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Mechanisms of Copyright Protection in the Digital Age: Comparison of International Practices

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REGULATORY REFERENCES

1. GOST 7.32-2001.report on research work. Structure and rules of registration.
2. Oxford University Standard for the Citation of Legal Authorities (OSCOLA). 4th edn. Faculty of Law, University of Oxford, 2012.

DEFINITIONS AND ABBREVIATIONS

ACTA	Anti-Counterfeiting Trade Agreement
AI	Artificial intelligence
BT	British Telecommunications
CC	Creative Commons
CDPA	Copyright, Designs and Patents Act 1988
CJEU	Court of Justice of the European Union
CMO	Collective Management Organisation
CSS	Content Scramble System
DEA	Digital Economy Act
DMCA	Digital Millennium Copyright Act
DRM	Digital Rights Management
ECD	European Copyright Directive
EU	European Union
GATT	General Agreement on Tariffs and Trade
IP	Intellectual property
IPR	Intellectual property rights
ISP	Internet Service Providers
MCI	Monthly calculation index
MPAA	Motion Picture Association of America
NFT	Non-fungible tokens
OECD	Organisation for Economic Co-operation and Development
OSP	Online Service Providers
P2P	Peer-to-Peer
PIPA	Protect Intellectual Property Act
RIAA	Recording Industry Association of America
SOPA	Stop Online Piracy Act
TPB	The Pirate Bay
TRIPS	Trade related aspects of intellectual property rights
TPM	Technological Protection Measures
UCC	Universal Copyright Convention
UK	The United Kingdom
UDHR	Universal Declaration of Human Rights
USA	United States of America
WCT	WIPO Copyright Treaty
WEB	World Wide Web
WIPO	World Intellectual Property Organization
WPPT	WIPO Performers and Phonograms Treaty

INTRODUCTION

The relevance of dissertation research

The dynamic development of the Internet has led to a practice where some users illegally reproduce and distribute copyrighted works for commercial purposes, and they continue to share copyrighted works. This kind of illegal activity is called copyright infringement or digital piracy and has been the subject of heated debate among copyright holders and academics.

The digitalization of creative content presents unprecedented challenges to copyright law by enabling new forms of private use that are not expressly authorized by copyright rules, while simultaneously allowing right holders to exercise greater control over access and use. Moreover, digital technologies facilitate the perfect, inexpensive copy and distribution of copyrighted works.[1]

Copyright infringement on the Internet has had a huge impact on copyright, turning it into a tool with which some users steal creative objects that originally belonged to copyright holders. It should be noted that copyright infringement on digital technologies is perceived worldwide as a serious crime. This reduces the creative potential of society, depriving copyright holders of their legitimate income, and leads to financial losses for everyone who invests in the creative industries.

In Kazakhstan, the number of disputes related to the protection of intellectual property rights has risen significantly. In practice, the courts of the Republic most frequently consider cases concerning the unlawful use of trademarks and copyrighted works.[2] For example, in the first six months of 2022, courts of first instance examined 164 claims relating to the protection of copyright, whereas appellate courts reviewed 33 copyright cases. During the same time, the Ministry of Internal Affairs reported the initiation of seven criminal proceedings concerning copyright violation.[3]

The Concept of Legal Policy of Kazakhstan until 2030 identifies key priorities, including addressing the composition of participants in legal relations concerning IP protection on the Internet and resolving questions of ownership of intellectual property created with the involvement of artificial intelligence.[4]

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[1] Chandrika Mehta, 'Digitalization of Copyright: Remedies on Infringement' (2023) 6(2) International Journal of Law Management & Humanities 1043.

[2] 'The concept of intellectual property development in the Republic of Kazakhstan for the period 2021-2025'<https://www.gov.kz/memleket/entities/adilet/documents/details/166427?lang=ru&ysclid=ldcw09slv5516323991> accessed 29 July 2025.

[3] 'Copyright Infringement' (ARBIS) <https://arbis.kz/en/all-articles/copyright/copyright-infringement/?utm_source=chatgpt.com> accessed 08 February 2026.

[4] President of the Republic of Kazakhstan, 'On approval of the Concept of Legal Policy of the Republic of Kazakhstan until 2030' Decree No. 674 <https://adilet.zan.kz/rus/docs/U2100000674 > accessed 29 July 2025.

On 20 June 2022, the President of Kazakhstan signed the Law of the Republic of Kazakhstan “on amendments and additions to certain legislative acts on enhancing legislation in the field of intellectual property and state-guaranteed legal assistance”.[5] This law aims to strengthen the protection of intellectual property rights, harmonize national laws with international treaties, and expand the scope of state-provided legal support.

The relevance of the dissertation research topic is due to the Nation Address by the president Tokayev dated September 8, 2025 which sets out the strategic task of turning Kazakhstan into a digital country, as well as the adoption of the Digital Code of the Republic of Kazakhstan on 09 January 2026 which aims to establish a transparent and effective system of legal regulation of the digital sphere in Kazakhstan.[6]

Moreover, Kazakhstan has recently adopted a law “on artificial intelligence” which one of the articles is devoted to copyright in the field of AI.[7]

In our view, the adaptation of Kazakhstan’s copyright law to the digital environment is becoming increasingly important today. This process depends not only on economic requirements but, to a greater extent, on the development of digital technologies and the spread of new telecommunication tools. Intellectual property is no longer merely a driver of economic growth but is also an essential element of national security.

It should be noted that digital technologies and the Internet have become integral parts of contemporary society. Accordingly, ensuring the effectiveness of copyright protection in this sphere is of particular importance. Any three-dimensional work can be reproduced in digital form, stored, and distributed in electronic format. This greatly increases the ease and speed of copying, improves the quality of reproductions, and facilitates the adaptation of works. At the same time, however, it generates significant problems associated with the unauthorized use and mass illegal distribution of digital content.

The rapid development of digital technologies and global social networks calls for new mechanisms of copyright protection on the Internet. Comparative legal research demonstrates that copyright in the digital environment possesses distinct features that require tailored approaches to regulation.

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[5] Law of the Republic of Kazakhstan, on amendments and additions to certain legislative acts of the Republic of Kazakhstan on the issues of improving legislation in the field of IP and provision of state-guaranteed legal assistance No. 128-VII (20 June 2022) <https://adilet.zan.kz/rus/docs/Z2200000128> accessed 08 February 2025.

[6] Digital Code of the Republic of Kazakhstan, № 255-VIII (09 January 2026) https://adilet.zan.kz/rus/docs/K2600000255 accessed 08 February 2026.

[7] Law of the Republic of Kazakhstan, on Artificial intelligence № 230-VIII (17 November 2025) https://adilet.zan.kz/rus/docs/Z2500000230 accessed 08 February 2026.

For legal science, and intellectual property law in particular, a vital task is to assess the future development of copyright protection on the Internet and to identify new tools and mechanisms capable of safeguarding the rights and legitimate interests of rights holders, ISPs, and users, while maintaining a fair balance between these parties.

Taken together, the above considerations confirm the relevance of the present dissertation and emphasize the importance of developing effective mechanisms for copyright protection in cyberspace.

Research aim and objectives. The scope of the dissertation includes only the study of the exclusive rights of authors in the digital environment in the form of personal non-property rights. Therefore, the main purpose of this dissertation is to conduct a comprehensive study of the protection of personal non-proprietary copyrights in the digital environment on the global Internet and to propose effective legal mechanisms and approaches to strengthen the Kazakh copyright protection system through a comparative analysis of best practices of the United Kingdom, the United States and the European Union.

The central research question of the dissertation is: To what extent is it possible to ensure effective copyright protection in the era of global unlimited internet and digital technologies?

To address this question, the following research objectives were pursued:

- identify the scope and rationale of copyright protection in the digital environment;
- highlight the difficulties and challenges in protecting copyright arising from rapid technological progress;
- identify the legal characteristics of digital works and distinguish them from analogue forms of expression;
- evaluate legal issues surrounding copyright protection of AI-generated works as one of the major challenges in the digital landscape;
- assess the liability of service providers for copyright infringements committed by third parties through Internet networks, with reference to the legal frameworks of the US, UK, and EU;
-develop proposals for improving Kazakhstani legislation, particularly with respect to the liability of service providers.

Object of the research in the thesis is societal relations emerging in the sphere of copyright protection in the digital age.

Subject matter of the thesis consists of scientific works of national and foreign scholars on the problems of copyright protection in the digital environment, legal acts and judicial practice in selected states.

Research methodology

To achieve the aims of this thesis, a legal doctrinal approach has been employed, complemented by comparative, historical, and case law analyses. Understanding effective mechanisms for copyright protection in the digital age requires engaging with a number of complex legal

issues and theories, including the international regulation of copyright, P2P technology, intermediary liability for third-party content, and anti-circumvention rules.

In our opinion, this approach appears to be most relevant when the work aims to analyse and systematize legal rules and principles relating to copyright protection in the information age. By analyzing statutes, case law, international treaties, and academic articles to reveal gaps and difference or some areas for legal reform, doctrinal research is primarily concerned with identifying the law in its existing form, rather than examining its practical application.

The doctrinal method offers several advantages over empirical or socio-legal approaches. First, the objectives of this thesis are analytical and normative, rather than descriptive or behavioural. The central research questions concern the modernization and coherence of the existing legal framework regulating copyright, rather than the social or economic consequences of legal norms.[8] Furthermore, since empirical and socio-legal methods typically rely on data collection through interviews, surveys, or case studies, they are not well suited for analysing the internal hierarchy, structure, and interpretation of legal rules across different jurisdictions[9].

The doctrinal approach may help to answer for the question through structured analytical framework to evaluate whether existing Kazakh copyright rules relevantly address the challenges of the digital age. Moreover, through critical analysis of primary and secondary sources, the method allows the author to make evidence-based legal suggestions and theoretical conclusions.

The research draws on a wide range of sources, including international and national legislation, regulations, theoretical works, international conventions and agreements, general legal principles, and case law. Together, these provide the basis for developing a comprehensive regulatory framework for copyright protection in the digital environment.

A comparative analysis of the legislation, case law, and approaches adopted in the United States, the United Kingdom, and the European Union has been carried out to identify more effective mechanisms of copyright protection. In addition, selected legal solutions in these jurisdictions are examined to determine their potential relevance for Kazakhstan.

Case law analysis plays a central role in this research. Judicial decisions on copyright protection in the Internet age are studied to assess how courts interpret and apply relevant norms, as well as to identify trends in judicial reasoning.

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[8] Mike McConville and Wing Hong Chui (eds), *Research Methods for Law* (2nd edn, Edinburgh University Press 2017) 5.

[9] Terry Hutchinson, *Researching and Writing in Law* (4th edn, Thomson Reuters 2018).

Finally, a historical analysis has been conducted to trace the impact of the Internet and digital technologies on online copyright infringement from the era of Web 1.0 to the emerging Web 3.0 environment. In particular, landmark cases and practices from the Napster era through to The Pirate Bay are examined, as these developments had a profound influence on the evolution of copyright protection in the digital age.

Theoretical basis of the dissertation and literature review.

Essential research focused on the effect of the WIPO Internet Treaties of 1996, which created global standards of protecting copyright and related rights in the cyberspace. For instance, scholars such as Reinbothe and Lewinski[10] analyzed the issues of extension of traditional copyright to digital environment. Their research highlighted the need for harmonization among national laws to provide effective protection of rights around the world.

As mentioned above, the advent of new technologies has altered the production, distribution and protection of copyrighted works. It could be argued that mostly the relationship between technological innovation and legal mechanisms of copyright protection is thoroughly examined by some academicians around the world.

Early works of Samuelson[11] and Boyle[12] mostly focused on the theoretical aspects of digital copyright by arguing that the internet could be as both digital landscape of opportunity and legal conflict. Samuelson indicated that new technologies could challenge the balance between public access and private control, whereas Boyle mainly criticized that the expansion of copyright could limit the free access of information in the digital environment.

Another legal scholar, Lessig developed an argument that code through DRM and TPMs has become a tool that affects the function of copyright in the digital landscape.[13]

In the US, the DMCA has become a debatable question among local scholars. For example, Litman[14] has analyzed the DMCA's double role like the protection of right holders through notice-and-takedown procedures and limitations on intermediary liability. Further studies criticized these provisions by claiming that they often give preferences to right holders rather than users.

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[10] Jörg Reinbothe and Silke von Lewinski, *The WIPO Treaties 1996: The WIPO Copyright Treaty and the WIPO Performances and Phonograms Treaty: Commentary and Legal Analysis* (Butterworths 2002).

[11] Pamela Samuelson, 'Intellectual Property and the Digital Economy: Why the Anti-Circumvention Regulations Need to Be Revised' (1999) 14 Berkeley Technology Law Journal 519.

[12] James Boyle, The Second Enclosure Movement and the Construction of the Public Domain (2003) 66 Law and Contemporary Problems 33.

[13] Lawrence Lessig, *Free Culture: How Big Media Uses Technology and the Law to Lock Down Culture and Control Creativity* (Penguin 2005).

[14] Jessica Litman, *Digital Copyright* (Prometheus Books 2006).

In Europe, a main question has been raised around the Digital Single Market Directive, especially, Article 17, which revises intermediary liability for user-generated content. Guadamuz[15] and Rosati[16] claimed that these provisions alter approaches where digital platforms are forced to take quasi-regulatory roles to monitor content which may affect the future of copyright protection in the EU.

Apart from the Western jurisdictions, some scholars have started to examine the adaption of digital copyright to developing economies. The works of Yu[17] and Okedjii[18] indicated the significance of local legal and cultural context in defining copyright protection especially in countries where public IP awareness is limited. Their research recommends that the acceptance of Western models should be coexisted with local reforms to obtain essential protection in the digital landscape.

In general, most scholars around the world take the same idea where copyright law in the information age ought to balance innovation, access and protection Yet, it is also worth mentioning that to achieve such balance there are different approaches among states. Developed countries mostly focus on technological regulation and intermediary liability, while developing states often struggle with enforcement and public awareness of digital rights and liabilities in the digital environment.

Theoretical basis of the dissertation was formed by foreign and Kazakhstani scholars:

A main part of the scientific and theoretical basis of our dissertation research were the works of foreign scholars on copyright: D. Bainbridge, L. Bently, A. Johns, B. Klein, A. Kur, J. Litman, G. Moss, A. Murray, P. Samuelson, B. Sherman, S. Stokes and P. Torremans.

The scientific works of Soviet and Russian scholars have been used: B. Antimonov, M. Boguslavsky, S. Boldyrev, B. Dozortseva, A. Garibyan, A. Gavrilova, M. Gordon, B. Koretsky, V. Serebrovskii, A. Sergeev, O. Yoffe, V. Yonosa, A. Zenin and others. Recently, S. Boldyrev in his research elaborated analysis on copyright protection in digital environment in Russian Federation.

A huge contribution to the development of the Kazakh national doctrine of IP made by prominent Kazakhstani scientists such as A. Amangeldy, E. Babykova, Z. Baimoldina, Y. Basin, K. Beisembin, D. Bratus, A. Didenko, S. Idrysheva, T. Kaudyrov, S. Masalina, K.

[15] Andres Guadamuz, 'New EU Directive threatens the Internet as we know it' (*TechnoLlama*, 23 February 2019) < https://www.technollama.co.uk/new-eu-directive-threatens-the-internet-as-we-know-it> accessed 10 March 2026.

[16] Eleonora Rosati, 'The DSM Directive Five Years On' (2024) Nordic Intellectual Property Law Review 1.

[17] Peter K Yu, 'Digital Copyright Reform and Legal Transplants in Hong Kong' (2010) 48 (4) U. Louisville L. Rev. 693.

[18] Ruth L Okediji (ed), *Copyright Law in an Age of Limitations and Exceptions* (Cambridge University Press 2018) 1.

Namengenov, A. Omarova, M. Suleimenov, B. Zhandarbek, K. Zhirenchin, V. Zinchenko and others.

In general, it can be noticed that there is a lack of scientific works, monographic researches on copyright issues in the digital age in Kazakhstan. However, the following scholars have written doctoral research on the different issues of author rights: N. Abdreeva “The objects of copyright according to the legislation of the Republic of Kazakhstan”; R. Abuova “Authorship contract in the civil law of the Republic of Kazakhstan”; K. Beisembin “Rights of authors on works: the problems of theory and legislation in the Republic of Kazakhstan”; V. Zinchenko “Computer programs and databases as objects of intellectual property in the Republic of Kazakhstan”; U. Ikhsanov “Copyright as a subjective civil right under the legislation of the Republic of Kazakhstan”; L. Mamikonyan “Audiovisual works as objects of copyright under the legislation of the Republic of Kazakhstan”; S. Masalina “Copyright Institute in the context of information technology development”; A. Amangeldy “Intellectual property law of the Republic of Kazakhstan at the present stage”.

A similar study to the present dissertation was conducted by Masalina, who also examined the issue of the liability of Internet intermediaries. However, it should be noted that the work lacked practical recommendations, as the author did not provide precise legal norms concerning the liability of intermediaries. Moreover, since the research was carried out nearly two decades ago, it primarily focused on the early stages of file-sharing technologies.

Despite the fact that many works devoted to intellectual property law, currently there are few works in Kazakhstan that address copyright in the context of digital technologies, therefore there is an objective need for a comprehensive and detailed study if IP law issues.

The normative basis of this research is grounded in the existing national legislation of the Republic of Kazakhstan, including the Constitution of the Republic of Kazakhstan, the Civil Code of the Republic of Kazakhstan (Special Part) (hereinafter – Civil Code), the Criminal Code of the Republic of Kazakhstan (hereinafter – Criminal Code), the Digital Code of the Republic of Kazakhstan (hereinafter – Digital Code), the Law of the Republic of Kazakhstan on Copyright and Related Rights (hereinafter – Copyright Law) and the Law of the Republic of Kazakhstan on Artificial Intelligence. In addition, the research relies on international and foreign conventions and treaties, such as the Berne Convention for the Protection of Literary and Artistic Works (1886), the Rome Convention for the Protection of Performers, Producers of Phonograms and Broadcasting Organisations (1961), WIPO treaties, and other relevant international instruments.

The novelty of the thesis. This dissertation is one of the first comprehensive and critical studies of copyright protection in the digital

environment on the Internet in Kazakhstan, based on comparative and reform-oriented perspectives. One of the features of this research is that it analyzes the transformation of copyright mechanisms with respect to contemporary technologies such as the Internet, AI, blockchain, TPMs and the mass digitization of copyrighted works while previous studies in Kazakhstan mostly focused on the traditional aspects of copyright protection.

There are currently no fundamental works on the research topic in Kazakh civil science, with significantly increases its scientific value.

The dissertation contributes to the development of copyright legislation by substantiating the concept of copyright dualism, namely, the coexistence of traditional copyright and its distinct system in the digital environment. Copyright in the digital sphere is characterized by unique features, methods, principles, and subject matter that differentiate it from conventional copyright. In addition, the dissertation provides a detailed analysis of the liability of Internet intermediaries, including ISPs, for copyright infringements committed by third parties through the use of online networks, drawing on comparative insights from the best international practices.

The dissertation identifies the principal methods and types of copyright violations in the digital environment, including piracy, plagiarism, unauthorized reproduction of copyrighted works for commercial purposes, the distribution of copies without the consent of authors and right holders, and the adaptation of works without authorization.

Finally, the dissertation develops the author's original definitions of the concepts of 'copyright in the digital environment', 'digital environment' and 'service provider'. It should be emphasized that most theoretical and legal research in this area has been carried out in jurisdictions where digital technologies are highly developed and widely integrated into everyday life, primarily in the European Union, the United States, the United Kingdom, and other technologically advanced states.

The main provisions for the thesis defense:

1) To ensure the effective protection of copyright in the digital environment, it is necessary to develop doctrinal or legal definitions of new phenomena of legal reality that objectively reflect the legal relations that have emerged in recent years. In this regard, more than a year ago we formulated the author's definition of one of the key terms of this dissertation, the "digital environment" in the following wording:

– 'Digital environment' means a set of infrastructure, technologies, and processes for the creation, circulation, storage, transmission and use of digital objects, as well as for the exercise and transfer of right to them, regardless of the territory where they are located or where the rights to them are registered.

However, on January 9, 2026 Kazakhstan adopted the Digital Code, Article 1 of which defines digital environment as a set of infrastructure, technologies, processes and conditions for the creation, circulation, storage, transmission and use of *digital data and digital code*, as well as the exercise and transfer of rights to them, regardless of the territory of their location or the registration of such rights, insofar as it concerns social relations regulated by this Code.

However, a drawback of the definition contained in Article 1 of the Digital Code of the Republic of Kazakhstan lies in the fact that it refers to both “digital data” and “digital objects”. In reality, digital data, including Big Data, personal data and other forms of data also constitute digital objects and therefore should not be included in the definition as a separate category. On this basis, the author’s proposed definition appears to be more accurate.

The next important concept that forms part of the subject of this research is the concept:

– ‘Copyright in the digital environment’ represents a distinct category of legal relations, encompassing a multifaceted legal framework that regulates relationships arising within the information and communication sphere among authors or right holders, internet intermediaries and user;

It is proposed to incorporate these definitions developed by the author into the Civil Code of the Republic of Kazakhstan by introducing Article 980-1 (see Application 1).

2) The rapid development of new technologies has introduced additional challenges for copyright law, particularly in relation to P2P technologies, BitTorrent services, and AI. The use of such technologies is carried out by important actors such as service providers. However, their role in copyright legislation has not yet been clearly defined, and their rights and obligations have not been established. Many of these technologies are exploited by end-users to infringe copyright in the digital environment. It has demonstrated that copyright law has not effectively adapted to the challenges of the digital environment.

Thus, to better address these challenges effectively, it is proposed that service providers, including access providers and hosting services should play an active, cooperative role in copyright protection while maintain the balance user’s rights and innovation. The author proposes introducing the definition of a “service provider” into the Article 2 of the Copyright Law (see Application 1)*;*

3) Digitized works over past two decades represent a new form of expression of creative results, existing in electronic or code-based form and functioning within information and communication networks.

Due to the mass digitization of works without notifying and the permission of authors and their heirs, both authors and their heirs have only recently begun to recognize the potential risks of copyright

infringement, while entities engaged in digitization projects often do not fully realize that digitization and dissemination of works may violate exclusive rights.

In this regard, it is proposed to supplement paragraph 1 of Article 972 of the Civil Code “Types of Copyright Objects” with a new subparagraph 13, defining “all types of digitized works” as copyright objects. This amendment would enable authors of works digitized without their permission and notification and their heirs to receive protection of intellectual property rights for the period set by law in cases of infringement through the mechanisms already established under the Civil Code and the Copyright law.

4) On the basis of comparative legal research into the protection of AI- generated works, it has been argued: First, the dissertation contends that copyright protection should extend to works produced with the assistance of AI systems, provided that such works involve substantial human creative input. This approach distinguishes AI-assisted creations from those autonomously generated by AI without meaningful human intervention. Accordingly, the traditional concept of human authorship remains the most appropriate and legally sound framework for determining authorship in cases involving AI-generated works.

Given that an AI system functions merely as a technological tool, the user who makes a significant creative contribution to the resulting work should be recognized as the rightful owner. Conversely, the developer or owner of the AI system cannot be considered an author or owner, as they do not determine the final creative expression produced by the system.

Consequently, users of AI systems bear the primary responsibility for the lawful use of such technologies and may be held liable for copyright infringements arising from the dissemination of use of AI-generated outputs.

In this regard, it is proposed to supplement paragraph 1 of Article 972 of the Civil Code “Types of Copyright Objects” with subparagraph 14, according to Application 1.

5) Internet intermediaries play a central role in the online distribution of copyrighted content, serving as a critical link between copyright holders and the public. Their importance has been described as the main challenge for copyright in the digital environment, since their activities of service providers also brought about the increase of online copyright infringement.

In order to strengthen the protection of copyright in the digital environment in cases of infringement involving service providers, the author proposes supplementing Chapter 5 of Civil code of the Republic of Kazakhstan with a new article 970.1 entitled “The liability of service provider” (see Application 1).

6) The notice-and-takedown procedure has become a central tool in combating online copyright infringement. One of the advantages of this procedure is that it provides rights holders with inexpensive and quick process for copyright enforcement in the digital environment, while obtaining a court injunction may take considerably more time and prove less cost-effective.

Under this system, service providers are required to remove allegedly infringing material once they receive notification from authors and other right holders. The notice-and-takedown procedure achieves its effectiveness when there is clear legal certainty, in particular if there are certain elements. A draft of the rules which obliges service providers to immediately comply with the notices of right holders, and which is presented as a draft order of the Ministry of Justice of the Republic of Kazakhstan, has been developed by the author and is included in Application 2.

Practical importance of the thesis. The conclusions and main provisions of this research may be applied in lawmaking practice to improve copyright legislation; in law enforcement practice; in the drafting of contracts related to the creation and use of copyrighted works and the provision of services by internet providers; and in the teaching of civil law and intellectual property courses.

Approbation of the results of the research.

The provisions and conclusions formulated in the course of the research are completely reliable. The results of the research are used in teaching on the discipline “Intellectual property law” at MNU. Moreover, the results also have been used in seminars organized by National Institute of Intellectual Property of the Committee on Intellectual Property Rights of the Ministry of Justice of the Republic of Kazakhstan. The findings of the thesis are reflected in the following articles:

1. Article “Copyright protection in the Internet age: Whether copyright can combat against Peer-to-peer technology”, Law and State No.21 (90) 2021, 73-88 pp;
2. Article “Digital piracy: Responsibility issues of Internet service providers” ENU Gumilyov Law Bulletin, No 4. (133) 2020, 23-32pp;
3. Article “Copyright protection on works generated by artificial intelligence” Bulletin Institute of Legislation and Legal Information of the Republic of Kazakhstan, No.2 (77) 2024, 146-157pp;
4. Article “Protecting copyright in the Internet age: The Kazakhstani perspective” ENU Gumilyov Law Bulletin, No 4. (149)/ 2024,71-83pp;
5. Article “Copyright infringement in the digital age: The case for reform to Kazakhstan’s copyright laws” Access to Justice in Eastern Europe, 7 (4) 2024 242-266pp (2 Quartile Scopus);
6. Article “Copyright Protection on Works Generated by Artificial Intelligence” Science and Innovation, Vol. 21 (1) 2025, 112-124pp (2 Quartile Scopus);

7. Article “Information Intermediaries in the Digital Environment: Copyright Problems and Trends of Legal Regulation” Al-Farabi Kazakh National University Journal of Actual Problems of Jurisprudence, No.1(113) 2025, 106-114 pp.

Research Design. The dissertation includes 174 pages. The thesis research includes definitions and abbreviations, introduction, main chapters, conclusion and references. The main body of the thesis is structured in four Chapters joining eighteen sub-chapters.

1.THEORETICAL FRAMEWORK: THE SCOPE AND RATIONALE OF COPYRIGHT PROTECTION IN THE DIGITAL ERA

1.1 Framework of the copyright law

Copyright is approached not merely as a set of legal norms governing creative activity, but as a complex legal institution that plays a systemic role in cultural, economic, and civil law relations. It is argued that copyright should be examined both from a subjective perspective and as an objective element of the civil law system regulating creative works.

Copyright plays a vital role in the cultural and economic development of nations. A rich cultural heritage is often associated with the level of protection granted to literary, dramatic, musical, and artistic works, as well as to films and sound recordings.[19]

In a broad sense, the concept of copyright is a set of civil and other legal norms that regulate relations arising in connection with the creation and use of works of science, literature and art.[20]

Copyright consists of a set of rights granted to the author, which is necessary to protect the interests that arise in connection with the creation of works and their use by society.[21]

Copyright is a category of intellectual property rights similar to rights to inventions, utility models, or trademarks. It protects literary and artistic works, including written works such as articles, books, and short stories, as well as creative works such as songs, musical scores, paintings, photographs, and films. The copyright holder is usually the creator or owner of these literary or artistic works.

As a form of IP, copyright provides creators and owners of literary and artistic works with the legal authority to allow or restrict the use of their creations by others for a certain period of time. In cases of violation, the author or owner has the right to claim compensation through the courts to protect their legitimate interests. It is noteworthy that an author is not required to complete administrative procedures to obtain copyright protection, but must meet three key conditions. First, the author must be the person who created the work. Second, the work must exist in a tangible form.[22]

The Copyright Law defines copyright as the personal non-property rights of the author. It can be seen that the law equates copyright with its subjective meaning. Therefore, it would be reasonable to develop the

[19] Alankrita Mathur, 'A Reflection upon the Digital Copyright Laws in India' (2020) 25 Journal of Intellectual Property Rights 6.

[20] A. Sergeev, *Pravo intellektual'noi sobstvennosti v Rossiyskoj Federatsii* [Intellectual property law in the Russian Federation] (2nd edn, Prospect 2005) 191-193.

[21] V.A. Hohlov, *Avtorskoe pravo: zakonodatel'stvo, teoria, praktika* [Copyright: legislation, theory, practice] (Gorodets 2008) 127-129.

[22] Nguyên Hô Bích Hăng, 'Copyright Infringement in Vietnam: Recognizing the Reasons and Suggesting Some Solutions' in Paul Torremans (ed) *Research Handbook on Copyright Law* (Edward Elgar Publishing 2017) 512.

meaning of copyright not only from a subjective point of view, but also from an objective point of view, since it defines the role of copyright in the civil law system.

Copyright applies to works of science, literature and art that are the result of creative activity, regardless of their form and mode of expression. Moreover, copyright applies to both published and unpublished works that exist in any objective form:

1) written (a manuscript, typescript, musical notation and others);
2) oral (public speech, public performance and others);
3) sound-visual recording (mechanical, digital, optical);
4) images (picture, plan, sketch, drawings);
5) three-dimensional forms (sculpture, building, model and others);
6) in other forms.[23]

Thus, the author defines copyright in terms of its objects, and it appears that the author's position is similar to the provisions of the Copyright Law.

A significant contribution to the theory of copyright was made by the Russian scholar Sukhanov, who argued that, in its objective sense, copyright constitutes a set of civil law norms regulating the results of creative activity and introducing such results into economic circulation. In its subjective sense, according to Sukhanov, copyright is an exclusive right, the content of which lies in the author's ability to exercise exclusive control over the use of works and to dispose of them at their own discretion, while preventing unauthorized use by others.[24]

We can agree with the author that copyright should be considered in both subjective and objective senses, this is the specific nature of intellectual property as a sub-branch of civil law.[25] However, some authors do not separate the institution of copyright and related rights, as a rule, they tend to consider them as a complex issue.

For example, Gavrilov and Leontieva argue that copyright and related rights form a complex system of legal norms that establish certain types of rights, exceptions to them, exceptions to exceptions, as well as additional rights related to certain types of objects or certain ways of using them. However, it is worth noting that the above definition does not seem to be successful, since it does not reflect the specifics of either copyright or related rights.[26]

Among Kazakh authors, Ihsanov shares the above opinion and gives his own definition of subjective copyright, which means that it is a

[23] Law of the Republic of Kazakhstan on Copyright and the Related Rights № 6-I (10 June 1996) <https://adilet.zan.kz/eng/docs/Z960000006_> accessed 21 January 2024.
[24] Evgeniy Suhanov (ed), *Rossiiskoe grazhdanskoe pravo* [Russian civil society] (Statut 2011) 719.
[25] Amangeldy Aizhan Amangeldykyzy, 'Interaction of intellectual property law with certain branches of public law' (2023) 3 (74) Bulletin of the Institute of Legislation and Legal Information of the Republic of Kazakhstan 99.
[26] I.A. Bliznets (ed), *Pravo intellektual'noi sobstvennosti* [Intellectual property law] (Prospekt 2011) 37.

legally guaranteed opportunity for a person to create a work by their own creative effort, be recognized as the author of this work, choose ways to determine their authorship, and use works in accordance with the law. However, this understanding of copyright seems to be one-sided, since copyright norms also regulate personal non-property rights.[27]

After reflecting on authorship, Namengenov notes that this is a personal right, since it cannot be separated from the author's personality. According to the scientist, another important feature is its exclusivity, which means that it belongs only to the person who makes a creative contribution. It can be concluded that Namengenov considers this institution from the point of view of subjective law.[28]

According to Amangeldy, copyright needs to be considered both objectively and subjectively. Objectively, copyright represents a branch of intellectual property law that comprises a set of legal norms regulating personal non-property and exclusive rights over the results of creative activity, such as literary, scientific and artistic works. From a subjective perspective, copyright refers to a set of personal non-property and exclusive rights belonging to an individual and protected by law, which arise from the creation and use of literary, scientific and artistic works.[29]

Copyright is an exclusive right granted to an author who creates original and innovative works.[30] According to the exclusive right, the copyright holder can reproduce, distribute, perform publicly and other actions at its own discretion. Moreover, copyright arises automatically and applies to creative works when they take material form. Creative works of copyright holders usually include musical, dramatic, artistic and literary works and can range from simple songs to complex film productions.[31]

Copyright can be defined as the legal protection granted to authors or owners of literary and artistic works, allowing them to exclusively use and benefit from the material and moral aspects of their creations. As an abstract concept, copyright should be translated into specific legal rights provided for by international or national legislation. These rights allow authors or owners, for example, to name their work, edit it exclusively, or allow its reproduction. Both national and international legislation generally recognizes and protects two main categories of copyright: moral rights (personal non-property rights) and property rights (economic

[27] Erlan Ihsanov, ‘Avtorskoe Pravo kak Sub’ektivnoe Grazhdanskoe Pravo po Zakonodatel'stvu Respubliki Kazahstan’ [Copyright as a Subjective Civil Right under the Legislation of the Republic of Kazakhstan] (Avtoref. diss, Institutt gosudarstva i prava MON RK 2001) 6.

[28] Kastai Namengenov, *Absoljutnye i otnositel'nye izobretatel'skie pravootnoshenia* [Absolute and relative inventive relations] (Nauka 1978) 43-44.

[29] Aizhan Amangeldy, ‘Pravo intellektual'noi sobstvennosti Respubliki Kazakhstan na sovremennom etape’ [Intellectual property law of the Republic of Kazakhstan at the present stage] (DPhil dissertation) 293.

[30] Lionel Bently and others, *Intellectual Property Law* (6th edn, OUP 2022) 31.

[31] Bethany Klein and others, *Understanding copyright: Intellectual property in the digital age* (SAGE Publication Ltd 2015) 160.

rights). Copyright infringement is a violation of the law and may result in remedial sanctions provided for by law.[32]

At its core, copyright protection can be considered as an action that extends to any product of human creativity. The fundamental purpose of copyright, as emphasized in its objectives, is to encourage creativity. From an instrumentalist point of view, copyright achieves this by giving the creator coercive rights to prevent others from using their work, thereby giving the author (and those who support the distribution of the work) the opportunity to profit from the resources they have invested. From the point of view of naturalists, copyright serves to recognize the inherent right of the creator to control the results of their work.[33]

The main purpose of copyright protection is to encourage the creative activity of creators or in other words, to promote creativity in society. When the law grants copyright holders the exclusive right to derive material benefits from their work, ensuring that no one else can use it without the author's consent, the creators gain both the authority and motivation to produce new works. This, in turn, encourages creativity in the broader community. On the other hand, copyright protection is also aimed at ensuring proper public access to creative works. By granting authors the exclusive right to use their works for material gain, copyright indirectly encourages them to make their works available to the public, thereby facilitating public access. A limited period of protection has a double effect: it ensures that creators retain exclusive control over their works during the protection period, and also provides the public with free access to the work after the protection period expires.[34]

As a rule, copyright has several vital purposes. These goals can be as follows:

- awarding the authors of original works by granting them certain rights;
- promoting and recognizing creative efforts;
- protecting the rights of copyright holders;
- promoting intellectual development through the dissemination of creative works;
- providing public access to copyrighted materials;
- ensuring a balance between the interests of copyright holders and society.[35]

The cultural rationale is one of the four main justifications for copyright law identified by legal scholar Willem Grosheide. This perspective holds that copyright stimulates creativity, thereby fostering the development of knowledge and enriching cultural heritage. The

[32] Hô Bích Hăng (n 22) 512.
[33] Rebecca Giblin and Wetherall Kimberlee, *What if we could reiamgine copyright?* (ANU Press 2017) 16.
[34] Hô Bích Hăng (n 22) 512.
[35] Mehta (n 1).

earliest copyright legislation was rooted in this rationale, and many countries continue to reflect it in their legal frameworks. For instance, the Copyright Clause of the U.S. Constitution states that the goal of copyright is “to promote the Progress of Science and useful Arts” by granting authors and inventors exclusive rights to their works and inventions for a limited time.[36]

In addition to the cultural rationale, Grosheide outlines three other foundations for copyright. The first is the "personality" rationale, which views creative works as reflections of their creators’ individuality, linking authorship to a broader right to privacy. The second is the "justice" rationale, which holds that authors' rights are not granted by legislation but are inherent, stemming from a fundamental sense of legal fairness. Lastly, the "economic" rationale sees copyright as a tool for transforming information into a marketable asset, thereby serving the public interest through regulated access and distribution.[37]

In terms of the nature of copyright, it is worth noting that it has some features. The first feature is territoriality which means that copyright protection is granted in a particular state where the local government regulates the copyright system; the second feature of copyright is that it prevents others from committing unlawful acts concerning the creative works of copyright owners; the third feature concerns the set of rights that protect the moral and economic rights of right holders. Authors have moral rights to claim authorship on their works and to object to distortion or other unfair treatment of their creations.[38]

One of the important points of copyright is that it does not protect ideas. For instance, copyright does not apply to ideas, concepts, principles, methods, systems, processes, discoveries and facts, according to subparagraph 4 Article 971 of Civil Code of Kazakhstan.[39] It can be claimed that so-called “idea/expression dichotomy” has been created by the courts to find the boundary between public domain in which works can be exploited by anyone and protected expression which can be considered as privatized.[40]

Therefore, copyright cannot protect the ideas themselves, but only their expression. For example, if you take the famous artwork “The

[36]Mitchell Longan, ‘Rethinking Copyright and the Internet: A New Model for Users’ Rights’ (PhD Thesis University of Sussex 2020)</articles/thesis/Rethinking_copyright_and_the_internet_a_new_model_for_users_rights/23482934/1> accessed 30 July 2025.

[37] Frederik Grosheide, *Tailored Copyrith: Reflections on the Foundations of Copyrgith in a Legal-Policy Context* (Kluwer 1986) 128-145.

[38] ibid.

[39] Civil Code of the Republic of Kazakhstan, № 409 (01 July 1999) https://adilet.zan.kz/rus/docs/K990000409_ accessed 30 July 2025.

[40] Simon Stokes, *Digital Copyright Law and Practice* (5th edn, Hart Publishing 2019) 5.

Bathers" by the artist Seurat, then the idea behind the painting is open to anyone to reproduce.[41]

It is worth noting that not all copying and use of copyrighted works should be assessed as copyright infringement. Most states around the world have now adopted copyright exceptions, such as "fair dealing" or "fair use", which allow the copying of materials for certain purposes, including criticism, review, research, news reporting, and parody.[42]

Murray points out that the following copyright protection requirements are met, such as originality, recording requirement. The first requirement is originality, which usually means that the work must be original and new and must not contain copies from another source.[43]

According to the British approach, there should be no simple copying, even if it requires significant skills, work and judgment, in any case, there should be some elements of change in the work.

For example, this is clearly seen in the key case, Designers Guild Limited v Russell Williams (textiles) Ltd, where it was stated:

> *"The law of copyright rests on a very clear principle: that anyone who by his or her own skill and labour creates an original work of whatever character shall, for a limited period, enjoy an exclusive right to copy that work. No one else may for a season reap what the copyright owner has sown …".*[44]

Thus, any skill and effort in terms of creativity may be sufficient for protection under the UK Copyright Act, and this approach is sometimes referred to as justifying copyright by the "sweat of your brow" doctrine. As you can see, the Anglo-Saxon states rely on such a doctrine, which requires effort but pays less attention to creativity. Similarly, the US also requires a minimum level of creativity.[45]

Whereas in European countries such as France and Germany, the requirement for originality depends on the identity of the author. And this copyright justification is usually referred to as "the author's own intellectual creation". But it should be noted that the European approach appears to be stricter than the UK approach when it comes to certain categories of copyright objects, such as software, photographs, and databases. In addition, Infopaq case[46] has led to a debate among scholars about whether the standard of copyright originality is appropriate, and one expert who analyzed the case expressed the

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[41] ibid 5.
[42] ibid 6.
[43] Andrew Murray, *Information technology law: the law and society* (3rd edn, OUP 2016).
[44] [2000] 1 WLR 2416
[45] Peter Baldwin, *The copyright wars: three centuries of trans-Atlantic battle* (Princeton University Press 2014) 28.
[46] *Infopaq International A/S v Danske Dagblades Forening* (C-5/08) [2009] ECR I-6569.

opinion that “a work created by simple labor, skill, or judgment” is not original if the work is not the result of the author's own creativity.[47]

Second, copyright protection also requires that the original work be recorded or take on a tangible form. The requirement of fixation in copyright law serves to preserve cultural heritage, which is a key goal of modern copyright laws. Fixing increases the chances that the work will survive and be available to a future audience, although survival is not guaranteed. However, the fixation is not perfect; some creative aspects may not be fully reflected. For example, a video recording of a stage play or a choreographic performance may not fully reproduce the live performance. However, recordings or fixed forms give future audiences and creators more information about the work than if it had never been recorded.

The fixation requirement also increases the applicability of copyright law by providing evidence of the existence of the work and its content. This evidence is essential in copyright infringement cases, allowing courts to assess whether a work meets the requirements for protection and whether the defendant has violated its expression.[48]

Since copyright can restrict certain actions by individuals, such as sharing works, this in turn raises some questions about whether copyright is appropriate. Thus, it is vital to know that not everyone shares this argument. In fact, with the advent of the Internet, some members of the public have argued that copyright limits people's ability to create new things. Thus, some believe that certain aspects of copyright are justified, while others do not. The argument is that copyright law has crossed a red line. According to these opponents or critics, there are several theories that recognize the importance of copyright:

1) *Economic theory.* Economic theory or utilitarian theory tends to be one of the most popular approaches in the US. It is argued that the purpose of copyright is to provide economic incentives to the author or creator of copyrighted material. Thus, granting the author ownership rights seems to be a motivation to create new works.

Generally speaking, the economic justification of copyright can be both “static” and “dynamic” elements, for example. the "static “element determines that the owner receives a positive benefit from the ownership of property rights; while in accordance with the “dynamic” element, copyright can be the initial one for creating a work.[49] Supporters of this theory also stress that copyright provisions enhance economic efficiency by enabling a market for creative goods and by restricting unauthorized commercial exploitation. By granting exclusive rights,

[47] Estelle Derclaye, ‘Assessing the Impact and Reception of the Court of Justice of the European Union Case Law on UK Copyright Law: What Does the Future Hold?’ (2014) Revue International du Droit d’auteur 9.
[48] Giblin and Kimberlee (n 33) 142.
[49] Simon Stokes, *Art and copyright* (Bloomsbury Publishing 2021) 11.

copyright ensures that authors and rightsholders can control and profit from the use of their works.[50]

2) *Natural law or Personality theory.* This theory is often associated with the British philosopher John Locke, who argues that because works come from the minds of authors, they have a right to the results of their work, and we should recognize ownership of these intellectual works. For example, a poem can be considered as a product of the poet's intellect. Therefore, it should be considered as their property. In general, this theory is supported by those who seek to protect authors' rights and oppose those who use or exploit copyrighted works for profit.[51]

Another justification for copyright is a theory called "personality". Both Kant and Hegel supported copyright on this basis. It is argued that the relationship between copyright and the author's identity constitutes the basis for copyright protection in civil law jurisdictions:

> *"[I]n the civil law countries, the justification for the protection of a person's creation is not the potential economic value of the labour and effort which have gone into the work, but the fact that every person can claim protection for his/her personality and anything that flows from it".*[52]

The Hegelian view rests on the belief that property functions as a powerful means of self-realization, personal expression, and the affirmation of dignity and individuality. Once ideas are transformed into creative works, the creator's identity and emotional well-being become intrinsically tied to the fate of those works. This connection forms the basis for granting individual protection to such creations.[53]

However, some have criticized the use of natural law arguments to justify copyright. For example, Locke's theory does not adequately explain why a property should be created in relation to an object. What if creativity is 99 percent inspiration and 1 percent perspiration? In such cases, the notion that labour alone justifies property rights becomes questionable.[54]

Moreover, some critics challenge the natural law justification of copyright because of the nature of copyrighted works. In fact, "authorship" is not a solo work, when one person creates an entire work based only on their imagination. Here, Bard and Kurlantzik argued that there can be different reasons for creating works of art-from the author's

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[50] Sergey Boldyrev, Avtorskie Prava v Sovremennom Informacionno-telekommunikatsionnom Prostranstve Rossiyskoi Federatsii: Grazhdansko-pravovoe Regulirovanie i Zashita [Copyright in the Modern Information and Telecommunication Space of the Russian Federation: Civil Law Regulation and Protection] (DPhil thesis, Kursk 2017) 45.

[51] Lior Zemer, 'The Making of a New Copyright Lockean' (2005) 29 Harvard Journal of Law & Public Policy 936.

[52] Stokes, *Art and copyright* 16.

[53] Lawrence C Becker, 'Deserving to Own Intellectual Property' (1993) 68 (2) Chicago-Kent Law Review 610.

[54] Stokes, *Art and Copyright* (n 49) 17.

personality to the influence of modern society on the works of other authors.[55]

3) *Reward theory.* According to this theory, society is obliged to encourage people who are creative and innovative. Therefore, creators and inventors usually expect support and protection from society in order to continue being creative and to encourage others who may have a similar passion. It should be noted that no one wants to engage in activities that pay little or nothing at all. Because these authors can spend a lot of resources or time creating valuable works. Needless to say, if everything is properly managed, creativity and innovation can contribute to the socio-economic development of society.[56]

4) Public Policy theory. According to Stokes, authors should be supported in publishing their works to ensure the widest possible dissemination of knowledge or culture. The existence of copyright supports this idea, and from an economic point of view, such distribution may be feasible. But in this case, copyright protection can be a problem: it is one thing to support copyright production among the public, but on the other hand, if it is not regulated, it can become a kind of obstacle for those who want to copy works for private study. Thus, exceptions to the rules of copyright protection, such as “fair dealing”, can be vital in this regard.[57]

In discussing the rationale for copyright, it is also important to distinguish between the “author’s rights” system of civil law jurisdictions and the “copyright” system of common law jurisdictions. The former is often linked to natural rights, while the latter is grounded in utilitarian principles. Yet, this distinction is sometimes overstated. Historically, natural rights justifications for authors’ rights emerged in the late nineteenth century, whereas utilitarian ideas also influenced early French copyright law.[58]

Over time, international harmonization and the rise of the global information economy have softened these differences, though they continue to shape legal discourse. Common law countries, such as the United States, typically justify copyright through a utilitarian lens, as reflected in the Constitution’s aim to “promote the Progress of Science and useful Arts”.[59] By contrast, civil law systems emphasize natural

[55] R.L. Bard and L.S. Kurlantzick, *Copyright Duration: Duration, Term Extension, The European Union and the Making of Copyright Policy* (Austin & Winfield 1999).
[56] Albert Olu Adetunji and Nosakhare Okuonghae, ‘Challenges of Copyright Protection in the Digital Age: the Nigerian Perspective’ [2022] Library Philosophy and Practice (e-journal) <https://digitalcommons.unl.edu/libphilprac/7159> accessed 30 July 2025.
[57] Stokes, *Art and Copyright* (n 49) 36.
[58] Paul Goldstein and P. Bernt Hugenholtz, *International copyright: principles, law, and practice* (OUP 2019) 5.
[59] The Constitution of the United States <https://www.archives.gov/founding-docs/constitution-transcript> accessed 30 July 2025.

rights, exemplified by French law, which grants authors an inherent property right over their creations.[60]

Copyright and authors' rights frameworks differ as well in how they regulate the position of performing artists and other creative industry participants, including producers and broadcasters. Common law copyright systems generally extend protection to these contributors, recognizing their role in the creative process. By contrast, civil law author's rights systems typically do not grant them full copyright protection, but instead provide more limited neighbouring rights.[61]

In the legal literature, the meaning of the concepts of "security" and "protection" differs. Security is the establishment by the norms of law of a general regime of values, in which the right holder benefits from its implementation, while protection is understood as measures applied against the offender. The right to defense is a competence included in the content of subjective civil law and represents the possibility of applying measures against the offender.[62]

Vinogradova argues that the very first step in securing the author's exclusive rights is to allow the author to place a sign of protection on each copy of the work. This sign consists of the Latin letter "C" in a circle; the name of the owner of exclusive rights and the first year of publication of the work. Both in the literature and in the legislation, the placement of copyright protection marks is related to the creation of copyright and the presumption of authorship, but it is assumed that these signs perform protective functions and serve as a kind of preventive measures. Thus, they not only notify the public about the existence of copyright protection, but also warn potential violators about possible adverse circumstances of using someone else's work.[63]

The protection of works through copyright and related rights is an internationally recognized and dynamically developing legal institution. It should be noted that many issues of legal regulation of this sphere have not yet received an unambiguous solution both in theory and in practice.

As a general rule, disputes concerning the protection of intellectual property rights are considered and resolved by the courts.[64] For example, the protection of copyright and related rights is carried out by the courts through the following actions:

1) recognizing rights;
2) restoring the situation that existed prior to the violation;
3) preventing actions that violate or threaten to violate rights;
4) compensating for damages, including lost profits;

[60] WIPO, 'Intellectual Property Code, France' <https://www.wipo.int/wipolex/en/legislation/details/22588> accessed 30 July 2025.
[61] Goldstein and Hugenholtz (n 58) 5.
[62] Elena Grin', *Pravovaja ohrana avtorskih prav* [Legal protection of copyrights] (Prospect 2016) 86.
[63] M. M. Vinogradova, 'Mehanizm Zashity Avtorskih Prav' [Copyright Protection Mechanism] (2014) 6 (1) Problemy prava i ekonomiki 62.
[64] ibid.

5) recovering the income received by the offender as a result of the infringement of copyright and related rights;

6) taking other measures, in accordance with the legislation.[65]

Moreover, before considering the case, the judge may make a decision prohibiting the violator from producing, reproducing, or using copies of copyright and related rights objects in respect of which counterfeit products are allegedly being used. The judge also has the right to make a decision on the seizure and confiscation of all copies of copyright and related rights objects that are alleged to be counterfeit, as well as materials and tools used for their production and reproduction. Counterfeit copies of objects of copyright and related rights may be transferred to the owner of copyright and related rights at their request or liquidated by a court decision.[66]

In turn, methods of protecting civil rights are divided into two categories: measures of state coercion, which have the characteristics of measures of civil liability, and measures of protection, in the narrow sense of the word, which do not have such characteristics. The first one includes the following measures: compensation for losses, recovery of penalties and property compensation for moral damage, while the second category performs preventive and suppressive functions and is applied in connection with disputed or violated subjective rights.[67] It can be argued that when applying protective measures, “the offender legally loses what does not belong to him by right, and does not incur additional legally binding property consequences”, whereas the application of liability measures means that the offender incurs legally binding property encumbrances.[68]

In addition, the concepts of sanctions and liability should also be defined. Civil law sanctions are understood as property measures of a state-enforced nature provided for by law, applied by the court to the violator in order to compensate for the property losses of the victim and impose unfavorable property consequences on the violator. Thus, every liability measure is a sanction, but not every sanction constitutes liability.

In general, civil liability is characterized, as a rule, by three elements: state coercion, negative consequences for the offender and condemnation of the violation and its subject.[69]

Moreover, in addition to civil liability, there is criminal liability for copyright infringement. The Criminal Code of Kazakhstan provides for criminal liability for violation of copyright and related rights, for violation of the rights to an invention, utility model, industrial designs, selection

[65] Law on Copyright and the Related Rights' (n 23) art 49.
[66] ibid.
[67] Grin' (n 62) 87.
[68] ibid 87.
[69] ibid 88.

achievements or integrated circuit topology, and for illegal use of trademarks.[70]

According to Article 198 of the Criminal Code of the Republic of Kazakhstan, illegal use of copyright objects and (or) related rights, as well as acquisition, storage, transfer or production of counterfeit copies of copyright objects and (or) related rights for the purpose of sale, misappropriation of authorship, or coercion into co-authorship, are punishable.[71]

However, it has been argued that the greatest problems arise in the application of legal acts, as evidenced by the sparse and contradictory judicial practice. Thus, it is very important to improve not only the legislation, but also the judicial system. Rapid, objective, impartial, and legitimate judicial resolution of emerging conflicts could be achieved through the specialization of judges and legal services. Moreover, it is necessary to resolve the issues of compensation for the time spent by copyright holders in court to protect their rights, and remuneration of their representatives. This approach will allow for the establishment of effective practice, ensure not merely a formal declaration, but a genuine implementation of copyright.[72]

Some argue that the mechanism for protecting violated rights in this area is ineffective. Previously, Soviet courts most often considered only one type of claim – claims for the recovery of royalties. The novelty of the problem lies in the fact that the application of the norms of international law, as a rule, creates certain difficulties for copyright holders, users and judges, among others. Meanwhile, legal protection in most cases depends on how quickly and correctly the dispute is resolved.

1.2 The development of copyright protection from Berne Convention to WIPO Internet treaties

Copyright protection is the outcome of a gradual and non-linear historical evolution shaped by technological, economic, and cultural factors. It is argued that modern international copyright standards from the Berne Convention to the WIPO Internet Treaties cannot be properly understood without tracing their roots to earlier forms of protecting creative activity. Accordingly, the development of copyright is examined as a dynamic process responding to changes in the creation and dissemination of works.

[70] Criminal Code of the Republic of Kazakhstan, 03 Juy 2014 № 226-V <https://adilet.zan.kz/eng/docs/K970000167_> accessed 12 May 2022.
[71] ibid art 198.
[72] Vinogradova (n 63) 63.

Copyright as a legal phenomenon has emerged as a result of a long process of evolution. The rationale for the emergence of copyright is directly related to the creative activities of people.[73]

People have been trying to protect and preserve something original, extraordinary and exclusive since ancient times, and this is why the concept of intellectual property appeared a long time ago.[74]

The right of intellectual property has historically emerged as a means of legal protection of the interests not only of authors of artistic works, but also of booksellers and publishers, who have always remained the main partners of creative individuals.[75]

According to many scholars, the birthplace of the book is considered to be ancient Egypt, where the first literary works appeared. However, ancient Egyptian authors did not associate their works with their own names, they simply dedicated them to the pharaoh or god, since this was assessed as a guarantee of the immortality of the works.

It is worth noting that a high level of literary creativity, including publishing and bookselling, was achieved in Athens. The term “published book” originated in Ancient Greece. The ancient Greek word “ekdosis”, which means “publication”, defined the process by which, under the personal control of the author, the original literary work was first created, then commissioned copies were made from it. Even at that time, plagiarism was considered an illegal act that discredited a person's honor.[76]

In the Roman Empire, during the heyday of civil law, special legal protection of copyright was not regulated, instead only the right to the physical manuscript was secured. One of the reasons for the lack of special copyright protection in the Roman Empire was the lack of technical means that could produce them in such quantities that the works became commodities.

It can be argued that copyright, in its modern sense, began to develop around three centuries ago with the invention of the movable-type printing press. This technological breakthrough enabled the mass production and distribution of books and other materials, creating new legal and economic challenges. In this sense, the development of copyright law reflects an early reaction to technological advances, similar to how modern law responds to challenges arising on today’s digital information society. Before Gutenberg’s printing press, few considered issues of authorship or innovation, since creative works were often regarded as collective products that could be freely shared or exploited.

As soon as the printing press appeared, this became the main reason for creating a new industry, namely publishing, in which the

[73] Boldyrev (n 50) 14.
[74] Irina Svechnikova, *Avtorskoe pravo* [Copyright] (3rd edn, Dashkov i Ko 2009).
[75] Boldyrev (n 50) 14.
[76] ibid 15.

publisher and booksellers often received greater profits than authors and poets.[77]

It is worth noting that the history of copyright has important milestones: first, the advent of the printing press and engraving led to the emergence of copyright; second, the invention of sound recording, cinematography and broadcasting expanded its scope; and third, the digital revolution that occurred in the 1990s and 2000s.[78]

Some scholars argue that copyright did not originally emerge to protect authors, but rather to safeguard the interests of publishers and printers.[79] Copyright protection in England began with the emergence of the publishing cartel with the support of the state namely the Stationers' Company, some members of which, officially included in the cartel, granted exclusive rights to their published works. The publishing business, in turn, led to disagreements between publishers and authors who wanted to own the right to publish copies of the works.[80]

The climax came with the adoption of the Statute of Anne (1710), the first modern copyright law, which finally put an end to this dispute. The importance of this law was that it provided authors with a monopoly on the publication of their works.[81] This Act also allowed the author to transfer his rights to publishers, who played a key role in the distribution of creative works.[82]

However, some experts believe that the legal framework for copyright protection was formed even earlier than the Statute of Anne, for example, in 1474, a Venetian Charter was published, which became the first legal act for copyright protection in the world. This law was introduced in Venice, and for the first time mentioned the exclusive rights of authors to use their works. In addition, it can be argued that the first legal acts that tried to restrict the rights of authors, publishers and booksellers were adopted under the pressure of entrepreneurs who are not the authors of works.[83]

It is worth noting that the Act introduced some new concepts of copyright for the first time. First, the Law establishes the concept of authorship, although there are ambiguous details about the nature of authorship. Secondly, it provides legal protection for published works. For example, the term of protection was 21 years for works that were already published at the time of entry into force of the Act, and 14 years for new works. With an additional term of 14 years, if the author was still alive at the end of the first term.[84]

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[77] ibid 15.
[78] Ayyar Vaidyanatha, *The WIPO Internet Treaties at 25: A Retrospective* (Springer Nature 2023) 12.
[79] Carolyn Guertin, *Digital Prohibition: Piracy and Authorship in New Media Art* (Bloomsbury Publishing USA 2012) 3.
[80] Boldyrev (n 50) 17.
[81] Murray (n 43) 224.
[82] Charlotte Waelde and et al, *Contemporary intellectual property: law and policy* (OUP 2014) 32.
[83] ibid 32.
[84] Murray (n 43) 224.

Initially, the statute applied only to books. However, as new technologies emerged, the scope of copyright expanded to include engravings, sculptures, paintings, photographs, and later motion pictures. In this sense, technological innovation directly influenced the growth of copyright subject matter.[85]

Despite the adoption of the Statute of Anne, some important issues related to copyright protection remained with the UK, as local authors could not stop illegal actions related to copyright. In other words, national legislation failed to protect the author's rights outside its territory. It should also be noted that the copyright laws of different states with their legal formalities and systems have caused some practical difficulties in the field of copyright protection.[86]

This development led to the adoption of the Berne Convention for the Protection of Literary and Artistic Works (1886), although the treaty has been revised several times. It remains the world's oldest copyright convention.[87]

The emergence of the Berne Union led to the emergence of a continental ideology of long-term and reliable protection of authors. It should be noted that, for fear of being isolated, the UK joined the Berne Convention from the very beginning, but maintained its traditional approach to copyright, while the US did not recognize the copyrights of foreign copyright holders and stayed away for more than a hundred years and joined only in 1989. The state, which used to be an importer of cultural property, became the largest exporter of copyrighted works since by that time. Indeed, the U.S., once a cultural importer, had by then become the world's largest exporter of copyrighted works.[88]

The Convention has been revised several times to strengthen international protection and to respond to new technological and economic realities. Revisions took place in Berlin (1908), Rome (1928), Brussels (1948), Stockholm (1967), and Paris (1971). These updates addressed issues such as new media technologies, the exploitation of authors' rights, and the recognition of new economic rights. Collectively, these revisions have also influenced the national legislation of many developing countries.[89]

The Berne Convention, as an international treaty, requires each member to protect all creative works falling within the category of literary and artistic works.[90] There are several key features of the Berne Conventions, which are as follows:

[85] Goldstein and Hugenholtz (n 58) 16.
[86] Joseph S Dubin, 'The Universal Copyright Convention' (1954) 42 California Law Review 92.
[87] Alikhan Shahid, 'Role of the Berne Convention in the Promotion of Cultural Creativity and Development' (1986) 28 (4) Journal of the Indian Law Institute 423.
[88] Baldwin (n 45) 154.
[89] ibid.
[90] Waelde (n 82) 32.

The first feature is the principle of national treatment, which means that a State that has acceded to the treaty should treat the rights holders of other member States in the same way as it treats its own authors;

The second feature is related to the minimum standards of national copyright legislation in which the member State undertakes to apply general rules of copyright protection, for example, copyright protection should arise from the moment of creation of copyrighted works, and not from the moment of official registration of works;

The third feature of the treaty is the recognition and protection of authors' moral rights. In other words, the Convention established the concepts of authorship and personal non-property rights; according to personal rights, this is the right to claim authorship of a work and object to any distortion, regardless of modification, or other illegal actions that may damage the reputation or honor of copyright holders;

The fourth feature of the Convention is that it introduced some practically feasible exceptions to copyright, whereby works protected by copyright may be used without the consent of the authors for specific purposes, such as teaching, research or news reporting.[91]

The Berne Convention also provides for certain limitations and exceptions in respect of copyrighted works, allowing users to use works without payment in specific circumstances. In theory, this is referred to as the free use of copyrighted works.[92]

However, it is worth noting that the adaptation of copyright to the development of technology seems to be historically slow, for example, photography existed when the Berne Convention was adopted in 1886, but photographs were included as the subject of literary and artistic works only in 1948.[93] Despite this fact, the Convention has promoted the development of cultural creativity in the following ways and directions: first, works by local authors have received copyright protection in all Member States; second, translations and adaptations of foreign works published in one Member State may find similar protection in other Member States; third, translations and adaptations of foreign works published in one Member State may find similar protection in In addition to the interests of authors, translators and adaptors, the interests of national publishers were also protected.[94]

In addition to the Berne Convention, there is another important convention the UCC [95], which plays the same role as the first one in the

[91] ibid 32.
[92] 'Summary of the Berne Convention for the Protection of Literary and Artistic Works (1886)' <https://www.wipo.int/treaties/en/ip/berne/summary_berne.html> accessed 30 July 2025.
[93] Vaidyanatha (n 78) 13.
[94] Shahid (n 87).
[95] UNESCO, 'Universal Copyright Convention with Appendix Declaration relating to Article XVII and Resolution concerning Article XI' https://www.unesco.org/en/legal-affairs/universal-copyright-convention-appendix-declaration-relating-article-xvii-and-resolution-concerning accessed 30 July 2025.

development of global copyright protection.[96] The main purpose of the UCC was to strike a balance between members of the Berne Union and those states that considered the Berne standards incompatible with their domestic legislation.[97]

The UCC also takes into account the exclusive rights of authors, such as the right to translate, and sets a minimum term of copyright protection, which should not be less than the life of the author plus 25 years after their death. In other cases, the national treatment principle is applied.[98] Unlike the Berne Convention, however, the UCC permitted certain procedures, including notice, registration, and deposit as conditions for protection.

The US refusal to join the Berne Convention was one of the main reasons for the adoption of the UCC. Although the United States became a nation of creativity, invention, and innovation after World War II, it wanted to avoid liability for the use of most European copyrighted works. Moreover, the US did not welcome certain concepts of copyright, such as moral rights, copyright without formalities, and retroactive effect. Some believe that in reality, the United States as a country was not ready to accept the rules of the Berne Convention, and even if it had wanted to join the treaty, it would have had to amend its national copyright laws. Thus, it can be argued that the UCC contained some provisions that allowed countries to preserve their approaches to copyright.[99] Thus, the US initiative to find an alternative treaty for the Berne Convention led to the adoption of the UCC.

Meanwhile, neighboring rights emerged in the early twentieth century in civil law countries to protect performers, phonogram producers, and broadcasters. Their recognition was gradual, but in 1961 the Rome Convention for the Protection of Performers, Producers of Phonograms and Broadcasting Organizations was signed by 40 states, many of which had to adopt new legislation to comply with its standards. The Rome Convention is often seen as a response to discussions first raised during the 1928 Rome revision of the Berne Convention, which highlighted the need for international protection of neighboring rights. The treaty established rights for performers, producers of phonograms, and broadcasting organizations.[100]

During the eighteenth to twentieth centuries, the market of intellectual property rights was formed, moreover, this intellectual

[96] Dubin (n 86) 89.
[97] Goldstein and Hugenholtz (n 58) 39.
[98] Boldyrev (n 50) 31.
[99] Ermek Abdrasulov, *Pravovaja ohrana ob'ektov intellektual'noi sobstvennosti v usloviah vstupleniya Respubliki Kazakhstan v VTO: po rezul'tatam fundamental'nogo nauchnogo issledovania, provedennogo po grantovomu finansirovaniu MON RK* [Legal protection of intellectual intelligence in the context of Kazakhstan's response to the WTO: based on the results of fundamental scientific research carried out with grant funding from the Ministry of Education and Science of the Republic of Kazakhstan] (KazGUU Konsalting 2015) 105.
[100] Goldstein and Hugenholtz (n 58) 48.

property market later became the most globalized among other types of activities. There are common legislative norms and rules that were established by WIPO and the WTO, moreover, it is no secret that these rules were dictated by rich states and transnational corporations and serve their interests.[101]

One of the most important international instruments is the Stockholm Convention (1967), which established WIPO. WIPO is an institution of the United Nations and is responsible for the functionality of the international intellectual property protection system. It addresses legal issues and provides relevant recommendations in the field of copyright protection.

However, WIPO has not been able to create tools that are consistent with current technological developments. Positive developments have occurred since the adoption of the TRIPS as a result of the Uruguay Round of Negotiations of the General Agreement on Tariffs and Trade (GATT).

TRIPS is defined as an agreement aimed at protecting legitimate rights and creating an acceptable legal framework, which is derived from two sources: international law in this area and the basic principles of GATT 1994.[102]

According to Abdrasulov, the TRIPS agreement is the main document defining the parameters of compliance of the national legislation of a country joining the WTO with the requirements of this organization. TRIPS set minimum standards to be met by WTO member States by granting and securing intellectual property rights. The minimum description of rights means that they are necessary and sufficient for the protection of copyright and related rights. It can be noted that the TRIPS agreement is the most innovative of all WTO agreements. A special feature of this agreement is that its requirements must be met before joining the WTO. Failure to meet the minimum requirements may mean that a State is not allowed to be a WTO member. It can be argued that the creation of the WTO contributed to the creation of new elements and gave great dynamism not only to Kazakhstan, but also to the global system of intellectual property protection.[103]

The basic idea is that intellectual property rights should be legally protected, but such protection should not be an obstacle to international trade. It is worth noting that TRIPS is the first international treaty regulating all the most important components of intellectual property and providing the sector with a legal regime of minimal international

[101] Abdrasulov (n 99) 105.
[102] 'WIPO - World Intellectual Property Organization' <https://www.wipo.int/en/web/treaties/convention/summary_wipo_convention> accessed 31 July 2025.
[103] Abdrasulov (n 99) 105.

protection, consisting of effective national and international mechanisms to ensure compliance with this regime.[104]

In addition, the Berne Convention failed to provide adequate provisions to combat copyright abuse in the digital space. The rise of the Internet has led to massive illegal distribution and copying of intellectual property works, such as movies, music, video games, audio recordings, and others, without compensation to copyright holders. The failure of the Berne Convention to address copyright infringement in the digital space has led to a review of the existing legal framework for addressing copyright piracy.[105]

Thus, to address the emerging global problem of copyrighted materials available on the Internet, WIPO adopted the WIPO Internet Treaties. The first is the WCT, which aims to strengthen the Berne Convention by providing relevant provisions on the digital environment. The agreement requires participants to provide adequate copyright protection and remedies against circumvention technologies. The second agreement is the WPPT, which serves to protect sound recordings in cyberspace.

Dr. Bogsch, former Director of WIPO, argued that both treaties would have a vital impact on the development of copyright and related rights. Other experts also supported this view, saying that these treaties would be an important milestone in global lawmaking in the field of copyright and related rights with positive results, although some doubted that the treaties would create obstacles rather than contribute to the development of the information society.[106]

A detailed analysis of the WCT text introduces some significant points. The first WCT includes a “three-step” test to examine limitations and exceptions. Furthermore, the WCT requires Contracting States to provide for restrictions and exceptions related to the digital environment. Second, in accordance with Article 11, states must take legal measures to stop circumvention of technological tools used by rights holders to protect their rights. In addition, each State is required to take effective measures to ensure the effective implementation of the treaty within its national legal framework.[107]

The WCT requires Member States to recognize certain specific rights that are particular important in the digital space, such as the right of communication to the public, the right of rent and the right of reproduction, which becomes especially relevant when a person downloads works from the Internet.[108] Peters argues that many copyright

[104] Boldyrev (50) 32.
[105] Adetunji and Okuonghae (n 56) 16.
[106] Brigitte Lindner, *The WIPO Treaties. In Copyright in the Information Society* (Edward Elgar Publishing 2019) 7.
[107] ‘Summary of the WIPO Copyright Treaty (WCT) (1996)’ <https://www.wipo.int/treaties/en/ip/wct/summary_wct.html> accessed on 11 May 2025.
[108] Adetunji and Okuonghae (n 56) 17.

laws provide for such rights in the form of reproduction or performance, and the WCT clarifies that these rights, in digital form must be explicitly granted to authors.[109]

However, Scheinblatt has argued that the WCT does not fully resolve several issues related to international copyright protection issues. For example, the agreement does not prohibit circumvention of security tools nor does it clearly regulate the modification or removal of rights management information. Certain issues, such as fair use protection and issues of liability of Internet service providers, were also not clearly explained in the treaty.[110]

WPPT contains the same provisions as WCT, but mainly concerns two copyright holders, such as performers (singers, musicians, etc.) and producers of phonograms in the digital environment.[111] It should be noted that the main purpose of WPPT is to ensure the protection of copyrights related to the storage and distribution of digital performances and phonograms, as well as to provide measures against the circumvention of technological protection measures.[112]

In short, the main purpose of the WIPO treaties is to strengthen existing copyright protection and clarify the illegality of actions to violate encrypted data. In addition, the treaties extend copyright protection to new copyright objects available on the Internet, such as music, software, movies, and so on. The WIPO treaties clarify the limitation of liability of Internet service providers and telephone companies that act as providers of data and information. In general, it can be said that these international treaties have contributed to strengthening intellectual property rights worldwide.[113]

However, there are some significant criticisms regarding the implementation of the WIPO Internet treaties. The claim that the WIPO Internet treaties address problems that arise in cyberspace, such as the distribution of copyrighted works over the global web, may not be true due to new digital formats or new parties. Moreover, according to some cases in the United States, WCT is shown to be ineffective when it determines the interests of users. For example, some US courts have relied primarily on domestic copyright law rather than directly applying the provisions of the WIPO treaties in resolving copyright disputes.[114]

What is more, Bratus argues that no international mechanism has been found to effectively protect digitized works since the advent of the Internet. These instruments mostly relied on existing mechanisms and

[109] Marybeth Peters, 'The Challenge of Copyright in the Digital Age' (2006) 9 Revista La Propiedad Inmaterial 59-67.
[110] J. S. Sheinblatt, 'The WIPO copyright treaty' (1998) 13 Berkeley Tech. LJ 535.
[111] Adetunji and Okuonghae (n 56) 18.
[112] ibid 18.
[113] Carolyn Andrepont, 'Digital Millennium Copyright Act: Copyright protections for the digital age' (1999) 9 DePaul Journal of Art, Technology and Intellectual Property Law 402.
[114] Ruth L. Okediji, 'Regulation of Creativity under the WIPO Internet Treaties' (2008) 77 Fordham L. Rev. 2396.

did not solve a main enforcement issue. Some recommendations of the WIPO were not able to address technological challenges. Thus, the effectiveness of copyright protection in the digital landscape remains still debatable.[115]

In general, it should be noted that the WCT and WPPT require participating countries to provide appropriate legal protections, remedies against circumvention technologies, and strict DRM-related measures. The above-mentioned treaties oblige the participating countries to adopt a law on the protection of technological measures and tools designed to prevent counter circumvention.[116]

It has been argued that bilateral agreements have some advantages over many conventions, since they are the result of a bilateral agreement and that is why they fully and specifically regulate relations between countries. As some scholars point out, bilateral agreements may take into account the specifics of the legislation of the member states, for example, issues of mutual settlements and taxation.[117]

The collapse of the USSR led to the destruction of this monopoly, and as a result, the process of privatization was carried out in the field of intellectual property, and the unified intellectual property system was divided into 15 independent national systems.[118]

In its relatively short history, the protection of intellectual property in Kazakhstan has developed unevenly, and the degree of its protection has fluctuated over time.[119]

The Constitution of Kazakhstan is the highest legal act in the system of regulating copyright protection. According to Article 1 of the Constitution, a person, his life, rights and freedoms are the highest values of the state. In particular, paragraph 2 of Article 19 provides that everyone has the right to enjoy culture and creative activities. Moreover, the State guarantees creative activity in accordance with paragraph 1 of Article 20 of the Constitution. Therefore, it can be argued that intellectual property is protected by law. The provisions comply with generally recognized principles and legal norms of international law.[120]

Furthermore, the Constitution affirms that everyone has the right to receive and disseminate information by any means not prohibited by law.

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[115] Dmitri Bratus, ‘Zashita avtorskikh prav v ciphrovuiu epohu’ [Copyright protection in the digital age] (2015) Voprosy rossiiskoi justicii 23-27.

[116] Dayananda Murthy, ‘Copyright and Digital Media: Perspective and Challenges in the New Legal Regime in India’ in K. M. Sinha and V. Mahalwar (eds) *Copyright Law in the Digital World* (Springer 2017) 221.

[117] Boldyrev (n 50) 33.

[118] Abdrasulov (n 99) 104.

[119] Yuri Bolotov and Saule Kul'zhambekova, ‘Zakonodatel'stvo Respubliki Kazakhstan i Soglashenie TRIPS’ [Legislation of the Republic of Kazakhstan and the TRIPS Agreement] (2015) 3 Research and Practice Journal “Intellectual Property in Kazakhstan” 19.

[120] Constitution of the Republic of Kazakhstan (30 August 1995) https://adilet.zan.kz/eng/docs/K950001000_ accessed on 15 November 2025.

Accordingly, copyright enjoys constitutional protection, and individuals who abuse it may face legal liability.[121]

Taking into account international experience, similar provisions are contained in the International Declaration of Human Rights and in accordance with Article 27 (2), everyone has the right to protect the moral and material interests resulting from the artistic, literary and scientific works created by him. Comparable norms are also included in the International Covenant on Economic, Social and Cultural Rights, and under Article 15, obliges States to take measures for the protection, development and dissemination of scientific and cultural achievements.[122]

In Kazakhstan, copyright protection is further regulated by a number of regulatory legal acts, most notably the Civil Code and the Copyright Law. According to Article 972 of the Civil Code, there is a list of objects protected by copyright, such as literary works, dramatic works, musical works, artistic works, computer programs and other creative products. It should be noted that the Civil Code provides for general provisions on intellectual property rights, which, in turn, regulate not only copyright and related rights, but also patents, trademarks and the right to the topology of integrated circuits.[123]

The Copyright Law is the primary legislative act regulating relations arising in the field of intellectual property, in particular the creation and use of literary, dramatic, artistic works, performances, phonograms, broadcasts and other original products.[124]

As already mentioned, the main law governing copyright and exclusive rights to works is the Copyright Law. Until 2020, about 20 amendments were adopted, most of which were introduced to address emerging challenges.[125]

Despite the amendments to the Copyright Law, it can be seen that not only certain definitions or terms are lacking, but also appropriate approaches to regulating copyright in the digital environment. Consequently, all works made available online continue to be protected as traditional objects of copyright. The objects of copyright include:

1) literary works;
2) dramatic and musical-dramatic works;
3) scenarios;
4) pantomimes and choreographic works;
5) music with or without lyrics;
6) audiovisual works;
7) paintings, sculptures, drawings, and other works of fine art;

[121] ibid.
[122] United Nations, ‘Universal Declaration of Human Rights' <https://www.un.org/en/about-us/universal-declaration-of-human-rights> accessed 31 July 2025.
[123] Civil Code (n 39).
[124] Law on Copyright and the Related Rights (n 23).
[125] ibid.

8) works of applied art;

9) works of architecture, city planning, design and landscape art;

10) photographic works and the works produced by the means and analogous to photography;

11) maps, plans, sketches, illustrations and three-dimensional works, relating to geography, topography and other sciences;

12) computer programs;

13) other products.[126]

Pursuant to Article 49 of the Copyright Law, copyright may be protected through the courts by a variety of remedies, including:

- recognition of rights;
- restoration of the situation that existed prior to the infringement;
- suppression of actions that violate or threaten to violate copyright;
- compensation for damages, including lost profits;
- recovery of income obtained by the infringer as a result of copyright piracy;
- payment of statutory compensation, ranging from 100 to 15,000 MCI, awarded at the discretion of the court;
- other measures provided by law.

In addition, collective management organizations that manage intellectual property rights, in accordance with the law, have the right to sue on their own behalf to protect the personal non-property and exclusive rights of authors and copyright holders.[127]

Summing up, the historical and legal analysis of the development of copyright shows that copyright as an institution emerged in Europe simultaneously with the advent of printing. The peculiarity of European copyright law can be seen from the fact that it first arose as a right to use literary works, when the author of works remained a disenfranchised participant in legal relations, which, in turn, caused, on the one hand, the need to establish a balance between authors, publishers and booksellers, and on the other hand, protection of the rights of authors, publishers and booksellers. copyright issues. Moreover, it is fair to say that the development of digital technologies, including the advent of the Internet, has led to the adoption of WIPO treaties such as the WCT and WPPT.

With regard to Kazakhstan, it can be argued that during the Soviet period its development was associated with censorship legislation, which was based on a state monopoly and centralized control in the field of intellectual property. Despite the formal grounds for copyright protection, mentioned above, there is no judicial practice and effective legal acts that could address copyright violations on the Internet. Although Kazakhstan's copyright legislation is already largely established and meets the main international requirements, it still depends on the old

[126] ibid art 7.
[127] ibid art 49.

regulatory framework for solving modern technological problems, and therefore may require additions and amendments.

Finally, it must be emphasized that copyright law continues to be regulated primarily at the national level, which produces substantial differences between jurisdictions. The rise of global information networks has amplified these disparities, while existing conflict-of-law principles remain insufficient to resolve cross-border disputes in the digital environment. Consequently, persistent uncertainty remains as to which national legal systems should govern online copyright disputes, thereby highlighting the need for renewed international coordination and further legal harmonization.

1.3 Copyright and digital landscape

The digital environment has fundamentally changed the nature of copyright relations and exposed structural limitations of traditional copyright models. It is argued that the Internet not only strengthen the economic and cultural value of creative works, but also significantly increases the risks of unauthorized use, thereby requiring a reassessment of existing legal protection mechanisms. From this perspective, copyright in the digital must be analysed as a dynamic legal institution adapting to technological change.

It could be argued that in the 1970s a military project named as ARPANET (Advanced Research Projects Agency Networks) facilitated the emergence of a computer which we call today as the internet. At the end of 1980s, Sir Tim Berners created the World Wide Web (www) through which the Internet gained widespread popularity and evolved into a vast global network for communication and commerce.[128]

The digital age has created new challenges for copyright, and some issues related to copyright have become more complex, which in turn has led to improvements in the copyright protection system.[129] Digital technologies have completely changed our world. On the one hand, they have created new opportunities and challenges, while on the other hand, they have generated significant difficulties and problems. Digital technologies are changing not only how we communicate with each other, but also how we search for and use data. Such technologies are mainly based on ideas, innovation and dissemination of information. According to some dictionaries, the “digital age” is defined as a time when a huge amount of data is available to the general public, mainly through computers. As information technology becomes ubiquitous and popular around the world, some governments are trying to control and regulate the digital environment. However, it seems too difficult to

[128] Murray (n 43) 19.
[129] Stokes, *Digital Copyright Law and Practice* (n 40) 11.

exercise effective control over it, given the decentralized and borderless nature of the Internet.[130]

It should be noted that creative industry has been dramatically developed because of the internet. In 2023, it is estimated that over three billion internet users watched streaming or downloaded video through any devices at least once per month.[131] In the digital landscape, copyright protection seems to be more vital than ever before. Given the ease of copying and distributing digital works, it has become relatively simple for users to reproduce and share copyrighted content without authorization or compensation to right holders.[132]

A copyright scholar, Paul Goldstein has argued that digitization or digital technologies have created significant tension between copyright owners who cannot detect infringing actions on the new market places and service providers, such as telephone companies and search services who cannot fully control the actions of their users on their platforms.[133]

It can be argued that copyright has faced the following serious problems:

a) *tracing the copyright offender*- one major challenge in addressing online copyright infringement is the difficulty of identifying infringers and determining their exact locations, largely due to the internet's anonymous nature and privacy concerns. While the Act outlines steps for identifying infringers, effective enforcement requires diligence. Once pirated work is identified, tracing its source to an individual, company, or premises is necessary for apprehending the offender. However, the broader issue of ensuring adequate protection against infringement persists. A more precise method is required to link identified accounts to specific acts of infringement within a particular jurisdiction;

b) *the emergence of advanced technology*- The rapid evolution of internet-based technologies, primarily in software and coding, poses significant challenges for copyright enforcement. Technological advancements have made it harder to enforce copyright laws effectively. In the digital era, users can record, download, and transmit high-quality data more quickly than with analogue systems, which were slower and less efficient. As a result, copyrighted works have become increasingly vulnerable to infringement, making preventive measures more challenging;

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[130] Irina Atanasova, 'Copyright Infringement in Digital Environment' (2019) 1 Economics & Law 13.
[131] 'Digital Video Viewers Number Worldwide 2023' (Statista) <https://www.statista.com/statistics/1061017/digital-video-viewers-number-worldwide/> accessed 31 July 2025.
[132] 'Digital Piracy: A Growing Threat To The Creativity Industry' (Dataconomy) <https://dataconomy.com/2023/06/14/what-is-digital-piracy-effects-on-creativity-industry/> accessed 31 July 2025.
[133] Goldstein and Hugenholtz (n 58) 272.

c) international infringement of copyright- a recurring issue in copyright infringement involves determining the precise location where the breach occurred and identifying the appropriate court to assume jurisdiction. This raises complex questions about which law applies and which court is competent to handle cases of online copyright infringement. At present, there are no accepted solutions, as international copyright law does not provide a comprehensive and satisfactory framework for resolving such jurisdictional and legal conflicts in cyberspace. This reflects the inherently borderless nature of the Internet;

d) balance between access and protection- while copyright protection is important, it is also important to balance this protection with the need for access to information and creative expression. Achieving this balance has become particularly challenging in the digital age.[134]

Some scholars argue that copyright is so far behind modern technological capabilities that it is often perceived not as an anachronism, but as an obstacle to free creativity and media actions. This misperception is used by various protest and populist movements that intend to take political advantage of social discontent. Consequently, copyright issues in the context of globalization and challenges of the twenty-first century acquire additional political measures.[135]

Judge Richard Posner claims that creative project owners, copyright holders, and users ultimately share interconnected interests and needs, as they are mutually dependent on one another. He suggested that in the future, copyright would increasingly serve the interests of copyright owners by creating new sources of income and stimulating demand for creative works.[136]

The main contradiction in the situation is that authors want to receive income from their works, while netizens want to receive information for free. At the heart of this conflict is the cheapening of technologies for copying and distributing information. The opportunity provided to users in the digital age to copy and distribute information for free is a global problem for copyright protection. Consequently, copyright holders seek mechanisms to restrict unauthorized free exchange of protected content.[137]

Focusing on the digital environment, it should be noted that neither legislation nor legal literature provides a legal definition of this term.

[134] Nneka Umejiaku and others, 'Legal Impact of the Advancement of Digital Technology on Copyright Protection in Nigeria' (2024) 11 Journal of Commercial and Property Law 101.
[135] Entin V, Avtorskoe pravo v virtual'noi real'nosti (novye vozmozhnosti i vyzovy tsifrovoi epohi) [Copyright in virtual reality (new opportunities and challenges of the digital age)] (Statut 2017) 9.
[136] Martin Kretschmer, 'Digital Copyright: The End of an Era' (2003) 25(8) European Intellectual Property Review 336.
[137] Arina Dmitrieva and Denis Savelyev, 'Avtorskoe Pravo v Internete: Konflikty, Raspredelenie Otvetstvennosti i Varianty Regulirovanija' [Copyright on the Internet: Conflicts, Allocation of Responsibilities, and Regulatory Options] (2011) < https://www.russianlaw.net/files/law/doc/a276.pdf> accessed 31 July 2025.

Researchers express different points of view on this issue: on the one hand, the digital environment is a set of hardware and software tools for data storage, on the other hand, it is a set of software hardware, information and communication networks.[138]

Ryabyshev and Bolotov note that the digital environment should be understood as a geographically distributed design for the development of the information space. In their view, the purpose of the digital environment is to create conditions that will promote the emergence and development of innovative processes of network interaction between subjects and objects operating within it.[139]

It is reasonable to agree with the view held by the majority of researchers that digital environment is an integrated system of software and hardware intended for the processing, storage and transmission of information in electronic form, facilitating the access to and interaction with textual, audio, visual, and graphic content.

In July 2022, media outlets reported on the initiatives undertaken by the Ministry of Digital Development, Innovation and Aerospace Industry of the Republic of Kazakhstan aimed at drafting a Digital Code.[140]

Digital environment is defined as an integrated of infrastructure, technologies, processes, and conditions that enable the creation, distribution, storage, transmission and use of digital data and digital objects, as well as the exercise and transfer of rights, regardless of territorial boundaries of such rights, according to the Digital Code.[141]

It could be argued that the provision of the Digital Code of the Republic of Kazakhstan, which recognize the digital environment as an independent sphere of legal regulation confirm the conclusion that a distinct set of public relations has emerged within which copyrights are exercised and protected.

In this regard, it can be stated that the dissertation had articulated a definition of the digital environment prior to the adoption of the Digital Code, thereby further demonstrating the relevance, originality and practical significance of the present research.

Moreover, one of the innovations of the Digital Code is the introduction of the concept of a digital object defined as a separate element of the digital environment that is created, used, or transmitted through digital technologies, possessing unique digital characteristics and enables subjects of the digital environment to exercise ownership, use or disposal. According to the Digital Code, digital objects cover the following objects: digital recordings, digital resources, digital systems,

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[138] Boldyrev (n 50) 92.

[139] A.A. Bolotov and A.M. Ryabyshev, 'Informacionno-obrazovatel'naya Sreda Setevyh Tehnologii Distancionnogo Obespechenia' [Informational and Educational Environment of Network Technologies for Remote Provisions] (2009) 2 Nauchnyi Vestnik MGIIT 24-26.

[140] Sara Idrysheva, 'On the Digital Code of Kazakhstan' (2022) 3(96) Law and State 73.

[141] Digital Code (n 6) art 1.

digital platforms, software, digital data products and other objects. It can be observed that the Code recognizes digital objects as significant elements of the digital environment.

However, a shortcoming of the definition provided in Article 1 of the Digital Code of the Republic of Kazakhstan is that it refers to both “digital data” and “digital objects”. In practice, digital data, including Big Data, personal data and other types of data also constitute digital objects and therefore should not be treated as a separate category within the definition.

Furthermore, from a technical point, digital objects are formed on the basis of digital data. For example, files such as PDF, MP3 are digital object, which consists of digital data. Digital data may include personal data and database.

According to the Section 1 of the Article 10 of Law on AI, the use of AI systems is possible only if data protection and confidentiality requirements are met, and personal data is not collected, stored, or distributed in an unauthorized manner[142]. In other words, digital data may include database and personal data.

Therefore, the simultaneous use of the terms “digital data” and “digital objects” in the definition of the digital environment may create conceptual duplication.

As for the owners of digital objects, they are obliged to keep rights and legal interests of third parties; take measures to prevent unauthorized access, copying, modification or deletion of digital data and digital objects; perform other duties established by the legal acts of Kazakhstan.

The owner of a digital object bears liability for damage resulting from illegal actions related to its creation, use, or disposal.[143]

However, some researchers argue that it is impossible to protect copyright in the digital environment using traditional legal protection, but it is necessary to protect copyright on the basis of new legal norms and approaches. Special attention should be paid to technical measures for the protection and management of IP rights on the Internet.

It should be noted that in the field of copyright regulation in the digital environment, there are the most pressing issues that are related to the following factors:

1) scope of copyright protection in the digital environment;

2) responsibility of providers;

3) rights of digital broadcasting organizations;

4) protection of the Internet database.

In addition, Naumov points out that the key issues of legal regulation of public relations arising in connection with the use of the Internet include:

[142] Law on Artificial intelligence (n 7) art 10.

[143] ibid art 20, 38.

- jurisdictional problem related to the internet;
- the issue on liability of information providers;
- development and implementation of the problem of

initiation in the field of self-development regulation of relations in Internet networks.[144]

WIPO highlights the most important issues for the possible development of new international copyright protection instruments, including: the right of broadcasting organizations, the right of performers of audiovisual works, and the protection of sui generis databases that are not subject to copyright.[145]

The main subjects of copyright are persons who have created works protected by copyright. Any person can create works, regardless of their age, legal capacity, or citizenship. Moreover, copyright arises as soon as the creative result is expressed in an objective form. The requirement of objective form allows the author's work to exist independently of the creative once it has been completed.

Boyko rightly argues that the author is the beginning of a chain of copyright holders, since copyright belongs to the author by virtue of its connection with the creator's personality, it is inalienable.[146]

Article 2 of the Berne Convention stipulates that the convention's copyright protection is effective in favor of the author and their legal successors.[147]

After the creation of the work, the author acquires a number of personal non-property rights. In addition, the creation of these rights does not require official registration, special registration of the work, or compliance with any formalities. The author can dispose of the work at his own discretion, he can allow the use of the work, resolve issues of copyright infringement, which is the exclusive nature of copyright.[148]

The subjects of copyright in the digital environment may differ from traditional subjects of copyright, and since some researchers rightly note that new copyright owners have appeared on the Internet, for example, authors of electronic works. For example, creators of computer games may be distinguished as a separate category as subjects of copyright in the digital space. While a writer works with words in creating literary works, a developer of computer games simultaneously works with text, graphics, sound, and other multimedia elements.[149]

In addition, some scholars divide copyright subjects in the digital environment into primary and secondary subjects: the first category

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[144] Victor Naumov, *Pravo i Internet: Ocherki Teorii i Praktiki* [Law and the Internet: Essays on Theory and Practice] (Knizhnyi dom Universitet 2002) 9.
[145] Boldyrev (n 50) 94.
[146] ibid 48.
[147] 'Berne Convention for the Protection of Literary and Artistic Works' <https://www.wipo.int/treaties/en/ip/berne/> accessed 31 July 2025.
[148] Boldyrev (n 50) 33.
[149] ibid 59.

includes the author of electronic works, the author of computer games, the author of website content, the author of software and databases that provide Internet access; while the second category includes copyright holders of objects posted on websites, copyright holders of software, music, articles, images, and other digital content.

Copyrighted works on the Internet are usually placed on websites, and when compared with traditional copyright, a website as a collection of copyright objects could represent a composite work in a digital environment.

If copyright arises from the moment of creation of the work, then for the implementation and protection of copyright, it is necessary that the work be fixed in an objective form. For example, according to Article 971 of the Civil Code of Kazakhstan, the copyright law applies to both published and unpublished materials, which can exist in any form, such as written, oral, sound and other forms.[150]

Traditionally, works can be recorded on paper, in movies, or on magnetic tape. When a work is digitized, some works, including music, words, images, sounds, graphics, and others, are converted to the binary numbers 1' or 0'. Digitization refers to the process that converts information into a digital format, or basically refers to the change of communications and media from analog to digital. For example, compact discs of the 1980s replaced cassettes and vinyl records; in the 1990s, videotapes replaced DVDs; and in the 2000s, the Internet allowed digital distribution. With the advent of the Internet, many consumers around the world have taken advantage of new media services, greater flexibility, and better access.[151]

Electronic works may also differ from the published ones due to the peculiarities of the form and medium of the document. Electronic works can be defined as a set of ideas, thoughts, and fantasies that, as a rule, are the results of creative actions posted on the Internet, and, thus, this information is available to other users of the network. The originality of the created work can exist in an objective form on a machine-readable storage medium. The data carrier is presented in the form of a magnetic and optical disk and is used by the computer for recording, storing and reproducing media. Works are typically presented as a file or set of files, and this is the expression of works in an objective form. Physically, the original can be initially recorded on the author's personal computer or on a publicly accessible device.[152]

Moreover, an author may take measures to protect an original electronic work by indicating his authorship in a manner that cannot easily be removed during copying. Any electronic works can be protected by the digital signature of the author, including the time of registration of

[150] Civil Code (n 39).
[151] Bethany Klein and others (n 31) 34.
[152] Boldyrev (n 50) 60.

the digital work. However, some experts are inclined to note that the protection of a digital work posted on the Internet cannot be created in a technical way, since digital content can be reproduced, altered, redistributed more easily than works in traditional analogue formats.[153]

It is worth noting that copyright law also protects means of communication used to create online exhibitions, in particular websites, applications and video materials. Such issues are especially important, for digital museums and online exhibitions, when they digitize their collections or individual works. To avoid legal issues, they must first determine whether a work is protected by copyright and if so whether they have obtained permission from the relevant right holders to digitize and make the work online. Otherwise, they may incur legal liability for copyright infringement.[154]

Courts have suggested that publishers who have concluded traditional book publishing contracts should not automatically claim infringement when books are distributed in digital format, instead, they should seek to negotiate appropriate licensing agreements. Although such publishers may not hold the rights to digitize the next text, they retain the original print publishing rights.[155]

In Random House v. Rosetta Books, a court ruled that Random House did not possess the right, under publishing contracts concluded in the 1970s, to publish Kurt Vonnegut's Cat's Cradle in electronic format. The court determined the grant of print rights did not inherently extend to digital rights, thereby allowing the defendant to continue distributing e-books.[156]

One could argue that the same digital technologies also pose huge challenges to the copyright system. This can be seen from two main aspects: first, the digital form of copyrighted works (for example, a photograph and, for example, can be scanned into an image file) and the creation of new copyrighted products, such as software; second, the emergence of network technologies, in particular the Internet, which allowed transmitting digital information.[157]

The development of the Internet has led to a revision of the scope of copyright protection in the digital environment. Because all kinds of works, such as e-books, musical compositions, artworks, movies, and sound recordings, are now available over the Internet. Not to mention the fact that technologies make it possible to reproduce and distribute cheap, flawless works.[158] Therefore, it is fair to say that the Internet has led to an

[153] ibid 60.
[154] Yaniv Benhamou, 'Copyright and Museums in the Digital Age' (The WIPO Magazine 2016) https://www.wipo.int/ru/web/wipo-magazine/articles/copyright-and-museums-in-the-digital-age-39611 accessed 3 August 2025.
[155] Entin (n 135) 14.
[156] Caryn J. Adams, 'Random House v. Rosetta Books' (2002) 17 (29) Berkeley Technology Law Journal 32.
[157] Stokes, *Digital Copyright Law and Practice* (n 40) 11.
[158] Murthy (n 156) 223.

increase in trade in goods and services, in particular intellectual property materials, such as copyrighted works.[159]

According to Vaidhyanathan, the digitization process, along with the advent of networks, has disrupted some vital features of the copyright system, including the differences between an idea and an expression (is a digital code an idea or an expression?); between access and copying; between producers and consumers; and between local and international regulation. Thus, it is safe to say that digitization has simplified access to, control over, or use of copyrighted works, and raised the question of revising the principles and processes of the entire copyright system.[160]

According to Pamela Samuelson, a leading American copyright expert, new technologies have raised six problems for copyright:

1. *Ease of reproduction* – the technology can be used to create many excellent copies of a work;

2. *Ease of transmission* – the global network contributes to the mass distribution of pirated works. Thus, continuous development and mobile networks can contribute to this even more;

3. *Flexibility of digital media* - the user can easily change, improve or adapt works in digital form. This led to Web 2.0;

4. *Similarity of works in digital form* – all works look the same when they are codified, so it is easy to combine digital works into a new product, such as multimedia. And this is also part of convergence, which means a combination of new technologies, multimedia and networks in areas such as the Internet;

5. *Compact works in digital form* – a large number of works can be stored on multiple CDs or storage devices, and this feature also makes it easier to create new works;

6. *Advanced search and linking capabilities*– for example, websites on the Internet can be easily linked.[161]

Similar to the aforementioned tasks, Mathur highlights additional advantages of new technologies related to the copyright regime, such as cost-effectiveness, simplification of direct publication by authors, and a platform for creating new types of works. Digital technologies are generally not only time-efficient, but also cost-effective for both copyright holders and users, as digital media can reduce the economic costs of consuming and distributing copyrighted works; moreover, digital technologies provide authors with a platform for direct publication of their works without intermediaries. such as traditional publishers. Before the advent of new technologies, publishers distributed works, but now

[159] ibid 223.

[160] Siva Vaidhyanathan, *Copyrights and Copywrongs: The Rise of Intellectual Property and How it Threatens Creativity* (NYU Press 2001) 36.

[161] Pamela Samuelson, 'Digital Media and the Changing Face of Intellectual Property Law' (1990) 16 Rutgers Computer & Tech. LJ 323.

authors can directly make their works available to the general public; needless to say, digital technologies have led to the emergence of new types of works, such as multimedia works, computer software, and databases.[162]

A proper understanding of digital copyright requires an appreciation of how the Internet functions. The Internet is considered as a global computer network that allows computers or mobile devices to connect to each other. The viewer's computer sends a request to the server computer hosting the website being viewed, asking it to forward a copy of the requested material. This material is not transmitted directly to the viewer's computer; instead, it is broken up into packets, each with an address, and sent over the Internet. It is then transmitted from one computer on the Internet to another until all packets are received by the user's computer. This process usually takes place within a few seconds, making the Internet a global means of communication. In 1991, the government opened the Internet for commercial use. This commercialization and global use led to the fact that the Internet becoming the essential communication infrastructure we know today.[163]

The Internet gives rise to some legal problems. Moreover, the Internet has created many commercial opportunities. For example, thanks to the Internet, new digital products have appeared, such as online magazines, e-commerce or advertising, and so on. However, it is safe to say that new technologies pose some challenges, as people not only view information, but also freely copy it. Because what they copy may belong to other people. In particular, such use may infringe another party's copyright.[164]

Moreover, it should be noted that the Internet makes it difficult to comply with copyright law in the digital environment. It is also true that tracking those who commit online violations is difficult because of the Internet. The main problem is that access to information on the Internet is available anywhere in the world, anyone can copy anything without fear of being caught by the authorities.[165]

From the point of view of the objective aspect of an offense committed online, the concept of "place" has clear characteristics. This is due to the fact that the Internet is a virtual space without physical borders. An offender can operate from one country, infringe on intellectual property rights belonging to an author in another country, and have the results of the offense appear in a third country.[166]

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[162] Mathur (n 19) 7.
[163] Catherine Pignataro, 'Copyright Law and the Internet: The New Generation of Legal Battles in the Courts' (2001) 18 Touro Law Review 783.
[164] ibid 784.
[165] Yuanyuan Hui, 'Protecting Copyright in the Digital Era in China: A Critical Analysis of the Relevant Law and Practice from a Comparative Perspective' (DPhil thesis, Durham University 2016).
[166] Boldyrev (n 50) 41.

It is worth noting that the territoriality principle plays a pivotal role in international copyright law. In other words, it means that copyright protection is limited to the borders of the state where it is granted. Thus, copyright law does not have effect outside the territory of the state. According to that principle, each country determines for itself, what can be protected, who is an author, or how long protection may last and etc. Therefore, copyright remedies are ruled by the local law where such protection is sought (lex loci protections).[167] This principle is placed in the Berne Convention where it claims that "protection and remedies shall be governed by the laws of the country where protection is applied".[168]

Dinwoodie emphasizes that "the distribution of information products that are used online around the world affects the territories of many countries, in his opinion, this implements the principle of extraterritoriality, and not the principle of territoriality". Territoriality was relevant in the past, but now it faces a challenge with the internet which has no border. Digital works can be distributed around the world in second, thus it makes difficult to find where copyright violation happens and what law should be used. The location of violation, jurisdictional disputes and fragmentation of enforcement might be main difficulties of the territoriality.[169] It is plausible to argue that above issues may limit the possibility of territoriality.

Geller contrasts the principle of extraterritoriality with the principle of flexible territoriality, arguing that in cases of cross-border copyright infringement, the court must determine the location of the infringement. This definition is important for deciding whether to apply the legislation of the country of the court or other relevant laws.[170]

While agreeing with this view, it is important to emphasize that the principle of extraterritoriality should apply to international copyright protection when determining jurisdiction for works published on the Internet.

Furthermore, Terentyeva argues that extraterritoriality is one of the key categories of private international law, since it defines the following in digital disputes: the limits of the national law outside the territory of the state; the ability to regulate the behavior of foreign entities; the boundaries of judicial jurisdiction in transnational disputes.[171]

Terentyeva notes that traditional territorial principle no longer reflects the modern transnational reality, as economic and information relations increasingly transcend state borders, and the decentralization

[167] Jane Ginsburg, 'Extraterritoriality and Multiterritoriality in Copyright Infringement' (1997) 12(1) Berkeley Technology Law Journal 587.

[168] Berne Convention for the Protection of Literary and Artistic Works (Paris Act 1971), art 5(2).

[169] G. Dinwoodie, 'Developing a Private International Intellectual Property Law: The Demise of Territoriality?' (2009) 51 William and Mary Law Review 715.

[170] Paul Edward Geller, 'Conflicts of Laws in Copyright Cases: Infringement and Ownership Issues' (2004) 51 Journal of the Copyright Society of the USA 337.

[171] L. Terentyeva, 'Ekstraterritorial'nost' v mezhdunarodnom chastnom prave' [Extraterritoriality in private international law] (2021) 5(126) Aktual'nye problemy rossiiskogo prava 183-194.

of the digital environment erodes the classical notion of the “place of tort”.[172]

According to Terentyeva, extraterritoriality is no longer an anomalous phenomenon but has evolved into an inherent tool for regulating cross-border private law relations, particularly in the digital environment, where the erosion of territorial boundaries creates numerous potential jurisdictions and overlapping legal regimes. The author stresses that conventional doctrines on jurisdiction and applicable law require reconsideration.[173]

Briefly, it could be argued that the territoriality is connected to the traditional scope of copyright, whereas the extraterritoriality raises to respond to the challenges of information society.

Digital technologies have put copyright at a crossroads. There are two conflicting groups: the first group claims that copyright is dead, while the second group advocates revising the copyright system to properly address digital technologies.

The first explains his argument: first, the emergence of file-sharing or peer-to-peer P2P technologies, such as Napster, The Pirate Bay or Newzbin, shows that copyright is not able to effectively regulate the digital environment. As a result, more and more digital works will be encrypted or protected; hacking a copy of the protection or encryption to use the work will be considered illegal regardless of the motive; secondly, the use of digital works will be governed by a contract, not copyright, since users must enter into a mandatory license with copyright holders in order to access digital works. works of art. For example, Amazon e-books are typically licensed rather than sold, meaning that users cannot resell or redistribute them. Thus, a copyright protection system may gradually lose practical relevance.

The latter argues that copyright is not obsolete, because many lawmakers are becoming more familiar with preserving the public domain and generally maintain an equal balance between copyright holders and users. And some initiatives, such as the Information Society Directive (2001) or the Digital Single Market strategy (2015), can show that copyright as an IP right can be feasible. Moreover, some argue that to better regulate the digital environment, it is worth simplifying the existing copyright system. For example, they suggest replacing the “set of rights” (which includes many rights, such as the adaption, reproduction, distribution and communication to the public) with a single right, such as the right to control the distribution or exploitation of digital works. The rationality of this proposal lies in the fact that such a right can be technologically neutral, no matter what new technologies bring.[174]

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[172] ibid.
[173] ibid.
[174] Stokes, *Digital Copyright Law and Practice* (n 40) 71.

Some are inclined to argue that the advent of digital technologies has both advantages and disadvantages for the cultural industry. On the one hand, the digital environment has opened up some opportunities: new forms of texts have emerged; modern methods of creating and distributing texts have emerged; users can access digital content in various ways – at home, on the road, and on their own devices. In addition, thanks to digital technologies, creators have more opportunities to communicate with their users (online platforms), while users can create copies of works that are not inferior to the original ones. Thus, it can be seen that digital technologies offer certain opportunities not only for copyright owners who benefit financially from the use and licensing of copyrighted works, but also for end users or consumers of copyrighted products. For copyright holders, digitization has offered a faster and cheaper way to create, reproduce, and distribute their own creative products, while for end users, digital technologies have made it possible to copy and distribute media across networks.

However, while some suggest that new technologies have increased the ability of users to gain unauthorized access to copyrighted works, many others point out that some corporations or industries have increased their ability to profit from copyrighted works through lobbying, campaigns, lawsuits, or investments in technology which help block unauthorized access or distribution.

In addition, in the digital age, instant access to content has become the norm, and users expect minimal delays between the movie's release in theaters and its digital availability. High-quality copies of copyrighted materials are often available online for free, making unauthorized consumption so common that many consider it acceptable. In fact, some people may not even realize that such actions are illegal. Even those who admit to a violation often justify it by saying that legal access to content does not meet their needs sufficiently.[175]

Today, some works, such as computer programs (similar to literary works), can only exist in digital form, while other works can be performed in either digital or analog form. For example, databases, photographs, computer-generated literary, dramatic, musical works, musical compositions, sound recordings, films, programs, and other creative works. But some works exist only in the traditional form, for example, most works of art, with the exception of photographs. However, even the work itself does not exist in digital form, it can be reproduced. Most of the artists' paintings are presented in analog form. But their digital photos can be either an electronic copy of the paintings or a work protected by copyright.[176]

[175] Ian Hargreaves, 'Digital Opportunity: A Review of Intellectual Property and Growth' (2011) https://assets.publishing.service.gov.uk/media/5a796832ed915d07d35b53cd/ipreview-finalreport.pdf . accessed 3 August 2025.

[176] Stokes, *Digital Copyright Law and Practice* (n 40) 11.

It should be noted that many works in digital form, such as digital photographs, digital broadcasts, and e-books, can be protected under copyright law. However, some states do not define the “multimedia” or “digital media”.[177]

It has been argued that the broadest definition of “multimedia”, describes it as “the use or presentation of data in two or more forms”. This interpretation covers a wide range of communication formats, such as television programs, films, plays, and encyclopedias.[178]

Most legal experts agree that multimedia typically refers to a computerized, digital combination of at least two distinct media types, such as text, sound, still images, moving images, and graphics.[179]

In addition to the above, Semenova argues that it is necessary to clearly define at the legislative level which party shall be responsible for the digitization of works, whether it is a cultural institution or the authors themselves.[180]

An important issue concerns the establishment of an effective mechanism for the protection of copyrights in digitized works whose term of legal protection has not yet expired. With the digitization of a work, new characteristics inherent to such copyright objects emerge. Digitized works can be copied, modified, supplemented, altered, and reproduced with far greater ease through the use of modern computer technologies.

There is a need to apply specialized methods for protecting digitized works, as well as to regulate activities related to providing access to such works through computer networks.

Digitization requires the proper registration of all works protected by copyright and related rights. It is therefore necessary to develop mechanisms that recognize and safeguard the rights and interests of copyright holders while simultaneously facilitating digitization, which, in turn promotes innovation and the development of creative and cultural industires.[181]

To protect digitized works, Semenova indicates that the development of token technologies, particularly NFTs, offers a new way to protect digitized works from alteration, aging, or restoration issues. By creating an NFT, the author secures an immutable record of authorship and ownership, as all transactions and licenses are permanently stored on the blockchain and can be tracked at any stage. This technology provides reliable information about the author and copyright holder, thereby addressing previous difficulties in proving rights to digital works.

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[177] Tanya Frances Aplin, *Copyright Law in the Digital Society: The Challenges of Multimedia* (Hart Publishing 2005) 12.
[178] ibid 2.
[179] ibid 2.
[180] Natalia Semenova, ‘Aktual'nye problemy otsifrovki ob’ektov avtorskih prav’ [Actual problems of digitization of copyright objects] (2022) 12(6A) Voprosy Rossiskogo i Mezhdunarodnogo Prava Uchrediteli: Analitika Rodis 167.
[181] ibid 167.

As a result, verifying authenticity and ownership has become easier, which is likely to encourage the creation of new copyrighted works.[182]

Given the above arguments, it would be plausible to introduce the liability of subjects who digitize the objects of copyright in the Civil Code and Copyright Law. For example, if such subjects digitalize the objects without authorization of right holders, they should be held responsible for copyright infringement. Thus, it is submitted that if digital works are classified as copyright-protected subject matter, the unauthorized transfer or distribution of such works should, in accordance with the current legislation, entail responsibility for digitizing party.

As mentioned above, digital technologies have contributed to the creation of non-traditional works, such as websites, hyperlinks, computer games, virtual reality products, and so on. The protection of these works may be respected: a) they will be protected as a copyrighted work; b) in some jurisdictions, the work may be defined as a video game. For example, the CJEU considers video games as a copyrighted work, although they can be considered as a complex object that includes not only software, but also graphic and sound elements.[183]

Back in 2008, the EU Commission published a Green Paper on Copyright in the Knowledge Economy. This was the first attempt to delineate the boundaries of digital content as a collective object of copyright. It usually contains all objects that are related to the consumption of digital content, such as music, movies, radio, television, games, and interactive content created by users, including blogs. The dramatic increase in financial revenues from digital content is due to the fact that a huge number of available cultural products are consumed through websites. As an example, you can specify music in iTunes, Netflix for movies, and Amazon for books.[184]

It is clear that advancements in science and technology, particularly digital technology, are reshaping the copyright system. Traditional notions of copyright subject matter remain focused on protecting works against piracy, yet the processes of creation, dissemination, and consumption of works have changed dramatically. While these technological developments offer significant advantages such as broader access, innovative forms of creativity, and direct communication between authors and audiences, they also present serious disadvantages, particularly in terms of widespread infringement and enforcement difficulties.

[182] ibid 168.
[183] Stokes, *Digital Copyright Law and Practice* (n 40) 200.
[184] Entin (n 135) 15.

1.4 Conclusions and findings of Chapter 1

From a contemporary perspective, copyright laws were established long before the rise of modern technologies. In light of rapid technological progress, it is necessary to reassess whether existing legal frameworks adequately protect authors and their works from infringement. This chapter has examined how the digital era has transformed access to and dissemination of information, highlighted the increasing importance of copyright protection given the ease of copying and sharing digital content, and assessed the impact of technology on copyright enforcement. The findings can be summarized as follows:

1. Copyright can be evaluated both objectively and subjectively: in the objective sense, copyright constitutes an intellectual property institution that regulates personal non-property and copyright and property rights arising from the results of creative activity, such as scientific, literary and artistic works, while in the subjective sense it represents a legal opportunity to exercise personal non-property and property rights arising from the creation and use of scientific, literary and artistic works;

2. With regard to works posted on the Internet, the use of the principle of extraterritoriality may be more appropriate and reasonable than the principle of territoriality in international copyright protection;

3. The emergence of new technologies has always been a reason to make changes legislation in the field of intellectual property, including copyright. Historical analysis demonstrates that from the advent of printing presses to the development of global networks, technological progress has led to the adoption of many conventions, agreements, international treaties and national legal acts;

4. It can be argued that the range of copyright subjects is broader in the digital environment than traditional copyright relationships, and there is no such dichotomy as “author-user”, since information intermediaries play a key role in this relationship, which, in turn, has created the opportunity for digitizing intellectual property objects and placing them on the Internet;

5. Modern digital technologies make it significantly easier to copy, modify, enhance, transform, and reproduce digitized works. Therefore, it is essential to apply specialized protective measures for such works and to establish rules governing the provision of access to them through computer networks. In this regard, it is proposed to supplement paragraph 1 of Article 972 of the Civil Code “Types of Copyright Objects” with subparagraph 13, “all types of digitized works”. This amendment would enable authors of such works to rely on the existing remedies provided by the Civil Code and the Copyright Law in cases of infringement.

2. THE DIGITAL CHALLENGES OF COPYRIGHT PROTECTION
2.1 Online copyright infringement

Online copyright infringement constitutes a systemic challenge to the effectiveness of contemporary copyright law. It is argued that the scale, speed and technological ease of digital environment have fundamentally changed the balance between public access to information and legitimate interests of right holders. Accordingly, online infringement is analysed not as an isolated legal violation, but as a structural phenomenon in the digital environment.

As mentioned above, digital technologies have significantly expanded access to knowledge, which plays a vital role in the development of society. By facilitating access to electronic resources for education, research, and entertainment, digital technologies and electronic networks create opportunities to advance public interests. Moreover, these innovations remove geographical barriers to accessing information by enabling remote search and allowing multiple users to access online documents at the same time.[185]

However, these innovations have created new challenges for copyright holders, especially with regard to unauthorized downloading and sharing of copyrighted works without proper authorization, licensing, or legal justification.[186]

Digital technologies have fundamentally transformed the nature of piracy. Today, copies of creative works can be produced almost instantly and without any degradation in quality. The Internet then facilitates the worldwide distribution of these perfect copies at minimal cost. Moreover, technological progress has altered how creative content is expressed, with many works now existing primarily in digital formats, even if they continue to have analogue counterparts.[187] For example, the 2018 report by the European Intellectual Property Office on intellectual property infringements found that the Internet plays a central role in enabling the spread of unauthorized content and counterfeit products online.[188] This shift to digitization has eroded the level of control that creators once had in the analog world, where intellectual property was comparatively easier to manage and protect. Once a work is uploaded online, treating it as fully protected property becomes highly difficult, if not impossible.

Furthermore, modern technologies have empowered ordinary users to convert analog content into digital form whether by transferring vinyl records to digital audio, capturing images through digital

[185] Erjona Bezatlliu, 'Digital copyrights: Addressing challenges in the internet age' (2024) 9(3) IJNRD < https://www.ijnrd.org/papers/IJNRD2403663.pdf > accessed 3 August 2025.
[186] ibid.
[187] Longan (n 36) 57.
[188] Zoi Krokida, *Internet Service Provider Liability for Copyright and Trade Mark Infringement Internet Service Provider Liability for Copyright and Trade Mark Infringement: Towards an EU Co-Regulatory Framework* (Hart Publishing 2022) 1.

photography, or using 3D scanning to replicate physical objects. These user-driven transformations have added another layer of complexity to copyright enforcement in the digital era.[189]

It could be argued that the law has been struggling to address copyright violations over the past two decades. From its very inception, copyright law was intended as a mechanism to combat piracy. Yet, the rise of the Internet has made infringement easier than ever, and the law often appears unable to cope with the scale of piracy in the creative industries.[190]

It should be emphasized that in cyberspace, all categories of IP rights and copyright in particular are significantly more vulnerable to infringement than in the traditional environment. Consequently, the issue of copyright violations represents one of the most serious challenges to effective protection mechanisms. Beyond enabling the creation of perfect digital copies of original works, modern technologies allow users to modify and adapt existing content, making it increasingly difficult to distinguish between original and altered versions. As a result, the internet and digital technologies have complicated authors' ability to control the distribution, use, and storage of their creative works.[191]

Copyright infringement can be classified as either direct or secondary. Direct infringement occurs when an individual is personally involved in an activity that violates copyright. Secondary liability, on the other hand, occurs when someone assists another person in committing the violation.

Infringement may occur even if a work is not copied in its entirety. The unauthorized use of a substantial part of a work can still constitute a violation. However, the term "substantial" lacks a fixed definition in copyright law. Courts assess this issue case by case, considering both the quantitative and qualitative value of the portion copied. Ultimately, only judicial interpretation determines whether a use amounts to substantial copying.

The first step in proving copyright infringement is to confirm ownership of the current copyright. The second step involves establishing evidence of copying. For a work to infringe exclusive copyrights, it must (1) be derived, directly or indirectly, from copyrighted material, and (2) have a significant similarity in expression to the original work.

[189] Longan (n 36) 57.
[190] ibid 58.
[191] Ansagan Aronov, 'Protecting Copyright in the Internet Age: the Kazakhstani perspective' (2024) 4(149) Bulletin of L.N. Gumilov Eurasian National University 74.

These requirements reflect the legal balance between protecting authors' exclusive rights and ensuring that mere ideas, concepts, or facts, which remain in the public domain cannot be monopolized.[192]

The CDPA distinguishes between two types of copyright infringement:

Primary infringement occurs when a person commits or authorizes acts restricted by copyright law without the permission of the copyright owner. Simply put, this means direct copyright infringement by copying, distributing, renting, performing, adapting, or otherwise making the work publicly available without permission.

On the other hand, a secondary violation involves an intermediary who facilitates the production of unauthorized copies. Although a person is not a direct infringer, they can still be held liable for a secondary infringement if they import, own, or provide the means to create copies of the work that infringe copyright. This reinforces a strong stance against all forms of violations. However, it is remarkable how little this principle has affected public perception. This study will explore the gap between consumer expectations and marketing approaches of creative industry organizations, as well as potential ways to bridge this gap.[193]

Digital piracy has a negative impact on creative sectors such as film, television, publishing, music and games. In addition, online piracy has economic consequences, as it threatens government revenues and creates financial risks for consumers.[194]

The widespread availability of information in the digital age has made it easier to use copyrighted works without proper permission, making piracy one of the most serious problems of the modern digital age. This problem not only undermines the financial rights of creators and performers, but also complicates compliance with copyright laws. As streaming services grow in popularity and content sharing expands, cyber piracy is becoming more advanced, involving vast networks of illegal websites that distribute copyrighted media such as music, movies, and more.[195]

Similarly, Kiskis argues that digital piracy is an ever-evolving phenomenon, adapting to advances in Internet technology, changing usage patterns, and changes in legislation. Today, copyright piracy is mostly digital in nature. Over the past two decades, increasing data transfer speeds, especially over wireless networks, have shifted piracy trends from P2P downloads, which involve downloading content for later

[192] David L Hitchcock and others, 'Current Status of Copyright Protection in the Digital Age and Related Topics' (2002) 8 Texas Wesleyan Law Review 550 <https://scholarship.law.tamu.edu/txwes-lr/vol8/iss3/9> accessed 4 August 2025.

[193] Copyright, Designs and Patents Act 1988 <https://www.legislation.gov.uk/ukpga/1988/48/contents> accessed 4 August 2025.

[194] Muhammad Zafar Iqbal and Muhammad Zubair Khan, 'Copyright Laws in Pakistan: Challenges in the Digital Age' (2024) 2 Dialogue Social Science Review (DSSR) 420.

[195] Sapna Tiwari, 'Intellectual Property Rights in the Age of Digital Content Distribution' (2024) 1(3) Sku Journal of Lex Vibrent https://www.skujlv.com/pdf/lalaks5.pdf accessed 4 August 2025.

use, to streaming, where users download and consume content simultaneously. Over the past decade, streaming piracy has significantly surpassed traditional P2P downloads. Recent estimates show that piracy in live TV and sports programs now exceeds piracy in movies and music combined by more than two times. The deployment of 4G and 5G networks, combined with the global popularity of entertainment and sports events, has spurred a growing demand for live broadcasts of these programs.[196]

The shift to online activities during the COVID-19 pandemic has led to the proliferation of high-quality streaming devices and increased choice of illegal content offerings. During this time, piracy in the streaming industry has particularly affected sports broadcasts. It is estimated that the annual damage caused by streaming piracy in 2021 in the United States alone was approximately $ 28.3 billion. While these figures are specific to the US, the estimated losses in the European Union are likely even higher due to Europe's overall higher piracy rate (45.72% compared to 13.48% in North America as of 2020) and its larger population - almost 500 million people compared to 330 million in the USA.[197]

For example, the Mobdro case study highlights the evolution of digital piracy, marked by a shift to live streaming and monetization through embedded services. Operating from at least 2018 to March 2021, Mobdro has become the leading pirate streaming platform, amassing over 100 million users. The app allowed you to stream copyrighted content, including TV shows, sports broadcasts, premium movies and music videos, to Android devices. It was highly rated for its extensive library of content, including live TV channels, sports broadcasts, the latest movies and TV shows, as well as its user-friendly interface. These features have made Mobdro a well-known pirate streaming platform, illustrating the direction of digital piracy trends and shedding light on real-world issues such as intermediary liability and contributory responsibility.[198]

Copyright piracy is the unauthorized and illegal copying or distribution of products protected by copyright, patents, and trademarks. But piracy should be properly understood as it concerns not only the reproduction of physical copies of copyrighted materials, but also extends to digital copies of such products, since they are widely available on the web, which can be shared using peer-to-peer technologies.

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[196] Mindaugas Kiškis, 'Addressing Evolving Digital Piracy Through Contributory Liability for Copyright Infringement: The Mobdro Case Study' (2023) 17 Masaryk University Journal of Law and Technology 219.

[197] ibid 232.

[198] Andy Maxwell, 'Mobdro Pirate Streaming: Police Arrest Suspect, Three Others Questioned' (*Torrentfreak*, 10 March 2021)<https://torrentfreak.com/mobdro-pirate-streaming-police-arrest-suspect-three-others-questioned-210310/> accessed 4 August 2025.

Thus, piracy is the illegal distribution, use and copying of copyrighted works, where the fair use doctrine does not apply to such actions, since they are committed for the purpose of making a profit. In addition, it is believed that the term “piracy” is often used synonymously with “copyright infringement”, but the terms are not exactly the same. It was argued that “all piracy is copyright infringement, but not all copyright infringement is piracy”.

Avomola-Enugiuga explains that piracy is when someone creates or reproduces an exact copy of a copyrighted work, whereas copyright infringement occurs when someone uses significant portions of books, music, or other creative materials to create copyrighted works. For example, if a person takes several lines of classical song lyrics and inserts them into a jazz song without the copyright holder's consent, this action is considered copyright infringement. However, if that person makes an exact copy of the entire song, such conduct would amount to piracy.[199]

When someone creates or reproduces an exact copy of copyrighted material, their actions may amount to piracy. Thus, the same copy of books, music, or clothing can be pirated. But this is not the case when someone takes the main part or fragments of a book without the consent of the copyright holder to write another book on a different topic, and this can be assessed as copyright infringement.

As an example, there was a copyright infringement case involving the author of the Harry Potter series, J. K. Rowling, where the defendant wanted to publish an encyclopedia containing several words and spellings from the Harry Potter book. The author claimed that by doing so, the defendant would have harmed her, and the court found that such actions could harm the author. Consequently, taking a substantial part in someone's work is equated to copyright infringement rather than piracy.[200]

In any event, piracy or copyright infringement has created problems for copyright since the very beginning of copyright itself, since the main purpose was to control copyright infringement, the Statute of Anne was adopted as the first legal act. It is fair to say that copyright infringement can harm legitimate businesses or have a detrimental effect on innovation and economic progress. Thus, it can be seen that copyright infringement affects not only users and copyright holders, but also has a negative impact on the economy of any state.[201]

As noted in previous chapter, a digitization process has brought about a negative effect on right holders and copyright owners, when digital libraries and archives scan or photocopy some books and

[199] Omotayo F Awomolo-Enujiugha, ‘Piracy and Its Burden on Copyright in Nigeria: Challenges and Solutions’ (2020) 23 Journal of World Intellectual Property 413.
[200] ibid 415.
[201] ibid 415.

published materials without permission of right holders. For instance, a publishing house “Eksmo” brought a lawsuit against three popular online libraries such as Flibusta.net, Litmir.net and Rutracker.org with requiring to protect copyright on books. All these lawsuits have been files when Russia made amendments on anti-piracy law in 2015. As a result, Roskomnadzor blocked one of the biggest online libraries Flibusta.net for copyright infringement.[202]

Similarly, the Moscow City Court ordered blocking of lib.rus.es for the publication of pirated content. It has been reported that the books of authors such as Sergei Tarmashev, Daniil Koretsky and Elena Mikhalkova were illegally published on the website. The online library lib.rus.es was founded in 2007 and had 9,4 million users monthly.[203]

De Corte and Van Kenhove provide a detailed explanation of modern digital piracy, highlighting key points relevant to this thesis. The P2P site referenced throughout this work is an online platform or network where users share files, often illegally. Notable examples include The Pirate Bay and BitTorrent, which operate by sharing torrents between users. A torrent is a permanently transmitted file divided into segments, where each user stores only a part. This decentralized structure complicates enforcement efforts and exemplifies the technological sophistication of contemporary piracy.[204]

In the modern era, there are many applications and websites offering video services, a prime example of which is YouTube. The YouTube app includes a download feature, but this feature does not save videos directly to the user’s device. Instead, it allows users to watch videos offline without using their internet data. Since the video is not stored on the device, it cannot be transferred to another device.

Due to the rapid development of technology, numerous websites now offer free video download services from YouTube. Known as copy sites or converters, these platforms allow users to download videos or convert them to MP3 (audio) files, which can then be saved on their devices. Unlike YouTube's built-in download feature, which allows you to view files only offline in the app, files uploaded through copy sites are stored on the device and can be transferred to other devices. The

[202] IT-Jurist, ‘Roskomnadzor zablokiroval odnu iz krupneishih onlain-bibliotek “Flibusta”’ [Roskomnadzor has blocked one of the largest online libraries, Flibust] https://it-jurist.ru/news/onlayn-biblioteka-flibusta-zablokirovana-za-narushenie-avtorskih-prav/ accessed 20 January 2026.
[203] PRG, ‘Roskomnadzor navsegda zablokiruet dostup k biblioteke “Librusek”’ [Roskomnadzor will permanently block access to the Librusek library] https://prg.kz/document/?doc_id=32700967&pos=4;89 accessed 20 January 2026.
[204] Charlotte Emily De Corte and Patrick Van Kenhove, ‘One Sail Fits All? A Psychographic Segmentation of Digital Pirates’ (2017) 143 Journal of Business Ethics 441 <https://ideas.repec.org/a/kap/jbuset/v143y2017i3d10.1007_s10551-015-2789-8.html> accessed 4 August 2025.

existence of these copy sites negatively affects song creators and other interested parties.[205]

Stream-ripping allows users to permanently save streaming video to their devices for offline use without proper licensing or consent from the copyright holders. This practice is often considered a form of copyright infringement, as it circumvents the protections and licensing agreements that govern content distribution and access. In the field of digital media, “copying” refers to the process of extracting audio or video data from sources such as CDs, DVDs, streaming platforms, or other digital media, converting it to a file format that can be played back, managed, and stored on computers or other devices.[206]

To sum up, digital piracy and online copyright infringement remain serious challenges for copyright owners and right holders. The Internet has enabled the large-scale reproduction and distribution of copyrighted works at unprecedented speed and quality. The dynamic nature of the information society means that technological progress continually gives rise to new tools of infringement, such as P2P file-sharing, illegal streaming, and stream-ripping services.

These developments highlight the pressing need for copyright law to adapt to evolving technologies while preserving a fair balance between protecting creators and ensuring access to knowledge and culture.

2.2 Napster to Pirate Bay: file sharing technology

Initially, copyright holders sought to protect their interests by taking legal actions against those who have committed copyright infringement, such as Napster. This strategy seemed more effective than pursuing individual violators, as it would be time-consuming and costly to pursue them. Given the huge number of people involved in online piracy, it would be impractical and almost impossible to hold all violators accountable.

Moreover, many of the perpetrators were young people or college students who did not have the financial means to recover significant damages. Legal actions against platforms that promote copyright infringement were based on the principles of secondary liability and contributory and vicarious liability. However, an analysis of court decisions concerning the recording industry and file-sharing networks highlights the limitations of this approach.[207]

File sharing technology emerged at the end of the last century and

[205] Benhard Tanuatmaja and others, ‘Copyright Infringement Using in Stream Ripping’ (2019) Proceedings of the 4th international conference on contemporary social and political affairs 243.
[206] Zafar Iqbal and Zubair Khan (n 194) 425.
[207] Lori A Morea, ‘The Future of Music in a Digital Age: The Ongoing Conflict between Copyright Law and Peer-to-Peer Technology’ (2005) 28 Campbell Law Review 195.

quickly it has become a worldwide phenomenon. File sharing or P2P is a technology that enables direct communication and sharing between computers or other mobile devices (peers) without a central server storing digital files. It should be noted that P2P used to be one of the well-known innovations in computer networking.[208]

Research shows that file sharing can serve as an effective means of disseminating information, and society can benefit more from adopting this technology rather than resisting its development. According to Professor Neil Netanel, file sharing goes beyond just having free access to music and movies. It provides a platform for finding rare or unavailable works, exploring new genres, creating personalized compilations, and sharing remixes, sequels, and adaptations of popular content. By participating in these activities, people who were once passive consumers take on a more active and creative role in cultural expression, as well as share their interests and creativity with others.[209]

It has been argued that the most significant peer-to-peer technologies function as highly efficient caching systems. This means that different types of files and information could be transferred more easily, reliably, and at a much lower cost. In addition, peer-to-peer networks offer significant opportunities for stimulating innovation and creativity.[210]

Since certain problems, such as digital copyright infringement, have arisen due to P2P systems, it is extremely important to learn file sharing technology from the very beginning. More specifically, references will be made to a number of important cases, such as the Napster, the Grokster, and the Pirate Bay.[211]

One of the earliest cases that examined file sharing technologies was UMG Recording V. MP3.com. According to the case, with the advent of the Internet, MP3 created a service called My.MP3.com which helped consumers copy songs from CDs that they had already bought illegally, and then upload them to an account that they managed MP3.com. This system allowed users to listen to their music from different locations.

To gain access to the MP3 service, the subscribers were required to verify ownership of a legal CD, either by placing it in the CD driver for his PC, allowing MP3.com check the legality of the CDs, or they could purchase the CDs from one of the defendant's retailers.

Record companies, led by UMG Recordings, sued MP3.com, arguing that its process of digitizing CDs and distributing digital copies amounted to copyright infringement. MP3.com defended its service by claiming: subscribers had legitimately purchased the CDs, and the

[208] Stokes, *Digital Copyright Law and Practice* (n 40) 186.
[209] Morea (n 207) 231.
[210] ibid 231.
[211] Stokes, *Digital Copyright Law and Practice* (n 40) 185.

service merely facilitated space-shifting, i.e., using purchased music in different locations, which should be permissible under the doctrine of fair use in U.S. copyright law.[212]

In response, UMG Recording and other record companies sued the defendant, claiming that both their digitization and distribution processes were copyright infringement. In its defense, MP3.com claimed that the CD owners made copies of copyrighted songs that they bought legally, and thus they can expect to be protected from fair use under the American Copyright Act. The defendant further claimed that his subscribers were simply engaged in moving space – using the music they bought in different places.

Rejecting the defendant's arguments, the court made it clear that the process of converting the CD to MP3 and providing access to these files to users violated the plaintiffs' copyright in these works. The court ruled that what the defendant did was commercial, since by his actions he simply copied all the plaintiffs' songs and negatively affected the plaintiff's requirement to license their works. Consequently, the court found that the fair use doctrine did not apply to MP3.com's service.[213]

Some are inclined to assume that Napster was one of the first copyright infringement cases committed through P2P file sharing technologies. According to the background of the case, Napster was found by an American teenager who actually created a platform for users to download some compressed music files, such as MP3s, from other users' libraries. A specific feature of Napster was that it relied on a central server that made it easier to index connected users and music files on their network; in fact, it created a searchable list of music files available on the platform. Its simplicity and ease of use made Napster popular with consumers who wanted to find and download music files.[214]

However, Napster's success exposed fundamental weaknesses in its structure and legal position. Because the platform operated a centralized system, it had direct knowledge of the files being shared by users yet failed to take measures to prevent infringement. As a result, Napster was sued by A&M Records and other recording companies for facilitating large-scale copyright infringement. The U.S. Department of Justice and the Copyright Office also raised concerns regarding the illegal copying and distribution of music files through the system.

Although Napster tried to convince the court by presenting three defense arguments, such as sampling, moving in space, and using with permission, the court was not impressed, and therefore all of these arguments were excluded. The court considered whether Napster committed collateral and indirect violations. To recognize a concomitant violation, you must pass a two-part verification process: 1) the

[212] UMG Recordings, Inc. v. MP3.com, Inc., 92 F. Supp. 2d 349 (S.D.N.Y. 2000).
[213] ibid.
[214] Sony Corp of America v Universal City Studios Inc, 464 US 417, 104 S Ct 774 (1984).

respondent must know or have reason to know of a direct infringement and 2) substantially contribute to the infringement of copyright. An indirect violation is established by applying a three-part test: 1) there must be a direct violation; 2) the indirect violator is able to control the actions of the main violator; 3) benefit financially from the violation. Napster failed all of the above tests and was held accountable for violations.[215] Ultimately, these legal issues led to the liquidation of the software development company, and its service was no longer available.

The Napster case was the first to interpret specific provisions of the DMCA, which took effect in October 1998. Its significance extends to the international level, as the European Union Copyright Directive includes many similar provisions. Consequently, the European legal community has been closely following the Napster lawsuit. Moreover, the case has had an impact on other countries by offering proposed solutions to address the issue of digital piracy and intermediary responsibility.

The collapse of Napster led to the spread of P2P technology, starting the “P2P revolution”. In this network model, users' computers communicate directly with each other, rather than relying on a central server. This allows a group of users, or “peers”, to share resources such as computing power and storage space over the network. P2P technology is poised to have a profound impact not only on the music industry, but also on various other business sectors, ultimately reshaping the structure of the Internet.[216]

Just one month before Napster was forced to shut down, another software client, Limewire, was launched. Like Napster, Limewire allowed users to share music files, but its legal trajectory followed the same path: it was eventually sued by the recording industry and ordered to pay over $100 million in damages and permanently shut down.[217]

For the music industry, the closure of Napster and similar platforms seemed like a legal victory, but in reality, it was a Pyrrhic victory. New and more sophisticated services soon emerged, offering users the ability to share not only music but virtually any type of digital file. Crucially, to escape liability for contributory and vicarious infringement, this new generation of networks abandoned the centralized model and instead adopted decentralized architectures that reduced control and knowledge of infringing activities.

It should be noted that the development of digital technologies has led to the development of more advanced systems. The first is a decentralized P2P network that works just like the Internet. According to this system, there is no central server; instead, you can log in to the network and establish a connection to the node closest to the user in the

[215] Murray (n 43) 302.
[216] Atul Jaybhaye and Barkha Dodai, ‘Copyright Piracy in the Digital Age with Special Reference to Napster’s Case’ (2021) 4 (5) International Journal of Law Management & Humanities 2147.
[217] Longan (n 36) 28.

network. Since this node already has a current connection, any request can be forwarded over the network without a central server. A decentralized system has both advantages and disadvantages. Its primary advantage lies in the absence of a central control point, making it more resistant to shutdown or disruption. However, its disadvantages include slower search processes and increased network traffic when responding to request.

The second system is a semi-structured system that relies on the use of “supernodes”. It is argued that the system has the advantages of both centralized and decentralized networks. One of the features of the system is that it decentralizes server functions, as well as file transfer and search functions.

Many P2P providers, such as Kazaa, eMule, eDonkey, and Grokster, offered either decentralized or semi-structured P2P services. The collapse of Napster affected some file-sharing companies, such as Gnutella and eDonkey, which were created in 2000, although their platform is based on a decentralized system. The main feature of the decentralized system is that peers in the network files directly without reliance on a centralized server.[218]

The first decentralized P2P network was the Gnutella protocol, which was released in 2000. As soon as the user starts the software for the first time, it should connect to another computer on the Internet to show its connection and, if necessary, get detailed information about other users, such as when users first connected to an online database. In the Gnutella protocol, all peers operate on an equal basis, without reliance on a centralized server.[219]

Similar to Gnutella, eDonkey is based on a decentralized system, which means that files are not stored on any central server, instead peers can directly exchange data with each other. However, eDonkey differed from the first one in that the servers used directories or addresses of shared files for storage, rather than storing specific files. In this context, users can search for the addresses of certain files, and thus users can directly download those files they were looking for. In short, eDonkey's was particular efficient for sharing large files and enabling long-term file availability within the network.[220]

In the US, they believed they would be protected from liability by the Supreme Court's 1984 decision in Sony v. Universal City Studios. [221]

Metro-Goldwyn-Mayer Studios Inc. v. Grokster is another frequently cited example involving peer-to-peer file sharing. The respondents included Grokster and Streamcast, companies that distributed free software that allowed users to share files over peer-to-

[218] Murray (n 43) 304.

[219] Hui (n 165) 74.

[220] ibid 76.

[221] Sony Corp of America v Universal City Studios Inc, 464 US 417, 104 S Ct 774 (1984).

peer networks. A substantial number of their users used the software to share copyrighted content, such as music and movies, without obtaining permission from the copyright holders. The plaintiffs, led by MGM, which included some of the largest entertainment companies of the time, filed a lawsuit against the defendants, seeking additional liability for copyright infringement.

The court found evidence that Grokster actively encouraged users to commit copyright infringement and marketed its software as an alternative to Napster, which had previously faced lawsuits for allowing copyright violations. The court ruled that Grokster knew about the copyright infringement and intended to promote it by distributing its software. Despite Grokster's claim that the software was used lawfully, the Court concluded that the company was liable under the inducement doctrine for the infringing activities of its users.[222]

In the Grokster case, questions of contributory and vicarious infringement were raised by a group of plaintiffs. Interestingly, both the district court and the Court of Appeals rejected the plaintiffs' arguments, pointing out that unlike Napster, Grokster did not have a central server that could index files and facilitate their distribution. In fact, Grokster has created software that allows a user's computer to search for files from other users' computers.[223]

The copyright infringement argument was based on the fact that Grokster knew or should have known about P2P copyright infringement and made a significant contribution to it. Relying on Sony's precedent, the court argued that the distribution of software that facilitates file transfer is not enough to bring to justice. As for vicarous liability, the court took a similar view, arguing that Grokster did not exercise any control or supervision over users, and that is why it is not responsible for copyright infringement.

However, the Supreme Court overturned the appeals court's decision, citing arguments that the court had misused Sony's decision, explaining that significant use that does not infringe copyright does mean that it exempts the creator from liability for copyright infringement. The Court has made it clear that the availability of sufficient non-infringing material may not be sufficient if there is a direct intention to provoke copyright infringement. The court argued that Grokster's actions could be assessed as inducement that could lead to copyright infringement. Moreover, the Court added that the Grokster platform aims to promote illegal file sharing among its users. According to the court, Grokster did nothing to use filtering tools to minimize copyright infringement.[224]

[222] MGM Studios, Inc. v. Grokster, Ltd., 545 U.S. 913 (2005).
[223] ibid.
[224] Steve Holmes, 'Comment on the Recent Grokster Judgment by the US Supreme Court' (2005) 1(1) Journal of Intellectual Property Law & Practice 23.

In BMG Music v. Gonzales, it was established that a user of the peer-to-peer Kazaa network uploaded 1,370 copyrighted songs without authorization. The defender argued that her actions represented fair use, claiming that she had merely sampled the songs to decide in order to decide which ones to purchase.

The Seventh District Court considered whether downloading 30 songs that the user admitted that she did not buy after sampling is a violation of copyright. The court concluded that the defendant violated copyright by saving the downloaded songs on her computer instead of deleting them after sampling.[225]

The court ruled that unauthorized downloading and saving of copyrighted works by the defendant does not qualify as fair use. At first, the court determined that the defendant's actions were not of a non-commercial nature, since she downloaded and stored entire copyrighted songs, which are often sold separately or as part of albums. The court also highlighted the negative impact on the potential market, saying that free music downloads from the Internet are a direct substitute for purchased music. The court rejected the defendant's "attempt before purchase" claim, noting that peer-to-peer networks are detrimental to traditional market-based methods of presenting music to consumers, such as radio. In addition, the court stressed the existence of numerous permitted ways for consumers to sample music before purchasing and concluded that the defendant's actions did not meet the criteria for fair use.[226]

Arguably, the now-outdated P2P technologies that were used in US lawsuits have been replaced by the more efficient BitTorrent technology. Similar to Gnutella and FastTrack, BitTorrent also uses shared file transfer without relying on a central server to allow clients to use content on the network. However, BitTorrent has its own technical characteristics. To take advantage of the protocol, you need a BitTorrent client. These BitTorrent clients are well known and include "Popcorn Time" and "Bitlord". They have the same relationship to the BitTorrent protocol as web browsers such as Internet Explorer and Chrome have to the HTTP protocol. Once installed, a BitTorrent client allows users to download BitTorrent files. To receive content via BitTorrent, a user must first receive a small file known as a "torrent file".

What distinguishes BitTorrent unique is its file sharing method. Since previous P2P technologies allowed files to be transferred between two users, in BitTorrent enables simultaneous distribution by multiple

[225] Giuseppe Mazziotti, *EU Digital Copyright Law and the End-User* (Springer Berlin Heidelberg 2008) 139.

[226] Studicata, 'BMG Music v. Gonzalez' United States Court of Appeals, Seventh Circuit 430 F.3d 888 (7th Cir. 2005) <https://studicata.com/case-briefs/case/bmg-music-v-gonzalez/> accessed 5 August 2025.

users. Large files are divided into smaller chunks and allowing different users to transfer each chunk independently.

They are usually made available through BitTorrent index sites, that specialize in tracking and listing available torrent files. The largest and historically well-known index was the Swedish platform TPB, which, due to its prominence and popularity, faced repeated legal actions from copyright holders and law enforcement authorities. This open-source P2P protocol is supported by a large number of clients and is initially used to distribute large amounts of data. TPB operated as a P2P service in which the service provider does not copy, store, or make content available itself, but relies on its users to do so.[227]

In 2006, the Swedish authorities conducted a raid against the website The Pirate Bay, and three members of The Pirate Bay were questioned on suspicion of online copyright infringement. Following the raid, the site was taken offline for three days, and the Motion Picture Association of America (MPAA) claimed victory over copyright infringement and declared that there are no safe havens for digital pirates. However, this was a premature statement. The site still worked and continued to exist. The investigation continued throughout 2006 and 2007, and eventually in 2008, the operators of the Pirate Bay were charged with inciting other people to infringe copyright. Two specific charges were brought against them:

1) complicity in the creation of copyrighted works;

2) complicity in the distribution of copyrighted works.

The first meant that they made copies available through the Pirate Bay site, and the second meant that they created and indexed torrent files through the site.[228]

In their defense, the defendants argued that the functions of the Pirate Bay were similar to those of other indexing and search websites, such as Google, Yahoo! or Microsoft Live search. They further argued that torrents could reference both authorized and unauthorized works, and that the platform did not verify or control the legality of indexed material.

However, law enforcement agencies had their own point of view on this matter, and they responded that, unlike Google, The Pirate Bay actively uses its technology to infringe copyright and directly benefits from this action. The prosecutor said that he is asking the court to rule not on the legality of BitTorrent, but rather on what the defendants did with their technology. It was alleged that The Pirate Bay profited between 5 million and 10 million Swedish kronor (SEK) (approximately £400,000-800,000) from illegal file-sharing activities.

[227] Murray (n 43) 309.
[228] ibid 309.

In advancing its arguments, the prosecutor relied on the same principles that led to the US Supreme Court ruling that Grokster/StreamCast actively promoted copyright infringement.[229]

On April 17, 2009, the Stockholm District Court announced its decision, according to which all four operators were found guilty of complicity in the distribution of copyrighted works. Each of them was sentenced to one year in prison and collectively found liable for damages totaling SEK 30 million. Although the defendants immediately appealed, the Court of Appeal did not overturn the district court's decision, but amended the validity period of the decision. Such changes meant that their prison sentences were reduced, although the fine was increased to 46 million Swedish kronor.[230]

The decisions of the European Court of Justice emphasized three points:

1)Making works accessible to the public.

The first key point is that pirate websites like The Pirate Bay engage in acts of “communication to the public”, which makes them liable for copyright infringement. The CJEU has ruled that even if users upload copyrighted content to the platform, platform operators can still be held liable, as they play an important and active role in ensuring that these works are accessible to the public. Thus, liability may arise where operators intervene deliberately to give access to protected contend;

2)No Safe Harbor Protection.

The second key point is that The Pirate Bay's active involvement in organizing and promoting access to infringing content excludes it form relying on safe harbour protections typically available to neutral hosting providers under EU law. This makes it different from platforms that focus on legal content and work in good faith with copyright holders to combat illegal content. While this may seem obvious to casual observers, who can quickly recognize The Pirate Bay's involvement in distributing a large amount of pirated content, this legal outcome has played an important role in clarifying EU legislation. This underscores the absurdity of the political debate, when some opponents of Internet intellectual property rights still question the purpose of Pirate Bay and whether copyright holders should have clear remedies to address such a systemic violation;

3) Profit-Driven Operations.

The third key point is that The Pirate Bay's activities were undoubtedly aimed at making a profit. The Swedish prosecutor's office said that as of 2008, the platform generated USD 3 million in annual advertising revenue, which is probably much higher today. A 2013 study found that the top 30 pirate websites earned an average of $ 4.4 million a year from advertising, while high - traffic torrent and peer-to-peer platforms generated USD 6 million a year. Moreover, in the United States

[229] ibid 310.
[230] ibid 311.

alone, the market for pirated subscription Internet protocol TV services comparable to platforms like Netflix is estimated to be an industry worth USD 1 billion. These figures demonstrate that large scale piracy frequently operates on a commercial basis rather than as purely.[231]

However, some commentators have criticized the legal actions taken against The Pirate Bay, as they believe that a simple fine and imprisonment of the creators of The Pirate Bay was not enough to stop the site. Anticipating that the local authorities would take away their domain address, they simply moved from one domain to another. It was reported that The Pirate Bay is hosted by some companies in two countries, and even if these companies are forced to stop hosting the Pirate Bay, the site operators can switch to another hosting service within a short time. Taking these arguments into account, it would be fair to say that The Pirate Bay seems unstoppable.[232]

The latest case is related to a recent decision of the District Court of California. On May 5, 2008, the court ruled that Valence Media LLC, the operator of TorrentSpy, was liable for copyright infringement, and ordered them to pay damages in excess of USD 110 million.

Columbia Pictures has led a coalition of film studios, each of which holds copyright or exclusive rights to reproduce and distribute numerous films and TV programs, in a lawsuit against the operators. torrentspy.com for alleged copyright infringement. The studios claimed that the TorrentSpy website allows Internet users to find, download, view, store and distribute unauthorized copies of copyrighted movies and TV shows.

During the trial, the studios argued that TorrentSpy's moderators and senior management intentionally obstructed efforts to determine the extent of copyright infringement that the site contributed to. They argued that such conduct amounted to “theft”, the destruction of evidence after being notified that it might be relevant to ongoing legal proceedings.

The court concluded that the studios were harmed by the deliberate misrepresentation of TorrentSpy evidence, which was directly related to the merits of the case, since the destroyed evidence was central to the studio’s claims of material and subsidiary liability. The court described the defendants’ behavior as “violent” and found that they made large-scale systematic efforts to destroy evidence, giving false statements under oath to cover up their actions. On May 5, 2008, the court ordered TorrentSpy operators to pay USD 110 million in damages to film studios.[233]

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[231] Nigel Cory, ‘A Decade After SOPA/PIPA, It’s Time to Revisit Website Blocking’(*ITIF,* 26 January 2022) https://itif.org/publications/2022/01/26/decade-after-sopa-pipa-time-to-revisit-website-blocking/ accessed 5 August 2025.

[232] Murray (n 43) 312.

[233] Sean Morris, ‘Pirates of the Internet, At Intellectual Property’s End With Torrents and Challenges for Choice of Law’ (2009) 17 International Journal of Law and Information Technology 282.

However, it should be noted that despite the victory of copyright holders in cases such as Napster, Grokster and Pirate Bay, the popularity of P2P file sharing with popular torrent files remains high. Even if Swedish prosecutors managed to permanently close The Pirate Bay, other torrent indexes would quickly fill the void.[234]

The closure of The Pirate Bay made it clear that simply fining and even jailing the founders of Pirate Bay will not lead to the site's closure. It appeared that The Pirate Bay was impossible to kill, because the site's supporters were quick to reflect it in a number of locations. Reports indicate that the physical server that hosted The Pirate Bay moved from Sweden, and then moved its work to the cloud. At present, it is reportedly hosted by cloud hosting companies in two countries, where they run multiple instances of virtual machines to ensure continuity of service.

If hosting providers in those two countries are forced to stop hosting The Pirate Bay, operators who are remote from the site can switch it to another hosting company within a few minutes. Consequently, some states have taken steps to block access to The Pirate Bay and other websites.[235]

However, it might be observed that the torrent distribution trend today seems to be declining due to the rise of cheap streaming services like Netflix and Hulu. The popularity of torrents peaked in 2012 and has continued to decline ever since, according to Google Trends. Between 2010 and 2013, torrent usage reached its peak, with platforms such as The Pirate Bay, KickassTorrents, and ExtraTorrents attracting millions of users to share files and download them daily. This surge coincided with the peak popularity of such TV shows as Breaking Bad, Game of Thrones and The Walking Dead, which significantly increased the activity of torrents during this time.[236]

Although overall torrent usage has decreased, some sites continue to attract significant traffic. According to TorrentFreak, the leading torrent sites as of 2023 are:

-YTS: primarily focused on high-quality movie torrents and offers a user-friendly interface;

-1337x: recognized for its extensive torrent library and intuitive design;

-NYAA: a leading torrent platform specializing in anime content;

-RARBG: founded in 2008, and known for distributing high-quality video releases across multiple domains;

[234] Murray (n 43) 312.
[235] ibid 312.
[236] Chad Rasnake, 'Torrent Usage Trends & Statistics: A Year-By-Year Analysis' (*PC Matic* 31 March 2023) <https://www.pcmatic.com/blog/torrent-usage-trends-statistics-a-year-by-year-analysis/?srsltid=AfmBOoobGK3UbR6_Y1UQO85i7Eizvd0DV3XbmazRc-6vuMn5d2FmgIDZ> accessed 5 August 2025.

-The Pirate Bay: operating since 2003 and remaining one of the most well-known torrent indexes.[237]

Although the overall share of BitTorrent traffic declined noticeably in 2021, this does not necessarily indicate a reduction in torrenting activity. Rather, it reflects a shift in user behavior, with growing share of global internet traffic directed toward mainstream platforms such as YouTube(14,61%), Netflix (9,39%), Facebook (7,39%), Facebook Video(4,20%), and TikTok (4,00%).This trend stems from the broader expansion of internet access worldwide and the rapid development of social media and video-sharing platforms, which have become primary sources of entertainment for many users. Consequently, even though BitTorrent represents only about 3% of global consumer internet traffic today, its relevance remains vital from a legal perspective, particularly in relation to the use of peer-to-peer networks for the unauthorized downloading and distribution of copyrighted works.[238]

In addition, some commentators argue that winning the war against illegal file sharing of copyrighted materials cannot change the outcome, because users are always looking for and finding different methods or ways to consume digital content for free thanks to new technologies. Thus, even if copyright holders win the current war against P2P file sharing, they will certainly face more modern methods of using copyrighted works.[239]

Taking into account modern digital technologies, copyright infringement might be classified into four categories:

Illegal downloading: this is an illegal action that occurs when a person directly uploads and provides digital content to their device without the permission of the copyright owner.

Torrent-based downloading: this is a P2P download process that does not download data directly from the server, but instead provides a content file from another torrent user that has the same content.

Unauthorized *live streaming:* this illegal action occurs when a person provides the user with digital content through an online broadcast, and this is not allowed by the copyright holder;

Stream-ripping: this occurs when audio and video data are illegally converted to downloadable formats.[240]

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[237] ibid.

[238] 'The Global Internet Phenomena Report, Growing app complexity: Paving the way for digital lifestyles and immersive experiences' (*Sandvine,*2022) https://www.sandvine.com/hubfs/Sandvine_Redesign_2019/Downloads/2022/Phenomena%20Reports/GIPR%202022/Sandvine%20GIPR%20January%202022.pdf?hsCtaTracking=18fff708-438e-4e16-809d34c3c89f4957%7C067d9d28-ef90-4645-9d46-c70d10279247 accessed 17 July 2022.

[239] Eldar Haber, 'Copyrights in the Stream: The Battle on Webcasting' (2012) 28 Santa Clara High Technology Law Journal 770.

[240] Seul-Ki Choi and Jin Kwak, 'Feature Analysis and Detection Techniques for Piracy Sites' (2020) 14 (5) KSII Transactions on Internet & Information Systems https://koreascience.kr/article/JAKO202019962560309.pdf accessed 5 August 2025.

Some scholars emphasize that streaming technology has led to the creation of a new industry that has enriched people's lives in their spare time. Streaming websites like Netflix, iTunes, and others allow people to watch movies and play sports without leaving their location. The widespread popularity of these services demonstrates a structural shift in consumer behavior toward subscription-based digital access.

However, it may also be argued that such digital technology has caused an increase in the number of illegal streaming services. From a consumer perspective, the availability of free access through BitTorrent or illegal streaming platforms may appear economically attractive when compared to paid downloads or subscriptions. Thus, the development of streaming platforms not only changed the methods of sales in the film and music market, but also posed a huge challenge to the entertainment business model.[241]

It should be that some violators try to find ways or tools to bypass live streaming by performing the following actions:

- stream- ripping, whereby users extract streaming data (for example, form YouTube) and convert it into downloadable audio or video files;
- converting proprietary streaming formats, such as "RealMedia" into widely accessible formats such as MP3;
- redirecting streaming data intended for authorized subscribers in order to provide unauthorized access to third parties.

Others tend to use or reinstall some special software, such as Kodi media players, to prevent illegal access to streaming content. In turn, this has created huge problems for copyright holders, because the majority of UK users seem to consider it legal to access illegal streams using such software. In September 2017, the Anti-Copyright Theft Federation published a report indicating that millions of such devices have been sold in the UK over the past couple of years.[242]

Moreover, although streaming technology is often used as a technical tool used to prevent digital piracy, any actions to circumvent this technology can also raise questions of liability under the so-called DMCA anti-circumvention rules and the Information Society Directive.

According to the U.S. case RealNetworks Inc v. Streambox Inc, the plaintiff RealNetworks filed a lawsuit against the defendant for creating products that allow users to capture and record streaming media and convert it to MP3 files. It was alleged that the defendant violated DMCA rules by distributing and manufacturing a video recorder and a product called Ripper. The VCR allowed users to access and download the applicant's files that are streamed over the network, while Ripper allowed them to convert RealMedia files to MP3 formats.

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[241] Mengna Liang, 'Copyright Issues Related to Reproduction Rights Arising from Streaming' (2020) 23 The Journal of World Intellectual Property 798.

[242] Stokes, *Digital Copyright Law and Practice* (n 40) 198.

The court issued an injunction against the sale of the VCR, but reversed its order and allowed sales of the Streambox Ripper product.

In addition, the CJEU ruled that the sale of a multimedia player with pre-installed software to websites where illegal streaming data is available may violate the right to public communication.[243]

You can see that while copyright holders have been successful in projects like Napster, Grokster, and Pirate Bay, the popularity of P2P file sharing is still high thanks to the torrent protocol. Even if Swedish law enforcement manages to permanently shut down The Pirate Bay, other torrent sites will appear in different locations. It is fair to say that in the world of decentralized BitTorrent, the days are over when we closed down several P2P site operators and controlled the trade of illegal copyrighted works. Therefore, new approaches have been developed to stop the use and distribution of illegal copyrighted works.

Arguably, after defeating Napster, the Recording Industry Association of America (RIAA) filed lawsuits against more than 35,000 people. Although they announced in late 2008 that they would stop large-scale lawsuits, they retained the right to sue specific offenders who are considered the most egregious. Meanwhile, the focus has shifted to targeting ISPs, pressuring them to take action against violators by revoking their Internet access - a measure that the European Union has criticized as a potential violation of human rights.[244]

Accordingly, the next section of this thesis will examine the role of ISPs in copyright enforcement, continuing the analysis of how enforcement mechanisms have adapted in the digital age.

2.3 Internet Service Providers are the gatekeepers of the web

Internet intermediaries play a pivotal role in the distribution of copyrighted works online, occupying a complex position between rights holders and the public. The WIPO has described them as the “main challenge for copyright in the digital space”. The diversity of the online ecosystem has given rise to multiple methods of distributing content, both lawful and unlawful.

According to the OECD, Internet intermediaries are organizations that provide access, host, transmit, and index products and services originating from users on the Internet. This definition seems too general and may include intermediaries with different purposes, commercial or non-commercial, legal or illegal, private or public.[245]

[243] ibid 200.
[244] ‘The 14 Most Ridiculous Lawsuits Filed by the RIAA and the MPAA (*Brainz*) <https://www.brainz.org/14-most-ridiculous-lawsuits-filed-riaa-and-mpaa/> accessed 5 August 2025.
[245] Bethany Klein and others (n 31) 70.

In addition to copyright issues, intermediaries play a crucial role in shaping our online human rights, including freedom of expression, access to information and knowledge, and cybersecurity and privacy.[246]

According to the DMCA, there are two ways to define Internet intermediaries: first, they are organizations that offer transmission, route, or provide connections for the digital world between users, and they do not modify the transmitted materials when they are sent or received; the second definition is too general, claiming that they are an online service provider or operator objects.[247]

It was argued that not all content transmitted or posted by intermediaries is copyrighted material. In addition to copyrighted content, their service may also be related to human rights issues, such as freedom of speech, privacy, and others.

It is noteworthy that intermediaries play a central role in what we do online. As Kohl observes, “our actions and communications are often mediated in the offline world and always in the online world by third parties”. Because they provide the means to legally and illegally transmit copyrighted material, they are vital contributors to copyright discussions. Internet intermediaries are important for copyright owners not only in finding a market for their products, but also in combating Internet piracy, which is conducted by intermediaries.[248]

According to Kohl, there are different types of Internet intermediaries. First, there are Internet service providers that provide us with Internet. These intermediaries seem important because they own and control the networks through which we access the Internet. Second, there are search engines that usually help us find relevant online content. Third, there are some social networks and other platforms that host applications and content. These online intermediaries treat copyright, the cultural industry, and copyright holders differently. Some commentators argue that intermediaries are a legitimate tool that helps return money to creative owners, while others view intermediaries as illegal sites that can contribute to copyright infringement.

The first category, intermediaries or connection intermediaries appears to be organizations that provide users with Internet access and include everything from cable companies to Internet service providers and Wi-Fi operators, such as libraries, coffee shops, and others. Their primary function is to provide web access rather than to host or store content.

What makes connection intermediaries relevant from a regulatory perspective is their role as gatekeepers to cyberspace, and there are

[246] Mathias Klang and Andrew Murray (ed), *Human Rights in the Digital Age* (1st edn, Routledge 2005).
[247] Thilini Kahandawaarachchi, ‘Liability of Internet Service Providers for Third Party Online Copyright Infringement: A Study of the US and Indian Laws’ (2007) 12(6) JIPR 554.
[248] Bethany Klein and others (n 31) 71.

relatively few of them. In the UK, for example, locals subscribe to major Internet service providers such as Virgin Media, TalkTalk and SkyBroadband, including BT, which has more than 5 million subscribers.

Regarding intellectual property issues, copyright law is considered to create more legal problems for connection intermediaries than other issues such as defamation. Their role was evaluated in two ways: first, they act as a repository of information that aggrieved parties can access to identify major copyright infringers; second, as gatekeepers capable of filtering or blocking measures against websites or content associated with large-scale infringement.[249]

The issue of content liability has become a major issue not only for the relatively small community of traditional Internet service providers, but also for a wider range of Internet hosting companies. These include universities, traditional media organizations moving to digital platforms (such as the BBC and the Times), software vendors such as Microsoft and Sun, libraries and archives, chat rooms and blog sites, individuals creating personal web pages, and new social media platforms. In addition, it has affected a wider range of Internet communication intermediaries beyond traditional ISPs, such as backbone ISPs, cable companies, and mobile service providers.[250]

However, under copyright law, connection intermediaries may face legal problems due to copyright infringement. In case Roadshow Films Pty Ltd v. iiNet Ltd, the court found that the Internet service provider iiNet, located in Australia, is not responsible for secondary copyright infringement of its users. The main argument was that by providing access to the network, the provider simply provided a precondition, and not a tool for violating rights, like the BitTorrent system, where intermediaries had no control. Thus, the Internet service provider did not have any intentions to infringe copyright, unlike platforms such as Napster, Kazaa and The Pirate Bay.

On appeal, the court took a different view, eliminating the difference between “precondition” and “means”, and argued that iiNet would be held liable for copyright infringement if it did not address notices to copyright holders in which they have evidence of alleged copyright infringement. This approach has been viewed by some scholars as more consistent with the evolving doctrine of secondary liability, particularly in relation to knowledge and inaction.[251]

It should be noted that lawsuits between copyright holders and Internet hosting providers have become widespread. In the United States, numerous Internet hosting providers, including Netcom, Veoh,

[249] ibid 186.
[250] ‘The Role and Responsibility of Internet Intermediaries in the Field of Copyright and Related Rights’ <https://www.wipo.int/publications/en/details.jsp?id=4142&plang=EN> accessed 5 August 2025.
[251] Uta Kohl, ‘The Rise and Rise of Online Intermediaries in the Governance of the Internet and beyond - Connectivity Intermediaries’ (2012) 26 International Review of Law, Computers and Technology 193.

Rapidshare, and YouTube, have faced lawsuits from copyright holders for infringing rights on their platforms.

For instance, in 2007 Viacom and other companies sued YouTube and Google due to widespread copyright violation on their websites. YouTube is a platform where users can share their own generated video content. The plaintiffs argued that YouTube's website was not merely a forum, but rather a platform where the owners facilitated to spread copyright violation and obtained financial benefits from such activities. The plaintiffs mainly accused the YouTube of several types of copyright infringement such direct copyright violation, contributory and vicarious copyright infringements. With regard to direct infringement, it was claimed that the defendant violated copyright through actions such publicly performing, displaying and copying the plaintiffs' works. The case took seven years to be resolved, and the court mainly relied on the safe harbour provisions of the DMCA (section 512) concluding that there was a lack of specific knowledge of infringement.[252]

Similarly, within the European Union, Internet hosting providers such as YouTube, Myspace, Dailymotion, and Rapidshare have been involved in numerous copyright infringement lawsuits.[253] To better understand the copyright infringement with respect to ISPs, it is necessary to examine several foundational cases:

1) Playboy Enterprises, Inc v. Frena

It is worth noting that, in the early stages of internet development, some courts adopted strict stances toward ISPs. Many of the most notable cases regarding ISP liability originated in the United States. For instance, in the case Playboy Enterprises, Inc. v. Frena[254], the court held ISP operator Frena liable for online copyright infringement caused by its users. The case centered on the fact that subscribers of the ISP had uploaded and shared images from Playboy magazine. Although Frena later removed the images and implemented a monitoring system after receiving a warning from the claimant, this did not exempt the ISP from liability. The court ruled that Frena was directly responsible for copyright infringement, despite lacking knowledge of or intent related to the unauthorized posting of the images.[255]

2) Sega Enterprises Ltd, v. Maphia

[252] Viacom International v YouTube Inc, YouTube LLC and Google Inc, District Court, Southern District of New York (13.03.2007).

[253] 'The Role and Responsibility of Internet Intermediaries in the Field of Copyright and Related Rights' (n 250).

[254] Playboy Enterprises, Inc. v. Frena, 839 F. Supp. 1552 (M.D. Fla. 1993).

[255] Jennifer L Kostyu, 'Copyright Infringement on Internet: Determining the Liability of Internet Service Providers' (1998) 48 Catholic University Law Review <https://heinonline.org/HOL/Page?handle=hein.journals/cathu48&id=1247&div=&collection=> accessed 5 August 2025.

A comparable decision was reached in Sega Enterprises Ltd. v. Maphia[256], where an ISP operator promoted the uploading of unauthorized Sega game copies and enabled other users to download them for a charge. The court determined that the ISP's lack of detailed knowledge about the specific times the games were uploaded or downloaded was insufficient to avoid liability. While the ISP was not found directly liable for online infringement, the court held it vicariously liable, as its actions contributed to digital piracy.[257]

3) Religious Technology Center v. Netcom On-Line Communication Services

Another significant precedent is Religious Technology Center v. Netcom On-Line Communication Services, Inc.[258], in which the rights holder brought an action against a former employee, Erlich, for posting copyrighted materials, namely, the Church's confidential texts on the Internet. The lawsuit also targeted Netcom, a prominent ISP in the US, through which Erlich accessed the internet. The plaintiff alleged that Netcom was liable for copyright violation.

The court, however, dismissed the claim of direct infringement, reasoning that data storage and transfer are integral to any ISP's services, and incidental copying inherent to such operations does not constitute unlawful reproduction. With respect to vicarious liability, the court found that Netcom derived no financial benefit from the infringing conduct because it functioned under a fixed-fee business model. Nevertheless, the court found Netcom liable for contributory infringement, focusing on whether the ISP had a significant role in facilitating the infringing activity. Ultimately, the court argued that Netcom's allowance of public distribution of infringing works without taking action to prevent it amounted to substantial participation in copyright infringement.[259]

In the 1990s, some critics suggested that Internet service providers had hidden interests in online copyright infringement, as downloading copyrighted works could attract more users to their platforms. They further contented that Internet service providers are in a better position than the authors to monitor and control user rights violations.

However, imposing stricter sanctions or additional restrictions on Internet service providers may undermine their operational autonomy. Overbroad liability for digital piracy can also reduce the efficiency of the

[256] 'Sega Enterprises Ltd. v. Maphia, 857 F. Supp. 679 (N.D. Cal. 1994) <https://law.justia.com/cases/federal/district-courts/FSupp/857/679/2008853/> accessed 5 August 2025.

[257] Ansagan Aronov, 'Digital Piracy: Responsibility Issues of Internet Service Providers' (2020)(133) 4 Bulletin of L.N. Gumilov Eurasian National University Law Seires < https://bullaw.enu.kz/index.php/main/issue/view/8 > accessed 6 August 2025.

[258] 'Religious Tech. Center v. Netcom On-Line Comm., 907 F. Supp. 1361 (N.D. Cal. 1995) <https://law.justia.com/cases/federal/district-courts/FSupp/907/1361/2249916/> accessed 6 August 2025.

[259] ibid.

Internet, which relies heavily on the functionality of online service providers.

Jennifer Bretan has argued that to ensure the freedom to innovate and operate, ISPs should be granted exclusions from liability. Without such safeguards, service providers may lose the incentive to develop Internet technologies.[260]

A landmark decision on ISP liability arose in the Newzbin case. British Telecommunications (BT), one of the UK's largest ISPs, was ordered to block access to Newzbin, a Usenet indexing and file-sharing platform, following proceedings initiated by major film studios.

In the Newzbin case, the defendant used the indexing and file-sharing service Usenet, which allowed subscribers to search for and download illegal copyrighted content, such as movies. The service allowed users to easily and quickly access content via Usenet.[261] Several movie studios brought legal action against Newzbin, alleging that it provided users with tools to search for pirated copies of movies and access them. Subscribers paid fees for using the service, and premium users got extended access to download movies directly from files on Newzbin. The defendants tried to compare his service with Google, claiming that it functions only as a search engine.

While it was clear that subscribers were committing direct violations by uploading unauthorized copies of movies via Usenet, the case focused on Newzbin's role in facilitating these violations. The applicants identified three key offences:

- Newzbin has sanctioned the illegal activities of its subscribers;
- it encouraged or supported the actions of its users that violate copyright;
- it brought copyrighted content to the attention of the public, especially its users.[262]

The court found that, with respect to authorization, Newzbin's operations probably led subscribers to believe that they had permission to do things like copy films using the service.[263] Despite this ruling, the successor website, Newzbin2, soon appeared in the same online location as its predecessor. However, this new site operated in a different jurisdiction.

In response, the applicants changed their strategy, seeking to block access to Newzbin2 through ISPs. Referring to section 97A of the CDPA,

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[260] Jennifer Bretan, 'Harboring Doubts about the Efficacy of Sec. 512 Immunity under the DMCA' (2003) 18 Berkeley Technology Law Journal 50.

[261] Andy Maxwell, 'MPAA Threatens World's Premier Usenet Indexer' (*TorrentFreak* 28 May 2008) <https://torrentfreak.com/mpaa-threatens-worlds-premier-usenet-indexer-080528/> accessed 7 August 2025.

[262] 'Twentieth Century Fox v Newzbin Ltd' <https://www.theipmatters.com/post/twentieth-century-fox-v-newzbin-ltd> accessed 7 August 2025.

[263] Andres Guadamuz, 'Usenet Filesharing Defeated in Court' (*TechnoLlama,* 30 March 2010) <https://www.technollama.co.uk/usenet-filesharing-defeated-in-court> accessed 7 August 2025.

they demanded that British Telecom in the UK completely block access to Newzbin2.[264]

According to the court, both BT users and Newzbin operators used the BT service to commit copyright infringement. The court disagreed that the Internet intermediary "actually knew about the specific abuse of a specific copyrighted work by a specific person", although the injunction was initially issued based on the argument that the Internet service provider actually knew about another party using their service to commit copyright infringement.[265]

These decisions demonstrate that blocking injunction may be granted where a court determines that a third-party website is responsible for copyright infringement and that the intermediary's service are being used to access that site. These cases seem to demonstrate the active involvement of Internet intermediaries in copyright protection and indicate that these measures can be effective online copyright protection. It should be noted that after the Newzbin case, the copyright industry tried to extend this measure to other pirate sites, such as Pirate Bay, and other infringing platforms.[266]

It may therefore be argued that the current regulatory framework for intermediaries is anchored in global copyright law provisions such as WIPO, WTO, and TRIPS. With their flexible effect, these agreements have shown Member States how to deal with intermediaries, and hence the basic principle that intermediaries are not responsible for copyright infringement that occurs through their service works in most States. However, it can be seen that the claim of intermediaries for immunity depends on certain conditions, such as knowledge of copyright infringement, the degree of control over the content that is transmitted through their service.[267]

It should be emphasized that intermediaries are not required to control all the materials they post, and they cannot automatically be held responsible for copyright infringement committed by users.

One widely adopted solution is the "notice and takedown" system, under which intermediaries avoid liability by swiftly removing infringing content upon receiving notice from right holders. This approach is sometimes referred to as the "notification and removal approach". However, this approach seems indisputable, since some cases have been shown where the liability of Internet service providers cannot be limited. Directive 2004/48/EC (the Enforcement Directive) on the protection of intellectual property rights states that Member States must ensure that copyright holders can file injunctive relief actions against

[264] Stokes, *Digital Copyright Law and Practice* (n 40) 24.
[265] 'Twentieth Century Fox Film Corp. v. British Telecommunications PLC' (*Loeb & Loeb LLP*, 2011) <https://www.loeb.com/en/insights/publications/2011/08/twentieth-century-fox-film-corp-v-british-teleco__> accessed 7 August 2025.
[266] Kohl (n 251) 194.
[267] Bethany Klein and others (n 31) 73.

Internet service providers whose services are used by third parties to infringe intellectual property rights, without prejudice.

Deep Packet Inspection (DPI) technology available to Internet service providers plays a crucial role in combating copyright infringement. DPI allows Internet service providers to closely examine content passing through their networks and precisely control it, offering a technological solution to the problem of piracy. As Bridy observes, DPI provides ISPs with centralized and automated tools that can underpin a graduated response system, progressively escalating sanctions against persistent offenders. However, while technically effective, DPI also raises significant concerns about privacy, surveillance, and proportionality, particularly under European fundamental rights standards.[268]

The case of L'Oreal SA v. eBay International AG raised the question of whether eBay can be held liable for ads placed by subscribers of their website that infringe L'Oreal's trademark rights. In its defense, L'Oreal argued that the point is that eBay is responsible for using its trademarks by displaying them on the website and in search engines such as Google.

The court ruled in favor of eBay, ruling that the site should not be jointly and severally liable in this situation, and asked the European Court for clarification. In turn, the European Court of Justice ruled that the provider cannot be held liable when it acts simply as an intermediary and does not play an active role of such a nature as to provide it with knowledge or control over this data.

In contrast, in SABAM v. Scarlet Extended SA, a collecting society based in Belgium that represents the rights of composers, musicians and other authors, obtained an injunction against the Internet service provider Scarlet. The plaintiff claimed that Scarlet subscribers downloaded copyrighted materials from the SABAM catalog without permission through a P2P system. Thus, the plaintiff wanted Scarlet to take the necessary measures, including blocking or making it impossible for its users to exchange musical works.

First, a local court found that there was a copyright violation in Scarlet’s services, and ordered the company to block the illegal use of the file sharing site by its users. On appeal, the court suspended the proceedings and referred them to the European Court of Justice, raising the question of whether it could be consistent with EU law when a national court issues an injunction against Internet service providers whose services are used by third parties to infringe copyright on

[268] Annemarie Bridy, ‘Graduated response and turn to private ordering in online copyright enforcement’ (2010) 89 Oregon Law Review 104.

materials, and forces companies to install a filtering system to block illegal P2P use.[269]

Finally, the European Court of Justice ruled that courts cannot order Internet service providers to install a filtering system that includes continuous monitoring, as this would be contrary to the articles of the Electronic Commerce Directive. The Directive states that Member States are not allowed to require intermediaries to constantly review the content they transmit or store, and there is no obligation to search for facts or circumstances that may lead to illegal actions.[270]

It should be noted that recently there has been a high demand for intermediaries, in particular Internet service providers, from some copyright holders and governments to combat copyright piracy. But Klein et al. argue that while policymakers may encourage intermediaries to assist in enforcement efforts, they must also carefully balance other fundamental rights, including freedom of expression, access to information and the right to privacy. Excessive control or monitoring obligations imposed on intermediaries may undermine these protected values.[271]

As mentioned above, a large number of copyrighted works can be uploaded simultaneously due to P2P technology. Thus, it is not easy to catch and punish every user who commits illegal actions. Moreover, pursuing each intruder is not only expensive and time-consuming, but in some cases, it is unlikely to be possible to confirm the true identity of the intruder due to problems with anonymity in the digital environment.

To protect their rights and interests, copyright holders, including the music and film industries, have taken action against intermediaries such as Internet service providers that supply technologies that promote copyright infringement. These industries not only seek injunctions, but also lobby some legislators to adopt new harsh legal acts against intermediaries.[272]

The L'Oréal v. eBay[273] and SABAM v. Scarlet cases highlighted the growing importance of ISPs in the online copyright ecosystem. ISPs are attention has shifted to their potential role in either contributing to or preventing infringement. Liability questions arise not only from the actions of direct infringers but also from the activities of ISPs themselves. For example, when copyrighted content is transmitted, stored, or communicated to the public without authorization, ISPs may be said to contribute to or facilitate infringement.[274]

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[269] 'Global Freedom of Expression, 'Scarlet Extended SA v. SABAM' <https://globalfreedomofexpression.columbia.edu/cases/scarlet-extended-sa-v-sabam/> accessed 7 August 2025.

[270] Yi Jun Tian, *Re-Thinking Intellectual Property: The Political Economy of Copyright Protection in the Digital Era* (1st edn Routledge-Cavendish 2009) 124.

[271] Bethany Klein and others (n 31) 74.

[272] Tian (n 270) 125.

[273] L'Oréal v eBay [2009] EWHC 1094.

[274] Murthy (n 156) 233.

This development also raises the question: should those who innocently host, store, or transmit infringing material be liable for copyright infringement? The challenge lies in defining the term “innocent”. While some ISPs may genuinely lack knowledge of infringing material, others may deliberately ignore or profit from it, making their role less neutral.

From the early days of Internet law, U.S. courts began to address this issue in cases involving websites, electronic bulletin boards, and ISPs accused of hosting or facilitating infringing content. These decisions drew upon U.S. doctrines of contributory infringement (liability for materially assisting infringement) and vicarious infringement (liability for profiting from infringement while having the ability to control it). These principles have since shaped much of the debate on intermediary liability in the digital environment worldwide.

Moreover, it raised a number of the following questions:

a) Are Internet service providers required to monitor the sites they host or track copyright violations copyrighted materials?

b) What if they clarified in the terms of use what users are hosting or hosting it is the materials on their websites that are responsible for infringing copyright, not the host or operator?

c) What if such users are innocent of everything and have posted information that violates copyright?

It should be noted that since the 1990s, some countries have tried to clarify when liability arises in such situations. The first major piece of legislation was the U.S. DMCA, which provides a “safe harbor” for those who post, transmit, and store copyright-infringing material. Then similar provisions were used in the EU E-Commerce Directive. According to the Electronic Commerce Directive and the Information Society Directive, those who store, post or “simply distribute” can avoid liability if they remove materials that infringe copyright as soon as they become aware that it is illegal. It may be noted that a lack of knowledge can help operators or service providers avoid liability.

Safe harbor provisions are widely implemented in the US, EU, and China to protect the operational freedom of host ISPs. These provisions are supported by compelling arguments such as promoting e-commerce, maintaining the efficiency of the Internet, and supporting the growth of information technology.[275]

Under the US practice, the burden of proof is structured in a specific manner. Rightsholders must prove the fact of infringement and notice an intermediary, while the intermediary must prove that it acted in good faith and promptly remove the content. Thus, the DMCA demonstrates that each party confirms only its actions and knowledge. A similar practice is also used in both the EU and the UK, where the

[275] Jie Wang, *Regulating Hosting ISPs' Responsibilities for Copyright Infringement* (Springer 2018) 12.

burden of proof of violation lies in rightsholders, but if the intermediary ignores the notice or involve actively in the infringement, the presumption of innocence is lifted.

In recent years, the safe harbor regime under the e-Commerce Directive (Directive 2000/31/EC) has been subject to increased scrutiny, particularly in relation to large content-sharing platforms, such as Youtube. The fact is that the music industry often refers to the "value gap" in laws such as the e-Commerce Directive, where there is a mismatch between the value that some digital platforms, such as Youtube, extract from music and the revenue returned to the music community. Moreover, inconsistent enforcement of the laws has led some digital platforms to claim that they are not responsible for the music they have made available to the public.

These concerns contributed to legislative reform at the EU Level, culminating in the adoption of the Digital Single Market Directive (Directive (EU) 2019/790). Article 17 of that Directive narrows the scope of safe harbour protection for certain online content-sharing service providers which by imposing enhanced obligations to obtain authorization from right holders or to demonstrate best efforts to prevent the availability of infringing content.[276]

It should be noted that Internet intermediaries are not just channels for the exchange of cultural products between industries and their audience. They play a key role in how we communicate and participate in society, both as citizens and consumers. Internet service providers are as integral to our participation in public life and the social world as traditional means of communication such as the telephone, television or postal service. Any restrictions imposed on intermediaries should take into account their potential impact on freedom of speech and access to information, culture and knowledge. Policy makers therefore need to carefully balance the public's right to freedom of expression and information with the private interests of corporations as copyright holders.[277]

This chapter has demonstrated that intermediaries occupy an essential position in the debate over digital copyright. Far from acting as neutral "conduits", intermediaries play a decisive role in determining when, where, and how copyright infringement occurs. By enabling the circulation of cultural products, they influence the contours of copyright regulation, shaping the opportunities available to both creators and consumers. In collaboration, and sometimes in conflict - with cultural industries, intermediaries affect how works are produced, distributed, shared, and monetized in the digital age.

Importantly, while the regulatory discourse is often framed as protecting creators, the actual position of creators in these debates is

[276] Stokes, *Digital Copyright Law and Practice* (n 40) 67.
[277] Bethany Klein and others (n 31) 88.

more complex. Their interests are mediated by powerful stakeholders, including cultural industries and intermediaries, whose priorities do not always align with those of individual authors.[278]

The next chapter will therefore turn to a comparative analysis of intermediary liability across different jurisdictions, focusing on the US, the EU, and the UK. This analysis will explore how different legal systems define the scope of liability for intermediaries, and how these frameworks attempt to balance copyright protection with fundamental rights and public interests.

2.4 Copyright and AI-generated works

AI fundamentally challenges the traditional foundations of copyright law, particularly the concepts of authorship, originality and liability. It is argued that existing copyright frameworks, both in Kazakhstan and in many foreign jurisdictions are not fully equipped to address works generated through AI technologies. Accordingly, AI-generated works are analysed as a distinct legal phenomenon requiring doctrinal reassessment and legislative adaptation.

The development of AI is often associated with the British scientist Alan Turing, who investigated the question of whether machines can think independently. However, the term “artificial intelligence” was coined by American scientist John McCarthy during a meeting in Hanover.[279] McCarthy himself did not provide a comprehensive definition of AI, leaving the concept open to multiple interpretations.

This topic holds theoretical and practical importance for the legal regulation of copyright works produced through AI technologies. Despite numerous academic studies addressing related issues, there remains a lack of comprehensive analysis concerning the regulation of AI-generated works in developed jurisdictions. Consequently, several questions arise, for instance, who should be recognized as the author of works created by AI systems, what is the legal personality of AI, and who bears liability for its actions. Furthermore, given the rapid pace of technological advancement, previous research in this area may already be outdated, emphasizing the need for renewed and more in-depth scholarly inquiry.[280]

AI systems are capable of producing creative outputs either autonomously or with varying degrees of human participation. The rapid development of AI is bringing about substantial transformations in copyright legislation. Based on the research conducted, the issue of

[278] ibid 92.
[279] Shlomit Yanisky-Ravid and Samuel Moorhead, ‘Generating Rembrandt: Artificial Intelligence, Copyright, and Accountability in the 3A Era — The Human-Like Authors Are Already Here — A New Model’ (2024) 114 Trademark Rep. 998.
[280] Ansagan Aronov and Sara Idrysheva, ‘Copyright Protection on Works Generated by Artificial Intelligence’ (2025) 21(1) Science and Innovation 113.

copyright protection for works created using AI technologies may be summarized as follows. First, AI represents a computer program operating on the basis of specific algorithms for data processing and decision-making, possessing the capacity to learn from experience and progressively enhance its functional capabilities. Second, it becomes evident that the existing framework of copyright law is insufficiently adapted to the realities of AI technologies. Consequently, in order to ensure consistency between copyright regulation and contemporary technological developments, the relevant legal norms require reconsideration and where necessary, revision.[281]

Based on its characteristics, AI can be defined as a system capable of performing tasks that typically require human intelligence, such as decision-making, recognition, learning, and communication. Gurko argues that AI is closely related to neural networks, which are mathematical models and their software implementations inspired by the structure and functions of biological neural networks.[282]

In 2018, the European Commission published a report on AI, defining it as a system that demonstrates cognitive behavior and acts with a certain degree of autonomy to achieve specific objectives.[283]

Some authors identify eight key characteristics of AI: creativity, unpredictability, independence, autonomy, rationality, the ability to learn and develop, data collection capabilities, efficiency, accuracy, and the ability to quickly and freely choose alternatives.[284]

AI, along with other modern technologies such as the Internet of Things (IoT), robotics, and 3D printing, as key components of this revolution, which is expected to impact governments and industries around the world.

In this sense, AI is more than a technological advancement; it is part of a broader set of innovations that are restructuring the way societies create, distribute, and consume knowledge, information, and cultural products.[285]

Given the various approaches to the legal regulation of intellectual property rights involving AI, the following regimes can be highlighted:

1.*Theory of AI authorship:* This theory proposes recognizing AI as a full-fledged author of creative works. Since the human involvement is

[281] ibid 121.
[282] A. Gurko, 'Iskusstvennyi Intellekt i Avtorskoe Pravo: Vzgljad v Budushee' [Artistic Intelligence and Copyright: A Look into the Future] (2017) 12 Intellektual'naja sobstvennost'. Avtorskoe pravo i smezhnye prava https://elibrary.ru/item.asp?id=30635536 accessed 9 August 2025.
[283] EUR-Lex, Communication from the commission 'Artificial Intelligence for Europe' <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52018DC0237> accessed 9 August 2025.
[284] I. Ponkin and A. Red'kina, 'Iskusstvennyi Intellekt i s tochki zrenia prava' [Artificial intelligence and from the Point of View of Understanding the Law] (2018) 22(1) RUDN Journal of Law 95.
[285] Rofi Aulia Rahman, Akhmad Al-Farouqi and Shu Mei Tang, 'Should Indonesian Copyright Law Be Amended Due to Artificial Intelligence Development?: Lesson Learned from Japan' (2020) 9 (1) NTUT Journal of Intellectual Property Law and Management 44. <https://iip.ntut.edu.tw/var/file/92/1092/img/2036/v1-1.pdf> accessed 9 August 2025.

minimal, typically limited to a simple command, and the primary work is generated by the AI, it argues that the AI-generated machines should be considered the authors. Simply giving a command does not make someone an author;

2. *Theory of co-authorship:* According to this theory, both AI and humans (programmers, owners, or users) can be recognized as authors. This viewpoint acknowledges that creative works today are unlikely to be entirely AI-generated without human involvement. Even if computer programs can perform creative tasks, humans still play a crucial role by defining the principles, developing, and launching these programs. The goal of AI creation is to perform specific tasks, not to become a free artist. Additionally, works generated by AI may not meet the copyright requirements for creativity and originality;

3. The theory of work for hire: Some scientists suggest determining authorship using this theory, where AI is considered as an employee who creates an official work. This concept applies the employee-employer relationship to artificial intelligence and its programmers;

4.*Theory of public domain:* This theory states that works created by machines created by artificial intelligence, which may not have a human author, should be placed in the public domain. Since the true author is a computer program that does not have a legal entity, it is argued that such works should not be protected by copyright.

Each of these theories has both strengths and weaknesses. To date, none of them fully addresses the problem, since the adoption of any theory would require significant changes in the existing legislation.[286]

Since modern forms of art, such as drawing, music, and literature, have emerged in the creative industry, the importance of copyright is growing all over the world. The advent of AI poses serious challenges to how we accept and use copyrights. In particular, AI has enabled the creation of new forms of artwork that are mostly created by machines, not humans. AI made it possible to create rather complex works of art, music, and literature without the help of humans. So, the recent popularization of AI demonstrates that humans are not just a source of innovative products. Computers, with the help of humans, can create amazing artistic and innovative products. Sometimes machines are programmed in such a way that they acquire certain skills that programmers do not have.[287] For example, a research team from the Netherlands working with Microsoft unveiled a portrait called “The Next Rembrandt” in 2016. The interesting thing is that the painting was not a recently found work of art by Rembrandt and is not a copy as such. The uniqueness of this creative work was that it was created by artificial

[286] Aronov and Idrysheva, ‘Copyright Protection on Works Generated by Artificial Intelligence’ (n 280) 112.

[287] Kalin Hristov, ‘Artificial Intelligence and the Copyright Dilemma’ (2016) 57 IDEA: The Journal of the Franklin Pierce Center for Intellectual Property 434.

intelligence after analyzing many works of art by such a famous Dutch artist. Machine-based technical and artistic elements in the artist's works, including lightning, color, and geometric models.[288]

Thus, the question of the possibility of copyright protection for works created by computers and machines becomes controversial or problematic in the legal sphere, raising some legal issues:

1) Does a work created by an artificial intelligence machine have copyright in itself?

2) If so, who should own the copyright, the programmer, the user, or perhaps the AI system itself?

3) Are copyrights to works created with the help of artificial intelligence protected?

The accelerating appearance of AI-generated works underscores the reality that copyright legislation across jurisdictions is struggling to keep pace with digital technologies. While national copyright laws remain largely based on the principle of human authorship, AI creations increasingly challenge this paradigm and demand careful re-evaluation of what “authorship” truly means in the digital age.[289]

As AI can solve different issues without the assistance of people, its performance is quite similar to humans and even it surpasses human intelligence. Thus, the growth of AI has led to the expansion of AI intelligence which is similar to human intelligence. In general, there are some criteria to distinguish between human and artificial intelligences.

The first criterion concerns human mind and many scholars argue that AI can identify reality as humans do. The second criterion relates to whether AI can think in comprehensively and in an integrating way. It means that AI can think without predefined formats and patterns. But, to achieve that result is not straightforward, given the current development of technology. The third criterion depends on the classification of AI as “weak” and “strong”. For example, when AI can work or function like people, this type can be called as weak AI, while if it thinks comprehensively and in combinative way, it can be called as strong AI.[290]

It is worth noting that in accordance with the problem of a work created by artificial intelligence, there are two main assumptions. First, the work has an author, even if the work is generated by artificial intelligence, there is still an “author”- an individual who provided the necessary actions for creating such works. Most jurisdictions, such as Spain and Germany, claim that only human-made objects can be protected by copyright, while the UK takes a different approach to this

[288] Andrés Guadamuz, ‘Do Androids Dream of Electric Copyright? Comparative Analysis of Originality in Artificial Intelligence Generated Works’ (5 June 2020) <https://papers.ssrn.com/abstract=2981304> accessed 9 August 2025.

[289] ibid.

[290] Byungun Yoon, ‘A Comparative Study of the Copyright Laws for Artificial Intelligence in the UK and Korea’ (2022) 28 Comparative Law Review 286.

issue, which recognizes that a work created by a computer without human assistance is still protected by copyright.

Second, in order to qualify for protection, a work protected by copyright must fall under one of the definitions of a work protected by copyright, such as literary or artistic works.[291]

The issue of ownership of works created using artificial intelligence seems straightforward in the UK jurisdiction, according to section 9 (3) of the 1988 CDPA:

> *"As for artistic, musical, literary and dramatic works created by artificial intelligence machines, the author is the person who took the necessary actions to create such works".*

Furthermore, article 187 defines computer-generated works, which means "a work created by a computer that does not have a human author". It should be noted that the United Kingdom is one of the few countries that regulate works created by artificial intelligence, and most other countries take the same approach to protecting such works.

Section 9(3) CDPA indicates that there is the lack of case law dealing with this issue.

One relevant case is Express Newspapers v. Liverpool Daily Post, in which the plaintiff organized a contest in which readers were given certain cards, each of which contained a sequence of five letters that had to be checked against the winning sequences. Because participants were not required to purchase paper to receive their cards, the Liverpool Daily Post copied the winning sequences in their documents. As a result, the plaintiff filed a lawsuit against the defendant because of this action. In court, the defendant argued that the published fragments are not protected by copyright, since they were created by a machine and, therefore, there is no person in them. The judge made a decision that explained that the machine was a simple tool that was run by a programmer.

This solution may satisfy paragraph 9(3), but there is still uncertainty that leads to who the real author is. Some are inclined to believe that the logic of the above solution could be used to recognize ownership of the user of the program, but not of the programmer. It seems obvious that this kind of uncertainty can affect the field where works created by artificial intelligence are widely distributed.[292]

In general, three potential parties may claim copyright in works created with the assistance of AI:

1) the programmers of the AI system;

2) the owners, who can be large companies or some investors in the artificial intelligence industry;

3) the end users.

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[291] Guadamuz 'Do Androids Dream of Electric Copyright? Comparative Analysis of Originality in Artificial Intelligence Generated Works' (n 288).

[292] ibid.

Aziz argues that the idea of granting copyright ownership to the programmer of an AI system is problematic. Although the programmer creates the code, the AI's self-learning and autonomous operation do not constitute the programmer's direct intellectual effort that generate the final creative work. Moreover, advanced AI systems typically involve multiple programmers contributing in different ways, making it impossible to assign ownership shares to determine responsibility for specific creative outcomes. Since the programmers do not control the AI's final output, attributing copyright to them would contradict fundamental copyright principles.

The proposal to grant copyright ownership to the user of an AI system rests on the notion that AI functions as a creative tool, similar to a paintbrush in an artist's hand. However, unlike traditional tools, AI systems such as those using algorithms possess autonomous learning and creative capabilities. Therefore, users may contribute to the conception rather than the actual creation of a work, meaning they would be rewarded for results produced without their intellectual input. Since users can generate works by merely operating the AI without creativity, attributing to them would contradict the fundamental principles of copyright law.

Granting copyright ownership to the company or entity that owns the AI system draws on the "work made for hire" doctrine, where works created by employees belong to their employer. While this approach might seem practical, it risks centralizing creative ownership in large corporations that control advanced AI technologies. Such concentration could undermine human creativity, reduce opportunities for individual authors, and contradict the public interest principles of copyright law. Ultimately, giving corporations exclusive rights over AI-generated works could lead to monopolization of creativity and restrict of original expression.[293]

Although end users may appear to play a role by making the "necessary actions" to create outputs (for example, by inputting prompts), their claim to authorship is the least convincing. Their contribution to the creative process is typically minimal, and assigning authorship to end users could undermine incentives for programmers and investors. In response, owners and developers might restrict public access to AI tools, thereby stifling innovation and limiting the broader application of AI technologies.

A more compelling case can be made for recognizing programmers or owners as authors. Programmers can be seen as the individuals who embed creativity and originality into the system itself, while owners (including companies and investors) often secure authorship through employment or contractual arrangements. In many creative industries,

[293] Aziz Atif, 'Artificial Intelligence Produced Original Work: A New Approach to Copyright Protection and Ownership' (2023) 2(2) European Journal of Artificial Intelligence and Machine Learning 9-16.

intellectual property produced by employees is automatically assigned to employers under labour contracts.[294]

To avoid such ambiguity, it is necessary to provide a coherent doctrinal explanation. For example, during the copyright reform that led to the 1988 CDPA, there was a discussion in which it was argued that "the author of an output can only be the person or persons who created the instructions or data that were used to control a particular output.

Hristov argues that a possible solution can be found in the doctrine of the US Copyright Act. According to this doctrine, "if a work is created for hire, the author may be the employer, even if the work is created by an employee". An employer can be a firm, company, or individual. This kind of employer-employee relationship can be used in the field of artificial intelligence. Although the current definition of employee applies to a person who is usually below the manager and hired by another person to provide services for a salary, the corresponding definition could also be applied to current legal definitions of jobs generated by artificial intelligence. For example, an "employer" can be a person who uses the services of another organization to achieve certain goals or perform tasks. Therefore, a programmer or owner of a computer machine would fit the definition above, since he or she uses an artificial intelligence service to produce certain creative results. In addition, a machine with artificial intelligence can be an employee, since its services are hired by a programmer or owner. This employer-employee relationship can be vital for the development of the artificial intelligence industry.[295]

Some scholars argue that such ambiguity could be eliminated simply by reading the letter of the law and studying each specific case. For example, artificial intelligence is initiated directly by the programmer and creates a creative work, then the programmer is the author, according to section 9(3) CDPA of 1988. But if the user receives a program capable of creating works of artificial intelligence and uses it to create a new work, then the user can be the author.

Moreover, some scholars argue that the term "authorship" should be redefined to include human and non-human authors. For example, one of the proponents of this idea, Professor Ryan Abbott, has argued that the transfer of authorship to non-humans can contribute to the rapid development of the artificial intelligence industry. From a theoretical point of view, this could prevent works created by artificial intelligence from entering the public domain and offer some advantages to programmers and owners of devices with artificial intelligence.

However, this solution appears problematic and causes uncertainty in the future. Non-humans are not natural persons and, therefore, they cannot bear legal responsibility before the court. Thus, they cannot be

[294] Hristov (n 287) 445.
[295] ibid 445.

considered as authors, according to many jurisdictions around the world.[296] There was only case named Naruto v. Slater which has addressed non-human authorship issue. According to this case, a macaque named Naruto took photos of itself using David Slater's camera and Slater later published those photos in a book. However, the organization People for Ethical Treatment of Animal (PETA) brought lawsuit against Slater for copyright violation, arguing that his illegal actions (display, sales) led to the violation of Naruto's copyright. However, the court rejected the case, because the monkey is not an author, according to the US Copyright Act. Thus, Naruto case directly shows that works produced by animals are considered to be a part of public domain.[297]

In summary, it can be seen that the rise of AI system has posed a huge challenge to copyright law, in particular the question of AI ownership. As above said, authorship appears to be controversial and hot issues among scholars and academic world. Each of theories or approaches to assign ownership to AI system has its pros and cons.

As it was said earlier, the author can be recognized a natural person, according to the Kazakhstani legal framework.

Because AI does not possess legal personhood under Kazakhstani law, it cannot be regarded as an author a holder of copyright. Accordingly, several categories of potential copyright claimants to AI-generated works in Kazakhstan might be considered:

AI itself: Under the current legal system, AI systems are not recognized as legal entities capable of possessing IP rights, thus they cannot be attributed copyright ownership;

Programmer/Developer: The individual who designs the AI algorithms or software may assert ownership of the program itself and its source code, but such ownership does not automatically extend to all content produced by the AI system. Under Kazakhstani law, authorship and ownership generally belong to the person who exercises creative judgement and control over the resulting work. Thus, if the programmer plays only a limited role in shaping or influencing the creative process of each AI-generated output, they would not qualify for copyright protection in relation to those specific works;

User: The person or entity employing an AI system to produce content may be recognized as the legitimate owner of they provide substantial creative input in the process.

An analysis of the principal approaches to establishing authorship for works by or with the assistance of AI suggests that the most relevant framework for protecting the rights of persons who engaged in AI-related

[296] ibid 441.

[297] Victor Palace, 'What If Artificial Intelligence Wrote This: Artificial Intelligence and Copyright Law' (2019) 71 Florida Law Review 226.

creative process is the anthropocentric concept. According to this approach, only a natural person can be recognized as the author.

2.5 Conclusions and findings of Chapter 2

To conclude, this chapter has focused on some generations of P2P technology and the complex problem of copyright protection linked to each generation. It is reasonable to say that even though copyright violation problems were solved in one generation, more contemporary generations appeared to emerge and combatted the complex problems of copyright protection. The rise of P2P technologies such as Napster and Gnutella, including their later more sophisticated models such as Grokster, StreamCast, KaZaa and others, the use of BitTorrent services, as well as the exploitation by copyright infringers of information intermediaries such as Google and eBay to distribute and reproduce infringing works demonstrate that copyright is unable to efficiently regulate the digital environment.

Alongside these technological and enforcement issues, the chapter addresses the unresolved question of authorship in relation to AI-generated works, noting that while most jurisdictions insist on human authorship, the emergence of AI has created significant challenges for copyright law, particularly concerning the questions of authorship and ownership. As noted, determining authorship in AI-generated works remains a highly debated issue among scholars, with each proposed approach presenting distinct advantages and limitations.

3.INTERNATIONAL APPROACHES TO COPYRIGHT PROTECTION IN THE DIGITAL ENVIRONMENT

3.1 US approach to copyright protection in the digital environment

The advancement of new technologies has been a major driver of successive reforms in U.S. copyright law. To address the challenges posed by digital innovations, U.S. lawmakers have repeatedly amended legislation, setting standards that have influenced other jurisdictions worldwide.

Congressman Smith, known for his strong stance on piracy and technology, emphasized the need for stricter enforcement of existing piracy laws, particularly in the digital age. He argued that piracy and intellectual property theft result in significant financial losses for American businesses and the elimination of hundreds of thousands of jobs each year. Smith also pointed out a double standard, noting that while most people would never steal a CD from a store, many see no issue with downloading entire albums from peer-to-peer networks. He stressed that both actions constitute theft, harming artists, software developers, and others who rely on their creative works for their livelihoods. Ultimately, he called for measures to protect intellectual property while collaborating with, rather than opposing, the technology industry.[298]

Significant amendments to US Copyright law were enacted in 1976. The law had to be changed because of the Berne convention which established the world standard of copyright protection and as a result, the law expanded the duration of copyright by adding 50 years to life of the author. Also, the law introduced a new concept “fair use” as a result of which, comments, criticism, teaching, news reporting or research is no copyright infringement anymore.

The 1976 Copyright Act suggests that contributory infringers can be held liable but leaves the specifics of secondary liability doctrines for the courts to interpret in individual cases. U.S. courts have established two main theories of indirect infringement: vicarious liability and contributory infringement, both derived from secondary liability principles in tort law:

1) Vicarious liability – A defendant may be held liable if (a) the defendant had the authority and ability to supervise the infringing activity, and (b) derived a direct financial benefit from the infringement;

2) Contributory infringement – Liability arises where the defendant materially contributes to, or authorizes, the infringing activity with knowledge of the infringing acts.

Both doctrines reflect the adaptation of tort law principles to copyright disputes.[299]

[298] Morea (n 207) 220.
[299] Wang (n 275) 21.

To establish vicarious liability, two key elements must be proven. First, the defendant must have the authority and ability to oversee the infringing activity. Second, the defendant must derive a clear and direct financial benefit from the exploitation of the copyrighted materials.

Additionally, to be classified as a contributory infringer, the provided authorization or assistance must have a direct connection to the infringing acts. Moreover, the individual offering such assistance or authorization must act in collaboration with the infringer.[300]

One of the first cases in which the US Supreme Court considered fair use issues in connection with copyright infringement was the case of Sony v. Universal City Studious or, for short, the case of Sony Betamax. TV production companies, namely Universal Studios and The Walt Disney, sued Sony for copyright infringement. They were talking about a home video recorder, a Betamax tape recorder made by Sony, which allowed consumers to record copyrighted TV programs for later viewing. Therefore, instead of suing individual users of recording devices, TV companies sued Sony for equity and subsidiary obligations.[301]

As a result of careful consideration of the case, the judges explained that delaying the viewing time of a TV program when the user is watching it for free does not constitute copyright infringement, and also argued that an increase in the number of viewers can be covered by the principle of “fair use”. Later, the judges rejected subsidiary and subsidiary liability for the following reasons: first, there is no relationship between Sony and viewers, Sony supplied recording devices through sellers; second, the mere knowledge that its consumers may create illegal copies of copyrighted products does not constitute subsidiary liability.[302]

It can be observed that the level of sanction for copyright abuse has been gradually increased in the US. According to the Harvard law review, copyright abuse started to assess as a crime in 1897. Since jail time and fines were increased due to the advent of new types of copyright works. For example:

- The Piracy and Counterfeiting Act (1982) and the Copyright Felony Act (1992) were both designed to tackle large-scale piracy;

- In the late 1990s, the term of copyright protection was extended again to the life of the author plus 70 years, aligning U.S. law with international standards.

Copyright protection was also broadened to cover computer programs as a distinct category of creative works.[303]

[300] ibid 21.
[301] Sony Corp of America v Universal City Studios Inc, 464 US 417, 104 S Ct 774 (1984).
[302] Murthy (n 116) 223.
[303] Guertin (n 79) 17.

One of the major reforms to copyright laws the adoption the DMCA which intended to make a better protection for copyrighted works in the digital environment.[304]

The US was actually a first state responded quickly to digital copyright issues once it recognized the importance of digital media and Internet technologies. Before adopting Internet treaties and the DMCA, there was a fierce debate about the regulation of intellectual property, in particular copyright in digital environment. Bill Clinton's administration set up Information Infrastructure Task Force to regulate cyberspace.

As part of this, there was IP working group which produced "white paper" and the document introduced the policy of the US president administration on what IP should like in the digital age.

However, that working group was harshly criticized for giving more power to content industries. For example, it proposed that copyright holders should have control over all uses of copyrighted works, including the making of temporary digital copies in computer memory. It also suggested that ISPs could assume a more active role in monitoring infringement, effectively functioning as "copyright police". In addition, with respect to TPMs, the White Paper advocated the use of "copyright management information" embedded in digital copies to enable right holders to track digital uses and technologically protect their works.

Also, it was proposed to make unlawful the circumvention of protected copyrighted works.[305] As a result of the White Paper, the DMCA was adopted in 1998 which implemented the provisions of WIPO treaties and addressed existing digital copyright challenges.

During the early 2000s some huge music industry representatives like the RIAA used to bring legal actions against many copyright infringers. However, this enforcement strategy brought about more damages to innovation and creativity rather than fruitful results. Consequently, music companies started to collaborate with the ISPs to identify more major copyright abusers than individuals.

As a result, the RIAA published some illegal file-sharing websites used for the unauthorized sharing of movies, music and other copyright subject matters and then offered to focus on major firms and companies which induce copyright abuse rather than users who share illegal works.[306]

It could be argued that the safe harbor regime under the DMCA was attempted to strike a balance. On the one hand, it made possible for right holders to collaborate with ISPs to detect and remove illegal

[304] Hui (n 165) 90.
[305] Blayne Haggart, *Copyfight : The Global Politics of Digital Copyright Reform* (University of Toronto Press 2014) 111.
[306] Robin Mansell and W Edward Steinmueller, 'Copyright Infringement Online: The Case of the Digital Economy Act Judicial Review in the United Kingdom' (2013) 15 New Media and Society 1312.

contents, on the other hand, it enabled ISPs to spread the free information over the internet without interruption.[307]

In the United States, two distinct immunity regimes were established for ISPs and hosts, one covering all types of liability except for IP and the other specifically addressing liability for copyright infringement.

The first regime is outlined in Section 230(c) of the Communications Decency Act, which grants ISPs and hosts broad immunity from liability for user-generated content, except in cases related to IP. This protection applies as long as the content in question was provided by a third party rather than the service provider itself.

The second regime, established under Section 512 of the DMCA, provides various types of online intermediaries with immunity from copyright infringement liability through a system of "safe harbors". However, this immunity is conditional on compliance with specific requirements, such as disclosing the identities of infringers upon request, adhering to a detailed notice-and-takedown procedure, and banning repeat infringers from accessing their services.[308]

The DMCA introduced some legal changes in the US Copyright Act. There were main prohibitions, the first linked to the circumvention of TPMs attached by right holders to avoid the illegal use of copyrighted materials; while second was on the removal of DRM used to track copyrighted works and their copyrighted owners.[309]

According to Andrepont, the DMCA is divided into five parts. Among these five sections, the first two is essential to our research rather than the rest of parts. The Section 1 implements main provisions of WIPO Treaties. By doing it, the DMCA starts to recognize new copyright objects such as music, computer programs and other objects published on electronic sources.[310]

The section II, entitled "Online Copyright Violation Liability" regulates some provisions related to "safe harbor" regimes for ISP.

Accordingly, Section 512, which was also added to the Copyright Act, provides limitations on the indirect liability of ISP for the illegal actions of users or subscribers on the Internet. Those limitations come from four categories of the function of ISPs. First, ISPs act as a transitory communication which means if ISPs transmit data or information from one point to another point according to someone's request; second, when ISPs functions as system caching where it temporarily keeps copies for a short period, a material has been made accessible by a user

[307] Sharon Bar-Ziv and Niva Elkin-Koren, 'Behind the Scenes of Online Copyright Enforcement: Empirical Evidence on Notice & Takedown' (15 July 2018) <https://papers.ssrn.com/abstract=3214214> accessed 9 August 2025.
[308] Lilian Edwards, 'Role and responsibility of internet intermediaries in the field of copyright and related rights' [2011] https://strathprints.strath.ac.uk/35492/ accessed 9 August 2025.
[309] Hui (n 165) 397.
[310] Andrepont (n 113) 409.

than ISP itself and the transmitted to a subscriber under his request; third, where ISPs store information on the net under the request of users; fourth, data location tools which means ISPs links to the website that may contain infringing contents providing by data location tools like search engines, hyperlinks.[311]

It may be argued that ISPs have to be passive in terms of the transition of information. For example, in case “conduit”, and “caching” ISPs must play a passive role when they transmit information on a third-party behalf, so they should care what is transmitted or to whom is transmitted or should not chose a recipient.

With regard to “hosting”, ISPs have to be passive, too. But, once they find out an illegal content, they have to act or remove as rapid as possible.[312]

Moreover, the DMCA includes a provision described as “No monitoring responsibility” which means that ISPs do no need to search any infringing activities on their networks. This exception is also close to another concept “general knowledge of infringement” which means that ISPs do definitely know about copyright infringement which is occurring on their service, but they do not know in detail what content is being infringed or by which users are infringing.

In practice, the US court generally refuses to apply secondary liability to ISPs due to a “lack of monitoring responsibility”, when copyright infringement issues are based only on “general knowledge of the infringement”. The defendant was MP3tunes, a website that allowed users to store music files in their lockers, and the plaintiff filed a lawsuit against the website because of the multiple infringing files. But the court ruled in favor of the website, explaining that although the plaintiff was aware of copyright infringement on its service, it did not have a red flag to stop piracy, and it did not know what content was being infringed.[313]

Similarly, the defendant owned a video-sharing website called Veoh, and the plaintiff sued him, explaining that some of the music videos were uploaded illegally without consent. The Court issued a similar decision stating that “general knowledge of a violation” does not apply to this case, since only specific knowledge of a violation can take a website out of safe harbor regime.[314]

It should be noted that apart from general knowledge of infringement, there is specific knowledge of infringement, but it has its own features from legal perspective. As its name says itself, specific knowledge requires more than general awareness that violations are

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[311] ibid 413.

[312] Capitol Records, Inc. v. MP3tunes, LLC, 48 F. Supp. 3d 703 <https://casetext.com/case/capitol-records-inc-v-mp3tunes-llc> accessed 7 May 2023.

313 ibid.

[314] UMG Recordings, Inc. v. Shelter Capital Partners Llc, No. 09-55902 (9th Cir. 2013) <https://law.justia.com/cases/federal/appellate-courts/ca9/09-55902/09-55902-2013-03-14.html> accessed 7 May 2023.

occurring or detailed knowledge about infringement which has occurred. The US, and EU laws indicate that if the ISP has specific knowledge about copyright infringement, but it did not do anything to stop, it will liable for secondary infringement.

The DMCA points out that ISP may avoid damages or responsibilities, when ISP does not possess actual knowledge that material or content in its platform are infringing; in the absence of such knowledge, is not aware of such facts or circumstance where illegal activity is emerging and obtaining such knowledge, it rapidly removes or disable access to the internet.[315]

Specific knowledge is sometimes called as “Red Flag” standards and as some tend to say this standard is high and it is difficult to prove as practice shows. Therefore, the parties which involve in a dispute argue about what means constructive knowledge of illegal activity. According to the provisions, constructive knowledge is usually described as “red flag” test. If the ISP is aware about red flag from which copyright infringement is emerging, but does not do anything to stop it, it will lose an immunity from safe harbor regime.

Some commentators explain that the red flag test when a service provider is notified about illegal content by a copyright owner, while in actual knowledge, the service provider is aware about the specific infringing activity.[316]

As noted above, the notice-and-take down (N&TD) procedure as a part of safe harbor approach was introduced by the DMCA and offers some advantages for right holders. It is worth mentioning that N&TD is an innovative tool aiming at combating online copyright infringement.

First, this procedure offers right holders cheap and quick online copyright enforcement. A removal request may offer effective remedy that can be obtained by right holders, which in turn helps to reduce a harmful effect of infringement without any burdens. Also, this remedy seems to be a quick procedure, while seeking an injunction in a court may last longer and be not cost effective. The second advantages of safe harbor approach are to offer clear rules for ISPs liability and the rules of what it needs to do. The DMCA includes specific rules about N&TD procedure and regarding that a right holder sends a notice to ISPs.

To ensure that notification can reach the ISPs, the DMCA requires providers to establish an agent for receiving notifications from right holders. Also, hosting ISP needs to provide a contact information such

[315] Wang (n 275) 143.
[316] ‘Effort to Capture “Red Flag” Embodies DMCA Reform Struggle' (*Finnegan,* 10 June 2020)<https://www.finnegan.com/en/firm/news/effort-to-capture-red-flag-embodies-dmca-reform-struggle.html> accessed 9 August 2025.

as location of websites, email, address accessible to the public. It is a task of ISP to keep update the information contact.[317]

The notification includes an information for the copyright owner which includes an address, telephone number, an electronic email address, data about copyrighted works that is argued to be violated and a significant information to allow ISPs to locate it and a statement that the use of a material is not permitted by the author and law. After receiving this sort of notification, the next step for ISPs is to remove alleging material as quick as possible or disable access to the allegedly infringing material.

Third, the procedure offers some protection against unjustified removal of non-infringing content, because this sort of removal may negatively change the balance struck between copyright owners who are seeking copyright enforcement for their works and the users who are seeking to learn from these materials or works.[318]

These formal requirements seem to be vital, for example, in case Arista Records v. MP3Board, a claimant sent tree notifications to a defendant where the first two letters had insufficient information about copyright violation. Luckily to the claimant, the third letter was more informative where it included not only songs were claimed to be violated, but also their screenshots.

Given that there would be an abuse from copyright owners regarding a removal request, the DMCA included safeguard measures and according to those measures, a user can contest the remedy. In order to retain safe harbour protection, the ISP must notify the subscriber that the material has been removed or disabled and must forward any counter-notification to the original complainant.

The counter notice usually includes the following:

1) a signature either in physical or online;

2) information about removed material and its location;

3) statement that the subscriber claims that the content is mistakenly removed;

4) name, phone number, address and consent to the court.

If there is a counter notice from the user, ISPs have to return the content back, provided that the copyright owners fail to inform the ISP about the lawsuit within 14 days. If there is lawsuit, the content is removed until a court decision is held.[319]

Another method to stop the unjustified of removal request is that the right holder must state that he or she has a good faith belief that the content is used without the consent of the copyright owner or without the authorization of law. Otherwise, if the notice is not backed by this sort of statement, a party might be liable for damages.

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[317] Wang (n 275) 143.

[318] Bar-Ziv and Elkin-Koren (n 307) 349.

[319] ibid 349.

Some scholars argue that N&TD procedures may lead to certain negative circumstances such as suppression of freedom of speech, fair use and other values. For example, on one case, an American activist made a video where he criticized a rapper Akon and later posted his video on Youtube. The video was complained by the rapper on copyright issues and it was taken down by Youtube. Thanks to the Electronic Frontier Foundation, the activist managed to send a counter notice to Youtube and removed takedown request.[320]

Rights holders may misuse notice-and-takedown procedures in several ways. First, individuals or entities who are not the legitimate copyright owners may issue takedown notices. Second, the system can be exploited to deliberately suppress free expression. Third, these procedures often overlook key principles of copyright law such as fair use exceptions and are sometimes employed to discourage lawful and creative uses of content.[321]

Accordingly, these measures seek to protect alleged infringers from lawlessness or unjustified decisions. Also, these measures may protect the public interest in avoiding unlawful restrictions on freedom of expression.[322]

Recent developments have further modified N&TD procedures which applied to the online service providers. With the growth of digital piracy, the right holders started to develop contemporary tools to track infringed contents and file online notification with ISPs.

It may be observed that sometimes copyright owners to cover as much infringing material as possible, they send unclear or vague notifications to hosting ISPs. But, as practice showed, it does not always work. For instance, in one case, the defendant sent three notifications, where the first two notification included a number of performers whose works were alleged to be infringed. Finally, the court concluded that those notifications were not incompetent as it expected by rules, because it did not identify the copyright materials. But, the third notification letter was competent, as it included more details about alleged infringement materials.[323]

In another case, the first two letters sent by the defendant pointed out just works being infringed, but the agent failed to announce that he was authorized to represent the right holder. Later, the third letter supplemented the declaration to the previous two letters. Despite the fact that, three separate letters actually meant one competent notification, the

[320] Wang (n 275) 172.
[321] Longan (n 36) 62.
[322] Bar-Ziv and Elkin-Koren (n 307) 351.
[323]Arista Records, Inc. v. MP3BOARD, Inc., No. 00 Civ. 4660 (SHS) <https://casetext.com/case/arista-records-inc-v-mp3board-inc> accessed 7 May 2023.

court rejected his effort by explaining three different letters would make harder the service of ISPs.[324]

In certain cases, to protected high-valued copyrighted works right holders may send a letter to the defendant, before the official issue of a material. But, the court in the US usually do not accept this sort of notifications. For example, in one case, the claimant who owns the copyright to a film, sent notification to the defendant claiming all DVD versions of the film were violating his rights, though the DVD version was not released at that time. Thus, the defendant sent a letter when there was no infringing his material on the website.

Approximately, nine months later, the claimant found out that the DVD versions of his movie was still on the defendant website and he argued the defendant was liable for copyright infringement, because his previous notification results in actual knowledge of infringement. However, the court did not accept such statement because the Congress intended the notice to make the ISP aware of copyright violation that is happening at the time it obtains the letter.[325]

As for the large number of notifications, online providers have also adapted certain tools to administer the deletion request. For example, Google allows copyright holders to post files online and asks them to show the intended content that should be removed. As soon as it receives the app, it deletes the content.[326]

In addition to complying with statutory obligations, some online providers have taken steps which exceeds their obligations concerning the safe harbor regime, and offer additional enforcement help to copyright owners. For example, with the special algorithm, Google combats websites which obtain more removal request by placing them at the bottom of the search results which in turn, it could be difficult to find them. Another example is Youtube ID Content, where a provider notifies right holders new uploaded contents match materials or works that they possess. Then copyright owners may block or remove those illegal contents or share the content. These measures may include filtering system which check any contents before they are uploaded.[327]

Despite these enforcement mechanisms, the DMCA has been subject to criticism. Some argue that the DMCA provides the owners of copyrighted works with absolute monopoly to control the use of information in business and society. Copyright not only protects copyrighted works against illegal use, but also serves to the public interest in terms of distribution creative works rather than private interest. It is worth mentioning that some relevant copyright doctrines such as the

[324] Perfect 10, Inc. v. Ccbill LLC, 488 F.3d 1102 <https://casetext.com/case/perfect-10-inc-v-ccbill-llc?q=Perfect 10 v. CCBill&sort=relevance&p=1&type=case&resultsNav=false> accessed 7 May 2023.
[325] Wang (n 275) 145.
[326] Bar-Ziv and Elkin-Koren (n 307) 351.
[327] ibid 352.

originality requirement, idea-expression dichotomy and fair use have made a limitation to monopoly consequences that would come from excessive copyright protection. These limitations have ensured that copyright consider the public interest, too. However, these limitations have become a principal feature of copyright since the Anna Statute 1709, the adoption of DMCA appears to destroy this traditional protection of public interest. It seems that the former is copyright, while latter is pure monopoly. The above act emerged a danger that copyright may serve to private interest and thus the primary intention of copyright may die because of that.[328] Given these concerns, some concluded that the more control to creative works, the less creativity will grow in public.

To provide better protection, the DMCA went too far to stop the threat from digital technologies. The DMCA prohibits others making, distributing and importing decryption tools that could use to unlock encrypted works. Therefore, the DMCA restored an old tradition when the same approach used by copyright owners to control over the dissemination and publication of works in past. For example, nearly three hundred years ago, right holders attempted to control illegal use of copyrighted works through the total possession of printing tools which backed by law to prohibit anyone from using printing press. The anti-circumvention policy of the DMCA, reestablished the same approach today. The only difference is that the legally controlled tool needed to make illegal copies of works in past was printing press, while today legally controlled technology necessary to make illegal copies is decryption technologies.[329]

Despite these critical arguments, the Act intends to protect copyright owners' works through encrypted devices and imposes some barriers to tools aimed at circumventing these protection measures. Moreover, the Act provides some exceptions, for example educational institutions may take advantages of using fair use exceptions to do research through circumvention technologies.[330] It is worth mentioning that there was not only the DMCA, but also other legal enforcement acts in the US intended to combat digital piracy.[331]

Congress introduced two legislative measures, the Stop Online Piracy Act (SOPA) in the House and the Protect IP Act (PIPA) in the Senate. These proposals aimed to empower rights holders to obtain court orders compelling ISPs to block the domain names of foreign sites engaged in copyright infringement. Additionally, search engines,

[328] Glynn Lunney, 'The Death of Copyright: Digital Technology, Private Copying, and the Digital Millennium Copyright Act' (2001) 87 Virginia Law Review 814.
[329] ibid.
[330] Andrepont (n 113) 418.
[331] Hilary Pearson, 'Intellectual Property and the Internet: A Comparison of U.K. and U.S. Law' (1998) 1 Journal of World Intellectual Property 829.

payment processors, and advertising networks would have been required to cease their business dealings with such sites.[332]

However, widespread protests, including a global blackout of popular websites organized by various companies and advocacy groups, highlighted concerns that the legislation amounted to censorship and threatened the integrity of the Internet. The resulting public outcry ultimately led Congress to abandon the proposals.

The SOPA triggered intense debate among right holders, users and industries. Proponents of the act claimed that it would provide more jobs and profits and therefore, innovation, while opponents were worried about privacy rights of users by saying it would violate it.[333]

Another important initiative was the ACTA which aimed to address the issues about global trade of counterfeit goods and online copyright infringement. The act required an ISP to adopt a policy to resolve problems concerning the illegal storage and transmission of copyrighted works to get immunity from safe harbor regimes. Some tend to claim that when there was a doubt to fully legalize a direct graduate response, the ACTA became a tool to pressure ISPs to collaborate with powerful copyright owners to enforce copyright protection.

Supporters of free culture movement criticized the ACTA provisions that it was going to be an obstacle to the distribution of free works. Because, the prohibition file sharing system by the ACTA would cause a big issue to free distribution. They claimed that the provisions of the act would create a culture of total control and the freedom required to produce software would look more dangerous and rather than creative and innovative. Yet, it was claimed that the final text of the ACTA does not include mandatory rules for ISPs to accept a graduated response tool.[334]

In conclusion, it can be seen that there have been several reasons to accept the DMCA in 1998: first, to address the problem of copyright law being circumvented by the advent of the internet; second, to create limited responsibility for copyright violation by the ISPs; third, to establish procedural mechanisms where a right holder could get a subpoena from a court to order the ISPs to identify a user who committed copyright violation.

3.2 UK legal approach to copyright protection in the digital environment

The UK has developed one of the most proactive and adaptive legal approaches to copyright protection in the digital environment. It is

[332] Cory (n 231) 1.
[333] ibid 4.
[334] Alexandra Giannopoulou, 'Copyright Enforcement Measures: The Role of the ISPs and the Respect of the Principle of Proportionality' (2012) 3 European Journal of Law and Technology <https://ejlt.org/index.php/ejlt/article/view/122/204> accessed 19 January 2024.

argued that UK copyright law demonstrates an early and systematic response to online infringement, particularly through the regulation of intermediary liability and the use of judicial blocking measures. For the reason, the UK model is analysed as a significant reference point for assessing effective copyright enforcement in the digital age.

During the SOPA/PIPA debate, which took place between 2010 and 2012, the United Kingdom was a sole country, beginning in 2011, that permitted rightsholders to obtain court injunctions requiring ISPs to block access to piracy websites engaged in the large-scale distribution of copyright-infringing content.[335]

It should be noted that to address the latest digital challenges, the UK adopted some regulations and acts such as the Information Society Directive, the Electronic Commerce regulation and so on. Moreover, the UK was the first state which could regulate ISPs liability by enacting the Digital Economy Act 2010 and the Internet Watch Foundation.[336]

Today, the UK Copyright law is regulated by the CDPA 1988. According to the act, authors have exclusive rights including copy, distribute, perform to the public, play to the public, broadcast and to make adaptions. Doing those actions without the authorization copyright owners is assessed as a direct infringement, while the distribution, sale or possession in order to gain commercial benefits is called as secondary infringement.[337]

In addition, the UK CDPA of 1988 includes a special section on “secondary copyright infringement”. Under this provision, specific actions such as importing, possessing or distributing copies that infringe copyright, as well as providing the means to make such copies, constitute infringement if the respondent is aware of or has reasonable grounds to believe that the material in question is a copy that infringes copyright. Therefore, determining secondary infringement requires careful consideration of whether the respondent was aware of working with copyright-infringing content.[338]

The 1998 CDPA was one of the first legal acts to provide for digital media. And it explained that copying involves storing the copyrighted work on a medium by any means necessary and converting the source code to object code.

According to the 1988 CDPA, the copyright holder has the right to file a lawsuit against a potential infringer. Courts offer damages and injunctions. However, if the defendants did not know or did not assume that the copyrighted works are protected by copyright, they may be excluded from damages. With the development of new technologies, it should be mentioned that the 1988 CDPA adopted new legal remedies,

[335] Cory (n 231) 3.
[336] Hui (n 165) 101.
[337] Pearson (n 331) 827.
[338] Wang (n 275) 29.

such as web blocking. For example, there was an application to block a website when an MPAA plaintiff sued one of the UK's largest Internet service providers, BT, for copyright infringement. The problem was that the Newzbin website, run by BT, offered access to illegal copies of movies and TV movies. The court ruled that the defendant was liable for copyright infringement, after which access to Newzbin was blocked. Despite this fact, there was a new website called Newzbin2, and interestingly, this site used the same code and data. The plaintiff again invoked the 1988 CDPA article on website blocking to block access to the Newzbin2 website.[339]

Arguing that copyright infringement is a serious problem for copyright holders, Judge Arnold discussed the rights of expression under European law, the rights of Internet service providers, and the rights of copyright holders under European and UK law. BT argued that the court was wrong because its service was not used for copyright infringement and it did not know anything. However, the court did not accept that BT, as an intermediary, provided a link to transfer works that violate copyright between subscribers and a third party, as a result of which the use was significant, and BT was aware of what was happening within its service.[340]

In his ruling, Mr. Justice Arnold stated: "*I find that BT has clear knowledge of its service being used by others to commit copyright infringement. It is aware that the users and operators of Newzbin2 are engaged in widespread copyright violations, particularly involving a large number of films and television programs owned by the studios*".

He further noted: "*BT also knows that some of Newzbin2's users are its own subscribers and that they utilize its service to access infringing copies of copyrighted works provided by Newzbin2*".[341]

Then judge Arnold focused on how Newzbin operated and discussed other significant parts of this website. It was figured out that Newzbin functioned as a part of internet system called Usenet which allowed users to upload and view messages on the web. The use of Newzbin actually led to post binary and text files. Binary files are split into small part of messages. For example, if a user wants to download copyrighted works, he or she needs to assemble these files to form a whole copy of copyrighted materials. As a result, it should be mentioned that basic and primary members lost access to the website.[342]

In addition, Judge Arnold ruled that BT must implement its CleanFeed technology, which is currently being used to block access to

[339] Twentieth Century Fox Film Corp. v. British Telecommunications PLC (n 265).
[340] ibid.
[341] 'BT Ordered to Block Links to Newzbin 2 Website' (*BBC News*, 28 July 2011)<https://www.bbc.com/news/technology-14322957> accessed 10 August 2025.
[342] 'Twentieth Century Fox Film Corp. v. British Telecommunications PLC (n 265).

websites containing child sexual abuse material, in order to restrict access to Newzbin2.[343]

It is worth noting that above mentioned case made an example of blocking access for other following cases by implying the 97 Article of the CDPA. It can be seen from another case, when a claimant MPAA brought a lawsuit against a group of ISPs because of the "Popcorn Time" application used for illegally downloading TV programs and movies. In this case, illegal copyrighted content was delivered by users from the application not from website from which the application was downloaded. The judge found out that the aim of the application was to violate copyright by making easier for users to access copyright content. Finally, the court claimed that the creators of the Popcorn Time application were complicit to infringe copyright.[344] All these cases have shown that with the development of digital technologies, new questions may again arise regarding the injunction against blocking under article 97.

Moreover, similar to the U.S. Copyright Act, the 1988 CDPA introduces exceptions to copyright infringement rules, such as fair dealing. The purpose of fair transactions is to prevent certain actions that can be assessed as copyright infringement. According to the law, private use, criticism, new reports, cartoons, parodies, research or educational use, archives and libraries are subject to fail dealing.[345]

Another important UK law regulating digital technologies, especially digital media, was the DEA, passed in 2010. To combat piracy on the Internet, the law provides for certain measures aimed at solving problems of file sharing and other illegal activities. For example, the Law requires Internet service providers to warn their subscribers when copyright owners report that their IP addresses are being used for copyright infringement.[346]

Some popular British ISPs such as BT Plc and Talk Talk Telecom Group Plc were granted a judicial review by the High Court. In ruling, they raised some questions like whether the DEA is consistent with EU law on some issues such as the right to privacy, the right to free expression, data protection and so on. Besides, they asked the court to consider the burden of costs on ISPs for revealing their users' identities and notifying those subscribers about copyright abuse. A pivotal question was whether the Act provisions are appropriate response to copyright abuse. But it was concluded that the provisions of Act are unreasonable and unlikely to achieve their goals to curb copyright infringement. After dismissing the challenge by the ISPs, the High Court answered that it is

[343] BT Ordered to Block Links to Newzbin 2 Website (n 341).
[344] 'Case Law: Twentieth Century Fox v Sky UK, Blocking Injunction Granted in Relation to "Popcorn Time" Websites – Kana Patsalides' (*Inforrm's Blog*, 12 June 2015) <https://inforrm.org/2015/06/12/case-law-twentieth-century-fox-v-sky-uk-blocking-injunction-granted-in-relation-to-popcorn-time-websites-kana-patsalides/> accessed 10 August 2025.
[345] Hui (n 165) 111.
[346] Mansell and Steinmueller (n 306) 2.

up to Parliament rather than court to decide the balance of interests in dispute.[347]

The DEA was one of the problematic legal acts, because it was widely criticized by digital rights activists. ISPs have claimed that to monitor their subscribers' online activities is too excessive, because this kind of measure may breach users' privacy rights. In 2010, some ISPs of the UK required a judicial review on the ground that the DEA had negative effect on individuals and business. They explained that provisions of the DEA might be problematic by following way: that the Act had not been properly notified under the Technical Standards Directive; it breaches the mere conduit exemption of E-Commerce Directive; it contradicts to the provisions of E-Privacy and Data Protection Directives; and it appears to be disproportionate.

The effectiveness of the DEA has been called into question due to several controversial issues.

First, the Act does not clearly define a term "subscriber". A subscriber could be an individual at home or an entity such as a café or educational center that provides internet access to others. This ambiguity complicates the identification of responsible parties in cases of infringement.

Second, reliance on IP addresses to identify copyright infringers presents evidentiary concerns. Monitoring users via IP addresses may not provide sufficient evidence of infringement, as IP addresses typically identify a router rather than a specific individual. This can lead to innocent users being unfairly penalized, especially in shared networks like libraries or airports offering free Wi-Fi, where pinpointing the actual infringer can be challenging.

Third, Section 3(3) of the DEA requires rights holders to report ISPs with evidence of infringement, including the relevant IP address. However, this approach is inadequate for combating illegal file-sharing. In practice, infringers may use compromised accounts, shared networks, or anonymization tools, thereby complicating efforts to accurately attribute responsibility.[348]

The provisions of the DEA actually imposed certain requirements on Ofcom to administer measures to tackle digital piracy issues. These measures led to an approach intending on the decrease of copyright infringement by educating users, taking enforcement or backing industry to develop online service by offering legal access to copyrighted materials.[349]

It could be argued that the DEA initiated a Code where initial obligations could be established. If there is no code initiated or drawn up

[347] ibid 3.
[348] Ansagan Aronov, 'Copyrigth Protection in the Digital Age: Whether Copyright can Combat Peer-to-Peer Technology (2021) 1(90) Law and State 82.
[349] Stokes, *Digital Copyright Law and Practice* (n 40) 226.

by creative industries, it will be a task for Ofcom to draw a Code. The Code included 'three strikes' approach and applied to huge internet providers. However, the Code was not encouraged by the Government and finally it given up. Instead, the Government took a special program based on the education of users and volunteering. Those programs include certain steps where emails can be sent to ISPs subscribers who seem to share illegal content through file-sharing system.

Instead, the Government has adopted special programs based on user training and volunteering. These programs include certain steps in which emails can be sent to subscribers of Internet service providers who apparently share illegal content through file-sharing systems.[350]

It is worth noting that an online blocking injunction is one of the popular injunctions in the UK which is used to block websites. It is believed that over 30 blocking orders have been issued in the UK and among them is a well-knowing case Pirate Bay. Today, the injunctions have used some sophisticated tools which include live blocking injunctions where websites could be blocked during certain time, for example, during a match or a game.[351]

Based on the above analysis, it could be concluded that the DEA has had a limited impact on reducing online copyright violation in the UK. While the act introduced innovative enforcement tools and signaled a strong policy commitment to protecting copyright in the digital environment, its practical implementation revealed vital legal, technical, and procedural shortcomings. As a result, the UK experience demonstrates that effective online copyright protection depends less on rigid statuary sanctions and more flexible, court-drive solutions that balance the interests of right holders, intermediaries and users.

3.3 EU legal approach to copyright protection in the digital environment

The European Union has developed a complex and multi-layered legal framework aimed at harmonizing copyright protection in the digital environment. It is argued that EU Copyright law places particular emphasis on intermediary liability, notice-and-takedown mechanisms, and the protection of technological measures, while simultaneously attempting to balance the interests of right holders, intermediaries and users. Accordingly, the EU approach is analysed as an evolving regulatory model shaped by both international obligations and rapid technological change.

In Europe, the legal framework for Internet service provider liability, the "notification and removal" regime and other remedies are mainly

[350] ibid 226.

[351] Hayleigh Bosher, *Copyright in the Music Industry : A Practical Guide to Exploiting and Enforcing Rights* (Elgar Practical Guides 2021) 211.

regulated by three regulations, such as the Information Society Directive, the Electronic Commerce Directive and the Intellectual Property Protection Directive. But among these regulations, the most important tool for solving secondary liability issues is the Directive on Electronic Commerce.[352]

Legal acts in the field of digital copyright address several issues, such as:

1) the implementation of the 1996 WIPO Internet Treaties in relation to copyright issues and digital processes, as well as to answer the question of whether the existing copyright law is able to protect authors and other persons involved in copyright in works in the digital environment;

2) the regulation of liability of service providers and other intermediaries;

3) the protection of technical measures designed to prevent copyright infringement, for example, ensuring that civil and criminal remedies are available to stop violators who will circumvent technological remedies.

4) the introduction of stricter sanctions for copyright infringement in the digital sphere.[353]

There are several important copyright laws in Europe protection in the digital environment, including:

- the Information Society Directive (Directive 2001/2 / EC), which implemented rules of the WIPO treaties and related to technologies such as copy protection;

- the E-Commerce Directive, which established a framework for intermediary liability and safe harbour provisions for Internet Service providers;

- legislative measures adopted under the EU Digital Single Market strategy, including the Directive (EU) 2019/790 on Copyright in the Digital Single Market, which aimed to modernize and harmonize EU copyright rules in light of digital transformation.

Yu claims that when Directive 2001/2 / EC was first adopted, it represented an attempt to revise copyright laws across Europe, which were creating huge problems due to digital technologies, the Internet and the advent of e-commerce.[354] In fact, the adoption of Directive 2001/2/ EC had two main objectives: the first was to bring the copyright laws of Member States into line with the previously adopted WIPO Internet treaties, and the second was to harmonize certain aspects of EU copyright law. However, some apparently criticized Directive 2001/2 / EC

[352] Hui (n 165) 111.
[353] Stokes, *Digital Copyright Law and Practice* (n 40) 16.
[354] Peter K Yu, 'Digital Piracy and the Copyright Response' [2007] Texas A&M University School of Law https://scholarship.law.tamu.edu/facscholar/658/ accessed 10 August 2025.

for focusing on protecting both rights holders and Internet service providers.

For instance, the Directive mostly relied on the protection of performers, producers and broadcasters and the end-users of information society rather than creators who make priceless works. Through the digital advancement, Directive 2001/2/EC have faced both centralized P2P file sharing such as Napster and decentralized P2P systems such as Grokster and BitTorrent generations.[355]

The directive categorized three types of economic rights such as reproduction, communication to the public, and distribution. In terms of the right to copy, the directive claims that temporary copy by any means or in any forms is covered under the right to copy. Regarding communication to the public, the directive adapts it to digital environment referring on the WIPO internet treaties.[356]

It is worth mentioning that there are copyright issues which addressed by the directive: first, to clarify to what extent reproduction and distribution rights are applied in the digital field in terms of fair use/ fair dealing exceptions; second, temporary acts of copy might have excluded from copyright protection in terms of ISPs functions if there are no economic benefits; third, as there was a need 'transmission right' to the internet, a new right of communication to the public was added to the authors' rights by Directive 2001/2/EC; fourth, it concerns about copyright protection of anti-reproduction systems.

To strike a balance between copyright holders and ISPs and telecommunications operators, Directive 2001/2/EC has mandatory exceptions for the reproduction of technological copies. To accept those exceptions, the reproduction activities must be transient or casual by nature, and must be an essential of technological process. Moreover, the aim of the reproduction activity must facilitate the legal use of copyrighted works that have no any economic damages to right holders. Though, the Directive 2001/2/EC allows the internet to operate efficiently while encouraging a powerful economy in the EU member states.[357]

One of the reasons to adopt the WIPO internet treaties was the protection of anti-copying tools or digital management system. Digital process not only has brought a risk to right holders, but also it provided tools to establish identification, access control and digital management systems, which in turn allow right holders to control the exploitation of their works.

Similar to the DMCA, Directive 2001/2/EC requires EU countries to implement legislations that protect against the circumvention of anti-copying devices and against distribution, manufacture and importation of

[355] Hui (n 165) 78.
[356] Jerry Hua, 'Establishing Certainty of Internet Service Provider Liability and Safe Harbor Regulation' (31 March 2014) <https://papers.ssrn.com/abstract=2591222> accessed 11 August 2025.
[357] Yu (n 354).

tools applied to circumvent such protection. Also, EU states have to protect against the alteration and removal of digital rights management systems and the distribution, importation of works whose digital rights management systems are removed or changed.[358]

However, Ferri claims that Directive 2001/2/EC was not able to carry out its tasks effectively, since it failed to cover many contemporary aspects and challenges brought by the continuous development of digital technologies. The ways in which copyrighted works are used and consumed have changed dramatically, including downloading, online sharing, remixing and streaming services.

These developments have demonstrated that Directive 2001/2/EC cannot effectively solve copyright violation when one uploads illegally copyrighted works on the website and share those material to the users. The dramatic increase of software piracy and illegal streaming of contents has placed the rights and business models of media workers or creators at risk.[359]

Another key instrument concerning the enforcement of copyright in the digital environment is the EU ECD which intended to clarify the liability of ISPs.

Prior to the adoption of ECD, it should be noted, there was a lack of harmonization concerning the liability of ISPs between the Member states and nationals which in turn it led to obstacles to form a central rule between states and prevented the free movement of information services. Each state had own provisions on ISPs liability or relied on cases or tort law. In response to these inconsistencies, the European Commission sought to enact the ECD to tackle abovementioned legal issues.

Basically, the ECD encourages the free movement of Society service and the importance of act and it provides a safe harbor regime for ISPs, which means providing exemptions on ISPs liability for copyright violations occurring in their service. Under the provisions 12-15 of the ECD, ISPs may take advantage of exemption regime. Moreover, Article 15 of ECD asks the Member states not to apply controlling requirements or obligations to seek facts or circumstances pointing out illegal activity, thus ISPs cannot be asked to monitor the contents on their services or websites. Nevertheless, in some cases the Member states may ask for ISPs to apply duties of care to find or avoid some illegal activities, according to the ECD.

It could be argued that “no monitoring responsibility” rules have been incorporated in national laws. For instance, in Germany, local courts conclude that “general knowledge of infringement” is not enough to trigger liability issues, while in France there was Dailymotion case

[358] ibid.

[359] Federico Ferri, ‘The Dark Side(s) of the EU Directive on Copyright and Related Rights in the Digital Single Market’ (2021) 7 China-EU Law Journal 24.

where it was first assessed as publisher and thus was liable for copyright infringement, because it knew that its service used for illegal content. But later, since it became an ISP, it was not liable for "general knowledge of infringement". In the UK, the ISPs might be asked to monitor or block when it comes to certain criminal or national security issues.

It could be argued that in terms of specific knowledge of infringement, the EU courts do not explain in detail about actual knowledge and thus, courts decide themselves the levels and types of knowledge.[360]

Finally, Article 15 has been also applied to limit rights of copyright owners' enforcement attempt from being illegal. Safe harbor regime provided by the E-Commerce Directive not only ensures exemptions on ISPs liability, but also makes possible to apply copyright infringement against such ISPs.[361]

Therefore, the liability exemption regime provided the ECD is dedicated not only ISPs but also other subjects such as e-commerce companies Amazon or Ebay who are selling goods or service online; search engine or online information tools (Google, BBC website, MSN and etc.) and cable and telephone communication entities which provides access services.

It has been argued that the ECD addresses a different sort of issues from IP to defamation, while the US DMCA just focuses on copyright infringement.[362]

According to the ECD, ISPs are not liable for:

1)'mere conduit';

2)'caching';

3)'hosting'.

"Mere conduit" provision means that ISPs do not select or change the data in the transmission.

In 'caching' provision, ISPs are not liable for the automatic, temporary storage of information; does not interfere with technology which provided or used industry to get content on the use of information; acts quickly to remove information it has had on its storage, once it has actual knowledge about infringement;

The 'hosting' exemption means when ISPs do not have knowledge about copyright infringement occurred; and once it has knowledge, quickly remove or disable access to the data.[363]

But Edwards and Waelde claim that the hosting provision is one of the problematic issues in the ECD which deals with a circumstance when the ISP host or store information by a third party.[364]

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[360] ibid 82.

[361] Global Freedom of Expression (n 269).

[362] Lilian Edwards, 'The Fall and Rise of Intermediary Liability Online' in Lilian Edwards and Charlotte Waelde (eds), *Law and the Internet* (Bloomsbury Publishing 2009) 62.

[363] Stokes, *Digital Copyright Law and Practice* (n 40) 62.

[364] Edwards (n 362) 65.

Article 14 of the EDC claims that ISPs can be escaped from liability as long as they act expeditiously to delete or block the access to the content. There is not clear guidance regarding ‘expeditious’ and thus it raises a question of whether it includes fact checking time, consultation of lawyers and therefore it might be unclear to defendants. For example, in some cases like Mumsnet, the defendant was not sure about the removal of illegal content within 24 hours considered as a ‘expeditious’ act. In practice, expeditious remove periods might be varied from 24 hours to about a week depending the content and the size of companies.

However, the directive does not define “expeditious”, raising interpretive difficulties. For instance, does “expeditious” allow time for fact-checking, internal consultations, or legal review, or must removal be immediate? This lack of clarity has been tested in practice. In the Mumsnet case, for example, the defendant questioned whether removing content within 24 hours could be considered sufficiently expeditious. Courts and regulators have, in practice, treated the timeframe flexibly, ranging from 24 hours to about a week, depending on the nature of the content, the technical capacity of the ISP, and the size of the company.[365]

It is worth mentioning that unlike the US approach, the EU does not have yet a specific procedure regarding notice-and-takedown procedure. Local courts treat a notice from right holders as a vital tool to decide whether ISPs have actual knowledge of infringement. It can be seen that the Member states have not harmonized notice-and-takedown procedure yet. However, some states such Finland, Lithuania have adopted the above procedures, while others such as France, Italy and the UK ruled on the elements of the procedure on their national laws relying on the ECD and others namely Germany and the Netherlands have not even ruled on this procedure.[366]

Some states such as Finland and Lithuania have adopted notice-and-takedown mechanisms into their national legislation. Others, including France, Italy, and the UK, have incorporated elements of the procedure into domestic law, primarily by interpreting the E-Commerce Directive. By contrast, Germany and the Netherlands have not enacted specific statutory provisions on N&TD, leaving the matter to case law and judicial discretion.[367]

Although most European States do not regulate the notification and withdrawal procedure, some States, such as Finland, have established a notification rule to ensure that the procedure works properly. For example, according to the Finish law, a competent notification must contain the following requirements: first, information about the party sending the notification; second, the location of the content; third,

[365] ibid 67.
[366] Wang (n 275) 148.
[367] ibid 149.

confirmation that the material is illegal; fourth, a statement that the notifying party is the copyright holder.[368]

Some key factors such as website's URL may play an important role. In case Delta TV v. YouTube, a claimant Delta TV found out that some episodes of its TV series were available on the YouTube platform and then the claimant sent a notice which demonstrated the titles of video which were violated. Given these facts, a local court concluded that since the notice did not include the URL address of the infringing videos, it does not bring about that the defendant had actual knowledge about violated videos. Thus, the case made clear that it would be necessary to have the URL address in the notices.[369]

Moreover, it is worth noting that as in practice alleged illegal might be removed without a court decision, it is also possible that some content or material can be wrongly removed. In the US, this issue is addressed through the DMCA counter-notice procedure, which provides users with an opportunity to challenge wrongful removals.

In the EU, the counter-notice rules exist in states where the procedure have been implemented, including Finland, Hungary and Lithuania. For example, in Finland if a user thinks that the removal of content is wrong, he can send counter notice within 14 days after obtaining notices.

When a wrong notification takes place, the ISPs usually escape from liability. However, in some states it was claimed that a notifying party is liable for wrong notices. For example, in Finland, if a notifying party sends a fake or wrong information, he should be liable for the damage as a result of notification. In France, submitting a fraudulent notice may result in criminal sanctions, including up to one year of imprisonment or a fine of €15 000.[370]

The adoption of the Hadopi law (High Authority for the Diffusion of Works and the Protection of Copyright on the Internet) positioned France as the first country to implement a warning system to combat online copyright infringement. This legislation aimed primarily to strengthen the protection of creative industries in the digital sphere. Under the law, ISPs were tasked with monitoring infringers, and a dedicated administrative body, Hadopi, was established to regulate and curb illegal file-sharing online.

One of the law's key features was the introduction of the "three strikes" warning system. This process involved notifying infringers through their ISPs. The initial warning message might state, "Warning: Your internet connection is being used to infringe copyrighted materials".

[368] Wang (n 175) 150.
[369] Eleonora Rosati, 'Italian Court Finds Google and YouTube Liable for Failing to Remove Unlicensed Content (but Confirms Eligibility for Safe Harbour Protection) (*The IPKat*, 30 April 2017) <https://ipkitten.blogspot.com/2017/04/italian-court-finds-google-and-youtube.html> accessed 11 August 2025.
[370] Wang (n 175) 156.

If the infringement continued within six months, a second warning would be issued. Persistent violations could lead to sanctions imposed by a judge.

Sanctions ranged from fines to the suspension of internet access. During the suspension period, infringers were still required to pay subscription fees and were prohibited from switching ISPs. These strict measures underscored the law's commitment to deterring copyright violations.[371]

Since the adoption of the Hadopi law, several amendments have been introduced, leading to the implementation of Hadopi-2 and later Hadopi-3. The most recent update under Hadopi-3 occurred in 2013 when the French government issued a decree abolishing internet access suspension as a penalty and transferring Hadopi's responsibilities to a broader French regulatory agency.

From its inception, the Hadopi law sparked intense debate due to its strict sanctions against online infringers and the agency's policy of monitoring copyright violations on the internet. Although the Hadopi agency claimed that the three-strikes procedure yielded positive outcomes, critics have challenged this assertion. Studies indicate that the law failed to effectively curb online piracy, as infringers continued to violate copyright content, and the scale of infringement remained largely unchanged. The same studies suggest that while Hadopi may have influenced users' methods of accessing pirated content, it did not achieve its goal of significantly reducing piracy.[372]

Guadamuz highlights that the French anti-piracy law has been a contentious issue among policymakers and legal experts. The law faced initial rejection in Parliament, only to be eventually adopted. Over time, it has been criticized as partially unlawful due to concerns about human rights, particularly its potential to restrict internet access.[373]

The French Constitutional Court also identified serious issues with the Hadopi agency's broad authority. Rather than targeting specific groups, the agency's sweeping powers subjected the entire population to oversight, potentially infringing on the rights to freedom of expression and access to information.

Another critical flaw in the Hadopi law is its reliance on IP address detection to identify infringers. While an IP address can locate a device or network, it does not conclusively identify the individual responsible for the infringement, raising concerns about the law's fairness and accuracy in targeting offenders.[374]

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[371] Ansagan Aronov, 'Copyright Protection in the Internet age: Whether Copyright can Combat Peer-to-Peer Technology' (2021) 1 (90) Law and State 73.
[372] ibid 83.
[373] Andres Guadamuz, 'French Constitutional Court Strikes Down Three-strikes' (TechnoLlama, 2009) https://www.technollama.co.uk/french-constitutional-court-strikes-down-three-strikes accessed 25 October 2025.
[374] ibid 83.

The analysis highlights that the French anti-piracy law introduced a three-strikes system aimed at disconnecting users from the internet or imposing fines on online infringers. However, it is evident that the Hadopi law remains somewhat contentious, raising concerns among copyright holders, users, and ISPs alike.

Abovementioned situations where the liability of ISPs might be exempted under certain conditions, needs to be mentioned as contributory liability, according to the ECD. It can be observed that the ECD accepts certain standards namely “actual knowledge”, “banning” to making decisions about exemption. If ISPs have knowledge about illegal activity, but did not do anything to stop or prohibit infringing acts, it might be assessed as ‘materially contributed’ and thereby it can lead to secondary liability.[375]

Accordingly, the ECD has main provisions regarding all tree sorts of ISPs. First, Members states are not allowed to impose an obligation to ISPs to monitor what is going on their networks, for example what content is transmitted or stored. Second, Member states may ask ISPs at the request of certain state bodies, to identify users who committed online copyright infringement in their networks. Third, ISPs might be asked by courts to remove or block illegal contents.[376]

It can therefore be observed that the Information Society Directive has raised the question of copyright enforcement in terms of ISP liability, while the E-Commerce directive has had the provision to ensure a safe harbor regime for ISPs liability and to limit right holder’s enforcement attempt with respect to ISPs.

In 2015 the European Commission launched the Digital Single Market (DSM) strategy as a central policy initiative aimed at modernizing the EU’s digital regulatory framework. The DSM Strategy is based on three main pillars which can be seen below:

a) improving access to online goods and services across Europe, including the removal of cross-border barriers and the reduction of discrepancies between online and offline markets;

b) creating a favorable environment for digital networks and online services, which requires transparent and high-speed infrastructure and services encouraged by right regulatory conditions;

c) maximizing the growth potential of the European Digital Economy, including increased investment in information communication technologies (ICT) such as Big Data, Cloud computing and related digital innovations.[377]

It should be mentioned that the first pillar is directly related to copyright law by proposing to cease unwarranted geo-blocking and a more harmonized copyright framework. The Commission stated that it is

[375] Hui (n 165) 261.
[376] Wang (n 175) 38.
[377] Stokes, *Digital Copyright Law and Practice* (n 40) 4.

necessary to make proposals to exclude differences between EU members state and make conditions for better wider access to copyrighted work consumed by users. The proposals actually included: clarification the rules and activity of ISPs with respect to copyright contents; ensuring right regulation for cross-border use of copyrighted works; enhancing the enforcement of IP rights by giving more attention on commercial scale infringements.[378]

DSM strategy has led to some legislation and proposals which hugely affected copyright issues, too. One of the first legal act of the DSM strategy was geo-blocking regulation adopted in March 2018. It could be argued that geo-blocking as a discriminatory practice because it might be obstacle for customers from accessing or buying products or services from another EU country. Therefore, the regulation intends to prevent to reject obstacles to e-commerce by preventing discriminatory issues on customer's nationality, residence and so on. But its application can be limited to copyrighted works in hard form like CDs and hard copy books or services where the main feature is the provision of use of copyrighted materials or the selling of copyrighted works in intangible forms such as e-books and video games.[379]

Another controversial provision of the DSM strategy is the "download filter", which is contained in Article 17. As mentioned above, the Infosoc Directive demonstrates a failure to fully protect copyright holders from online copyright infringement. Thus, the main purpose of Article 17 is to protect the profit of authors when they create works.

Angelopoulos claims that article 17 of the DSM strategy is controversial and raises some questions for online service providers. For example, Article 17 regulates OSPs, and they are defined by law as profit-making providers that store and provide access to publicly available batches of copyrighted works uploaded by their subscribers. However, this definition looks so broad because it applies not only to well-known platforms like Youtube, Facebook, and others, but also to any platforms uploaded by users. The Regulation also explains that the operation of these platforms is an act of informing the public when they provide access to works uploaded by their subscribers. One interesting thing is that according to the new regulation, such platforms do not need privileges in relation to downloads.[380]

According to the regulation, such platforms have two main options: first, they can get permission from copyright holders by signing a license agreement, which seems difficult, since it is impossible to obtain licenses for mass works uploaded by users; second, platforms must meet certain requirements, such as prompt actions to block or disable access to

[378] ibid 4.
[379] ibid 5.
[380] Christina Angelopoulos and Joao Pedro Quintais, 'Fixing Copyright Reform' (2019) 10 Journal of Intellectual Property, Information Technology and Electronic Commerce Law 148.

malicious content as soon as they receive notification from the copyright holders, making every effort to obtain permission and ensure that the works provided by the copyright holders are unavailable.[381]

Some experts argue that these obligations associated with online providers may run counter to pre-existing laws, as well as human rights under the CJEU. To gain immunity and prevent access to works that violate copyright, Internet service providers must monitor all content to make sure that it is malicious material. Given the sheer volume of such content, providers need to rely on an automated verification system.[382]

A similar point of view was expressed by Ferry, who argues that OSP may be responsible for transmitting or providing content to the public when permission is not granted by the copyright holders. It should be noted that such a requirement creates a huge barrier for any OSP to obtain countless permissions from copyright holders. It is fair to say that the lack of clarity in the legislation regarding authorization forces some OSPs to take expensive measures, such as filtering or other methods.[383]

Moreover, Article 17 provides rules regarding the exemption of OSP from liability for unauthorized actions. To avoid liability, OSPs must comply with three main preventive obligations. First, they must demonstrate their best efforts to obtain permission from the copyright holders. Second, OSPs must rely on technological devices to monitor music, videos, photos, and other copyrighted content. Third, once copyright holders notice this, they should immediately block access to copyrighted content or remove it from their platform and take all necessary actions to prevent future illegal uploads.[384]

As it can be observed, there is no single harmonization to address indirect infringement around the world. In the US, local courts have relied on contributory and vicarious liabilities to address indirect copyright infringement, while in EU, except the UK, most Member states relied on tort law principles when there are issues concerning digital piracy.

To ensure the freedom of operation for ISPs, it can be seen that both the US and EU adopted «safe harbor regime» to limit providers' liability. The safe harbor regime not only decides whether ISPs are liable for copyright infringement, but also it provides certain mechanisms where providers need to fulfill some obligations due to copyright enforcement.

Notice-and-takedown procedure aims at combating copyright infringement in the Internet without time-consuming judicial process. So, according to the procedure, ISPs need to remove alleged illegal content or material once they receive notification. As mentioned above, there are certain differences between the US and EU with respect to the procedure. In the US, notification letter does not need to include

[381] ibid 148.
[382] ibid 149.
[383] Ferri (n 359) 33.
[384] ibid 34.

evidence of alleged infringing material, instead only a statement of alleging infringing content, and thus there is no need for ISPs to assess whether alleged material is infringing or not. In the EU, as most states have not codified the procedure and the notice-and-takedown procedure usually arise when a notice leads to the ISP knowledge of infringement. In another words, according to the EU approach, a notice should include evidence about infringing material and then ISP is about to evaluate the evidence prior to removing infringing material.

It is plausible to argue that the notice-and-takedown procedure achieves its effectiveness when there is clear legal certainty, in particular if there are certain elements: first, ISPs need to set an agent who accepts notification from copyright owner; second, ISPs should pass notification to the internet user whose content is about to remove; third, the procedure must clearly regulate the requirements and formal elements of a counter-notice; fourth, hosting ISPs should restore the removed content after receiving counter-notice, provided that the right holder does not initiate legal proceedings within the prescribed period; finally, the framework must address liability for false, abusive or bad-faith notifications.

Although, above said approaches may vary in their structure and implementation, their underlying rationale is essentially the same: provided that certain conditions are fulfilled, service providers are exempt from liability for third-party content to which they merely provide access.

The service providers can continue to realize its access to the resource, unless they know about copyright abuse. Once a provider knows or ought to know, that infringing content is available on its platform, it is required to take expeditious and appropriate measures to remove the infringing material or disable access to it.

3.4 Kazakhstani approach to copyright protection in the digital environment

Kazakhstan is constantly working to prevent the violation of exclusive rights of right holders. State’s government considers as a vital task not only lawmaking process in IP sphere, but also enhancing legal awareness in the public and authors. Some relevant amendments have been made in Criminal code and code on Administrative infractions which allow to identify individuals who is responsible for the creation of Internet websites for the illegitimate dissemination of information in the web. The feature of these amendments is liability which provided also for people who use the given resources to unlawfully disseminate information, copyright which is protected by law.

With regard to mechanisms for copyright protection, Kazakh legislation establishes both civil and criminal liability for online copyright infringement. In particular, the Civil Code and the Copyright Law contain

explicit provisions governing responsibility for copyright violations and the corresponding compensation mechanisms.

Under, the Civil Code, available remedies include injunctions to cease infringing actions, recovery of damages, confiscation of infringing materials, and mandatory publication of information about the violation.[385]

At present, the protection of copyright in the digital space in Kazakhstan is carried out in the following mechanisms:

- removal or blocking of illegal content (the author or copyright owner can request the court, the platform owner, or the internet service provider to remove or block unauthorized content or to help identify the person who originally uploaded it);

- technological protection measures such as digital watermarks, encryption, or limitations on copying and sharing content;

- monitoring of Infringements, including the use of software tools and specialized services designed to track the online use of copyrighted materials.

In Kazakhstan, initiatives are also underway to develop systems for the automated detection of unauthorized use. If the infringement takes place on a foreign platform, the rights holder may seek recourse by appealing to international bodies or courts under relevant international treaties, such as the Berne Convention or the WIPO Copyright Treaty.[386]

It is important to note that Kazakhstan currently does not impose administrative liability for violations of copyright and related rights. Since 2015, such offenses have been classified under criminal law. Consequently, today one may face serious sanctions for copyright infringement.

For example, under Article 198(1) of the Criminal Code of Kazakhstan, criminal liability occurs when a person uses the products of copyright and related rights without the consent of right holders as well as storing and manufacturing counterfeit products of copyright and (or) related rights for the purpose of commercial profit.

Pursuant to Article 198(2), enhanced liability applies if copyright infringement is committed at a significant level or has caused considerable damage to the rights of the authors or has been committed repeatedly.

Under Article 198(3) more severe penalties are considered where the infringing acts are committed by an organized group, cause particularly large-scale damage, or are carried out by a person using their official position. Depending on the gravity of the offence, sanctions

[385] Civil Code (n 39).

[386] Kazakhstanki Press Club, 'Po itogam sessii 'Avtorskoe pravo, plagiat v media i sozdanie sobstvennogo kontenta' [According to the results of the session 'Copyright, Plagiarism in the Media, and Creating Your Own Content'] <https://pressclub.kz/по-итогам-сессии-авторское-право-пла/> accessed 12 August 2025.

may range from fines to imprisonment fir a term of three to six years, as stipulated in the Article.[387]

Criminal proceedings under this Article are conducted by law enforcement agencies or the Economic Investigation Service, specifically the regional departments of the Financial Supervision Agency of the Republic of Kazakhstan.

Based on information available on the official website of the Committee on Legal Statistics and Special Registers under the Prosecutor General's Office of the Republic of Kazakhstan:

Table 1 – Information on criminal cases under the article of the Criminal Code of Kazakhstan "Violation of copyright and (or) related rights"

Period	**Number of offenses registered in the Unified Register of Pre-Trial Investigations during the reporting period**	**Number of offenses for which criminal cases were sent to court during the reporting period**	**Terminated due to lack of elements of crime**
2015	154	1	20
2016	120	10	39
2017	73	4	2
2018	43	0	19
2019	24	0	12
2020	19	0	21
2021	0	0	2
2022	0	0	2
2023	0	1	2
2024	1	1	0
2025	0	0	2
Total	**434**	**17**	**121**
Note – Compiled by the author based on sources[388]			

Table 1 shows a significant decline in the number of registered preliminary investigations related to crimes in the area of copyright and related rights.

In 2022, the Supreme Court of the Republic of Kazakhstan released only two rulings on criminal cases under Article 198 of the Criminal Code. Specifically, in Case No. 2-1/34, the Alatau District Court of Almaty terminated the proceedings due to the withdrawal of a private complaint filed under Article 198(1).[389]

[387] Criminal Code (n 70).

[388] Pravovaya Statistika, 'Statisticheskye otchety' [Statistical reports] <https://qamqor.gov.kz/crimestat/indicators> accessed 12 January 2026.

[389] Zhangir Shalekenov, 'Ugolovnaja Otvetstvennost' za Nezakonnoe Ispol'zovanie Ob'ekta Avtorskogo i Smezhnogo Prava' [Criminal liability for the illegal use of copyright and related rights]

Unfortunately, this reduction does not reflect an improvement in the protection of the exclusive property rights of authors and copyright holders.

There has been a marked rise in intellectual property rights disputes including copyright in Kazakhstan. The majority of these cases reviewed by the national courts involve the improper use of trademarks and copyrighted materials.

Since the beginning of the year, monitoring of the Internet space has identified almost 18,000 (17,901) foreign Internet resources with illegal content, including 121 with signs of copyright and related rights violations. In order to block access to such sites in the Kazakhstan segment, cooperation is underway with the Ministry of Information and Public Development.[390]

It should be noted that Kazakhstan enacted the Law “on Online Platforms and Online Advertising” in 2023. The law was popular and widely discussed in local media and got unofficial name as ‘law about bloggers’.[391] The law defined online platforms as ‘an online resource, software application, or instant messaging service that allows a user, through their personal account or a public community, to receive, create, publish, distribute, or store content on an online platform’.[392]

In another words, online platforms are digital services with a subscriber system which lets users to make, distribute and publish content. In our opinion, since a service provider a broad category, online platform tends to be one of the types of it. As mentioned above, service providers include access providers, hosting providers and transmission providers. It would be plausible to argue that all online platforms are service providers, but not all ISPs are online platforms.

Moreover, the store and distribution of illegal content is prohibited on online platforms in the territory of Kazakhstan, according to the law. Illegal content encompasses materials that promote or incite violent changes to the constitutional order, threaten the territorial integrity of the Republic of Kazakhstan, undermine state security, or advocate war, separatism, fraud, or social, racial, national, religious, class, or tribal superiority. It also includes propaganda of cruelty, violence, suicide, pornography, narcotics, psychotropic substances and their analogues or precursors, as well as information that disrupts interethnic or interfaith harmony, discredits statehood and territorial integrity, discloses state secrets or other legally protected secrets, and any other content

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(2023) 2 Intellektual'naya sobstvennost' Kazakhstana https://qazpatent.kz/storage/app/media/qazpatent_pub_02.2023.pdf accessed 12 August 2025.

[390] Kazakhstanki Press Club (n 386).

[391] Erzhan Esimhanov, ‘The Law ‘On Online Platforms and Online Advertising’ in Kazakhstan – Approach to Regulation and Practical Consequences’ (*Grata,* 16 November 2023) https://gratanet.com/ru/publications/1-2560?region=serbia accessed 12 August 2025.

[392] Law of the Republic of Kazakhstan on Online Platforms and Online Advertising № 18-VIII 10 July 2023 https://adilet.zan.kz/rus/docs/Z2300000018 accessed 12 August 2025.

prohibited under the laws of the Republic of Kazakhstan.[393] As it can be seen that the law fails or does not indicate IP issues as copyright infringement.

Moreover, the Digital Code introduced a digital object which can be defined as an independent element of the digital environment that is created, used or transmitted through digital technologies, characterized by unique digital features and enabling subjects of the digital environment to exercise rights of possession, use and disposal in accordance with the legislation of the Republic of Kazakhstan. The digital object includes digital platforms which are defined as a digital object that enable access within the digital environment to data, services, and goods offered by participants of the digital environment, and facilitates interaction among such participants.[394]

In contrast to service providers, whose role is largely limited to the technical transmission and storage data, digital platforms function as active facilitators of digital interaction, set the rules governing the use of digital content, and exert substantial influence over its dissemination, thereby requiring a differentiated approach to their liability for copyright infringement.

Despite the existence of detailed provisions, a significant legislative gap persists regarding the protection of copyright in the online environment. The current legal framework lacks specific measures to address and combat copyright infringement occurring directly on the internet. A comparative analysis highlights that, unlike other countries with well-developed regulations for digital copyright protection, Kazakhstan's Copyright Law remains insufficient in this area.[395]

The Copyright Law does not contain specific legal provisions regulating the status and liability of ISPs. Moreover, Kazakhstan has not adopted a dedicated legislative act aimed at defining and safeguarding the functions of ISPs, which could reduce their legal uncertainty and exposure to liability. In addition, Article 6 of the Copyright Law, which enumerates the protected subject matter, does not explicitly refer to works expressed in electronic or digital form.[396]

In the context of copyright protection in cyberspace, Idrysheva addresses the legal regulation of information intermediaries in Kazakhstan. She highlights that, although social interactions involving providers have existed for nearly three decades and continue to evolve rapidly, Kazakhstani legislation still lacks a defined legal status for these providers.

[393] ibid art. 14.
[394] Digital Code (n 6) art 20, 29.
[395] Ansagan Aronov and Sara Idrysheva, 'Copyright Infringement in the Digital Age: The Case for Reform to Kazakhstan's Copyright Laws' (2024) Access to Justice in Eastern Europe 19.
[396] ibid 18.

Moreover, the study revealed that the legislation of Kazakhstan lacks specific provisions governing public relations related to the circulation of creative intellectual works on the global internet, particularly concerning the primary participants involved in these processes.[397]

In addition to proposing regulations defining service providers, their types, and liability under copyright law, Idrysheva recommends introducing the following provisions:

– providers must obtain individuals' consent before publishing materials on an online platform. If textual works are submitted under another person's name, as stipulated in Article 15 of the Civil Code, providers should reject such submissions;

– Internet platforms should include guidelines for copying or reprinting uploaded texts, ensuring that a source link is automatically included when content is copied;

– a notice should be displayed on the website indicating the presence of specific copyright holders or authors associated with the posted content.[398]

Similarly, Masalina argues that the imposition by Kazakh legislation on hosting operators of the obligation to take measures against the unauthorized communication of works to the public constitutes a timely and necessary means of protecting copyright in the Internet environment. The experience of US copyright law may serve as an example in establishing such an obligation and regulating the relevant procedures. One of the most important aspects of this obligation is that it should be accompanied by certain conditions that ensure the prevention of abuse on the part of operators.[399]

Having analysed the current legislation of the Republic of Kazakhstan in the sphere of copyright protection, particularly in light of the ongoing development of the digital environment, the following conclusions can be drawn: first, it is necessary to amend Articles 970 and 971 of the Civil Code of the Republic of Kazakhstan by incorporating the above-mentioned provisions aimed at strengthening copyright protection in the digital environment. In addition, given that ISPs alongside users and right holders, play significant role in the IP system, it is proposed to introduce a legal definition of ISPs and to establish clear limitations and exceptions to their liability; second, drawing on the DEA model, it is advisable to supplement the Copyright Law with a separate

[397] Ansagan Aronov and Sara Idrysheva, 'Information Intermediaries in the Digital Environment: Copyright Problems and Trends of Legal Regulation' (2025) 1 (113) Al-Farabi Kazakh National University Journal of Actual Problems of Jurisprudence 112.

[398] Sara Idrysheva, 'Information Intermediaries and Their Role in Copyright Relations in the Digital Age' (2024) 3 (104) The Law and State Journal 26.

[399] Saule Masalina, 'Institut Avtorskogo Prava v Usloviah Razvitia Informacionnyh Tehnologii' [The Institute of Copyright in the Context of Information Technology Development] (Dissertation, Almaty 2007) 128.

provision imposing an obligation on internet intermediaries to notify their subscribers of alleged copyright infringements.[400]

In addition to above, Amangeldy also shares the view by arguing that nowadays it is possible to find any information in the global network, though IP rights are practically ignored, their violation is not prosecuted. The adoption of legal regulation of information intermediaries is necessary in Kazakhstan, as it will allow IP law to be transferred to a qualitatively new level.[401]

The lack of judicial practice concerning copyright violations in the digital realm in Kazakhstan can be attributed to several factors. Authors are often reluctant to pursue legal action due to litigation fears, challenges in collecting and documenting evidence, a general lack of public awareness regarding technical and legal issues, and insufficient expertise among lawyers in internet-related technology.[402]

Some argue that copyright cases rarely reach the courts because Kazakhstan lacks a structured market for copyrighted works. For instance, local singers primarily earn income through concerts and wedding performances rather than album sales. In contrast, artists in the US and UK typically generate significant profits from album sales.[403]

The rise of the internet has exacerbated copyright violations in Kazakhstan. A notable example is Almaty-based photographer Zolotukhin, who has been fighting copyright infringement for over five years. Despite his efforts, the issue remains widespread, with one of his photos reportedly infringed 5,500 times according to Google. In recent court rulings, Zolotukhin was awarded over 2 million tenge in damages for copyright violations. The case involved local companies that used his photos between 2016 and 2019. Although the defendants argued that the photos were sourced from open platforms lacking identifiable author information, the court ruled in favor of Zolotukhin, citing the absence of a contractual agreement between the parties.[404]

Another prevalent issue in Kazakhstan's digital environment is plagiarism, which involves presenting another person's work, either wholly or partially, under one's own name. This includes altering, falsifying, or removing rights management information, particularly in electronic formats, without the consent of the copyright holder.

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[400] Aronov and Idrysheva, 'Copyright Infringement in the Digital Age: The Case for Reform to Kazakhstan's Copyright Laws' (n 395) 19.

[401] Aizhan Amangeldy, 'Intellectual Property Law of the Republic of Kazakhstan at the Present Stage' (Dissertation, Moscow 2015) 241.

[402] Ansagan Aronov, 'Protecting Copyright in the Internet Age: the Kazakhstani perspective' (n 191) 76.

[403] Anna Vidyanova, 'Pochemu Zashhita Avtorskih Prav Ne Razvita v Kazakhstane?' [Why is copyright protection not developed in Kazakhstan?] (*Kapital,* 25 February 2019) <https://kapital.kz/gosudarstvo/76107/pochemu-zashchita-avtorskikh-prav-ne-razvita-v-kazakhstane.html> accessed 12 August 2025.

[404] Zolotuhin v ATIS LTD no 7514-19-00-2/10892 (Bostandyk district court of Almaty, 5 March 2020) https://office.sud.kz/courtActs/documentList.xhtml accessed 21 May 2024.

One prominent plagiarism case in Kazakhstan involved the web series “5:32”. The plaintiff, Mr. Dzaldinov, sued LTD “Salem Social Media” for approximately 15,000 monthly calculation indices (MCI) (one MCI equals 4,325 tenge) and 300 million tenge in moral damages. The court determined that the series’ screenwriters had plagiarized elements from Dzaldinov’s book. The defendants denied all allegations of copyright infringement.[405]

Furthermore, Yakubova and Yakubov argue that plagiarism does not necessarily require the full publication of plagiarized work. It can occur even when parts of a work, such as sections of a dissertation or scientific article, are copied. The core aspect of plagiarism lies in the legal consequences of claiming someone else’s work as one’s own. While the concept of plagiarism appears simple, its scope is often unclear and sometimes overlap with other related actions. For example, the unauthorized use, reproduction, or publication of copyrighted material may not always be classified as plagiarism.[406]

The Copyright Law defines an “internet resource” as an electronic information resource presented in text, graphic, audiovisual, or other formats, identified by a unique network address and/or domain name, and operating on the internet. However, this term is used exclusively in the context of regulating the activities of entities managing property rights collectively.

Additionally, Article 6 of the Copyright Law, which lists objects of copyright, does not explicitly include items in electronic or digital form, except for audio and video recordings in digital format. No specific provisions exist for other types of digital objects.[407]

In 2011, Kazakhstan's state authorities proposed a “three strikes” system to combat copyright infringement as part of their efforts to strengthen copyright protection against piracy. Under this approach, the first strike would result in a notification, the second in a formal warning, and the third strike could lead to the initiation of criminal proceedings. However, the proposal faced opposition from Internet users and bloggers, who argued that such strict measures could negatively affect Kaznet, which relies heavily on pirated content, by deterring users with restrictive policies. Critics contended that the state’s approach to curbing copyright infringement might discourage users from accessing Kazakh online platforms and reduce the competitiveness of Kaznet. In response to these concerns, the Internet community called on the Government to temporarily suspend changes to copyright laws. Since then, no further

[405] Oksana Skiban, ‘V Minjuste Rasskazali, Budut li Uzhestochat' Otvetstvennost' za Plagiat' [The Ministry of Justice has Revealed Whether the Responsibility for Plagiarism will be Tightened] (*Zakon*,19 December 2023) <https://www.zakon.kz/sobytiia/6417955-v-minyuste-rasskazali-budut-li-uzhestochat-otvetstvennost-za-plagiat.html> accessed 12 August 2025.
[406] Iroda Yakubova and Aybek Yakubov, 'Problems of Copyright Protection: Plagiary and Piracy on the Internet' (2021) 4(12) Turkish Journal of Computer and Mathematics Education 1134.
[407] Law on Copyright and the Related Rights (n 23) art.2,6.

legislative initiatives of a graduated response system have been adopted.[408]

A comprehensive analysis of the above-mentioned legal acts suggests that the introduction of the following provisions into national legislation could significantly strengthen copyright protection in the digital environment (see Application 1):

1. Section 2 of the Copyright Law should be expanded to include the following definitions:

a) Digital Information – *Audiovisual works, musical works (with or without lyrics), computer programs, phonograms, and other materials readable and reproducible by computers. These can exist as files (or parts of files) stored in databases on the internet or on storage devices such as servers*;

b) Service Provider – *A legal entity, organization, or individual that provides services or resources to website owners for hosting websites or their components on the internet and enabling their accessibility online. A website owner who independently publishes and makes digital content available online using their own technical infrastructure nay also be considered a service provide*r.

2. Drawing inspiration from the US's legal framework and the EC Directive Regulations (2002), it would be beneficial to introduce a new article in Chapter 5 of the Civil Code to address the responsibilities of internet intermediaries:

Article 970-1. Liability of Service Providers

1.A service provider in the digital environment is liable for intellectual property rights violations on general grounds established by this Code.

2. A service provider that transmits material in the digital environment is not liable for intellectual property violations resulting from such transmission if all of the following conditions are met:

1)it did not initiate the transmission and did not select the recipient;

2)it did not alter the material, except for changes necessary for the technical process of transmission;

3) it neither knew nor should have known that the use of the intellectual property by the initiating party was unlawful.

3. A service provider that provides the ability to post material in the digital environment is not liable for intellectual property violations resulting from such posting by a third party if both conditions are met:

1) it neither knew nor should have known that the use of the intellectual property or means of individualization in the material was unlawful;

[408] Sergey Park, 'Kazakhstan: Bor'ba s Internet-piratstvom' [Kazakhstan: Combating Internet Piracy] (*Global Voices*, 20 June 2011) <https://ru.globalvoices.org/2011/06/20/4442/> accessed 12 August 2025.

2)upon receiving a written notice from the copyright holder identifying the web page and/or network address containing the infringing material, it promptly took the necessary and sufficient measures to stop the violation. The scope and procedure of such measures may be defined by law.

4. The burden of proving the existence of an infringement of copyright and/or related rights, as well as the dispatch of a proper notice to the service provider, shall lie with the rightsholder. The burden of proving the good faith of its conduct and compliance with the obligations set out in paragraph 1 of this Article lie with the service provider.

5. In the event of failure to comply with the conditions for exemption from liability, service providers shall bear responsibility for the damages caused in accordance with the procedures established by the Civil Code and the Criminal Code of the Republic of Kazakhstan.[409]

Moreover, the notice-and-takedown mechanism has emerged as a key instrument in addressing online copyright violations. Its main advantage lies in offering rightsholders a fast and cost-efficient means of enforcing their rights in the digital environment, whereas obtaining a court injunction often requires more time and involves higher expenses.

In light of the rapid growth of digital content and the increasing scale of online copyright infringement, the absence of a formalized notice-and-takedown system can lead to several challenges: ambiguity regarding the legal status of service providers, the absence of effective self-regulation, and the inability to ensure a timely pre-trial response to widespread copyright violations.

Furthermore, since the notice-and-takedown procedure is widely recognized as an international standard and, in some jurisdictions, operates within the framework of the “safe harbor” regime, adopting a similar mechanism in Kazakhstan would contribute to aligning its copyright framework with global best practices.

3.5 Conclusions and findings of Chapter 3

This chapter surveys how the US, UK, EU and Kazakhstan tackle digital-era copyright. In the US, successive reforms culminated in the 1998 DMCA, pairing anti-circumvention rules with conditional “safe harbors” (Section 512) for online intermediaries. These protections apply where intermediaries comply with notice-and-takedown procedures, act on specific “red flag” knowledge of infringement, and terminate repeat infringers. In parallel, broader platform immunity for user speech is provided under Section 230 of the Communications Decency Act, although this immunity does not extend to IP claims. US courts have further shaped secondary liability through important decisions such as

[409] Aronov and Idrysheva, ‘Copyright Infringement in the Digital Age: The Case for Reform to Kazakhstan’s Copyright Laws’ (n 395) 19.

Sony (Betamax), which established the principle of substantial non-infringing uses, and MGM v. Grokster, which introduced the inducement theory of liability. Service-provider cases, including MP3tune and Veoh, clarified the distinction between general awareness of infringement and specific knowledge. Legislative initiatives supported by rights-holders such as SOPA/PIPA and ACTA, met objections due to civil liberties and innovations.

In the UK, the CDPA 1988 defines primary/secondary infringement, embeds fair dealing, and through case law and the Digital Economy Act 2010 enabled site-blocking and even “live” dynamic injunctions demonstrated in cases, including Newzbin and Popcorn Time. These measures have been complemented by educational and voluntary initiatives involving internet service providers following the abandonment of the proposed “three-strikes” enforcement code.

The EU framework combines the Information Society Directive (2001/29/EC), which regulates rights of reproduction and communication to the public, protects TPMs, and introduces exceptions such as the transient copy exception, with the E-Commerce Directive (2000/31/EC) establishes safe harbour protections for intermediary services including mere conduit, caching, and hosting.

More recently, the Digital Single Market agenda produced the Geo-blocking Regulation and, most notably, Article 17, which treats large user-content platforms as communicating to the public unless they license or make best efforts to prevent and stay-down infringements raising cost, proportionality and fundamental-rights debates around upload filtering. Across the United States and Europe, the shared core is liability limitation conditioned on swift action once notice has been received. the US tends to accept bare notices and restore via a statutorily defined counter-notice, while the EU often expects more evidence and leaves procedures to Member States.

Kazakhstan, by contrast, relies primarily on criminal sanctions under Article 198 of the Criminal Code, supplemented by ad-hoc content removal and blocking measures. Case law remains limited, while instances of online copyright infringement continue to increase.

Scholars analysis highlight some legislative gaps in the Kazakh legal system, including undefined service-provider categories, no harmonized N&TD or counter-notice, and incomplete coverage of digital works. Proposed reforms include adding digital-content and service-provider definitions to the Copyright Law and Civil Code, codifying safe-harbor conditions similar to those found in the EU and US frameworks, and adopting a balanced N&TD with counter-notice and penalties for abusive claims.

4. REMEDIES FOR DIGITAL COPYRIGHT INFRINGEMENT
4.1 Digital Right Management

Legal regulation alone is insufficient to ensure effective copyright protection in the digital environment. It is argued that DRM and other technological protection measures have emerged as a functional response to large-scale online violation, complementing traditional legal remedies. DRM is examined as an integral component of modern copyright enforcement rather than a purely technical solution.

It could be argued that many right holders believed that the same technologies which threaten copyright may also be used to protect it. Thus, some authors took various technological protection measures to protect their copyrighted works. Technological protection measures can be used for different aims from controlling access to regulating its subsequent use. Besides, they are usually integrated into software systems or installed into hardware. Common examples of such technological measures are passwords and encryption.[410]

The advantages of technical measures can be illustrated as follows:

- to protect copyrighted works from reproduction, for example RealNetworks streaming products mentioned above;
- to provide users with access to the material in question, for example, by using encryption or scrambling;
- label the material to identify its source, for example, using digital watermarks.

As noted above, the creative ambition of right holders can be ruined due to copyright abuse on digital environment, which results in the detrimental effect on the entire society. As a solution to protect digital copyrighted works, most scholars offer DRM tools. It has been said that such technologies aim at protecting copyright infringement of works in a digital format.[411] Hofman, for instance, argues that DRM appeared as a technological solution for copyright protection.[412]

DRM encompasses a diverse range of hardware and software technologies designed to regulate the access, use, modification, and distribution of content across online and offline platforms. Often referred to as TPMs, DRM plays a pivotal role in enhancing copyright protection for technology-driven content. Nearly all the content we consume, whether from iTunes or Netflix, is governed by a specific DRM protocol. Most DRM systems function through encryption or computer code embedded within digital content to restrict access or usage. These systems can regulate factors such as the number of times the content is

[410] M. Jansen, 'The Protection of Copyright Works on the Internet-an Overview'(2005) 38(3) Comparative and International Law Journal of Southern Africa 348.
[411] Nithin V. Kumar, 'Digital Rights Management and Intellectual Property Protection' [2012] SSRN Electronic Journal <https://papers.ssrn.com/abstract=2030762> accessed 12 August 2025.
[412] Julien Hofman, *Introducing Copyright: A plain language guide to copyright in the 21st century* (Commonwealth of Learning Vancouver 2009) 117.

accessed, the devices or individuals permitted to use it, or the duration of accessibility.[413]

Kumar argues that DRM is a term which covers any technologies used by right owners to prohibit, allow, provide access to works protected by copyright. From this explanation, it would fair to conclude that DRM enables right holders to control access to copyrighted works through various digital tools or technological devices. More specifically, DRM can be understood as a technological system aimed at protecting IP through mechanisms such as encryption and watermark tools. Through encryption, a work can be assessed by only authorized user, whereas, watermarking attaches a special mark to the content in order to identify its origin and ownership.[414]

DRM systems are designed to control copyrighted content which is distributed from right owners to users. In order to perform its function, DRM technologies usually have certain tools such as identifiers, metadata, and usage guidelines for the users. As an example, the streaming platform Netflix which let its subscribers to watch movies by providing them with a key to decrypt the film. To prevent copyright abuse such as illegal downloading, copying and sharing, the streaming platform usually hides that key. Other examples include Spotify or Apple iTunes in the music industry or the coding systems embedded in DVD players which determine whether a user can play legal DVD product.[415]

It is worth mentioning that DRM is sometimes confused with TPMs and IRM. TPM is usually installed by a copyright owner to monitor copyrighted works and its infringement can be explained as an analogue to breaking or entering into a locked room in order to get the copy of a work. While IRM is a collection of technological tools that aims in the protection of information from unauthorized usage.[416] Garnett argues that on the one hand DRM technologies should provide the users or consumers with opportunities to consume legally music and other digital works and on the other hand, they should also secure right owners and other commercial participants to have means to manage their rights and protect them. One prominent example concerns the P2P distribution systems, which may facilitate the distribution of digital content while simultaneously incorporating mechanisms to prevent unauthorized copying or sharing.

[413] Irina Atanasova, 'Digital Right Management: Safeguarding Copyright in the Cyber Era' (2023) 23(4) Annals of Spiru Haret University. Economic Series 287.
[414] Kumar (n 411) 1.
[415] Annabel Tresise, Jake Goldenfein and Dan Hunter, 'What Blockchain Can and Can't Do for Copyright' (2018) 28 Australian Intellectual Property Journal 144.
[416] Kumar (n 411) 2.

The DRM technologies must solve some pivotal issues like striking a correct balance between the interest of right holders, technology providers, and the public.[417]

In general, DRM can be understood as consisting of three main components:

1) Secure distribution: In accordance with this, the copyright owner can prohibit: distribution of his / her copyrighted works. Moreover, thanks to this system, copyrighted works can be reviewed for a certain period of time, and users can be prohibited from viewing, copying, editing and sharing their works;

2) Encryption tool: With this tool, the author can protect copyrighted works from illegal actions, such as piracy, copying, reading, and others. These works can be decoded later, which means that the materials can again be in a human-readable format. Such decryption can be performed by an individual who has the right to do so. This system is widely used in messaging applications such as Whatsapp;

3) Watermarking: a specific mark or logo attached to each digital image content that helps protect works from copyright infringement on the Internet.

Besides, apart from above tools there are other ways to protect the works from copyright infringement:

– Limiting the distribution of the data, for example, PDFs can be restricted to a limited number of devices;

– Preventing the screenshot or saving the data, a good example might be Facebook which restrict the ability to capture or download protected content;

– Restricting access for non-paying users, as implemented by services such as Spotify, Netflix and iTunes, which require subscriptions or payment to access copyrighted materials.[418]

Similarly, Atanasova argues that DRM may impose some restrictions on digital copy restrictions:

– Copy prevention: a traditional form of DRM allows users to access or consume digital content on the main channel, but do not allow copies to be created. This approach is often used by online publishers to prevent plagiarism;

– Copy restrictions: Similar to copy prevention, this method permits users to create a limited number of copies under specific conditions, such as a restricted number of eBook copies for personal use;

– Password protection: A simple but effective DRM approach that requires a unique password to access documents. This technique is

[417] N. Garnett, 'Digital Rights Management, Copyright, and Napster' (2001) 2(2) ACM SIGecom Exchanges https://www.sigecom.org/exchanges/volume_2/2.2-Garnett.pdf accessed 12 August 2025.
[418] Rachit Garg, 'Digital Rights Management :The New Copyright' (*IPleaders*, 24 June 2023) <https://blog.ipleaders.in/digital-rights-management-the-new-copyright/> accessed 13 August 2025.

commonly utilized by financial service providers to safeguard consumer transactions;

– Watermarking technologies: A cost-effective DRM strategy that embeds distinctive watermarks in visual content to prevent unauthorized reuse. This method is widely used to create stock photos, GIFs, and videos to prevent commercial use;

– Device control: A sophisticated DRM technology that restricts file access to authorized devices. This approach is widely used in enterprise DRM systems, requiring device manufacturers to obtain DRM certification in order to ensure compatibility with platforms such as Netflix.[419]

Technological protection measures have generated significant debate regarding restricted access to content. Copyright holders use these tools to prevent unauthorised use of their works, creating the challenge of finding a fair balance between their rights and the broader public interest. DRM and similar technologies intensify this tension. Authors now exert a greater control than ever, with digital content often made available only through pay-per-view models. As a result, the public domain is shrinking, including not only copyright-free materials but also works whose protection has expired. This shift disproportionately affects users in developing countries, where access to knowledge increasingly depends on one's ability to pay.[420]

However, Hoffman notes that the growing effectiveness of DRM raises two serious problems. The first concerns potential restriction of users' legal rights to access copyrighted materials or to use works that are not protected by copyright. The second relates to the potential intrusion into personal privacy.

An important question therefore arises as to whether the removal of DRM by users in order to exercise their legal rights violates the laws that protect DRM. International agreements do not provide clear guidance on this matter, which makes the outcome dependent on the domestic legislation of individual country. Moreover, interpretation often depends on the importance attached by national courts to education and access to knowledge. In jurisdictions where constitutional rights place access to knowledge and education above statutory DRM protections, courts may determine that DRM protections do not apply when users assert these fundamental rights.

Although DRM software is primarily designed to protect copyright, it may inadvertently violate personal privacy by monitoring user interactions with the software or other copyrighted works. In addition, the unintended consequences of strict DRM protection were documented. For example, in 2006, the Electronic Frontier Foundation published a

[419] Atanasova 'Digital Right Management: Safeguarding Copyright in the Cyber Era' (n 413) 288.
[420] Tana Pistorius, 'Developing Countries and Copyright in the Information Age' (2009) 9 (2) Potchefstroom Electronic Law Journal 9.

report demonstrating how strict DRM compliance under the US Digital Copyright Act hinders academic research and restricts business competition. Similar problems are likely to arise in other countries that are implementing a strong legal framework for DRM. In addition, the ubiquitous nature of the Internet exacerbates problems for copyright holders, making it more difficult to collect royalties for digital works.[421]

It can be argued that, despite the fact that DRM systems promise to provide a high level of technological security, no technology guarantees complete security. Because some hackers tend to bypass technical measures. For example, hackers created the DeCSS decode system to bypass the content scramble system, which is designed to protect DVDs. Because the encryption code is compromised, the entire system relying on this code may be compromised. This is why many copyright holders argue that circumvention of technical measures should be outlawed.[422] It is therefore reasonable to conclude that technological protection systems have been circumvented in the past are likely to face similar challenges in the future.

To address security concerns, specific legal norms were introduced that made it illegal to circumvent actions and manufacture or distribute technological tools that could be used to circumvent such actions.[423]

For example, Article 11 of the WCT requires Member States to take measures against DRM circumvention technologies.[424] For example, both the US DMCA and the European Copyright Directive of 2001 contain similar provisions for the protection of digital content. Although there are some differences, both legal acts are aimed at achieving a balance between the interests of copyright owners and the legitimate interest of users to have access to copyrighted works. In addition, the main goal that binds both of these acts is to impose responsibility on users who circumvent any DRM projects without the consent of the copyright holders.[425]

Thus, when foreign right holders use DRM technologies to protect their works, national legislation should provide effective legal protection against the circumvention of such technological measures by domestic users or infringers.

In connection with the legal protection of DRM, certain articles of the Copyright Law were amended. Today, these provisions clearly clarify that if the technical means installed in a copy of works were circumvented, then such copies are considered counterfeit products. According to the Copyright Law, a court may adopt several measures in relation to counterfeit products:

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[421] ibid 288.
[422] Stokes, *Digital Copyright Law and Practice* (n 40).
[423] Stefan Bechtold, 'Digital rights management in the United States and Europe' (2004) 52 (2) The American Journal of Comparative Law 331.
[424] Kumar (n 411) 4.
[425] ibid 6.

1) prohibiting the defendant from producing, reproducing, selling, or using copies of copyright objects;

2) ordering the seizure and confiscation of all copies of copyright objects, as well as materials and equipment used for their production;

3) ordering the destruction of counterfeit copies of copyright objects.[426] Therefore, if the copyright holder has implemented or installed a program containing a work or a technical device, and the user hacks that protection and gained access to the copyrighted work, then the received copy of the work may be considered a counterfeit product.

The adoption of the above rules has led to some cases where the court has basically stopped the production and distribution of products, such as software, that were intended to circumvent technological protection measures. For example, in one case, a court issued an injunction to prevent a company from offering software that circumvents the code management system in Sony's PlayStation game console, while in another case, a local court ruled against a company offering software that circumvented copy protection technology embedded in RealNetworks software.

In general, the primary purpose of DRM technologies is to assist copyright holders in safeguarding their digital works by restricting unauthorized distribution, reproduction, and use. However, DRM technologies are often perceived by users as intrusive and inconvenient, making them one of the most debated issues in copyright law. Critics argue that DRM is not only costly and time-consuming to develop but also vulnerable to individual hackers. As a result, DRM systems may exhibit several drawbacks, including difficulties in effectively monitoring digital content, susceptibility to hostile manipulation, and limited long-term effectiveness. Despite these limitations, most national copyright laws recognize DRM as a principal tool for protecting works in the digital environment.[427]

A similar opinion is expressed by Savelyev, who claims that DRM can reduce the level of copyright piracy to a certain extent, although it does not ensure perfect copyright compliance. First, DRM can complicate some issues, such as transaction costs for copyright holders. As practice shows, not all copyright holders can apply DRM tools for every copyrighted material. Second, DRM may also cause many difficulties for users. For example, they may lead geographical discrimination among subscribers, where users in certain regions cannot access or purchase digital content available in other markets. In addition, DRM systems may create security vulnerabilities in users' computer system. A well-known example is the Sony Rootkit controversy, where Sony embedded DRM software into music CDs.

[426] Law on Copyright and the Related Rights (n 23).
[427] Tresise, Goldenfein and Hunter (n 415) 6.

Third, because DRM is associated with code and, therefore, any code can be hacked. For example, there was a case when a tool called "content scramble system" designed to protect DVDs, was hacked by a young programmer who developed the DeCSS software.

In addition to the above disadvantages, DRM also prevents some use of copyrighted materials that would otherwise be considered lawful. It should be noted that the public's fair use rights may be removed due to DRM, which grants copyright holders additional powers. For example, the actions of the film industry to install DRM on DVDs has led to restrictions on legitimate user activities, such as making copies of personal or private use of legally purchased products.[428]

In the practice of copyright protection, the "Sony Rootkit" was one of the DRM technologies that caused some controversial disputes among the public. After discovering that the music on CDs is not technically protected, Sony decided to install special software designed to prevent copying the work to a personal computer. However, this software created an obstacle to the proper functionality of the operating system: first, it was installed without the knowledge of consumers and there was no uninstaller. After determining that the software could cause security problems for consumers, this led to a lawsuit against Sony, and as a result, the company recalled the affected CDs.[429]

In addition, the use of DRMs may be questionable for some buyers and users, since they may not know that the content they purchased cannot be transferred to other devices or tools.[430]

Some civil society activists are also concerned about DRM because it restricts the flow of information. For example, some lawyers believe that control over information will be given to copyright holders at the expense of consumers, such as librarians or scientists, who want to treat IP fairly. Lessig, a US legal expert, fears that the code may be governed by the legal code, rather than the other way around. And it asks the government to protect consumers' intellectual property by limiting DRM capabilities. Lessig believes that too much attention to copyright can lead to liability for copying, which means the obligation of copyright owners to provide public access.[431]

Moreover, Garnett argues that DRM should be in a neutral position, which means that it should not give any advantage to any parties or hidden interests. It also says that DRM providers should not benefit from any of the benefits of this technology, except for copyright holders and

[428] Alexander Savelyev, 'Copyright in the Blockchain Era: Promises and Challenges' (2018) 34 Computer Law & Security Review 550.
[429] Dana Dahlstrom and others, 'Piracy in the digital age' [2006] University of San Diego https://courses.cs.washington.edu/courses/csep590a/06au/projects/digital-piracy.pdf accessed 14 August 2025.
[430] Stokes, *Digital Copyright Law and Practice* (n 40) 213.
[431] Abbas Foroughi, Marvin Albin and Sharlett Gillard, 'Digital Rights Management: A Delicate Balance between Protection and Accessibility' (2002) 28 Journal of Information Science 389.

consumers. Thus, neither the copyright owner, nor the user, nor the DRM provider should change any commercial agreements or create obstacles to the interests and rights of any parties.[432]

Unfortunately, as real practice has shown, technological protection measures did not meet the expectations of copyright holders, since in some cases they were irrelevant or inappropriate in relation to copyright infringement due to their helplessness before hacking.[433]

When weighing the pros and cons of DRM, it's fair to say that it will have to protect digital copyrighted works and ensure that everyone who creates, produces, and distributes a work gets paid fairly for using the works. We can say that the DRM industry needs to find a balance between fair payment for digital content creators and the rights of end users to access and use copyrighted works. Some believe that DRM should promote the basic principles of effective copyright systems: protecting the rights and interests of copyright holders, promoting the interests of the public, and promoting the effective dissemination of copyrighted materials.

DRM does not provide reliable protection against piracy. The hacker community has demonstrated a remarkable ability to bypass technological security measures, which makes them inherently vulnerable. For the average Internet user, such measures often create significant barriers to accessing purchased content. While the legal strengthening of DRM tools is intended to combat piracy, it has quickly evolved into a legislative response. It is now clear that this legal approach has led to several unintended consequences. The effectiveness of technological protection measures should be evaluated on the basis of their technical capabilities and current innovations, and not solely on the basis of a legal framework. It is important to recognize the ever-evolving nature of technology and the adaptability of determined hackers in developing effective content protection strategies.[434]

While DRM constitutes an important technological instrument for copyright protection in the digital environment, its application remains controversial and limited in effectiveness. In practice, DRM systems tend to prioritize the interests of right holders and distributors, often at the expense of copyright limitations, consumer rights, and the public interests. Moreover, the persistent circumvention of DRM technologies demonstrates that technical protection measures alone cannot serve as a comprehensive solution to online piracy. Consequently, DRM should be regarded as an additional mechanism that must operate within clearly defined legal boundaries and be integrated into broader, balanced framework combining legal regulation, technological innovation and respect lawful user freedoms.

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[432] Garnett (n 417) 4.
[433] Jansen (n 410) 349.
[434] Atanasova (n 411) 289.

4.2 Creative Commons

The Creative Commons (CC) represents an alternative regulatory model within copyright law aimed at reconciling exclusive rights with public access in the digital environment. It is argued that CC does not weaken copyright protection, but rather modifies it by enabling authors to exercise their rights in a more flexible and socially responsive manner. CC is analysed as practical mechanisms for restoring balance between private and public interests in the information society.

Creative Commons is associated with Professor Lawrence Lessing and others and means a set of copyright licenses under which people can use it for free. Thanks to CC, copyright owners and authors can have the opportunity to express their will and distribute copyrighted materials more widely, while the public gets the chance to use these works legally and in a simple way.[435] The main goal of CC is to provide an opportunity for copyright holders of digital works posted on the Internet to share some of their rights with users and at the same time preserve copyright.

It should be noted that CC was originally created to solve the problem between two concepts of copyright, such as “private property” and “public policy vision”.[436] Accordingly, in order to function effectively as a solution, CC must meet three conditions: first, it must properly demonstrate how people create creative works; second, it should serve the private interests of the authors; and third, it should promote the broader public interest in access to knowledge and cultural works.[437]

The concept of copyright as private property derives from the idea that copyright originated as a natural right of authors, under which individuals who create original works possess the right to control and manage their creations as property. This perspective emphasizes the private interests of authors in controlling the use and distribution of their works.

In contrast, the vision of public policy is held by those who note that copyright has historically developed as a public grant of a limited monopoly. Proponents of this view argue that the rights of authors should be balanced with the freedom of the wider public to use a copyrighted work. This vision emphasizes the importance of the public interest in access to and use of copyrighted materials, positioning copyright as a public policy tool aimed at balancing private and public interests.

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[435] Yelena Anatolyevna Kirillova, Marina Vladimirovna Vasiljeva and Yulia Aleksandrovna Krohina, ‘Legal Protection of Copyright Items Inheritance in the Internet by Means of a Creative Commons License’ (2014) 6 Review of European Studies 232.

[436] ibid.

[437] Severine Dusollier, ‘The Master’s Tools v. the Master’s House: Creative Commons v. Copyright’ (2005) 29 Columbia Journal of Law & the Arts <https://heinonline.org/HOL/Page?handle=hein.journals/cjla29&id=281&div=&collection=> accessed 14 August 2025.

The two competing visions have clashed throughout the 300-year history of copyright law, but this clash has intensified in the digital age. Proponents of the concept of private property expected that digital technologies would allow copyright holders to charge a fee for each use of their works. Instead, however, they faced widespread copyright violations. Content providers, especially in the music industry, are looking to implement robust anti-unauthorized copying mechanisms to protect their ownership.

Proponents of the public policy concept hoped that digital technologies would facilitate the production and exchange of cultural products. However, they noticed that modern copyright laws have become so restrictive that they may hinder future innovation and creativity. For example, Samuelson argued that major copyright industries, fearing a significant loss of control over copyrighted materials due to technological advances, lobbied to gain unprecedented control over consumers. Similarly, Boyle argued that modern intellectual property policy is dominated by a maximalist "culture of rights", which, in his opinion, distorts the direction of debate.[438]

Moreover, one of the reasons for the emergence of CC is that scholars such as Lessig and Boyle believed that a balance of interests in the field of copyright should be observed in the information society. Moreover, Lessig attributed the problem to two extremes. First, with the advent of the Internet, the architecture of the Internet made it impossible to control copyrighted works. This architecture meant that copyright was devalued, because anyone could copy or distribute works without control. However, later the copyright industry was able to respond to this challenge by launching a campaign to change the legal and technical infrastructure, and as a result, the architecture of lack of control was replaced by an architecture of total control. Thus, these changes led to a shift from one extreme to the other.[439]

Lessig and Boyle also believed that none of these extremes protected the interests of the majority of people. They thought that most users wanted to use copyrighted material without any strict restrictions when copyright holders were trying to apply for commercially valuable copyrighted works. According to Lessig, the world is divided into three groups of people. There are those who want all rights to be protected, those who do not want any rights to be protected at all, and still others who believe that some rights should be controlled, but not all rights are protected.[440]

[438] Minjeong Kim, 'The Creative Commons and Copyright Protection in the Digital Era: Uses of Creative Commons Licenses' (2007) 13 Journal of Computer-Mediated Communication 187.
[439] Lawrence Lessig, 'The Creative Commons' in Benedict Atkinson and Brian Fitzgerald (eds), *Copyright Law Volume III: Copyright in the 21st Century* (Routledge 2017) 335.
[440] ibid.

As a copyright lev project, CC aims to enhance or expand culture and knowledge among the public. The original ideal of CC is to solve the problem of excessive copyright protection. In other words, it attempts to allow copyright holders to grant permission to use copyrighted works. Owners are provided with simplified methods of waiving their rights or specifying ways in which their work can be used, in order to enable "people to build on the work of others", making it easier for creators to give others the freedom to use and develop their creations.

CC aims to tip the balance in favor of the public interest by offering copyright holders mechanisms to license the public use of works such as websites, academic articles, music, films, photographs, and literature. In essence, it aims to simplify the permitting process by allowing owners to grant permission for specific use of their works under certain conditions. Unlike a typical individual contract or usage license, the Creative Commons license functions as a one-to-many permission grant under the terms established by the original owner.[441]

To use CC, the author must first visit the CC website and answer a number of questions, including what jurisdiction the author wants to use it in or what the copyright owner wants users to do with the work. Then, after answering the questions, CC is going to suggest what type of license should be used for their work.[442] In other words, CC licenses allow the author of a copyrighted work to choose how they want others to use the work. An important part of the license is that copyrighted works can be used for educational purposes, for example, teachers or students can copy, share, and sometimes remix CC materials, and they can do this for free and without requesting the author's permission.[443]

In addition, CC provides six main licenses, each of which allows the public to use a copyrighted work in a different way, for example, some authors allow re-use with an indication of authorship ('CC BY'), some allow users to use it for non-commercial purposes ('CC BY-NC'), or some users can use it in a different way. They may take it for non-derivative works ('CC BY-ND'). Under the CC licenses, you may copy, distribute, perform a work, transmit a work, or make adaptations for non-commercial purposes, subject to certain obligations and rules.[444]

However, some claim that the CC faced challenges and failed to reach their goals: first, the system failed to reach mass adoption; second, the CC still operated within copyright law framework.

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[441] Adrienne K Goss, 'Codifying a Commons: Copyright, Copyleft, and the Creative Commons Project' (2007) 82 Chicago-Kent Law Review <https://heinonline.org/HOL/Page?handle=hein.journals/chknt82&id=987&div=&collection=> accessed 14 August 2025.

[442] Murray (n 43) 322.

[443] 'What Is Creative Commons?' (*Smartcopying*, 9 January 2023) <https://smartcopying.edu.au/what-is-creative commons/> accessed 14 August 2025.

[444] ibid.

Arguably, CC's popularity is growing as it has received some positive feedback from the public. Since the early 2000s, it has made available about 3 billion copyrighted works, such as books, articles, music, art, and others, and has contributed to the creation of an open movement, including open culture, open science, open data, and a host of other values. CC was said to be available in almost 60 jurisdictions, and today users use about 350 million Flickr photos under CC licenses. Consequently, it can be seen that CC is a flourishing variant of the "all rights reserved" copyright model contained in the legal acts of most States. It should be noted that CC does not intend to replace all rights reserved by copyright, and CC recognizes that its licenses are not an ideal model of protection, especially for copyright holders who want to use their works for commercial purposes. But for the majority of netizens who simply want their work to be seen, heard, or remixed, reused, or adapted, CC provides a decent version of the general copyright model.[445]

A similar point of view is shared by Savelyev, who claims that the free characteristics of CC, apparently, are one of the main points of such a license agreement. As mentioned above, the use of works under CC rules only requires attribution of authorship without any payment, and thus this may be sufficient for those copyright holders who want to share their works for free, but it may not be acceptable for those who want to benefit financially from their creative works.[446]

In addition, it could be argued that the lack of legal proceedings against CC can serve as proof of its popularity and availability of licenses. However, the Constitutional Court supports court decisions that have confirmed the functioning of the Constitutional Court as it is. For example, there was a case when a Spanish collective society sued the owner of a bar, claiming that he did not pay a license fee for the public performance of music. But the court rejected the collective society's complaint because the bar owner provided evidence that the music played in the bar was licensed by musicians, according to CC. As a result, this collective society had no right to demand royalties.[447]

The CC can be a vital tool for copyright holders in the fight against copyright piracy of digital works, provided that users comply with the conditions specified by them. But CC faces practical challenges that may be an obstacle to stopping copyright piracy in the digital environment. For example, you can see these problems in digital photos. On the one hand, a photographer authorizing the use of their work through CC will help users stop copyright infringement, on the other hand, if these photos or images are of poor quality, this may lead to users illegally relying on high-quality images. In short, users can choose high-quality,

[445] Murray (n 43) 323.
[446] Savelyev (n 428) 7.
[447] Kirillova, Vasiljeva and Krohina (n 435) 235.

inexpensive, and copyright-infringing copies of images instead of low-quality, illegitimate licensed photos.[448]

Tomar argues that copyright piracy is a complex issue that affects many aspects of the creative industry. Using CC, which grants legal permissions to both creators and users of copyrighted works, can solve the above problem. CC licenses can help prevent copyright piracy by giving creators the ability to control how their work can be used, and by preventing others from using the work in ways that violate copyright law, such as copying the work without consent or using it for commercial purposes. Moreover, licenses can protect others from accidental violations by providing instructions on how legally use the work. However, it should be noted that CC does not provide legal protection, for example, if the CC licensing rules are violated, creators must take legal actions to protect their rights.[449]

Bratus claims that the future of copyright in the information age depends on ethical responsibility, flexible licensing models and fair contracts rather than more robust control or endless international agreements.[450]

It is plausible to cliam that CC is a system that lets authors give up some or all of their copyright rights to benefit the wider artistic community.

4.3 Blockchain and copyright

Today, the protect intellectual property law increasingly relies on digital technologies. One may notice that the suggestion about the application of blockchain in IP sphere is getting popular in the public. One of the perspective technologies of the digital economy is “blockchain”.

The rise of blockchain has led to a debate whether it is available to apply for copyright, especially, in copyright infringement. Some researchers view it as a technological tool of copyright protection since copyright owners can control or monitor the consumption and distribution of their works. Thus, from this perspective piracy and copyright infringement are nearly out of the question. For example, unlawful copying of music files can be ceased thanks to blockchain, since everything is recorded in open manner.

The appearance of the blockchain is primarily associated with the name of Satoshi Nakamoto. It can be argued that the first

[448] ‘Creative Commons Licences : Are They the Solution to Copyright Infringements?' (*Law Right*, 2018) <https://www.law-right.com/creative-commons-licences-are-they-the-solution-to-copyright-infringements/> accessed 14 August 2025.

[449] Tomar Vanshika, ‘Role of Creative Commons Licenses in Copyright Infringement’ (*Legal Servcie India*)<https://www.legalserviceindia.com/legal/article-10841-role-of-creative-commons-licenses-in-copyright-infringement.html> accessed 14 August 2025.

[450] Dmitry Bratus, ‘Zashhita avtorskih prav v cifrovuiu epohu’ [Copyright protection in the digital age] (2015) 2 Voprosy rossiiskoi justici 27.

cryptocurrency, such as Bitcoin, which tends to be anonymous, appeared in 2009, as a result of the publication of an article by Satoshi.[451]

The word “blockchain” in English means “list of blocks”. The blockchain is described as a large database that stores information about all participants in a transaction in the form of a list of blocks. Such a decentralized database stores an ever-growing list of records, i.e. blocks, and each block contains a corresponding timestamp and a link to the previous block. New entries are made only with the consent of the majority of system participants, and previously entered information is not changed or deleted. A copy of the block list is stored and processed independently on different computers. Therefore, transactions are processed and verified with the help of registry users.[452]

Any data is stored on the blockchain, as this technology is used as a way to store information. In addition, blockchain technology can also be used for digital and digitized products. In this regard, some experts assess the emergence of the blockchain as “creating a revolution in data storage”.[453]

It is worth noting that the term blockchain used to be an independent legal concept in Kazakhstan, however now the current legislation refers to a distributed digital object, which cover blockchain as one of its technological forms. For example, according to the Digital Code, a distributed digital object is a digital object that is created, stored, processed or utilized through a distributed system where multiple interconnected technical nodes operate together to maintain the consistency, reliability and integrity of digital records without relying on a single central processing authority. The distributed digital object has several key features including decentralized storage, immutability of records, network confirmation operations, and using cryptographic protection. Such systems normally function on the basis of distributed ledger technology of which blockchain is one form. [454]

Stokes gives a simple and concise definition of blockchain, which states that it is a form of ledger that can be shared and distributed, and it makes it easier to record transactions and track assets. Moreover, cryptography helps the ledger to be properly protected. As the name suggests, it stores data in blocks that are linked together to create chains.[455] Blockchain technology has two vital characteristics: first, it is

[451] Tao Jiang, A. Sui, W. Lin and P. Han, ‘Research on the Application of Blockchain in Copyright Protection’ [2020] International Conference on Culture-oriendted Science and Technology (ICCST) 616 https://ieeexplore.ieee.org/abstract/document/9262719 accessed 25 October 2025.
[452] Anastasya Salnikova, ‘Blockchain Technology as a Tool for Copyright Protection’ (2020) 15 Actual Problems of Russian Law 83.
[453] ibid 85.
[454] Digtial Code (n 6) art 26.
[455] Stokes, *Digital Copyright Law and Practice* (n 40) 240.

immutable, which means that data cannot be changed; second, it is distributed, not centralized.[456]

Jang and others claim that there are three stages of blockchain development: blockchain 1.0, 2.0 and 3.0. At the first stage of the blockchain, the cryptocurrency was developed as a P2P transaction system, and the result was the decentralization of payments. The main feature of blockchain 2.0. is the development of “smart contracts”, which are usually executed automatically. The third stage is related to the digital currency economy, and it is predicted that the blockchain can create an ideal, decentralized, fully automated environment. It is often argued that the current state of blockchain technology is in the middle of stages 2.0 and 3.0.[457]

Moreover, some scholars tend identify the following features of blockchain technology:

1) Distributed and decentralized

Unlike a traditional server system, the blockchain is based on a distributed storage model, which demonstrates greater resistance to cyberattacks;

2) Enhanced security

In accordance with the design of blockchain technology, each block is cryptographically is linked to the previous block, forming a secure chain that makes unauthorized modification extremely difficult;

3) Traceability

Since the transaction was saved in blocks, it is possible to track and verify the history of transactions within the blockchain network;

4) Absence of intermediaries

The transactions can be completed between the parties through a P2P system without any intermediaries. The advantage of this approach is that it provides openness, security, and trust.[458]

Blockchain technology can be accepted as copyright TPM technology if it matches the definition of TPMs in the Information Society Directive. According to that Directive, a definition of TPMs as the following:

> *… any technology, tool, or component that is normally used to block or limit actions involving copyrighted works or other protected content, when such actions are not permitted by the copyright holder or related rights holder, in accordance with*

[456] Marcus O’Dair, ‘How Blockchain Could Help Musicians Make a Living from Music’ (*The Converation*, 7 July 2016) <https://theconversation.com/how-blockchain-could-help-musicians-make-a-living-from-music-52125> accessed 17 August 2025.
[457] Jiang and others (n 451).
[458] ibid.

the law or the special rights outlined in Chapter III of Directive 96/9/EC.[459]

It is claimed that blockchain technologies as an immutable ledger can provide some advantages and opportunities to both copyright holders and the public. First, it is a registration service on the blockchain. Registration is mandatory for certain areas of intellectual property law, such as patent, trademark, and industrial design, whereas under the Copyright Act, copyright holders can protect their works from the date they were created without any formalities. While the law usually does not require copyright registration, in some states, such as the United States, the copyright holder does need to register them in order to exercise their exclusive rights.

In addition, Bosher claims that the blockchain can facilitate the ideal registration process in the near future, which will allow copyright holders to secure their ownership, as well as provide users with an identification address.[460]

The registration process can demonstrate the existence of the work and the true owner of the work who created it. Consequently, a copyright registration system could be useful for both copyright holders and users, since the copyright holder can prove that the work belongs to him, while the use can legally evaluate the corresponding work and the rights associated with the work.[461]

Although it is not necessary to register copyrighted works in most countries, in some countries, such as the United States or China, the author must register his or her works in order to use and protect copyright. Given this fact, in the future, the blockchain can directly participate in the copyright registration process. The blockchain technology registration system can provide the author with irrefutable evidence, and the user with an identification address. In this way, each author can be assured of authorship recognition and income generation by storing their work in a decentralized registry such as the blockchain. For example, in 2018, a “Single depository of intellectual Property results” was launched in Russia. On this platform, you can register copyrights to computer programs, literary works, design sketches and drawings through the blockchain.[462]

Pech claims that a blockchain-based copyright registry has three characteristics: a) it provides reasonable information about the owner; b) for tokenizing works and rights; c) for monitoring the use of copyrighted

[459] Directive 2001/29/EC on the harmonization of certain aspects of copyright and related rights in the information society (*EUR-Lex Access to European Union Law*) <https://eur-lex.europa.eu/eli/dir/2001/29/oj/eng> accessed 17 August 2025.
[460] Bosher (n 351) 226.
[461] Tresise, Goldenfein and Hunter (n 415) 4.
[462] Mariya Ulkina, 'Blokchain Platforms as a Means of Copyright Protection in Information Networks, including the Internet' (2019) Sovremennaya Nauka <https://elibrary.ru/item.asp?id=37790882> accessed 17 August 2025.

works. According to the first function, since the blockchain-based copyright registry does not have a central authority, ownership data can be processed within a few seconds. Moreover, since the data in the blockchain is stored in chronological order, it will soon be easy to find the name of certain works.

The second feature indicates the conversion of copyrighted materials into tokens, which represent a digital representation of assets using blockchain technology. The advantages of these digital assets are that they can represent the work itself, a copy of the work, or certain exclusive rights.

The third function of the copyright registry is to help copyright holders control the use of their works. One great example of this system is YouTube's Content ID, which controls the use of audio and video content. First, copyright holders need to upload a sample of their work to the platform, then it scans the use of their work. Once usage is detected, copyright holders are informed and given a choice: block, monetize content, or track viewership data. If such a system is part of the copyright registry, it scans works without requiring copyright holders to upload copies of their works. For example, the “ImageRights” platform allows the copyright holder not only to register their works, but also to perform image scanning and a quick trial for copyright infringement on the Internet.[463]

While the overall idea sounds interesting, there are some challenges that can be a barrier to achieving this goal. For example, incorrect authors can be permanently recorded in the blockchain, since the record is currently immutable. Thus, it would be fair to say that the technology should be flexible to changes, for example, in the case of copyright infringement, it is necessary to add other copyright holders to the registration of the blockchain.

Secondly, thanks to the blockchain, copyright holders can track the distribution of materials protected by their copyright. Moreover, it can provide complex licensing services and facilitate settlements between copyright owners and users. Licensing copyrighted materials through blockchain can be beneficial for both parties. On the one hand, copyright owners may receive royalties for using their works, while on the other hand users may obtain legal authorization to create or distribute content based on those works.

In addition, when licensing is feasible, it can be executed by means of smart contracts, which automatically simplify, authorize and enforce contractual terms without the need for human intervention. Thus, smart contracts can automatically approve licenses and transfer remuneration

[463] Sebastian Pech, 'Copyright Unchained: How Blockchain Technology can Change the Administration and Distribution of Copyright Protected Works' (2020) 18 Nw. J. Tech. & Intell. Prop. https://heinonline.org/HOL/LandingPage?handle=hein.journals/nwteintp18&div=3&id=&page= accessed 1 March 2025.

to copyright holders. There are already services such as PeerTracks that help artists secure payments and ownership of copyrighted material. The service can work by linking a smart contract to each song that the musician uploads, and dividing the money in accordance with the terms of the contract.[464]

Similarly, Ponomarchenko claims that blockchain technology can provide transparent transactions using smart contracts. A smart contract is an algorithm that is designed to automate the contract execution process. For some, a smart contract is just a piece of computer code with certain functions. V. Buterin, a Canadian-Russian programmer and former director of Bitcoin Magazine, describes smart contracts as "cryptographic boxes" that contain valuable assets and can only be opened if certain conditions are met. Therefore, smart contracts are just computer programs that can be executed sequentially by a network of computers without the need for an intermediary.

Smart contracts are closely related to transparency and cost savings, because as soon as a user purchases digital asset on a website, the copyright owner can simultaneously launch a smart contract so that all other actions are automated.[465]

Third, it was suggested that the blockchain could use a micropayment platform for copyrighted works. Because the technology can create usage records of copyrighted works, and the public can use them through their electronic payment wallets. As a result, copyright holders receive royalties or rewards in cryptocurrencies. Spotify recently bought a startup company that is working on blockchain technology to track transactions and content. Savelyev also believes that a cryptocurrency such as Bitcoin or Ether could be an ideal tool for paying licensing fees for using digital copies of copyrighted materials. Such payments using blockchain technology can exclude collection societies or other intermediaries from the copyright-related business.[466] However, the idea of micropayments sounds ambitious, and there are some issues that need to be addressed before they become effective. For example, cryptocurrency as a payment method has demonstrated itself with certain disadvantages, such as lack of scalability, slow bids, and an expensive tool.[467]

Similarly, Pech also claims that compared to a shared database, the lack of scalability technically limits blockchain technology. Blockchains may also be limited due to the frequency of transactions. For example, the Bitcoin blockchain can process from three to seven transactions per second, while the Ethereum blockchain can perform about fifteen transactions per second. Another problem is related to the

[464] Savelyev (n 428) 11.
[465] Anastasia Ponomarchenko, 'Blockchain Technology in Copyright' [2021] Legal Concept 148.
[466] Savelyev (n 428) 10.
[467] Bosher (n 351) 228.

storage of blockchain technology. Seeing the impracticality of storing entire works, such as videos or songs, on the blockchain, some experts suggest storing their hash value or so-called “serial numbers” instead of works, which can provide final identification of works. But some are inclined to argue that even this brief information about works and their copyright holders can exceed the storage capacity of existing blockchain technology.[468]

Savelyev argues that the importance of blockchain can also be seen in terms of increasing the availability of information about copyright ownership. One of the main problems that musicians face is the lack of a single, comprehensive database of copyrighted information. The problem is that when a song appears in multiple databases, the details may not match. If copyright data is stored on the blockchain, as a result, it can be accessible to many users, excluding some intermediaries.[469] This could be done using a unique tool called “Trusted Timestamping”, which tracks certain events related to copyrighted materials, in particular, it can continue to track the time of changes to certain documents.[470] In addition, the new blockchain-based management system depends on the number of copyright holders, users, and the number of copyrighted works. Being an analog of a network system, such a database system can be compared to a telephone network, where the service depends entirely on the number of subscribers who use it. Thus, the same can be true for a copyright management system: the more databases a user has, the more important they become for both copyright holders and the public.

Moreover, it has been suggested that blockchain technology can be used as a tool for copyright protection mechanisms. For example, copyright holders can track their work through a special address in the blockchain. According to this system, browsers and media players can only play works that are registered in the blockchain[471]. Both copyright holders and users can get increased security from the technology. Unlike a DRM system, which is sometimes vulnerable to hostile intruders, a decentralized blockchain system can increase security standards against copyright infringers.[472]

Panjaitan and others argue that blockchain provides a decentralized, secure, and tamper - proof system for recording ownership and licensing data, simplifying the process of tracking and verifying the use of copyrighted music.[473]

[468] Pech (n 463) 16.
[469] O’Dair (n 456).
[470] Savelyev (n 428) 8.
[471] ibid 10.
[472] Tresise, Goldenfein and Hunter (n 415) 8.
[473] Hulman Panjaitan and others, ‘Music Copyright Protection In The Digital Era: Legal Framework And Strategies For Enforcement’ (2024) 40 Jurnal Hukum Unissula 235.

In order to use blockchain as a tool for copyright protection, some states, such as Russia, are already implementing the IPChain project, which is a public, open and decentralized network based on blockchain technology that unites large owners of digital content. The platform is designed for effective cooperation between authors, copyright holders and users using intellectual property, and also provides a service for management and enforcement, allows people to record transactions with intellectual property objects, store digital materials protected by copyright, and provide access to them using smart contracts.[474]

In summary, blockchain technologies can provide some TPMs such as access control, copy control and others to prevent or eliminate copyright infringement.

Access-control technology represents the most basic and essential form of technical protection, as it prevents individuals from viewing, listening to, reading, or otherwise accessing a work without the creator's consent. Unlike authentication, which verifies a user's identity, access control focuses on determining whether a user is permitted to access a specific resource. This technology can either restrict or completely block further access to a work that has already been acquired or deny access at the level of the digital platform or end user.

Encryption serves as a powerful access control method by "locking" digital content, allowing only authorized users with the proper decryption keys to access and use the material. However, access control is not limited to encryption alone. It can also involve other mechanisms, such as password protection or various forms of data authentication, to regulate who can access the content.

A work must be accessible in order to be used, so controlling access effectively means controlling its use. However, there are cases where an author wishes to allow access to her work while still maintaining control over how it is used afterward. To achieve this, the author has two main options: access controls or copy controls. By using copy control measures, the author can limit what a user is able to do with the content even after it has been accessed.

As a result, copy control technology enables permitted uses while deterring unauthorized actions by users who have already accessed the work. It limits the ability to copy, share, view, or play the content. The main goal of this technical protection measure is to prevent copying. Copy controls restrict or block specific ways a work can be used. When encryption is applied as a copy control, it makes copied content unreadable, thereby rendering it unusable for the recipient.[475]

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[474] Salnikova (n 452) 88.

[475] Simphiwe Nyembe, 'The Challenges of Protecting Copyright In the Digital Age Due to Digital Piracy' (DPhil thesis, University of Pretoria 2023) <http://hdl.handle.net/2263/96888> accessed 17 August 2025.

It is worth mentioning that one of the main stories of digital technology in 2021 was the emergence of NFT.[476] NFTs function as digital certificates of ownership enabled by smart contracts and secured through blockchain technology.[477] As mentioned in previous chapters, any work capable of being represented in digital form, may be converted into an NFT.

One of the principal concerns relates to the widespread misunderstanding regarding the scope of rights acquired through the purchase of an NFT. Many buyers assume that they obtain ownership of the underlying artwork together with all associated rights. In practice, however, they only acquire only the token and its associated metadata, rather than the copyrighted work itself.

A significant concern in the NFT is the risk of copyright infringement, as users may mint NFTs of works without authorization. Numerous cases have been already emerged in which artworks, including public domain works were tokenized without proper permission. While most disputes have been resolved through removal of the tokens from marketplaces rather than litigation, the issue of whether NFT minting constitutes copyright violation is likely to be tested in court in the future.[478]

An ideal blockchain-based copyright control system would tokenize works and track their transfer like cryptocurrency. However, storing large copyrighted files directly on a blockchain is impractical due to storage limitations, high costs, and performance issues. For example, adding a high-quality image to Ethereum could cost around $11,000 in processing fees, while plain text costs much less. Because of these technical and financial barriers, only very small works, like plain text, can realistically be stored on a blockchain. Some blockchains like Bitcoin and Steem have successfully stored small text files.[479]

There are a number of technical and legal issues that need to be addressed first. One of the problems is related to the architecture: where should digital materials protected by copyright be stored: in the blockchain along with the metadata and transaction, or separately. Another question is to what extent the blockchain is linked to a government agency, for example, blockchain records need to be changed at the request of a court or government agencies, otherwise the technology may be in trouble. In addition, given the fact that the legislation does not take into account the specifics of blockchain

[476] Andres Guadamuz, 'Non-Fungible Tokens (NFTs) and Copyright' (*WIPO Magazine*, 2021) https://www.wipo.int/en/web/wipo-magazine/articles/non-fungible-tokens-nfts-and-copyright-42365 accessed 14 February 2026.
[477] Pinar Aksoy and Zehra Uner, 'NFT and Copyright: Challenges and Opportunities' (2021) 16(10) Journal of Intellectual Property Law and Practice 1115.
[478] Guadamuz (n 476).
[479] Nyembe (n 475).

technology, it is necessary to define the rules for using smart contracts, ensure data security and regulate the role of government agencies.

Despite these shortcomings, it is fair to say that blockchain technology is still under development. This could potentially change the way copyrighted works are distributed in the digital environment. As already discussed, the technology can provide some benefits from the availability of information about the copyright owner to the transparency of copyrighted works. Moreover, receiving permanent license fees, open ownership of digital content, and using smart contracts to simplify the licensing process can be beneficial not only for copyright holders, but also for users. In this way, blockchain technology can offer copyright holders some security and appropriate protection against possible copyright infringers who attempt to gain access to digital assets.

In sum up, blockchain technology can be used in Kazakhstan to protect copyright under Copyright Law. It helps prove ownership by storing data like text, photos, and videos in a secure ledger, making it easier for creators to show when and what they created. This technology also supports copyright management, helps prevent piracy and plagiarism, and provides reliable records of authorship and publication dates for resolving disputes.

4.4 Conclusions and findings of Chapter 4

In this chapter, various technological solutions aimed at addressing copyright violation namely, the DRM, CC and blockchain technologies have been comparatively analyzed. It should be noted that each of above-mentioned technologies has its own advantages and disadvantages.

First, the possibility of restricting the connection of the end-user with the content makes DRM to act as digital locker in the digital environment. But, in turn, it could mean that the more control the copyright owners have, the less benefits the users are about to get. Therefore, a true balance should be reached by considering the interest of both parties. Besides, as said above in this chapter, if the DRM are installed on copyrighted works, a program cannot differ whether the user pursues legal or illegal aims, they may just block or cease any actions of the users.

Second, the internet age has also given power back to the authors and right holders which has led to control over copyrighted works and content. It could be argued that Creative Commons operate on the same way of granting control back to the right holders. From this perspective, it can be seen that Creative Commons match the objectives of copyright.

To sum up, the most effective approach to combat copyright violation is not one tool, instead it is a complex strategy which includes technical controls, automated detection, and legal enforcement. TPMs or

DRMs can be effective to controlling access, copying and distributing digital contents, but such technological tools can be circumvented by other advanced technologies; blockchain can be used to record authorship, licensing and use rights, but in practice it does not fully stop copying or copyright.

Considering the technologies mentioned earlier, it can be said that they offer strong protection for digital content and have the potential to significantly reduce digital piracy. Nevertheless, the effectiveness of these security measures in blocking unauthorised access or copying depends on the type and format of the technological protection used. No protection method can entirely eliminate illegal use, but it can help reduce it to some extent. Some systems are easy to bypass, while others are more difficult to compromise.

CONCLUSION

This dissertation has claimed that the rapid development of digital technologies, including the internet are posing sufficient challenges to copyright protection across the world. It is notable that today copyright infringement on the internet causes numerous threats to copyright and appears to have a harmful effect on the exclusive rights of copyright owners. The function of copyright in cyberspace is completely different from the function of traditional copyright because of the digitization of copyright products and the role played by intermediaries.

Moreover, it should be noted that lawmakers constantly strive to keep up with technological advancements but inevitably find themselves responding to changes rather than predicting them. Given the rapid and often unpredictable nature of technological and digital progress, creating comprehensive legislation in advance is nearly impossible. The shift from analogue to digital, in particular, highlights the difficulty legislators face in staying ahead of these developments.

Given above said challenges, this thesis has argued that a number of treaties, directives and legislations both locally and globally have been updated. Moreover, a series of cases have been solved by courts from different jurisdictions across the globe on complex copyright problems. In brief, by critically comparing and examining the different legislations and case laws coming from different jurisdictions, this dissertation has not only argued that a number of challenges emerge in cyber space, but also has recommended effective solutions to these challenges in the context of Kazakhstan.

This conducted research allowed us to review or reassess copyright issues, including copyright infringement in the cyberspace, and to what extent digital piracy might be detrimental for copyright holders and analyze some effective measures and approaches to handle above legal issues. Summarizing the findings presented at the end of each chapter, the dissertation draws the following main conclusions:

1. From a modern perspective, copyright law originally designed before the digital revolution must be reconsidered in light of technological progress and its impact on authors' rights. It concludes that copyright embodies both objective and subjective dimensions, encompassing moral and economic rights as well as their legal exercise. It argues that the principle of extraterritoriality better addresses online violation due to the internet's borderless nature. The digital environment has expanded the range of copyright stakeholders, introducing intermediaries such as online platforms and service providers as central actors in the creation, distribution and protection of creative works.

Moreover, mass digitization by publishers, libraries, streaming platforms and similar entities increases the risks of unauthorized disclosure and distribution of works, yet current law does not clearly

assign liability for such violation. To close this gap, the dissertation proposes adding new subparagraphs 13,14 to Article 972 of the Civil Code to explicitly recognize all digitized works as copyright objects, ensuring their protection under existing legal mechanisms.

2. The dissertation explores the key challenges posed by digital technologies to copyright law. It demonstrates how digitization and global connectivity have enabled effortless reproduction and distant dissemination of creative works, shifting infringement from P2P file sharing to streaming and stream -ripping. Through landmark cases such as MP3.com, Napster, Grokster and the Pirate Bay, it shows how legal focus has evolved from targeting individuals to holding intermediaries liable under doctrines of contributory, vicarious and inducement liability. It also discusses how safe-harbor regimes under the DMCA and EU directives balance intermediary responsibility through notice-and-takedown mechanisms while rejecting broad monitoring duties. Moreover, the work addresses the complex issue of authorship in AI-generated work, emphasizing the despite technological progress, most legal systems continue to require human authorship;

3. In addition, the dissertation compares how the US, UK, EU and Kazakhstan regulate copyright in the digital era. The US DMCA introduced anti-circumvention rules and conditional safe harbor for intermediaries, refined through the cases such as Sony/Betamax and Grokster. The UK CDPA 1988 and later case law enabled site-blocking and dynamic injunctions, while the EU Information Society Directive and E-Commerce Directive, imposing stricter duties on major platforms. By contrast, Kazakhstan relies mainly on criminal penalties and lacks clear intermediary liability rules;

4. The dissertation analyzes modern technological remedies against copyright infringement, focusing on DRM, CC licensing, and blockchain solutions. Each approach has distinct strengths and weaknesses. DRM serves as a digital lock restricting unauthorized access but may overlimit user rights, requiring a balance between protection and accessibility. CC licenses empower authors by allowing flexible control over their works, aligning with copyright’s core objectives. Blockchain offers transparency in authorship and licensing records but cannot entirely prevent copying. Overall, no single tool can fully stop infringement; the most effective strategy combines technological measures, automated detection, and legal enforcement to mitigate unauthorized use of digital content.

What is more, a comparative table on the draft law of the Republic of Kazakhstan on introducing amendments and additions to certain legislative acts regarding the copyright issues, such as authorship on AI-generated works, the definition of service providers and their liability and other questions were prepared within the framework of the dissertation (Application 1).

Currently, Kazakhstani legislation does not provide for a notice-and-takedown procedure. However, its introduction could serve as an effective out-of-court mechanism for protecting copyright, would align with Kazakhstan's obligations under WIPO Internet treaties, and would ease the burden the burden on courts while improving the overall enforcement of rights in the digital sphere. To introduce such procedure, the dissertation offers to accept rules on the procedure for notice-and-takedown (in the form of a draft order of the Minister of Justice of the Republic of Kazakhstan), according to the Application 2.

The analysis of abovementioned legal acts indicates their ineffectiveness in handling the problems which have arisen out of technological advancement. It is important to highlight that the current copyright system in Kazakhstan, by and large, is still relying on an obsolete regulatory framework to respond to contemporary challenges posed by technologies, in spite few amendments in legal acts over the years.

It could be argued that the state must enhance the legal protection of copyrighted objects on the internet by providing the copyright owners with the opportunity to take a model for the protection of his work that will best suit his interests. However, one of the main conclusions made on this thesis is that the development of digital copyrighted works on the internet is impossible using prohibitive measures alone, because all its participants from users to copyright owners should have effective incentives to act within the framework of the law. Such approach will allow us to find correct responses to new challenges emerging for the IP system as a result of quick changes in the technological and information sphere.

The author affirms that the objective of the dissertation has been successfully accomplished within the prescribed timeframe and in accordance with the recommended length requirements.

Based on the above, the dissertation concludes that the topic of protection mechanisms of copyright in the digital landscape is complex and requires more research from multiple perspectives. The author believes that the proposals and conclusions presented make a meaningful contribution to the development of copyright law in the digital environment.

REFERENCES
Primary sources

Constitutions

Constitution of the Republic of Kazakhstan (30 August 1995) https://adilet.zan.kz/eng/docs/K950001000_.

Constitution of the United States <https://www.archives.gov/founding-docs/constitution-transcript>.

International treaties

Berne Convention for the Protection of Literary and Artistic Works https://www.wipo.int/treaties/en/ip/berne/.

United Nations, 'Universal Declaration of Human Rights' https://www.un.org/en/about-us/universal-declaration-of-human-rights.

Universal Copyright Convention with Appendix Declaration relating to Article XVII and Resolution concerning Article XI https://www.unesco.org/en/legal-affairs/universal-copyright-convention-appendix-declaration-relating-article-xvii-and-resolution-concerning.

Legal acts and decrees

Civil Code of the Republic of Kazakhstan, № 409 (01 July 1999) https://adilet.zan.kz/rus/docs/K990000409_.

Copyright, Designs and Patents Act 1988 https://www.legislation.gov.uk/ukpga/1988/48/contents.

Criminal Code of the Republic of Kazakhstan, № 226-V (03 July 2014) https://adilet.zan.kz/eng/docs/K970000167_.

Decree of the President of the Republic of Kazakhstan on approval of the Concept of Legal Policy of the Republic of Kazakhstan until 2030 No. 674 https://adilet.zan.kz/rus/docs/U2100000674.

Digital Code of the Republic of Kazakhstan, № 255-VIII (09 January 2026) https://adilet.zan.kz/rus/docs/K2600000255.

Digital Economy Act 2010 https://www.legislation.gov.uk/ukpga/2010/24/contents.

Directive 2001/29/EC on the harmonization of certain aspects of copyright and related rights in the information society (EUR-Lex Access to European Union Law) https://eur-lex.europa.eu/eli/dir/2001/29/oj/eng.

Intellectual Property Code, France, WIPO Lex' https://www.wipo.int/wipolex/en/legislation/details/22588 .

Law of the Republic of Kazakhstan on amendments and additions to certain legislative acts of the Republic of Kazakhstan on the issues of improving legislation in the field of IP and provision of state-guaranteed legal assistance No. 128-VII (20 June 2022) https://adilet.zan.kz/rus/docs/Z2200000128.

Law of the Republic of Kazakhstan on Artificial Intelligence № 255-VIII (17 November 2025) https://adilet.zan.kz/rus/docs/K2600000255.

Law of the Republic of Kazakhstan on Copyright and the Related Rights № 6-I (10 June 1996) https://adilet.zan.kz/eng/docs/Z960000006_.

Law of the Republic of Kazakhstan on Online Platforms and Online Advertising № 18-VIII (10 July 2023) https://adilet.zan.kz/rus/docs/Z2300000018.

Cases

A & M Records Inc v Napster Inc District of California, No 00-16401 (26.07.2000).

Arista Records, Inc. v. MP3BOARD, Inc., No. 00 Civ. 4660 (SHS).

Capitol Records, Inc. v. MP3tunes, LLC, 48 F. Supp. 3d 703.

Designers Guild Limited v Russell Williams (Textiles) Limited [2000] 1 WLR 2416.

Infopaq International A/S v Danske Dagblades Forening (C-5/08) [2009] ECR I-6569.

L'Oréal v eBay [2009] EWHC 1094.

MGM Studios, Inc. v. Grokster, Ltd., 545 U.S. 913 (2005).

Perfect 10 v Google Inc, US District Court, Central District of California, Case No CV 04-9484 AHM (SHx) (February 2006).

Perfect 10, Inc. v. Ccbill LLC, 488 F.3d 1102 <https://casetext.com/case/perfect-10-inc-v-ccbill-llc?q=Perfect 10 v.

Playboy Enterprises, Inc. v. Frena, 839 F. Supp. 1552 (M.D. Fla. 1993).

Religious Tech. Center v. Netcom On-Line Comm., 907 F. Supp. 1361 (N.D. Cal. 1995).

Sega Enterprises Ltd v Maphia, US District Court for the District Court for Northern of Northern California (16.12.1996).

Sony Corp of America v Universal City Studios Inc, 464 US 417, 104 S Ct 774 (1984).

Twentieth Century Fox Film Corp v Newzbin Ltd [2010] EWHC 608 (Ch).

UMG Recordings, Inc. v. MP3.com, Inc., 92 F. Supp. 2d 349 (S.D.N.Y. 2000).

UMG Recordings, Inc. v. Shelter Capital Partners Llc, No. 09-55902 (9th Cir. 2013).

Viacom International v YouTube Inc, YouTube LLC and Google Inc, District Court, Southern District of New York (13.03.2007).

Zolotuhin v ATIS LTD no 7514-19-00-2/10892 (Bostandyk district court of Almaty, 5 March 2020).

Secondary sources

Books

Abdrasulov E, *Pravovaia ohrana ob'ektov intellektual'noi sobstvennosti v usloviah vstuplenia Respubliki Kazakhstan v VTO: po rezul'tatam fundamental'nogo nauchnogo issledovania, provedennogo po grantovomu finansirovaniu MON RK* [Legal protection of intellectual intelligence in the context of Kazakhstan's response to the WTO: based on the results of fundamental scientific research carried out with grant funding from the Ministry of Education and Science of the Republic of Kazakhstan] (KazGUU Konsalting 2015).

Baldwin P, *The Copyright Wars: Three Centuries of Trans-Atlantic Battle* (Princeton University Press 2014).

Bard R and Kurlantzick L, *Copyright Duration: Duration, Term Extension, The European Union and the Making of Copyright Policy* (Austin & Winfield 1999).

Bently L and others, *Intellectual Property Law* (6th edn, OUP 2022).

Bliznets I (ed), *Pravo intellektual'noi sobstvennosti* [Intellectual property law] (Prospekt 2011).

Bosher H, *Copyright in the Music Industry: A Practical Guide to Exploiting and Enforcing Rights* (Elgar Practical Guides 2021).

Edwards L, 'The Fall and Rise of Intermediary Liability Online' in Lilian Edwards and Charlotte Waelde (eds), *Law and the Internet* (Bloomsbury Publishing 2009).

Entin V, *Avtorskoe pravo v virtual'noi real'nosti (novye vozmozhnosti i vyzovy tsifrovoi epohi*) [Copyright in virtual reality (new opportunities and challenges of the digital age)] (Statut 2017).

Frances Aplin T, *Copyright Law in the Digital Society: The Challenges of Multimedia* (Hart Publishing 2005).

Giblin R and Kimberlee W, *What if We Could Reimagine Copyright?* (ANU Press 2017).

Goldstein P and Hugenholtz P, *International Copyright: Principles, Law, and Practice* (OUP 2019).

Grin' E, *Pravovaia ohrana avtorskih prav* [Legal protection of copyrights] (Prospect 2016).

Grosheide F, *Tailored Copyright: Reflections on the Foundations of Copyrgith in a Legal-Policy Context* (Kluwer 1986).

Guertin C, *Digital Prohibition: Piracy and Authorship in New Media Art* (Bloomsbury Publishing USA 2012).

Haggart B, *Copyfight: The Global Politics of Digital Copyright Reform* (University of Toronto Press 2014).

Hô Bích Hăng N, 'Copyright Infringement in Vietnam: Recognizing the Reasons and Suggesting Some Solutions' in Paul Torremans (ed) *Research Handbook on Copyright Law* (Edward Elgar Publishing 2017).

Hofman J, *Introducing Copyright: A plain language guide to copyright in the 21st century* (Commonwealth of Learning Vancouver 2009).

Hohlov V, *Avtorskoe pravo: zakonodatel'stvo, teoria, praktika* [Copyright: legislation, theory, practice] (Gorodets 2008).

Hutchinson T, *Researching and Writing in Law* (4th edn, Thomson Reuters 2018).

Klang M and Murray A (ed), *Human Rights in the Digital Age* (1st edn, Routledge 2005).

Klein B and others, *Understanding copyright: Intellectual property in the digital age* (SAGE Publication Ltd 2015).

Krokida Z, *Internet Service Provider Liability for Copyright and Trade Mark Infringement Internet Service Provider Liability for Copyright and Trade Mark Infringement: Towards an EU Co-Regulatory Framework* (Hart Publishing 2022).

Lessig L, 'The Creative Commons' in Benedict Atkinson and Brian Fitzgerald (eds), Copyright Law Volume III: Copyright in the 21st Century (Routledge 2017).

Lessig L, *Free Culture: How Big Media Uses Technology and the Law to Lock Down Culture and Control Creativity* (Penguin 2005).

Lindner B, *The WIPO Treaties. In Copyright in the Information Society* (Edward Elgar Publishing 2019).

Litman L, *Digital Copyright* (Prometheus Books 2006).

Mazziotti G, *EU Digital Copyright Law and the End-User* (Springer Berlin Heidelberg 2008).

McConville M and Hong Chui W, (eds), *Research Methods for Law* (2nd edn, Edinburgh University Press 2017).

Murray A, *Information technology law: the law and society* (3rd edn, OUP 2016).

Murthy D, 'Copyright and Digital Media: Perspective and Challenges in the New Legal Regime in India' in K. M. Sinha and V. Mahalwar (eds) Copyright Law in the Digital World (Springer 2017).

Namengenov K, *Absolutnye i otnositel'nye izobretatel'skie pravootnoshenia* [Absolute and relative inventive relations] (Nauka 1978).

Naumov V, *Pravo i Internet: Ocherki teorii i praktiki* [Law and the Internet: Essays on Theory and Practice] (Knizhnyi dom Universitet 2002).

Okediji R.L (ed), *Copyright Law in an Age of Limitations and Exceptions* (Cambridge University Press 2018).

Reinbothe J and von Lewinski S, *The WIPO Treaties 1996: The WIPO Copyright Treaty and the WIPO Performances and Phonograms Treaty: Commentary and Legal Analysis* (Butterworths 2002).

Sergeev A, *Pravo intellektual'noi sobstvennosti v Rossiiskoi Federatsii* (Intellectual property law in the Russian Federation) (2nd edn, Prospect 2005).

Stokes S, *Art and Copyright* (Bloomsbury Publishing 2021).

Stokes S, *Digital Copyright Law and Practice* (5th edn, Hart Publishing 2019).

Suhanov E (ed), *Rossiiskoe grazhdanskoe pravo* [Russian civil law] (Statut 2011).

Svechnikova I, *Avtorskoe pravo* [Copyright] (3rd edn, Dashkov i Co 2009).

Tian Y, *Re-Thinking Intellectual Property: The Political Economy of Copyright Protection in the Digital Era* (1st edn, Routledge-Cavendish 2009).

Vaidhyanathan S, *Copyrights and Copywrongs: The Rise of Intellectual Property and How it Threatens Creativity* (NYU Press 2001).

Vaidyanatha A, *The WIPO Internet Treaties at 25: A Retrospective* (Springer Nature 2023).

Waelde C and others, *Contemporary Intellectual Property: Law and Policy* (OUP 2014).

Wang J, *Regulating Hosting ISPs' Responsibilities for Copyright Infringement* (Springer 2018).

Articles

Adams C, 'Random House v. Rosetta Books' (2002) 17 (29) Berkeley Technology Law Journal 32.

Aksoy P and Uner Z, 'NFT and Copyright: Challenges and Opportunities' (2021) 16(10) Journal of Intellectual Property Law and Practice 1115.

Amangeldy A, 'Interaction of intellectual property law with certain branches of public law' (2023) 3 (74) Bulletin of the Institute of Legislation and Legal Information of the Republic of Kazakhstan 97.

Andrepont C, 'Digital Millennium Copyright Act: Copyright protections for the digital age' (1999) 9 DePaul Journal of Art, Technology and Intellectual Property Law 397.

Angelopoulos C and Quintais J, 'Fixing Copyright Reform' (2019) 10 Journal of Intellectual Property, Information Technology and Electronic Commerce Law 147.

Aronov A and Idrysheva S, 'Copyright Infringement in the Digital Age: The Case for Reform to Kazakhstan's Copyright Laws' (2024) 7(4) Access to Justice in Eastern Europe 1.

Aronov A and Idrysheva S, 'Copyright Protection on Works Generated by Artificial Intelligence' (2025) 21(1) Science and innovation 112.

Aronov A and Idrysheva S, ‘Information Intermediaries in the Digital Environment: Copyright Problems and Trends of Legal Regulation’ (2025) 1 (113) Al-Farabi Kazakh National University Journal of Actual Problems of Jurisprudence 112.

Aronov A, ‘Copyright Protection in the Internet Age: Whether Copyright can Combat Peer-to-Peer Technology’ (2021) 1 (90) Law and State 73.

Aronov A, ‘Protecting Copyright in the Internet Age: The Kazakhstani Perspective’ (2024) 4(149) Bulletin of L.N. Gumilov Eurasian National University 71.

Aronov A, 'Digital Piracy: Responsibility Issues of Internet Service Providers' (2020) 4(133) Bulletin of L.N. Gumilov Eurasian National University 23.

Atanasova I, ‘Copyright Infringement in Digital Environment’ (2019) 1 Economics & Law 13.

Atanasova I, ‘Digital Right Management: Safeguarding Copyright in the Cyber Era’ (2023) 23(4) Annals of Spiru Haret University. Economic Series 281.

Atif A, ‘Artificial Intelligence Produced Original Work: A New Approach to Copyright Protection and Ownership’ (2023) 2(2) European Journal of Artificial Intelligence and Machine Learning 9.

Awomolo-Enujiugha O, ‘Piracy and Its Burden on Copyright in Nigeria: Challenges and Solutions’ (2020) 23 Journal of World Intellectual Property 413.

Bechtold S, ‘Digital rights management in the United States and Europe’ (2004) 52 (2) The American Journal of Comparative Law 323.

Becker L, ‘Deserving to Own Intellectual Property’ (1993) 68 (2) Chicago-Kent Law Review 609.

Bolotov A and Ryabyshev A, ‘Informacionno-obrazovatel’naya sreda setevyh tehnologii distancionnogo obespechenia [Informational and educational environment of network technologies for remote provisions] (2009) 2 Nauchnyi Vestnik MGIIT 24.

Bolotov Y and Kulzhambekova S, ‘Zakonodatel’stvo Respubliki Kazahstan i soglashenie TRIPS’ [Legislation of the Republic of Kazakhstan and the TRIPS Agreement] (2015) 3 Research and Practice Journal “Intellectual Property in Kazakhstan” 19.

Boyle J, The Second Enclosure Movement and the Construction of the Public Domain (2003) 66 Law and Contemporary Problems 33.

Bratus D, ‘Zashita avtorskikh prav v ciphrovuiu epohu’ [Copyright protection in the digital age] (2015) Voprosy rossiiskoi justicii 23-27.

Bretan J, ‘Harboring Doubts about the Efficacy of Sec. 512 Immunity under the DMCA’ (2003) 18 Berkeley Technology Law Journal 50.

Bridy A, ‘Graduated response and turn to private ordering in online copyright enforcement’ (2010) 89 Oregon Law Review 104.

Derclaye E, ‘Assessing the Impact and Reception of the Court of Justice of the European Union Case Law on UK Copyright Law: What Does the Future Hold?’ (2014) Revue International du Droit d’auteur 9.

Dinwoodie G, ‘Developing a Private International Intellectual Property Law: The Demise of Territoriality? (2009) 51 William and Mary Law Review 715.

Dubin J, ‘The Universal Copyright Convention’ (1954) 42 California Law Review 89.

Elkin-Koren N, ‘The Master’s Tools v. The Master’s House: Creative Commons v. Copyright’ (2006) 12 Theoretical Inquiries in Law 309.

Emily De Corte C and Van Kenhove P, ‘One Sail Fits All? A Psychographic Segmentation of Digital Pirates’ (2017) 143 Journal of Business Ethics 441.

Ferri F, ‘The Dark Side(s) of the EU Directive on Copyright and Related Rights in the Digital Single Market’ [123AD] China-EU Law Journal 24.

Foroughi A, Albin M and Gillard S, ‘Digital Rights Management: A Delicate Balance between Protection and Accessibility’ (2002) 28 Journal of Information Science 389.

Geller P, ‘Conflicts of Laws in Copyright Cases: Infringement and Ownership Issues’ (2004) 51 Journal of the Copyright Society of the USA 315.

Ginsburg J, ‘Extraterritoriality and Multiterritoriality in Copyright Infringement’ (1997) 12(1) Berkeley Technology Law Journal 587.

Hitchcock D and others, ‘Current Status of Copyright Protection in the Digital Age and Related Topics’ (2002) 8 Texas Wesleyan Law Review 539.

Holmes S, ‘Comment on the Recent Grokster Judgment by the US Supreme Court’ (2005) 1(1) Journal of Intellectual Property Law & Practice 23.

Hristov K, ‘Artificial Intelligence and the Copyright Dilemma’ (2016) 57 IDEA: The Journal of the Franklin Pierce Center for Intellectual Property 431.

Idrysheva S, ‘Information Intermediaries and their role in copyright relations in the digital age’ (2024) 3 (104) The Law and State Journal 22.

Jansen M, ‘The Protection of Copyright Works on the Internet-an Overview’ (2005) 38(3) Comparative and International Law Journal of Southern Africa 348.

Jaybhaye A and Dodai B, ‘Copyright Piracy in the Digital Age with Special Reference to Napster’s Case’ (2021) 4 (5) International Journal of Law Management & Humanities 2137.

Kahandawaarachchi T, ‘Liability of Internet Service Providers for Third Party Online Copyright Infringement: A Study of the US and Indian Laws’ (2007) 12(6) JIPR 553.

Kidwell P, ‘Netizens: On the History and Impact of Usenet and the Internet [Reviews]’ (2005) 20 IEEE Annals of the History of Computing 87.

Kim M, ‘The Creative Commons and Copyright Protection in the Digital Era: Uses of Creative Commons Licenses’ (2007) 13 Journal of Computer-Mediated Communication 187.

Kirillova Y, Vasilieva M and Krohina Y, ‘Legal Protection of Copyright Items Inheritance in the Internet by Means of a Creative Commons License’ (2014) 6 Review of European Studies 232.

Kiškis M, ‘Addressing Evolving Digital Piracy Through Contributory Liability for Copyright Infringement: The Mobdro Case Study’ (2023) 17 Masaryk University Journal of Law and Technology 219.

Kretschmer M, ‘Digital Copyright: The End of an Era’ (2003) 25(8) European Intellectual Property Review 333.

Liang M, ‘Copyright Issues Related to Reproduction Rights Arising from Streaming’ (2020) 23 The Journal of World Intellectual Property 798.

Lunardi J, ‘Guerrilla Video: Potential Copyright Liability for Websites That Index Links to Unauthorized Streaming Content’ (2008) 19 Fordham Intellectual Property, Media & Entertainment Law Journal 1077.

Lunney G, ‘The Death of Copyright: Digital Technology, Private Copying, and the Digital Millennium Copyright Act’ (2001) 87 Virginia Law Review 813.

Mansell R and Steinmueller W, ‘Copyright Infringement Online: The Case of the Digital Economy Act Judicial Review in the United Kingdom’ (2013) 15 New Media and Society 1312.

Mathur A, ‘A Reflection upon the Digital Copyright Laws in India’ (2020) 25 Journal of Intellectual Property Rights 5.

Mehta C, ‘Digitalization of Copyright: Remedies on Infringement’ (2023) 6 Issue 2 International Journal of Law Management & Humanities 1041.

Morea L, ‘The Future of Music in a Digital Age: The Ongoing Conflict between Copyright Law and Peer-to-Peer Technology’ (2005) 28 Campbell Law Review 195.

Morris S, ‘Pirates of the Internet, At Intellectual Property’s End with Torrents and Challenges for Choice of Law’ (2009) 17 International Journal of Law and Information Technology 282.

Okediji R, ‘Regulation of Creativity under the WIPO Internet Treaties’ (2008) 77 Fordham L. Rev. 2379.

Palace V, ‘What If Artificial Intelligence Wrote This: Artificial Intelligence and Copyright Law’ (2019) 71 Florida Law Review 217.

Panjaitan H and others, ‘Music Copyright Protection in The Digital Era: Legal Framework and Strategies for Enforcement’ (2024) 40 Jurnal Hukum Unissula 235.

Pearson H, ‘Intellectual Property and the Internet: A Comparison of U.K. and U.S. Law’ (1998) 1 Journal of World Intellectual Property 827.

Peters M, ‘The Challenge of Copyright in the Digital Age’ (2006) 9 Revista La Propiedad Inmaterial 59.

Pignataro C, ‘Copyright Law and the Internet: The New Generation of Legal Battles in the Courts’ (2001) 18 Touro Law Review 783.

Pistorius T, ‘Developing Countries and Copyright in the Information Age’ (2009) 9 (2) Potchefstroom Electronic Law Journal 10.

Ponkin I and Red'kina A, ‘Iskusstvennyi intellekt i s tochki zrenia prava’ [Artificial Intelligence and from the point of view of understanding the law] (2018) 22(1) RUDN Journal of Law 95.

Ponomarchenko A, ‘Blockchain Technology in Copyright’ [2021] Legal Concept 148.

Rosati E, ‘The DSM Directive Five Years On’ (2024) Nordic Intellectual Property Law Review 1.

Salnikova A, ‘Blockchain Technology as a Tool for Copyright Protection’ (2020) 15 Actual Problems of Russian Law 83.

Samuelson P, ‘Digital Media and the Changing Face of Intellectual Property Law’ (1990) 16 Rutgers Computer & Tech. LJ 323.

Samuelson P, ‘Intellectual Property and the Digital Economy: Why the Anti-Circumvention Regulations Need to Be Revised’ (1999) 14 Berkeley Technology Law Journal 519.

Savelyev A, ‘Copyright in the Blockchain Era: Promises and Challenges’ (2018) 34 Computer Law & Security Review 550.

Semenova N, ‘Aktual'nye problemy otsifrovki ob’ektov avtorskih prav’ [Actual problems of digitization of copyright objects] (2022) 12(6A) Voprosy rossiskogo i mezhdunarodnogo prava uchrediteli: Analitika Rodis 164.

Shahid A, ‘Role of the Berne Convention in the Promotion of Cultural Creativity and Development’ (1986) 28 (4) Journal of the Indian Law Institute 423.

Sheinblatt J, ‘The WIPO copyright treaty’ (1998) 13 Berkeley Tech. LJ 535.

Tanuatmaja B and others, ‘Copyright Infringement Using in Stream Ripping’ (2019) Proceedings of the 4th international conference on contemporary social and political affairs 243.

Terentyeva L, ‘Ekstraterritorial’nost’ v mezhdunarodnom chastnom prave’ [Extraterritoriality in private international law] (2021) 5(126) Aktual'nye problemy rossiiskogo prava 183.

Tresise A, Goldenfein J and Hunter D, ‘What Blockchain Can and Can’t Do for Copyright’ (2018) 28 Australian Intellectual Property Journal 144.

Umejiaku N and others, ‘Legal Impact of the Advancement of Digital Technology on Copyright Protection in Nigeria’ (2024) 11 Journal of Commercial and Property Law 98.

Vinogradova M, ‘Mehanizm zashity avtorskih prav’ [Copyright Protection Mechanism] (2014) 6 (1) Problemy prava i ekonomiki 62.

Weiskopf D, ‘The Risks of Copyright Infringement on the Internet: A Practitioner’s Guide 33 University of San Francisco Law Review 1.

Yakubova I and Yakubov A, 'Problems of Copyright Protection: Plagiary and Piracy on the Internet' (2021) 4(12) Turkish Journal of Computer and Mathematics Education 1132.

Yanisky-Ravid S and Moorhead S, ‘Generating Rembrandt: Artificial Intelligence, Copyright, and Accountability in the 3A Era - The Human-Like Authors Are Already Here - A New Model’ (2024) 114 Trademark Rep. 998.

Yoon B, ‘A Comparative Study of the Copyright Laws for Artificial Intelligence in the UK and Korea’ (2022) 28 Comparative Law Review 281.

Yu P, ‘Digital Copyright Reform and Legal Transplants in Hong Kong’ (2010) 48 (4) U. Louisville L. Rev. 693.

Zafar Iqbal M and Zubair Khan M, ‘Copyright Laws in Pakistan: Challenges in the Digital Age’ (2024) 2 Dialogue Social Science Review (DSSR) 420.

Zemer L, ‘The Making of a New Copyright Lockean’ (2005) 29 Harvard Journal of Law & Public Policy 891.

Online journals

Bar-Ziv S and Elkin-Koren N, ‘Behind the Scenes of Online Copyright Enforcement: Empirical Evidence on Notice & Takedown’ (15 July 2018) https://papers.ssrn.com/abstract=3214214.

Bezatlliu E, ‘Digital copyrights: Addressing challenges in the internet age’ (2024) 9(3) IJNRD https://www.ijnrd.org/papers/IJNRD2403663.pdf.

Choi S and Kwak J, ‘Feature Analysis and Detection Techniques for Piracy Sites’ (2020) 14 (5) KSII Transactions on Internet & Information Systems https://koreascience.kr/article/JAKO202019962560309.pdf.

Dahlstrom D and others, ‘Piracy in the digital age’ [2006] University of San Diego https://courses.cs.washington.edu/courses/csep590a/06au/projects/digital-piracy.pdf.

Dusollier S, ‘The Master’s Tools v. the Master’s House: Creative Commons v. Copyright’ (2005) 29 Columbia Journal of Law & the Arts https://heinonline.org/HOL/Page?handle=hein.journals/cjla29&id=281&div=&collection=.

Edwards L, ‘Role and responsibility of internet intermediaries in the field of copyright and related rights' [2011] https://strathprints.strath.ac.uk/35492/.

Garnett N, 'Digital Rights Management, Copyright, and Napster' (2001) 2(2) ACM SIGecom Exchanges https://www.sigecom.org/exchanges/volume_2/2.2-Garnett.pdf.

Giannopoulou A, 'Copyright Enforcement Measures: The Role of the ISPs and the Respect of the Principle of Proportionality' (2012) 3 European Journal of Law and Technology https://ejlt.org/index.php/ejlt/article/view/122/204.

Goss A, 'Codifying a Commons: Copyright, Copyleft, and the Creative Commons Project' (2007) 82 Chicago-Kent Law Review https://heinonline.org/HOL/Page?handle=hein.journals/chknt82&id=987&div=&collection=.

Guadamuz A, 'Do Androids Dream of Electric Copyright? Comparative Analysis of Originality in Artificial Intelligence Generated Works' (2020) https://papers.ssrn.com/abstract=2981304.

Gurko A, 'Iskusstvennyj intellekt i avtorskoe pravo: Vzgliad v budushee' [Artistic intelligence and copyright: A Look into the future] (2017) 12 Intellektual'naia sobstvennost'. Avtorskoe pravo i smezhnye prava https://elibrary.ru/item.asp?id=30635536.

Haber E, 'Copyrights in the Stream: The Battle on Webcasting' (2012) 28 Santa Clara High Technology Law Journal https://digitalcommons.law.scu.edu/chtlj/vol28/iss4/2.

Hua J, 'Establishing Certainty of Internet Service Provider Liability and Safe Harbor Regulation' (2014) https://papers.ssrn.com/abstract=2591222.

Jiang T, Sui A, Lin W and Han P, 'Research on the Application of Blockchain in Copyright Protection' [2020] International Conference on Culture-oriendted Science and Technology (ICCST) 616 https://ieeexplore.ieee.org/abstract/document/9262719.

Kohl U, 'The Rise and Rise of Online Intermediaries in the Governance of the Internet and beyond - Connectivity Intermediaries' (2012) 26 International Review of Law, Computers and Technology 185 https://www.tandfonline.com/doi/abs/10.1080/13600869.2012.698455.

Kostyu J, 'Copyright Infringement on Internet: Determining the Liability of Internet Service Providers' (1998) 48 Catholic University Law Review https://heinonline.org/HOL/Page?handle=hein.journals/cathu48&id=1247&div=&collection=.

Kumar N, 'Digital Rights Management and Intellectual Property Protection' [2012] SSRN Electronic Journal https://papers.ssrn.com/abstract=2030762.

Olu Adetunji A and Okuonghae N, 'Challenges of Copyright Protection in the Digital Age: the Nigerian Perspective' [2022] Library Philosophy and Practice (e-journal) https://digitalcommons.unl.edu/libphilprac/7159.

Pech S, 'Copyright Unchained: How Blockchain Technology can Change the Administration and Distribution of Copyright Protected Works' (2020) 18 Nw. J. Tech. & Intell. Prop. https://heinonline.org/HOL/LandingPage?handle=hein.journals/nwteintp18&div=3&id=&page=.

Rahman R, Al-Farouqi A and Tang S, 'Should Indonesian Copyright Law Be Amended Due to Artificial Intelligence Development?: Lesson Learned from Japan' (2020) 9 (1) NTUT Journal of Intellectual Property Law and Management 34 https://iip.ntut.edu.tw/var/file/92/1092/img/2036/v1-1.pdf.

Tiwari S, 'Intellectual Property Rights in the Age of Digital Content Distribution' (2024) 1(3) Sku Journal of Lex Vibrent https://www.skujlv.com/pdf/lalaks5.pdf.

Ulkina M, 'Blokchain Platforms as a Means of Copyright Protection in Information Networks, including the Internet' (2019) Sovremennaya Nauka https://elibrary.ru/item.asp?id=37790882.

Yu P, 'Digital Piracy and the Copyright Response' [2007] Texas A&M University School of Law https://scholarship.law.tamu.edu/facscholar/658/.

Zhangir Shalekenov, 'Ugolovnaia otvetstvennost' za nezakonnoe ispol'zovanie ob'ekta avtorskogo i smezhnogo prava' [Criminal liability for the illegal use of copyright and related rights] (2023) 2 Intellektual'naya sobstvennost' Kazakhstana https://qazpatent.kz/storage/app/media/qazpatent_pub_02.2023.pdf.

Dissertations

Amangeldy A, 'Pravo intellektual'noi sobstvennosti Respubliki Kazakhstan na sovremennom etape' [Intellectual property law of the Republic of Kazakhstan at the present stage] (Dissertation, Moscow 2015).

Boldyrev S, 'Avtorskie prava v sovremennom informacionno-telekommunikacionnom prostranstve Rossiiskoi Federatsii: Grazhdansko-pravovoe regulirovanie i zashhita' [Copyright in the modern information and telecommunication space of the Russian Federation: civil law regulation and protection] (DPhil thesis, Kursk 2017).

Hui Y, 'Protecting Copyright in the Digital Era in China: A Critical Analysis of the Relevant Law and Practice from a Comparative Perspective' (DPhil thesis, Durham University 2016).

Ihsanov E, 'Avtorskoe pravo kak sub'ektivnoe grazhdanskoe pravo po zakonodatel'stvu Respubliki Kazakhstan' [Copyright as a subjective civil right under the legislation of the Republic of Kazakhstan] (Avtoref. dissertation, Institut gosudarstva i prava MON RK 2001).

Longan M, 'Rethinking Copyright and the Internet: A New Model for Users' Rights' (PhD thesis, University of Sussex 2020).

Masalina S, 'Institut avtorskogo prava v usloviah razvitia informacionnyh tehnologii' [The institute of copyright in the context of information technology development] (Dissertation, Almaty 2007) 128.

Nyembe S, 'The Challenges of Protecting Copyright in the Digital Age Due to Digital Piracy' (DPhil thesis, University of Pretoria 2023).

Websites

'BT Ordered to Block Links to Newzbin 2 Website' (*BBC News*, 28 July 2011) https://www.bbc.com/news/technology-14322957.

'Case Law: Twentieth Century Fox v Sky UK, Blocking Injunction Granted in Relation to "Popcorn Time' (*Inforrm's Blog*, 12 June 2015) https://inforrm.org/2015/06/12/case-law-twentieth-century-fox-v-sky-uk-blocking-injunction-granted-in-relation-to-popcorn-time-websites-kana-patsalides/.

'Copyright Infringement' (ARBIS) https://arbis.kz/en/all-articles/copyright/copyright-infringement/?utm_source=chatgpt.com.

'Creative Commons Licences: Are They the Solution to Copyright Infringements?' (*Law Right*, 2018) https://www.law-right.com/creative-commons-licences-are-they-the-solution-to-copyright-infringements/.

'Digital Piracy: A Growing Threat To The Creativity Industry' (*Dataconomy*) https://dataconomy.com/2023/06/14/what-is-digital-piracy-effects-on-creativity-industry/.

'Digital Video Viewers Number Worldwide 2023' (*Statista*) https://www.statista.com/statistics/1061017/digital-video-viewers-number-worldwide/.

'Effort to Capture "Red Flag" Embodies DMCA Reform Struggle' (*Finnegan*, 10 June 2020) https://www.finnegan.com/en/firm/news/effort-to-capture-red-flag-embodies-dmca-reform-struggle.html.

'Global Freedom of Expression, 'L'Oréal SA v. EBay International AG' https://globalfreedomofexpression.columbia.edu/cases/loreal-sa-v-ebay-international-ag/.

'Global Freedom of Expression, 'Scarlet Extended SA v. SABAM' https://globalfreedomofexpression.columbia.edu/cases/scarlet-extended-sa-v-sabam/.

'Summary of the Berne Convention for the Protection of Literary and Artistic Works (1886)' https://www.wipo.int/treaties/en/ip/berne/summary_berne.html.

'Summary of the WIPO Copyright Treaty (WCT) (1996)' https://www.wipo.int/treaties/en/ip/wct/summary_wct.html.

'The 14 Most Ridiculous Lawsuits Filed by the RIAA and the MPAA (*Brainz*)' https://www.brainz.org/14-most-ridiculous-lawsuits-filed-riaa-and-mpaa/.

'The concept of intellectual property development in the Republic of Kazakhstan for the period 2021-2025'

https://www.gov.kz/memleket/entities/adilet/documents/details/166427?lang=ru&ysclid=ldcw09slv5516323991 .

'The Global Internet Phenomena Report, Growing app complexity: Paving the way for digital lifestyles and immersive experiences' (*Sandvine*, 2022) https://www.sandvine.com/hubfs/Sandvine_Redesign_2019/Downloads/2022/Phenomena%20Reports/GIPR%202022/Sandvine%20GIPR%20January%202022.pdf?hsCtaTracking=18fff708-438e-4e16-809d34c3c89f4957%7C067d9d28-ef90-4645-9d46-c70d10279247.

'The Role and Responsibility of Internet Intermediaries in the Field of Copyright and Related Rights' https://www.wipo.int/publications/en/details.jsp?id=4142&plang=EN.

'Twentieth Century Fox Film Corp. v. British Telecommunications PLC' (*Loeb & Loeb LLP*, 2011) https://www.loeb.com/en/insights/publications/2011/08/twentieth-century-fox-film-corp-v-british-teleco__.

'What is Creative Commons?' (*Smartcopying*, 9 January 2023) https://smartcopying.edu.au/what-is-creative%20commons/.

'WIPO - World Intellectual Property Organization' https://www.wipo.int/portal/en/.

Benhamou Y, 'Copyright and Museums in the Digital Age' (*The WIPO Magazine,* 2016) https://www.wipo.int/ru/web/wipo-magazine/articles/copyright-and-museums-in-the-digital-age-39611.

Cory N, 'A Decade After SOPA/PIPA, It's Time to Revisit Website Blocking' (*ITIF*, 26 January 2022) https://itif.org/publications/2022/01/26/decade-after-sopa-pipa-time-to-revisit-website-blocking/.

Dmitrieva A and Savelyev D, 'Avtorskoe pravo v Internete: konflikty, raspredelenie otvetstvennosti i varianty regulirovania' [Copyright on the Internet: conflicts, allocation of responsibilities, and regulatory options] (2011) https://online.zakon.kz/Document/?doc_id=31226441&pos=3;-106#pos=3;-106.

Esimhanov E, 'The Law 'On Online Platforms and Online Advertising' in Kazakhstan – Approach to Regulation and Practical Consequences' (*Grata*, 16 November 2023) https://gratanet.com/ru/publications/1-2560?region=serbia.

EUR-Lex, Communication from the commission 'Artificial Intelligence for Europe' https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52018DC0237.

Garg R, 'Digital Rights Management: The New Copyright' (*IPleaders*, 24 June 2023) https://blog.ipleaders.in/digital-rights-management-the-new-copyright/.

Ginsburg J, 'Berne-Forbidden Formalities and Mass Digitization' (2016) https://papers.ssrn.com/abstract=2772176.

Guadamuz A, ‘French Constitutional Court Strikes Down Three-strikes’ (*TechnoLlama*, 2009) https://www.technollama.co.uk/french-constitutional-court-strikes-down-three-strikes.

Guadamuz A, ‘Non-fungible tokens (NFTs) and copyright’ (*WIPO Magazine* 2021) https://www.wipo.int/en/web/wipo-magazine/articles/non-fungible-tokens-nfts-and-copyright-42365.

Guadamuz A, ‘Usenet Filesharing Defeated in Court’ (*TechnoLlama*, 30 March 2010) https://www.technollama.co.uk/usenet-filesharing-defeated-in-court.

Guadamuz A, ‘New EU Directive threatens the Internet as we know it' (*TechnoLlama,* 23 February 2019) < https://www.technollama.co.uk/new-eu-directive-threatens-the-internet-as-we-know-it>.

Hargreaves I, ‘Digital Opportunity: A Review of Intellectual Property and Growth’ (2011) https://assets.publishing.service.gov.uk/media/5a796832ed915d07d35b53cd/ipreview-finalreport.pdf.

IT-Jurist, ‘Roskomnadzor zablokiroval odnu iz krupnejshih onlain-bibliotek “Flibusta”’ [Roskomnadzor has blocked one of the largest online libraries, Flibust] https://it-jurist.ru/news/onlayn-biblioteka-flibusta-zablokirovana-za-narushenie-avtorskih-prav/.

Kazakhstanskii Press Club, ‘Po itogam sessii “Avtorskoe pravo, plagiat v media i sozdanie sobstvennogo kontenta’ [According to the results of the session “Copyright, Plagiarism in the Media, and Creating Your Own Content”] https://pressclub.kz/по-итогам-сессии-авторское-право-пла/.

Maxwell A, ‘Mobdro Pirate Streaming: Police Arrest Suspect, Three Others Questioned’ (*Torrentfreak*, 10 March 2021)https://torrentfreak.com/mobdro-pirate-streaming-police-arrest-suspect-three-others-questioned-210310/.

Maxwell A, ‘MPAA Threatens World’s Premier Usenet Indexer' *(TorrentFreak*, 28 May 2008) https://torrentfreak.com/mpaa-threatens-worlds-premier-usenet-indexer-080528/.

O’Dair M, ‘How Blockchain Could Help Musicians Make a Living from Music’ (*The Converation*, 7 July 2016) https://theconversation.com/how-blockchain-could-help-musicians-make-a-living-from-music-52125.

Park S, ‘Kazakhstan: Bor’ba s Internet-piratstvom’ [Kazakhstan: Combating Internet Piracy] (*Global Voices*, 20 June 2011) https://ru.globalvoices.org/2011/06/20/4442/.

Pravovaya Statistika, 'Statisticheskye otchety’ [Statistical reports] https://qamqor.gov.kz/crimestat/indicators.

PRG, ‘Roskomnadzor navsegda zablokiruet dostup k biblioteke “Librusek”’ [Roskomnadzor will permanently block access to the Librusek Library] https://prg.kz/document/?doc_id=32700967&pos=4;89.

Rasnake C, ‘Torrent Usage Trends & Statistics: A Year-By-Year Analysis’ (*PC Matic*, 31 March 2023) https://www.pcmatic.com/blog/torrent-usage-trends-statistics-a-year-by-yearanalysis/?srsltid=AfmBOoobGK3UbR6_Y1UQO85i7Eizvd0DV3XbmazRc-6vuMn5d2FmgIDZ.

Rosati E, ‘Italian Court Finds Google and YouTube Liable for Failing to Remove Unlicensed Content (but Confirms Eligibility for Safe Harbour Protection)’ *(The IPKat*, 30 April 2017) https://ipkitten.blogspot.com/2017/04/italian-court-finds-google-and-youtube.html.

Skiban O, ‘V miniuste rasskazali, budut li uzhestochat' otvetstvennost' za plagiat' [The Ministry of Justice has revealed whether the responsibility for plagiarism will be tightened] (*Zakon*,19 December 2023) https://www.zakon.kz/sobytiia/6417955-v-minyuste-rasskazali-budut-li-uzhestochat-otvetstvennost-za-plagiat.html.

Studicata, ‘BMG Music v. Gonzalez’ United States Court of Appeals, Seventh Circuit 430 F.3d 888 (7th Cir. 2005) https://studicata.com/case-briefs/case/bmg-music-v-gonzalez/.

UNESCO, ‘Universal Copyright Convention with Appendix Declaration relating to Article XVII and Resolution concerning Article XI’ https://www.unesco.org/en/legal-affairs/universal-copyright-convention-appendix-declaration-relating-article-xvii-and-resolution-concerning.

United Nations, ‘Universal Declaration of Human Rights’ https://www.un.org/en/about-us/universal-declaration-of-human-rights.

Vanshika T, ‘Role of Creative Commons Licenses in Copyright Infringement’ (Legal Servcie India) https://www.legalserviceindia.com/legal/article-10841-role-of-creative-commons-licenses-in-copyright-infringement.html.

Vidyanova A, ‘Pochemu zashhita avtorskih prav ne razvita v Kazakhstane?’ [Why is copyright protection not developed in Kazakhstan?] (*Kapital*, 25 February 2019) https://kapital.kz/gosudarstvo/76107/pochemu-zashchita-avtorskikh-prav-ne-razvita-v-kazakhstane.html.

WIPO, ‘Intellectual Property Code, France' https://www.wipo.int/wipolex/en/legislation/details/22588.