of national legislation.

The results of this study are consistent with international scientific approaches to the issue of intellectual property in the digital environment

but possess several distinctive features. In the work of O. Hubanov *et al.* (2021), emphasis was placed on the need to modernise international copyright legislation, taking into account the emergence of new forms of digital piracy. This study confirms that trend while simultaneously revealing a persistent gap between legislation and law enforcement in Ukraine. At the same time, the approach of S.M.H. Bamakan *et al.* (2022), who examined the prospects of using NFTs as a form of intellectual property protection, demonstrated the potential of blockchain technologies in ensuring transparency and the commercialisation of assets. This research confirmed the feasibility of such innovations in addressing deficiencies in the protection of digital rights in Ukraine.

The work of L. Judijanto *et al.* (2023) highlighted the role of corporate architecture in cyber risk management, broadening the understanding of intellectual property within the context of cybersecurity; similarly, Ukrainian practice has confirmed the need for comprehensive digital risk management at the state level. The study by T. Margoni and M. Kretschmer (2022) problematises the European system of exceptions for text and data mining, which creates risks for the development of artificial intelligence. This resonates with the conclusions of the present study on the need for a balanced approach that simultaneously stimulates innovation and safeguards authors' rights. National studies, in particular those by O.A. Pashchenko and V.L. Khomenko (2023), V. Baranovska (2024) and O.S. Klymenko and N.P. Khrystynchenko (2025), have also confirmed that digitalisation significantly complicates the enforcement of IP law. The findings of this study concretise these theses through the example of Ukrainian judicial practice, demonstrating its instability, high cost, and protracted procedures.

Thus, the discussion has shown that the problems identified within Ukraine's IP protection system are not unique; however, their

combination – modernised legislation, institutional incompleteness, weak law enforcement, and technological lag – creates a distinct and multifaceted challenge. This challenge extends beyond the legal sphere and has a pronounced economic dimension, as it slows the development of the digital market, deters foreign investment, and diminishes the competitiveness of Ukrainian creative industries on the global stage. Without a comprehensive solution to these interrelated problems, Ukraine risks consolidating its status as a country with a high level of piracy and a low level of innovation protection.

Comparison with international scholarly findings confirms that the recommendations proposed in this study correspond to leading global trends. The proposed comprehensive measures – encompassing institutional reform, the implementation of advanced technologies, and the adaptation of flexible legal doctrines – constitute a necessary response to this systemic crisis. Their adoption is essential to align the national legal system with the requirements of the digital age and to transform it from a formal set of norms into an effective mechanism for protecting innovation.

Conclusions

The conducted study of the legal protection of intellectual property in the digital environment of Ukraine revealed a fundamental paradox: despite significant progress in harmonising national legislation with European standards, there remains a deep gap between the modern regulatory framework and the effectiveness of its practical implementation. Such dysfunction not only creates legal uncertainty for authors and businesses but also undermines the rule of law and negatively affects the investment climate within the creative industries. While Ukraine formally meets international requirements, its system of IP protection in practice remains weak and unable to adequately respond to the dynamic challenges of the digital age.

It has been established that digital piracy dominates the Ukrainian market, with the audience of illegal resources exceeding that of legal services by many times, placing Ukraine among the world leaders in the consumption of unlicensed content.

Against this backdrop, the state response remains extremely limited. Criminal prosecution for copyright infringement is rare, and the small number of registered proceedings results in even fewer convictions, illustrating the systemic weakness of law enforcement mechanisms. The main institutional obstacle to fair and efficient justice in Ukraine is the absence of a specialised High Court for Intellectual Property. This legal vacuum leads to complex cases requiring in-depth technical expertise being heard by courts of general jurisdiction. The consequence is the formation of contradictory and inconsistent case law, excessive delays in proceedings that may last for years, and, as a result, a low level of trust in the judicial system among authors, inventors, and innovative businesses.

The analysis of case law confirmed that courts of general jurisdiction are capable of applying new legislation to modern digital disputes, particularly in cases involving co-authorship of YouTube content, unauthorised use of logos in commercial portfolios, and online media piracy. Courts rely on fundamental principles such as the presumption of authorship and the necessity of mutual consent for the use of collective works. At the same time, the examination of individual cases highlights the systemic shortcomings of the entire rights protection ecosystem: the ineffectiveness of pre-trial settlement mechanisms at the level of online platforms, which frequently ignore complaints from

rightholders; the objective difficulties of proving the extent of damage, which requires mandatory evidence collection; as well as the high cost and considerable duration of judicial protection. An important finding is that courts demonstrate an active role in ensuring a balance of interests by applying the principles of proportionality and fairness when determining compensation and refusing to mechanically impose inflated amounts.

Finally, a comparison with international experience demonstrates that, despite the formal implementation of European norms, Ukraine significantly lags behind leading jurisdictions in the introduction of effective models of online intermediary liability, alternative dispute resolution mechanisms, and tools for combating cross-border infringements. This indicates an incomplete and fragmented adaptation of the best global practices. A limitation of this study is its focus primarily on legal and institutional aspects, leaving aside an in-depth analysis of the economic and socio-cultural factors underpinning piracy. Prospects for further research lie in conducting empirical assessments of the effectiveness of specific law enforcement tools, as well as in studying the impact of digital education on users' legal awareness.

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Conflict of Interest

None.

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Проблеми захисту прав інтелектуальної власності в цифровому середовищі

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Анотація

Метою дослідження було проведення порівняльного аналізу правового захисту інтелектуальної власності в цифровому середовищі України. Дослідження базувалося на методах порівняльного та системного аналізу, в рамках яких було розглянуто національне законодавство, судову практику, статистичні дані та міжнародний досвід. Дослідження виявило значний розрив між прогресивною законодавчою базою України, гармонізованою з європейськими стандартами, та вкрай низькою ефективністю її практичного впровадження. Було встановлено, що піратський контент домінує на українському цифровому ринку, багаторазово перевищуючи легальний сегмент, тоді як рівень правової реакції залишається мінімальним, про що свідчить невелика кількість судових рішень у справах про порушення авторських прав. Основною інституційною перешкодою було визнано відсутність спеціалізованого Вищого суду з питань інтелектуальної власності, що призводить до непослідовності судової практики, процедурних затримок та низького рівня довіри до системи правосуддя. Аналіз судової практики показав, що, хоча суди

застосовують принципи презумпції авторства та пропорційності при визначенні розміру компенсації, процес залишається тривалим і складним. Україна продовжує значно відставати від провідних міжнародних практик у таких сферах, як відповідальність онлайн-платформ, досудове вирішення спорів та боротьба з транскордонними порушеннями. Результати дослідження можуть бути застосовані в законодавчій діяльності, спрямованій на подальше вдосконалення національного законодавства у сфері інтелектуальної власності. Сформульовані рекомендації також можуть слугувати основою для ефективної реалізації Стратегії цифрового розвитку інноваційної діяльності України та модернізації правоохоронної практики

Ключові слова: штучний інтелект; цифрове середовище; національна стратегія; судовий захист; соціальні мережі