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Olya Yolcuyeva

Baku State University

Master student

<https://orcid.org/0009-0000-3541-6194>

olyayolcuyeva@gmail.com

The Conflict of Copyright and the Internet: Perspectives for a Solution for Azerbaijan

Abstract

The spread of the internet and digital technologies has changed the conditions of the copyright sphere and brought about new problems. In the digital environment, works are disseminated all over the world in a short time, copied, shared, and that has resulted in reducing the efficiency of the traditional legal means of protection. In the case of Azerbaijan, the issue of copyright protection in the digital environment must be resolved by combining legal, technical, and educational tools. From this point of view, Digital Rights Management (DRM) systems, blockchain, AI monitoring algorithms, digital watermarking, and fingerprinting systems play an important role in preventing infringement of copyright. Digital watermark and fingerprinting systems confirm the authorship of the work and have the force of legal evidence. Cooperation with platforms, raising the awareness of the public, ensuring access to the legal content, creating a culture of creativity, integration of international rules such as the Berne Convention, WIPO Copyright Treaty, TRIPS Agreement into national legislation play an important role in improving the digital copyright system for Azerbaijan, ensuring the protection of the author's economic and moral rights, stimulation of development of the digital economy and creative industries in the country.

***Keywords:** copyright, digital environment, DRM, blockchain, artificial intelligence, digital watermark, fingerprint, copyright infringement*

Olya Yolcuyeva

Bakı Dövlət Universiteti

magistrant

<https://orcid.org/0009-0000-3541-6194>

olyayolcuyeva@gmail.com

Müəlliflik hüququ ilə internetin toqquşması: Azərbaycan üçün həll perspektivləri

Xülasə

İnternetin və rəqəmsal texnologiyaların yayılması müəllif hüquqları sahəsinin şərtlərini dəyişdirib və yeni problemlər yaradıb. Rəqəmsal mühitdə əsərlər qısa müddətdə bütün dünyada yayılır, kopyalanır, paylaşılır və bu, ənənəvi hüquqi qoruma vasitələrinin effektivliyinin azalmasına səbəb olub. Azərbaycan nümunəsində rəqəmsal mühitdə müəllif hüquqlarının qorunması məsələsi hüquqi, texniki və təhsil vasitələrinin birləşdirilməsi ilə həll edilməlidir. Bu baxımdan, Rəqəmsal Hüquqların İdarə Edilməsi (DRM) sistemləri, blokçeyn, süni intellekt əsaslı monitoring alqoritmləri, rəqəmsal su nişanı və barmaq izi sistemləri müəllif hüquqlarının pozulmasının qarşısını almaqda mühüm rol oynayır. Rəqəmsal su nişanı və barmaq izi sistemləri əsərin müəllifliyini təsdiq edir və hüquqi dəlil qüvvəsinə malikdir.

Platformalarla əməkdaşlıq, ictimaiyyətin maarifləndirilməsi, qanuni məzmunu çıxışın təmin edilməsi, yaradıcılıq mədəniyyətinin formalaşdırılması, Bern Konvensiyası, WIPO Müəllif Hüquqları Müqaviləsi, TRIPS Sazişi kimi beynəlxalq qaydaların milli qanunvericiliyə daxil edilməsi Azərbaycan üçün rəqəmsal müəllif hüquqları sisteminin təkmilləşdirilməsində, müəllifin iqtisadi və mənəvi hüquqlarının qorunmasında, ölkədə rəqəmsal iqtisadiyyatın və yaradıcı sənayelərin inkişafının stimullaşdırılmasında mühüm rol oynayır.

Açar sözlər: *müəllif hüququ, rəqəmsal mühit, DRM, blokçeyn, süni intellekt, rəqəmsal su nişanı, barmaq izi, müəllif hüququnun pozulması*

Introduction

The evolution and pervasiveness of digital technologies and the internet has dramatically altered the ease and availability of information access and distribution in today's society. With the internet the world has been given the ability to globally publish and disseminate works. Although this ease of global publication presents problems for the protection of the works (namely, copyright issues) the traditional copyright system was established for a different media. (Litman, 2001, pp. 1-5) With the ease of reproduction, manipulation, and distribution of digital works the task of protecting the creator's rights is becoming increasingly difficult. Balancing copyright with the public interest therefore is one of the most difficult issues facing legal systems in the new digital age. (International Journal of Criminal, Common and Statutory Law 2025; 5(2), pp. 131–136)

Research

Copyright in the digital environment is not only a matter of protecting economic rights but has a direct impact on the development of culture, science, and education. The law of the Republic of Azerbaijan on Copyright and Related Rights, Article 5, states, "Copyright is the sum of personal non-property and property rights that are inherent to the author in the creation of scientific, literary and art works." (Law of the Republic of Azerbaijan on Copyright and Related Rights, Article 5) Therefore, improving the legal and technical environment in this sphere is one of the priorities for Azerbaijan, where protecting the interests of authors and ensuring the right of the public to information are of great strategic importance. There is, however, also a need for international solutions to legal problems on the Net. The internet has no borders and you cannot tackle copyright violations with local laws alone, an international approach is needed.

Due to the digital nature of works in the digital network, it needs protection by the copyright law. Regardless of whether the work is used in the digital network, it has the same legal status as other works. The personal, moral and property rights of the author should be respected.

In relation to the objects of copyright, posted on Internet resources, in most cases, the rules of use are indicated. For instance, if it's indicated on the site that "reproduction is allowed only with the reference to the resource", it means that the reproduction of the work is possible without payment, but the moral rights of the author must be respected. In all other cases, the author's consent is required.

In the digital network there are also property right enforcers: the password, or the subscription. So the rights of the person and of the property have to be respected in the third party use. But making a copy for personal use is regarded as legal, and does not involve the need to obtain permission from the author, though the copy has to be destined for individual consumption. Digital objects and multimedia works that are copyright protected are abundant on the net. Books, audio-visual works, music files, art works and software are nowadays available in digital form and easily accessible through the net. Moreover digital technology allows for the creation, publication and dissemination of works but at the same time the question of the protection of copyright and related rights arises.

The Nature of Copyright and Its Transformation in the Digital Environment

Copyright protects literary, artistic and scientific works that are the result of creative activity. The author has the right to use, dispose of and receive income from the work. Due to the development of digital technologies, the boundaries of the copyright object have changed: e-books, online magazines, software, databases, video and audio materials have become new objects of copyright, which leads to changes in legal norms and the use of technological protection measures.

The underlying concepts of copyright remain unchanged in the digital context. However, some of these concepts can be tricky to apply:

- Works are reproduced and distributed very rapidly and are easily disseminated without the author's consent.
- Copyright laws and procedures differ between countries, making international copyright enforcement more challenging.
- The anonymity and privacy of the Internet complicate the tracing of copyright violations.
- Another major issue is that technological advancements, particularly AI and generative models, enable automatic adaptation and exploitation of works without the author's permission.

International regulation of copyright in the online environment

Perhaps the biggest threat to copyright is digital piracy. Article 1.0.9 of the Law on Ensuring Intellectual Property Rights and Combating Piracy defines "Pirated product" as copies of an audiovisual work, phonogram, computer program, database, or book that are produced and distributed without the consent of the rights holder. (Law on Ensuring Intellectual Property Rights and Combating Piracy, Article 1.0.9) The copying, sharing and distribution of works without the permission of the author causes economic damage to the authors and creators. Music and cinema websites, torrent sites and social networks create a wide range of opportunities for such distribution. In the world, this issue is regulated by WIPO Copyright Treaty (1996). In the 8th article of the Treaty (Right of Communication to the Public) the author is given the right to communicate the work to the public, and therefore, the sharing of licensed audio-visual and other digital content on the internet is regulated by law and the 11th article (Obligations concerning Technological Measures) obliged the states to provide legal protection to the technological protection measures, such as DRM (Digital Rights Management). (TRIPS Agreement, 1994) Both articles form the technological and legal basis for the restriction of unauthorized copying of the works. In Azerbaijan, the electronic DRM systems are applied to the protection of books, music and video content against copyright infringement.

User-generated content introduces new issues for copyright, because on social media and video-hosting sites, users can share content, and often, music, videos, etcetera are used without the permission of the author. In this matter, the American Digital Millennium Copyright Act (DMCA, 1998), Section 512 ("Safe Harbor") specifies the liability of platforms and the monitoring they have to execute ((DMCA, 1998), Section 512). In the European Union, the Digital Services Act (2019), Articles 14-15, specify the liability of online platforms in monitoring user-generated content and protecting rights. (The Digital Services Act (2019), Articles 14-15) Technologically, AI-software, like Content ID on YouTube, identifies copyright infringements in real-time, enabling the liability of platforms.

Further, new distribution models create a problem of copyright. Streaming services and online platforms have changed the distribution model and thus the problem of author's profits, licensing and the protection of his rights have become more complicated. For instance, Spotify and Netflix pay royalties for the copyright. However, sometimes the system of profit share becomes untransparent. At the international level, this issue is regulated by TRIPS Agreement Articles 9-14, WIPO Internet Treaties (WCT and WPPT), Articles 6-12. These documents regulate distribution and licensing in the digital environment and transparency in royalty payments. Technological solutions include automated and traceable blockchain-based royalty payment systems. In Azerbaijan, there is legislation on the licensing and author's profit share of streaming platforms that has been applied in line with international principles. (TRIPS Agreement Articles 9-14, WIPO Internet Treaties (WCT and WPPT), Articles 6-12)

Last, the borderless nature of the internet poses a problem for global copyright enforcement. Legal gaps arising from different national legislations hinder the protection of rights on an international scale. International collaboration within the WIPO IP Enforcement Directive and the DSM Directive of the EU (Article 17) are pursued to block access to illegal content hosted on foreign servers.[3] Technological measures, digital watermark and fingerprint systems, determine the owner of the content and provide evidence in court. (The DSM Directive of the EU, Article 17) In Azerbaijan these technologies are applied to online music, video and electronic publishing platforms to prevent

copyright infringements. Digital Rights Management (DRM) systems apply technological methods to control the use and distribution of digitally copyrighted content, preventing the unauthorized copying of the work, prevents the unauthorized copying, distribution and modification of the content. A user can only access the content under certain conditions through license keys and encryption. In this way, e-books, music and video remain under the author's control and the use of the content can be controlled through the DRM system. For instance, Adobe DRM prevents copying and sharing of e-books, and Apple FairPlay can only open music and video files on registered devices, Microsoft PlayReady ensures license-based use of multimedia content, and in Azerbaijan, e-libraries and online music platforms can protect copyright and ensure license-based use of content through DRM. (Imanov, 2019, pp. 12–14)

Blockchain for rights of works, licensing conditions and release dates recorded on immutable blocks, creating a tamper-proof, transparent, and traceable copyright system where you can monitor who is using content and violations of copyright, and a means of managing royalty payments automatically and transparently, in order to register and license works in Azerbaijan and pay authors through blockchain technology on national music and video platforms. (Savelyev, 2018). Copyright in the blockchain era: Promises and challenges. *Computer Law & Security Review*, 34(3), 550–561)

The use of AI and automated monitoring algorithms enable to monitor a huge amount of data in order to trace the copyright infringements in real time and to minimize the human labor. For instance, the YouTube Content ID system identifies the videos which contain copyrighted musical and visual content and blocks them if they are used without permission and notify the owner of the copyright about it. In Azerbaijan, AI-based systems are applied in social networks, online music and video platforms in order to automatically trace the copyright infringements and block the shares which violate the law.

The digital watermark and fingerprint technologies, which assign a unique code to the content for identifying the author and tracing the illegal use of the content, monitoring the content, and proving legally and technically the copyright infringement are applied to the audio, video and image. In Azerbaijan, the use of the watermark and fingerprint technologies for detecting the copyright infringements and ensuring the legal use of the content on the online music, video and e-publishing platforms is practiced.

The opportunities for copyright protection in the digital environment in Azerbaijan include legal, technical and educational activities in this sphere. Legal reform is the most important factor in the protection of copyright; it not only protects the economic and moral rights of authors, but also guarantees access to legal content by the public for education, research and personal purposes. For instance, the legislation should contain certain norms on copyright and countermeasures against digital piracy, and explain legal ways for unauthorized streaming and tampering on digital platforms. In addition, the inclusion of international norms and standards, such as the Berne Convention and WIPO recommendations, in the national legislation increases the efficiency of copyright protection. Digital control tools are the most important mechanisms for technical protection. The DRM (Digital Rights Management) system enables authors to control the illegal copying and distribution of the work. For example, when accessing an e-book on an e-book platform, the book is available only through subscription or purchase, and its copying and distribution is impossible due to the DRM system. Blockchain technology allows authors to store the works in an unalterable, trackable and transparent way; the creative rights, license terms and release dates of musical compositions are registered in the blockchain to prevent the infringement of the copyright. (IBM, n.d.)

AI algorithms automatically identify copyright violations in videos, music and other digital content and instantly notify the creators, thereby enabling the rights holder to intervene in real time.

One more benefit of partnering with platforms. When we partner with social networks, video platforms, marketplaces, and service-providing websites, it becomes possible to monitor and track the content and prevent it from being shared illegally. YouTube, for instance, utilizes AI and DRM to identify, remove illegal video and audio content and inform rights holders while adjusting the platform's terms of service to the terms of license. In the same way, blockchain-licensed content is

decrypted for a concrete user and then protected by DRM. If it is an e-book in PDF or ePUB formats, it is decrypted only for a license holder.

Consciousness raising is equally an important tool for copyright protection. It is very essential to raise awareness on copyright, legitimate use of works and netiquette for youth and Internet users. This could be done through training, workshops, webinars, public awareness campaigns in schools, universities and in online platforms. Respecting copyright is not only a legal obligation, it is also a vital element that encourages a creative culture and boosts a digital economy.

Thus, taking all these measures together, the protection of copyright in the digital environment for Azerbaijan will become more comprehensive and efficient. The legislation, digital surveillance tools, blockchain and DRM systems, cooperation with platforms and awareness tools, will protect the rights of authors, provide access to the population to the legal content and will create the base for innovations within the creative industry. In addition, this will also provide the commitment to international standards and contribute to the digital economy development, as well as establishing sustainable and practical tools to fight with the copyright infringements.

Conclusion

With the development of digital technologies and the Internet, the copyright system faces new challenges and problems. The authors have new possibilities for the dissemination of their works, new opportunities for income generation, but, at the same time, there is a new problem of free exchange, digital piracy and legal vacuum. A framework that should be adopted in Azerbaijan should consist of law and technology, which are inseparable. The implementation of Digital Rights Management (DRM), blockchain, AI-based monitoring algorithms are essential for copyright protection. DRM protection of e-books and blockchain-licensing prevent illegal usage of works; AI-based algorithms monitor and report infringements of video and music content in real time; digital watermark and fingerprinting ensure authorship of works and serve as legal evidence.

This enables to provide authors with economic and moral rights, ensure the right of society to access to legal content and contribute to digital economy development. Simultaneously, cooperation with platforms and enlightenment activities enhance the culture of creation and public commitment to digital etiquette. In this way, legal and technological mechanisms ensure systematic and effective protection of copyright in the digital environment for Azerbaijan, which is the basis for future innovations and creativity.

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