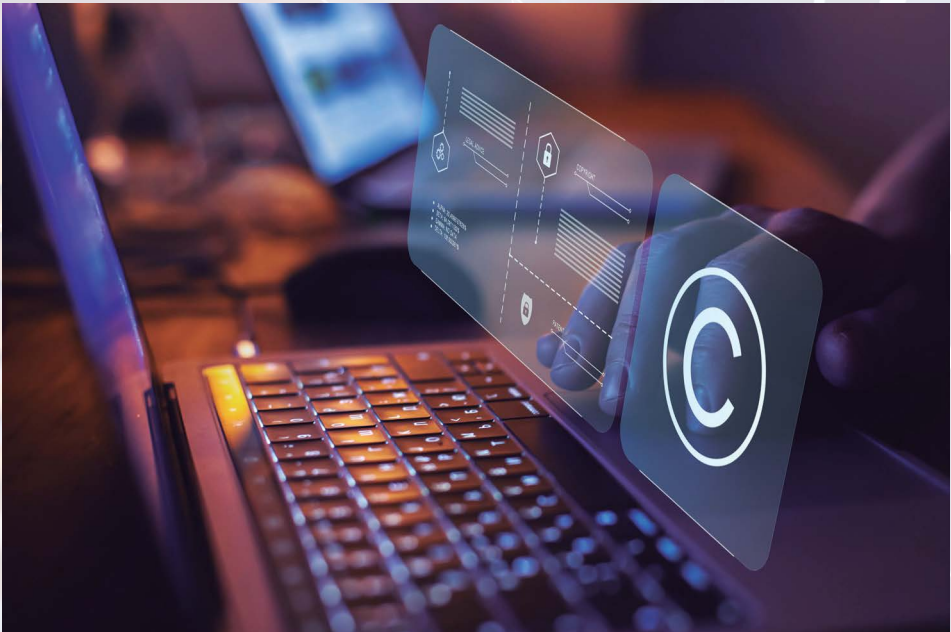


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How to cite this article [Chicago]: Sopilko, Iryna, Valeriia Filinovich, Liliia O. Pankova, Serhii V. Obshalov, and Kostiantyn O. Chaplynskyi. "Protection of Intellectual Property Rights from Cyber Threats in the Global Information Environment." *Novum Jus* 17, no. 1 (2023): 237-258. <https://doi.org/10.14718/NovumJus.2023.17.1.10>

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Protection of Intellectual Property Rights from Cyber Threats in the Global Information Environment

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Received: March 23, 2022 | **Evaluated:** October 5, 2022 | **Accepted:** November 23, 2022

Abstract

The encouragement of creative, scientific, inventive activity and business competition largely depends on the solid protection of intellectual property and related rights on the internet. The problem of such protection lies in the transnational nature of the internet, the absence of a unified centralized management, the difficulty of proving infringements, as well as in the insufficient regulation of this issue. This article analyses the protection of intellectual property rights on the internet in Ukraine, the potential and real threats to them in the cybernetic domain, and the key areas of related activity of state bodies and individuals. The research uses a method of synthesis and analysis, comparative legal analysis, and systemic and formal-logical methods. This article analyses the normative legal documents of Ukraine on intellectual property and rights on the internet, points out their shortcomings, and provides advice on their use. Recommendations are given on how to ensure the protection of intellectual rights through preventive measures and subsequent judicial and extrajudicial proceedings, indicating ways to ensure cybersecurity in relation to the intellectual property of individuals.

Keywords: copyright, cyberspace, information-oriented society, intellectual property law, protection against cyber threats

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Protección de los derechos de propiedad intelectual de las ciberamenazas en el entorno de información global

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Recibido: 23 de marzo de 2022 | **Evaluado:** 05 de octubre de 2022 | **Aceptado:** 23 de noviembre de 2022

Resumen

El fomento de las actividades creativas, científicas, innovadoras y de la competencia empresarial depende en gran medida de la protección sólida de la propiedad intelectual y los derechos asociados en internet. El problema de esta protección radica en la naturaleza transnacional de internet, en la ausencia de una administración unificada y centralizada, en la dificultad de probar una violación de los derechos, y en la falta de regulación. Este artículo analiza las características de la protección de los derechos de propiedad intelectual en Ucrania, las amenazas potenciales y reales en el ámbito cibernético y las áreas fundamentales relacionadas de actividad de las instituciones estatales y los individuos. Esta investigación usa un método de síntesis y análisis, un análisis legal comparativo, y los métodos sistémico y formal-lógico. Este artículo analiza los documentos legales normativos de Ucrania sobre la propiedad intelectual y los derechos asociados en internet, señala sus falencias y proporciona indicaciones para su uso. Se proporcionan recomendaciones sobre cómo garantizar la protección de los derechos intelectuales mediante medidas preventivas y acciones legales y extrajudiciales posteriores, señalando las formas de garantizar la ciberseguridad en relación con la propiedad intelectual de los individuos.

Palabras clave: derechos de autor, ciberespacio, sociedad de la información, leyes de propiedad intelectual, protección contra ciberamenazas

Introduction

We live in a digital epoch. Today it is difficult to imagine an average citizen of Ukraine (and most of the developed countries) who would not use the internet. At the beginning of 2021, 4.66 billion people were users of the global network, which is 59.5% of the total population of the planet¹. This is not surprising, because the internet gives us access to a huge volume of information, allows to easily communicate with people around the world and to send data outside the borders of states, among others. But there are two sides to every coin. The internet has also negative aspects: spam and ubiquitous advertising, opportunities for stirring up conflicts and stalking, virtual addiction, and, most importantly, various cyber violations and crimes.

Frequently the subjects of internet relations see their intellectual property rights infringed by means of plagiarism, theft of content, cybersquatting and similar actions that can not only cause monetary losses but, more importantly, lead to the loss of business reputation. In this article, the subjects of internet relations are defined as individuals, legal entities, the state represented by its bodies, as well as other subjects of information law, in which Yu Kuniev, I. Sopilko, and V. Kolpakov also include the legal organization of information activities².

It is worth considering that the protection of intellectual property objects on the internet is seriously hampered due to the transnational nature of cyber violators, as well as the imperfection of the national legal regulations. As for Ukraine, back in 2007, the Law “On the Basic Principles for the Development of an Information-Oriented Society in Ukraine for 2007–2015”³ came into force. In it the state recognized as one of its main priorities the transformation of our society into one that is information-oriented and open for everyone, with a clear focus on human interests. This document is a starting point in the formation of a society where information and knowledge are available to everyone, and any of its members can easily create, operate, and exchange information assets. In turn, this would favor

¹ Ksenia Murasheva, “Number of the Day: How Many People in the World Use the Internet?”, January 29, 2021, <https://www.ferra.ru/news/techlife/cifra-dnya-skolko-chelovek-v-mire-polzuyutsya-internetom-29-01-2021.htm>

² Y. Kuniev, I. Sopilko, and V. Kolpakov, “Object and Subject of Information Law,” *Journal of Law and Political Sciences* 23, no. 2 (2020), 9-40.

³ Verkhovna Rada of Ukraine, Law of Ukraine No. 537-V, 2007, “On the Basic Principles for the Development of an Information-Oriented Society in Ukraine for 2007–2015”, <https://zakon.rada.gov.ua/laws/show/537-16?lang=en#Text>

the social and economic development of Ukrainians, thereby improving their quality of life⁴.

Ukraine, as a state with an information society, is actively operating in the field of cybersecurity. However, ensuring it is a task of the Ukrainian Security Service, the Ministry of Internal Affairs, the National Bank, and the Special Communications Service. However, their activities are more focused on their own areas of responsibility. “Theft” of technologies and trade secrets, circulation of counterfeit products, frequent data leaks, internet piracy—these and other new threats require the continuous improvement of the cyberspace protections. Therefore, not only government agencies should be involved in ensuring the cyber protection of intellectual property objects, but also organizations, as well as each internet user. Posting content that is protected by intellectual property rights on the internet is allowed only with the permission of the author or of the holder of the copyright and (or) related rights, or the rights of individualization and other industrial property⁵. Otherwise, the content is protected in the manner prescribed by national legislation.

Virtual reality has created new living conditions for Ukrainian society, creating new rules for the internet and becoming a global social phenomenon. But the development of new technologies has resulted in frequent cyber threats. It is happening so quickly that legislators cannot always respond fast enough to such changes. That is why it is important to know how to protect yourself and your intellectual asset, as well as how to protect it from the unfair actions of violators. This article is devoted to such an issue.

Thus, the purpose of this study is to determine the legal nature of intellectual property in the global information environment, to list the main cyber threats to it, to identify shortcomings in approaches to the legal regulation of this issue, and to provide recommendations for protecting one’s intellectual property rights on the internet.

⁴ G. M. Grabovska, “Forms and Ways to Protect Intellectual Rights,” *Scientific Bulletin of Uzhhorod National University* 19, no. 2 (2012): 38-40.

⁵ Iryna Sopilko et al. (2021), “Information Wars as a Threat to the Information Security of Ukraine,” *Conflict Resolution Quarterly* 39, no. 3 (2021), <https://doi.org/10.1002/crq.21331>

Materials and Methods

According to this purpose, the object of the study are the social relations regulated by civil, administrative, and criminal law, which arise in connection with the placement and use of objects of intellectual property in the digital space and directly on the internet, and the implementation of the rights of the subjects of intellectual property. The subject matter of research is the intellectual property produced by human creative and scientific activity in the global cyber environment.

This scientific article is based on generally recognized criteria of scientific objectivity and general scientific research methods that allow a comprehensive analysis of intellectual property and the associated rights in the cyber environment and in connection with cyber threats. Accordingly, the method of analyzing the problem and its solution based on scientific facts made it possible not only to identify the problems of modern regulation of the sphere of intellectual property in the context of countering cyber threats, but also to develop a set of recommendations for the self-protection of one's rights.

The method of synthesis and analysis was used to identify the specific features required to ensure the protection of intellectual property and rights on the internet, which has a transnational nature and lacks a centralized management. Also, a comparative legal analysis was used in the study of the normative legal acts of Ukraine, which have regulated the intellectual property in the global information space. The systemic method was used by the authors to better understand the system of intellectual property rights, the relations between its elements and components, and to find solutions for the protection of the corresponding rights. Also, the systematic method allowed to establish a connection between intellectual property objects and rights and cybersecurity, as well as other related phenomena.

The formal-logical method served as the basis for the in-depth comprehension of the conceptual apparatus, while the method of classification and grouping was used to determine the object, subject matter, and subjects in the resolution of disputes regarding the violation of intellectual property rights on the internet. A thorough analysis of Ukrainian legal acts on intellectual property law and cyber security was carried out, as well as a study of their application. The shortcomings were also pointed out.

To build the argumentation various literature sources were analyzed forming the theoretical basis of the research⁶. Also, certain aspects of the protection of intellectual property from cyber threats and violations in cyberspace were studied based on several scholars⁷.

Results

Unique digital technologies and global information networks are advancing rapidly, requiring changes in many regulatory traditions, for example, in intellectual property. Every year the European Commission publishes a report on violations of intellectual property rights. In the 2020 report, available on the official website of the European Union, it was noted that counterfeit goods worth almost 2 billion euros were seized that year, while a year earlier this figure was 2.5 billion euros. At the external borders of the Union, customs officers seized counterfeits with a retail value of 778 million euros, while a year earlier the figure was 2.4% lower⁸. At the same time, our era of “intellectual capitalism”, which is based on the right of private property, free enterprise, and the desire to make a profit, depends fully on the production of assets, associated mainly with the market turnover of intangibles, that is, “intellectual” values. This is the difference from the commodity markets

⁶ Taras Litavskiy, “IP Protection on the Internet: How Should it Theoretically Work?” *Legal Newspaper* 12, no. 718, <https://yur-gazeta.com/publications/practice/zahist-intelektualnoyi-vlasnosti-avtorske-pravo/zahist-iv-u-merezhi-internet-yak-ce-teoretichno-mae-pracyuvati.html>; O. Myronets, S. Holovko, and M. Prokhorenko, “Educative Function of Law: Modern Challenges and Prospects,” *Journal of Law and Political Sciences* 25, no. 4: 91–110; Anna Prokhorova, “UA-DRP: Practical Advice to the Plaintiff when Writing a Claim,” *Lawyer and Law* 3 (2020), https://uz.ligazakon.ua/magazine_article/EA013420; A. Golub, “Cybercrime in All its Manifestations: Types, Consequences, and Methods of Combating,” Gurt Resource Center, <https://www.gurt.org.ua/articles/34602/>; Alexander Kartskhiya, “Cybersecurity and Intellectual Property (Part 1),” *Cybersecurity Issues* 1, no. 2 (2014); Alexander Kartskhiya, “Cybersecurity and Intellectual Property (Part 2),” *Cybersecurity Issues* 2, no. 3 (2014); O. Kostyuchenko, “Legal Regulation of Intellectual Property in Ukraine,” 2019, https://minjust.gov.ua/m/str_4487

⁷ Among others, Yu Atamanova, “Issues of Correlation between Innovations and Objects of Intellectual Property Rights,” in *Legal Regulation of Innovative Relations* (2nd ed.), ed. Yu Atamanova (Kharkiv: Yurait Publishing House, 2013); Grabovska, “Forms and Ways”; I.A. Kovalenko, “Some Problematic Issues of Intellectual Property in Modern Times,” *Scientific Bulletin of Uzhgorod National University* 50, no. 1 (2018): 71-73; Sopilko, “Information Wars”; N.V. Trotsyuk, *Administrative and Legal Protection of Copyright* (Kyiv: National Aviation University, 2016), 238; G.M. Zelenov and M.O. Zelenova, “Analysis of Some Legislative Initiatives Aimed at Protecting Copyright and Related Rights on the Internet,” *Legal Bulletin Air and Space Law* 43, no. 2 (2017): 113-119; K.O. Zerov, *Publication in the Media of Data on Copyright Infringements and Court Decisions on These Infringements as a Way to Protect Copyright on Works Posted on the Internet* (Kyiv: Interservice, 2017), 17.

⁸ Taxation and Customs Union, “Intellectual Property Rights - Facts and Figures,” 2020, https://ec.europa.eu/taxation_customs/customs-4/intellectual-property-rights-facts-and-figures_en

for tangible assets⁹. Intellectual property rights are entrusted with the function of guaranteeing investors a protection against investment risks.

As Aleksander Kartskhiya points out, transnational corporations strengthen their positions in the world market based on intellectual property as a means of gaining competitive advantages and monopolizing sales markets¹⁰. In this regard, the use of highly effective strategies for conducting so-called “patent wars” has changed the conditions for the implementation of intellectual property rights. Today there is a never-ending flow of data, including information about new technologies. That is why ensuring cybersecurity in the mentioned field is one of the pillars of national security and has received significant importance.

Before proceeding directly to the issue of ensuring the protection of intellectual property in face of cyber threats, let us describe in more detail the conceptual apparatus. According to the World Intellectual Property Organization (WIPO), intellectual property is a creation of the mind and includes literary and artistic works; inventions; symbols and images used in trade, among others. These objects are protected by patents, trademarks, and copyrights, which ensure that people receive recognition or material benefits for their creations. The system of intellectual property is aimed at creating an environment that fosters creativity and innovation, which is carried out by ensuring the necessary balance between the interests of creators and the broader public interest¹¹.

According to the Ministry of Justice of Ukraine, intellectual property refers to the legal rights of a person over his intellectual activity in the fields of industry, science, literature, and art. The definition includes the commonly used concept of the rights to the results of a person’s mental activity in the mentioned areas, which are the object of civil legal relations in terms of the right of each person to own and dispose of the results of his intellectual and creative activity. Such results are defined as intangible benefits, and the rights are assigned to the creator. Other persons can only use them with his permission, except in cases directly specified in the legislation¹². The Civil Code of Ukraine in Book Four, Chapter 35, Article

⁹ O. Granstrand, *The Economics and Management of Intellectual Property: Towards Intellectual Capitalism* (Cheltenham: Edward Elgar Pub.).

¹⁰ Khartskiya, “Cybersecurity (Part 1).”

¹¹ World Intellectual Property Organization, “What is Intellectual Property (IP)?”, 2010, <https://www.wipo.int/about-ip/en/>

¹² Kostyuchenko, “Legal Regulation.”

418 defines the right of intellectual property¹³. The subject has the right to the results of intellectual or creative activity, as well as the right to other objects of intellectual property rights defined by this Code and other legislative acts. This right is inviolable, and no person can be limited in the exercise or deprived of it, except in cases stipulated by law.

Equally important for this study is understanding the essence of cybersecurity and the associated cyber threats. According to Security Tip (ST04-001), posted on the official website of the US Cybersecurity and Infrastructure Protection Agency, cybersecurity should be understood as the art of protecting information, networks, and devices from unlawful acts, unauthorized access, or criminal use, and involves supporting the CIA triad, which stands for availability, confidentiality, and integrity of information¹⁴. Also, Article 1 of the Law of Ukraine No. 2163-VIII *On the Basic Principles of Cybersecurity in Ukraine* says that cybersecurity refers to the protection of the vital interests of the entire state, its society, and people when they use the cyberspace¹⁵. This state of security implies ensuring sustainable development of both the digital communication environment and the information society. It is also necessary to timely identify, prevent, and neutralize all threats to the national state security in cyberspace. At the same time, Law no. 2163-VIII understands the latter as a virtual space where communication and social relations can be realized. Such a space (environment) is formed as a combination of compatible communication systems and the provision of electronic communications using the internet and other global information transmission networks¹⁶.

Thus, cybersecurity in cyberspace is crucial not only for successful businesses but is also an integral part of public policy. But cybercriminals have learned to bypass cyber protection by constantly improving their methods and tools, which inevitably increases the number of cyber threats. According to Article 1 of the Law of Ukraine *On the Basic Principles of Cybersecurity in Ukraine* (hereinafter, the Law on Cybersecurity), a cyber threat is a real or probable phenomenon (facet) that endangers vital national state interests in cyberspace and harms the state of cybersecurity of the country and its facilities¹⁷. In simple terms, a cyber threat is a combination of factors that create the danger of a breach of information security

¹³ Verkhovna Rada of Ukraine, *Civil Code of Ukraine*, 2003, <https://zakon.rada.gov.ua/laws/show/435-15?lang=en>

¹⁴ US Cybersecurity and Infrastructure Protection Agency, "What is Cybersecurity?" 2009, <https://www.cisa.gov/uscert/ncas/tips/ST04-001>

¹⁵ Verkhovna Rada, "On the Basic Principles."

¹⁶ Verkhovna Rada, "On the Basic Principles."

¹⁷ Verkhovna Rada, "On the Basic Principles."

in general. This can be illegal encroachment into an organization's systems or the threat of malicious intrusion into virtual spaces to achieve political, social, or other goals. Most often, cyberthreats come from hackers, that is, computer intruders, but there are also cases of simple production negligence when important information is leaked through the fault of employees.

In this research study, we look at cyber threats from the perspective of cyber intruders that infringe intellectual property rights. We will also present the concept of a cyberattack as a deliberate action in cyberspace using electronic communications, the purpose of which is generally the violation of the CIA triad of processed information resources, obtaining prohibited access to such resources, disrupting the normal functioning of communication and technological systems, as well as using these systems and their resources for carrying out cyberattacks against other objects of cyber defense¹⁸.

Thus, the consequences of cyber threats and illegal actions in the information and communication environment result not only in property losses, but also, and more importantly, in reputational losses for the holders of intellectual property rights. If we refer to the Constitution of Ukraine, its Article 54 states that every Ukrainian is guaranteed freedom of technical, literary, scientific, and artistic activity, as well as protection of their copyright, moral, and material rights and interests in connection with such activities. Article 41 of the Basic Law gives each of citizen the right to possess and dispose of the results of their intellectual and creative activities.

In the context of global market relations, intellectual intangible assets have acquired a particular value for their rightsholders. Accordingly, they must be protected from threats and undesirable impacts. State policy should be aimed at the effective protection of advanced scientific and technical achievements, as well as to the application and improvement of the legal mechanisms for the protection of intellectual activity. This is not only to protect the interests of rightsholders, but also to ensure a balance between the public and private interests of rightsholders concerning their intellectual property, which often has not only high intellectual significance, but also tangible commercial value. In this regard, we suggest that the concept of cybersecurity ensures a sufficient level of protection of the intellectual property rights holders from existing and potential cyber threats.

¹⁸ Verkhovna Rada, "On the Basic Principles."

Now we should define the most common cyber threats and problems that affect the intellectual-legal sphere. Let's look at piracy first. At the level of individuals, cybercrime is most often manifested through pirated software. In the last decade, according to the International Intellectual Property Alliance (IIPA), Ukraine was recognized as the number 1 pirate country in the world¹⁹. Our regulations in this area are lagging technological advances, further exacerbating the problem of cybercrime.

The essence of internet piracy consists in the reproduction and distribution of digital content (video and audio files, computer programs, and other intellectual property) over the internet without obtaining permission from the author or other copyright holder and (or) without paying them an appropriate remuneration for using the works legally. Clause b of Article 50 of the Law of Ukraine *On Copyright and Related Rights*²⁰ states that piracy in the field of copyright and (or) related rights includes the publication, reproduction, export from or import to Ukrainian customs territory and distribution of counterfeit copies of works, phono- and videograms. This also includes camcording, cardsharing, illegal disclosure of programs of broadcasting companies, as well as directly internet piracy itself, that is, any violation of copyright and (or) related rights using the World Wide Web. Also, the topic of internet piracy is touched upon in the Law of Ukraine "On State Support of Cinematography in Ukraine"²¹.

As for international legislative practice, the most famous documents in this area are the American Digital Millennium Copyright Act of 1998²², the Anti-Counterfeiting Trade Agreement²³, and the European EU directives "On Copyright in the Single Digital Market" and "On Electronic Commerce"²⁴. Also in force are the so-called "Internet Treaties" of the World Intellectual Property Organization such as the

¹⁹ Golub, "Cybercrime."

²⁰ Verkhovna Rada of Ukraine, Law of Ukraine No. 3792-XII of 1993, "On Copyright and Related Rights," <https://zakon.rada.gov.ua/laws/show/3792-12>

²¹ Verkhovna Rada of Ukraine, Law of Ukraine no. 1977-VIII of 2017, "On State Support of Cinematography in Ukraine," <https://zakon.rada.gov.ua/laws/show/1977-19#Text>

²² U.S. Copyright Office, *Digital Millennium Copyright Act*, 1998, <https://www.copyright.gov/legislation/dmca.pdf>

²³ European Parliament & Directorate-General for External Policies of the Union, *The Anti-Counterfeiting Trade Agreement*, 2013, https://www.mofa.go.jp/policy/economy/i_property/pdfs/acta1105_en.pdf

²⁴ European Parliament & the Council, *On Certain Legal Aspects of Information Society Services, in Particular Electronic Commerce, in the Internal Market*. Directive No. 2000/31 of 2000. <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=celex%3A32000L0031>; European Parliament & the Council, *On Copyright and Related Rights in the Digital Single Market*, Directive No. 2019/790 of 2019, <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019L0790>

WIPO Performances and Phonograms Treaty (WPPT) and the WIPO Copyright Treaty (WCT)²⁵.

In addition to copying (usually in the form of downloading) intellectual property objects without the proper permission of the copyright holder, other frequent violations include installing copies of software without a license and using intellectual property objects in violation of the terms of license agreements.

In addition to the infringement of authorship and related rights to works, Aleksander Kartskhiya lists the following²⁶:

- Obtaining forbidden access, including through targeted hacker attacks, and disclosing official data, state secrets, or commercial secrets.
- Illegal use of trademarks, company names, and other means of commercial individualization (including domain names).
- Unauthorized interference with databases, even using software to alter or block them.
- Dissemination of false information on the World Wide Web, discrediting the honor and business reputation of subjects, or other violations of privacy rights.

These are not all cyber threats faced by copyright holders and owners of intellectual property. The list of intellectual property objects itself is constantly expanding, and the variety of threats and risks is increasing, due in part to the globalization of internet commerce and services. For this reason, each user must know how to protect their intellectual work from violations. Such measures can be conditionally divided into preventive and directly protective.

Preventive measures include the registration of rights to objects of intellectual property. As for the objects of copyright and related rights, registration is optional, but it generates a certificate, which, at least, will become sufficient evidence to establish authorship. Protection of industrial designs, inventions, utility models, trademarks, and similar objects of industrial property rights is granted in Ukraine

²⁵ World International Property Organization, *WIPO Copyright Treaty*, 1996, <https://www.wipo.int/treaties/en/ip/wct/>; World International Property Organization, *WIPO Performances and Phonograms Treaty*. 1996. <https://www.wipo.int/treaties/en/ip/wppt/#:~:text=The%20WIPO%20Performances%20and%20Phonograms,have%20the%20responsibility%20for%20the>

²⁶ Kartskhiya, "Cybersecurity (Part 2)."

only after they are patented or registered with Ukrpatent. As far as domain names are concerned, it is necessary to register them with the delegation of the corresponding name. This method allows you to obtain an official document with the rights to the name of the site and if the company is successful and brand awareness is stable, it can be sold or reassigned.

Also, when it comes to objects of copyright, do not forget to affix the copyright sign (“c” in a circle, ©). This symbol indicates that this content has an author or copyright holder and prohibits copying information. This sign does not require prior registration or other formalities, it can be placed at the bottom of the website, in the so-called “basement”, and next to it you should indicate the copyright holder and the year of first publication. This is stated in paragraph 3 of Article 11 of Law 3792-XII²⁷. To protect the rights of objects of copyright, the deposit of works is often used. This is the transfer of, for example, the pages of the original text, the design of the website, or other content, for storage in an appropriate accredited organization. As a result of the deposit, the copyright holder will receive the appropriate certificate. Also, in practice, depositing is also the certification by a notary of the time of the deposit. The notary does not keep a copy with himself, but only records the time of its presentation and the time of signature on the document.

As for computer programs, according to Ukrainian legislation, they are classified as objects of copyright. Nevertheless, such an object can be patented by going through the appropriate procedure. In this case, protection will extend to the algorithm and functions of the program; accordingly, any program with similar functions will violate this patent²⁸.

A message on the site about your rights and the rules for using the content posted on it is also a preventive measure. For this, the User Agreement is usually used, which specifies the procedure for operating the web resource, warnings to protect the trademark and other means of individualization, and the like. We also advise you to enter into licensing agreements with the authors of the content of the website to establish the rules for using the content. Through such an agreement, you will acquire exclusive property rights to use the work. When we talk about a website, we should not neglect the possibility of registering it as a media, which will not only add “weight” to the web resource but also help to better protect its

²⁷ Verkhovna Rada, “On Copyright.”

²⁸ Mihailuk Sorokolat & Partners, “Can I Patent Software?” 2019, <https://www.msp-patent.com.ua/ua/7-mozh-no-li-zapatentovat-programmnoe-obespechenie.html>

content and domain name. However, before proceeding to the consideration of protective measures, it is worth examining the types of liability for the infringement of intellectual property rights in Ukraine.

Discussion

For Ukraine and the Commonwealth of Independent States (CIS) countries, the topic of intellectual property protection in the cyber environment and its legal regulation is relatively new and requires further development. In Ukraine, the types of liability for infringement of intellectual property rights are civil, criminal, and administrative. The civil liability provides for the possibility of protecting one's violated rights in court, as stated in the fourth book of the Civil Code of Ukraine²⁹. Also, following Article 52 of Law 3792-XII, the subjects of copyright and related rights are entitled to file claims in court for compensation for non-property damage (clause "c", Part 1 of Article 52) and material damage, including lost profits, the collection of income received by the violator as a result of the violation, or the payment of compensation (clause "g", part 1 of article 52)³⁰.

The option of administrative-legal protection is provided for in Article 51-2 of the Ukrainian Code of Administrative Offenses³¹ in which the illegal use of an object of intellectual property rights, the attribution of authorship to it, or another intentional breach of the relevant rights is recognized as administratively punishable. Criminal liability will be imposed on anyone who illegally reproduces, circulates, replicates works of copyright and related rights, or otherwise intentionally violates the rights concerning such objects by causing material damage in large quantities. This is stated in Article 176 of the Criminal Code, and Article 177 imposes liability for violation of industrial property rights if this has caused a large amount of material damage³².

For a victim of infringement of intellectual property rights, a jurisdictional form of protection is possible. With this form of interaction, the copyright holder, whose rights and legitimate interests have been broken, can apply for protection to state or other competent officers that are authorized to take the necessary measures to stop the violations and restore the violated rights. Jurisdictional protection can be divided in general and special. We will consider jurisdictional protection to

²⁹ Verkhovna Rada, *Civil Code*.

³⁰ Verkhovna Rada, "On Copyright."

³¹ Verkhovna Rada of Ukraine, *Code of Ukraine on Administrative Offenses*, 1984, <https://zakon.rada.gov.ua/laws/show/80731-10?lang=en>

³² Verkhovna Rada of Ukraine, *Criminal Code of Ukraine*, 2001, <https://zakon.rada.gov.ua/laws/show/2341-14>

include protective measures, that is, those that are used if a violation has already taken place. In the case of the general jurisdictional protection, it implies going to court. The special jurisdictional protection involves an administrative procedure for the protection of violated intellectual property rights.

Ukraine has acquired an extensive practice of court consideration of cases on disputes in connection with infringements of intellectual property rights. Quite often disputes arise about the proof of authorship. That is why we strongly recommend that you go through the appropriate copyright registration. If there is no evidence of such, you will have to refer to Section 11 of Law 3792-XII³³, which states that the primary owner of the copyright is the author of the work, unless there is evidence to the contrary. In this context, the author should be considered the one whose name is indicated on the original or a copy of the work.

But in the absence of a Certificate of Copyright Registration this will be significantly complicated if the work is published in electronic form under a pseudonym. In this case, as noted by lawyer Taras Litavskyi (2020), you will have to prove your authorship using various measures, like contacting the administration of the web resource with a request to confirm that the IP address from which the publication was made belongs to you, depositing an object of copyright with depositories, or using digital signatures or similar mechanisms. In such disputes, the proper respondent is the owner of the web resource where the controversial content is posted, since it was he who created the technological opportunity for such placement. However, this raises the question of establishing the owner of the website before filing a claim in court. To establish his identity, it is enough to use the Whois system, where registration data on the domain owner and IP addresses are available.

It will not be superfluous to record the placement of the corresponding object of integral rights at a certain time. Special expert institutions can assist in this process. The authors of this study personally applied to the “Ukrainian Center for Support of Numbers and Addresses”, where the fixation was carried out with the subsequent study of the content of the website and a corresponding report. Taras Litavskyi also points to a frequent problem in this regard, namely, the lack of clear criteria for determining the amount of damage inflicted on the copyright holder³⁴. The court can decide on the payment of a compensation in the form of a lump sum representing double or triple the amount of the remuneration and the

³³ Verkhovna Rada, “On Copyright.”

³⁴ Litavskyi, “IP Pprotection.”

commission that the infringer would have paid if he applied for permission to use the contested copyright. However, the law does not establish the difference between “remuneration” and “commission payments”, because of which an interpretation of the provisions of paragraph 5 of Art. 15 of the Ukrainian Copyright Law is usually applied³⁵.

The out-of-court procedure for resolving disputes regarding internet domain names suggested by the World Intellectual Property Organization back in December 1999 is an example of a special form of protection. This service is provided under the Uniform Domain Name Dispute Resolution Policy (UDRP). The main advantages of this procedure are swiftness and low cost. The UA-DRP administrative procedure, an analog of the 1999 UDRP policy, began operating in Ukraine on December 19, 2019. The body implementing it is the WIPO Arbitration and Mediation Center and, when considering disputes concerning the .UA and COM.UA domains, is guided by the following three documents:

- The WIPO Rules for the Uniform Dispute Resolution Policy for .UA Domain Names (WIPO Additional Rules).
- The Uniform Dispute Resolution Policy for Domain Names in the .UA Domain (.UA Policy).
- The Rules of the Uniform Dispute Resolution Policy for Domain Names in the .UA Domain (.UA Rules).

As noted by Anna Prokhorova, an arbitrator for domain disputes under the UA-DRP procedures at WIPO, the administrative process begins with the filing of an application for the removal of a domain name or its redelegation to the applicant at the WIPO Center³⁶. This can be done by emailing the WIPO Center or via the WIPO Center’s internet system, with the size of the letter not exceeding 10 MB. The application should be sent with the Complaint Transmittal Coversheet, as well as with a copy of the claim to the administrator of .UA public domain represented by Hostmaster LLC, and to the corresponding .UA registrar. Hearings in the case, including through remote forms of participation, are not conducted, except in special cases (Clause 13 of the Rules. UA). During the procedure, the applicant will need to prove that the disputed domain name:

³⁵ Verkhovna Rada, “On Copyright.”

³⁶ Prokhorova, “UA-DRP: Practical Advice.”

- Is identical or deceptively like the trademark of which the claimant is the copyright holder.
- Is used or was registered in bad faith.
- The registrant has no rights or legitimate interests to it³⁷.

There are still few comprehensive studies on these and other related issues, although there are some specific high-quality works in relation to certain subjects of intellectual property. For example, Aleksander Kartskhiya examines the impact of the globalization of the information environment and the features of the information security strategy from the point of view of an intellectual property lawyer³⁸. In the second part of his study, he examines the problems of intellectual property in the structure of cybersecurity and its protection from cyberthreats³⁹. He is confident that increasing the efficiency of intellectual property protection against new cyber threats is closely related to expanding the diversity of the intellectual property objects themselves. Current situations, like protecting the means of individualization, the globalization of internet commerce and other services, the spread of cryptocurrencies, among others, entail the need to improve the protection mechanisms in cyberspace, because new challenges require new approaches and satisfactory responses⁴⁰.

Anna Prokhorova clearly describes the specifics of the procedure for resolving domain disputes under the UA-DRP, where there are three grounds for filing a claim for domain disputes⁴¹. A. Golub describes the main types and consequences of cybercrime, including the violation of intellectual property rights on the internet, and analyzes possible solutions to this issue⁴². Taras Litavkiy (2020) considered the theoretical features of the protection of intellectual property in the World Wide Web from a national perspective⁴³. Thus, ensuring the protection of intellectual property from cyber threats is a pressing concern today. Various cyber violations of the rights in the mentioned sphere are a problem not only for ordinary citizens and companies but also for the state, because defense enterprises and critical infrastructure facilities often suffer cyberattacks. Therefore, ensuring cybersecurity, including in the field of intellectual property, has become a policy priority in many

³⁷ Prokhorova, "UA-DRP: Practical Advice."

³⁸ Kartskhiya, "Cybersecurity (Part 1)."

³⁹ Kartskhiya, "Cybersecurity (Part 2)."

⁴⁰ Kartskhiya, "Cybersecurity (Part 1)."

⁴¹ Prokhorova, "UA-DRP: Practical Advice."

⁴² Golub, "Cybercrime."

⁴³ Litavskiy, "IP Pprotection."

countries. In the current conditions of global changes and social transformations the role of an educative function of law is quite significant⁴⁴.

Conclusions and Recommendations

Today, information has become more available than ever, giving us access to an unlimited volume of knowledge. But, at the same time, this has led to competitors copying instantly any innovations, while lawmaking and judicial practice almost always lag the technological development of technology. At the same time, intangible assets, which are objects of intellectual property, have become a key element for businesses to maintain competitive advantages. That is why it is so important to protect the objects of intellectual rights from cyber threats and related cyber violations.

The issue of protecting intellectual property on the internet is acute not only for Ukraine but in general and has a global significance. Analysis of doctrinal approaches allow to characterize the threats to intellectual objects:

- The World Wide Web has a transnational character, is a publicly accessible information space, and has no special centralized management. Therefore, the implementation of the norms of national legislation is sometimes difficult.
- On the internet the objects of intellectual property rights are presented exclusively in digital form.
- On the internet it is impossible to ensure full control over the use of intellectual property objects.
- It is difficult to prove the infringements of rights.
- The archaism and unpreparedness of specialized structures doesn't allow timely and adequate responses to cyber incidents.

As already mentioned, individuals, organizations, and the state can be the rightsholders of various objects of intellectual property. That is why there are different levels of protection of intellectual property from cyber threats and each may have its own special legal protection regime. Thus, some intellectual products may fall under the regime of state, official, or commercial secrets to prevent the influence of cyber threats on them. And, in any case, one must start with oneself as an individual end-user of cyber technologies.

⁴⁴ Myronets, Holovko, and Prokhorenko, "Educative Function of Law."

The following recommendations can help you protect yourself and your content from the actions of cybercriminals:

- Use strong passwords and update them periodically.
- Use double authentication when logging into the platform associated with intellectual property.
- Use antivirus software and firewall.
- Explore the available information on emerging cyber threats and how to counter them.
- Use only secure networks for work, as well as various privacy and security utilities.

If violations of your intellectual property rights are uncovered, we strongly recommend you to first use out-of-court methods for resolving the dispute, such as sending the violator, the domain name registrant, and, if necessary, the provider, a demand to stop the violation (takedown notice). Only after you have done this, go to court or administrative authorities, since judicial protection, although it is an effective jurisdictional form for protecting intellectual property rights, requires time, effort, and significant resources. Such protection in Ukraine is provided by courts of general jurisdiction based on general principles of legal proceedings.

Thus, countering cyber threats and cyber violations and ensuring an adequate level of cybersecurity is one of the priority areas in today's Ukraine policy. But a comprehensive struggle against the problems under consideration requires the joint efforts of all the subjects of legal relations—the state, the citizens, the society, as well as the international community.

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