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Possibilities of Blockchain Use for the Protection of Intellectual Property Rights

Oksana Nikolaevna Borisova[1]; Mikhail Victorovich Afonin[2];
Lyudmila Vladimirovna Maslennikova[3]; Andrey Baybarin[4]; Evgeniya Olegovna Ermolaeva[5];
Vladimir Aleksandrovich Biryukov[6]

[1]Russian State University of Tourism and Service, Moscow, Russia.
[2]Russian State Social University, Moscow, Russia.
[3]Kuban State Agrarian University named after I. T. Trubilin, Krasnodar, Russia.
[4]Southwest State University, Kursk, Russia.
[5]Kemerovo State University, Kemerovo, Russia.
[6]Moscow Polytechnic University, Moscow, Russia.

Abstract

The study analyzes the possibilities of blockchain use for copyright protection. Currently, the legislation on copyright protection does not provide for blockchain use, without which copyright protection is not ensured at the proper level. The study aims to substantiate the advisability of blockchain use as a tool for protecting copyright. The analysis of the theoretical foundations and practice of blockchain use allowed the authors to conclude the significant potential of its use in the field of intellectual property in Russia. The advantages and main problems of this technology as an instrument of copyright protection at the present stage are revealed. The introduction of the blockchain into the field of intellectual property will make it possible to confirm the authorship of works, dispose of copyrights and control their use, as well as receive remuneration for the use of works. Reliable and secure technology allows authors, copyright holders, and consumers to interact openly and transparently, without intermediaries, and also minimize time and financial costs, and protect copyright. One of the pressing and most significant problems is the lack of legislative consolidation of blockchain in Russia. The authors concluded that blockchain creates a new and simpler tool for confirming authorship, disposition, and control over the use of works, which does not replace the existing system of copyright protection, but supplements it.

Key-words: Blockchain, Copyright, Intellectual Property, Proof, International Experience.

1. Introduction

Today, the key resources for the development of the economy and society are intellectual ones – knowledge and information. The competitiveness of countries in world markets largely depends on the effective use of intellectual property. A reliable level of intellectual property protection stimulates scientific research, the development of culture, literature, and art, the practical use of the achievements of science and technology, as well as their international exchange [1].

"Intellectual rights", or "intellectual property rights", is a legal term denoting a set of rights possessed by a person or persons (authors or other right-holders) to the results of intellectual activity and the means of individualization equated to them. In Russia, the term "intellectual property" is defined in Article 1225 of part four of the Civil Code of the Russian Federation, adopted on November 24, 2006 [2], as a list of the results of intellectual activity and equivalent means of individualization, which are provided with legal protection. The term "intellectual rights" is defined in Article 1226 as rights to "the results of intellectual activity and the means of individualization equated to them (the results of intellectual activity and means of individualization)" [2].

Currently, the problem of protecting intellectual rights is more than relevant. Unfortunately, in a large number of countries, including Russia, there are no sufficiently effective mechanisms for the protection of intellectual property. From the essence of the concept of copyright protection, one can single out that it is prohibited to reuse any information, however, people freely copy music or films on the Internet, send them to their friends, acquaintances, save them to a computer. If previously only publishers could reprint books or copy information, today it is possible for everyone. All works translated into electronic format are in the public domain. Anyone who is on the Internet can use this information at any time for their own purposes. According to statistics, up to 95% of copyright works and phonograms are distributed via the Internet without observing any norms and laws. Despite the fact that the foundations of international law in the field of intellectual property protection establish strict prohibitions on such actions, violations in this area are increasing every day.

It is important to understand that an author's work is not only papers (articles, books) that were published in the usual way, but also any intellectual property objects published on the Internet [3]. Any publications, regardless of their type and method of publication, must be protected by law. Today, when media mentions intellectual property, as a rule, the conversation goes negatively, they discuss violations of intellectual property rights (hereinafter – IP), problems of piracy, and counterfeit products. Every year nonresident companies lose billions of dollars in the Russian Federation due to violations of patents, copyrights and trademark rights. Russian companies also lose hundreds of millions of dollars annually to similar violations. One of the reasons for this is the lack of attention

and experience in solving problems associated with IP use [1]. One of the most important problems is copyright protection on the Internet. It has not found a final solution, not only in Russia and abroad but throughout the world. From the information posted on the website of the Judicial Department at the Supreme Court of the Russian Federation, it follows that in 2019 the arbitration courts of the constituent entities of the Russian Federation considered 20,140 cases "related to the protection of intellectual property". The total amount of the declared claims amounted to 139.4 billion rubles, i.e. the average cost of a claim in this category of cases is 6.9 million rubles. The courts agreed with the arguments of the plaintiffs in 15505 cases, which is about 77% of the number of cases considered. In favor of the copyright holders, 4.4 billion rubles were collected, which on average amounted to 283 thousand rubles. The last indicator is interesting in that this figure has been decreasing quite rapidly for several years in a row. In 2016, an average of 641 thousand rubles was collected in favor of copyright holders, in 2017 – 488 thousand rubles, in 2018 – 360 thousand rubles [4].

The situation in the field of copyright protection was slightly corrected by the so-called "anti-piracy" law, namely the Federal Law of 02.07.2013 N 187-FZ "On Amendments to Certain Legislative Acts of the Russian Federation on the Protection of Intellectual Property Rights in Information and Telecommunication Networks" [5], where provisions appeared on the pretrial settlement of disputes between copyright holders and site owners, on the indefinite blocking of the offending site, as well as on expanding the list of copyright objects that came under protection. This law, first of all, affected the owners of Internet sites who violate exclusive rights when placing content – they face not only legal but also reputational risks for untimely response to complaints from copyright holders. Another significant problem of IP in Russia is that many Russian right-holders do not properly patent their inventions in the Russian Federation and their creations go abroad, where they are patented and used. In some cases, they then have to be bought back. As a result, there is a large-scale outflow of the most highly qualified personnel, whose work has not been appreciated at its true worth, and this undoubtedly worsens the scientific and technical potential of the country. On the whole, the overall picture in the field of IP leaves much to be desired, because the IP import is several times higher than export, according to Rospatent's estimates, more than 11 times [1]. That is, the use of foreign patents is much more common than Russian. This characterizes our very modest place in the global high-tech market. The tendency is unpleasant, which also confirms that in organizational and legal terms, not enough has been done to protect copyright.

Thus, today in Russia there is a basis of legal norms, which is aimed at regulating legal relations in this area, but there is no effective working mechanism to protect the interests of right-holders related to the distribution of objects and works of copyright. The current model of copyright

protection mechanism in Russia, posted on the Internet, lacks mechanisms associated with the use of modern digital technologies, one of which is blockchain.

Blockchain is an innovative and relatively new technology that has already conquered many areas of activity. Distributed ledger systems (blockchain) were included in the list of digital technologies approved in the national program “Digital Economy of the Russian Federation” [6]. The course towards the development of the digital economy makes blockchain more and more popular, and the potential of its application is constantly expanding. The research results demonstrate “the growing dynamics of the blockchain use of in an ever wider range of industries” [7]. At this stage, it seems not only possible but also necessary to use blockchain as a copyright protection tool.

In IP-intensive industries, blockchain and related distributed ledger technologies offer interesting perspectives in terms of IP protection and registration, as well as the provision of evidence, both at the registration stage and in court. In addition, they provide an economical way to speed up these processes. Potential areas of application include: confirmation of authorship and origin; registration and clearance of IP rights; control and tracking of distribution of (un) registered IP rights; providing evidence of real and/or first use in trading and/or commercial activities; digital rights management (for example, on music sites); developing and enforcing IP agreements, licenses or creating exclusive distribution networks through smart contracts; and real-time transfer of payments to IP holders. Moreover, the blockchain can be used to certify and confirm the origin when identifying and/or searching for counterfeit, stolen, or imported goods using parallel import [8]. However, there are many potential barriers to the widespread legal use of this technology (including issues of applicable law and jurisdiction, data security, and privacy).

The above circumstances actualize the topic of blockchain use to protect intellectual rights and generate great interest in it on the part of modern researchers. There are still relatively few scientific papers presenting the study of the possibilities of blockchain in the field of copyright protection. It should be noted that there are publicly available studies by A. V. Salnikova [8], T. V. Deryugina, A. E. Ponomarchenko [9], and others. However, several issues that are important for solving the problem of using blockchain to protect copyright in these works remain outside the attention of the authors, including little research on international best practices. Therefore, new research seems to be very relevant and in demand. The hypothesis of the study: legal recognition of blockchain will make it possible to successfully use it within the framework of current copyright law to protect IP rights.

2. Methods

The dialectical method of cognizing reality is taken as the methodological basis of the research. In combination with it, a whole complex of general scientific and private scientific methods was used. The statistical method was used to show the scale of the problem. In addition, the method of system analysis, method of legal modeling, formal legal method, method of transition from a general concept to a particular one, and comparative legal method were used. The theoretical basis of the study was the provisions for the creation, management, and protection of the results of intellectual activity, developed by scientists in previous years. The informational basis of the research was the normative legal acts regulating the IP turnover, examples of the practical use of digital technologies for copyright protection, and statistical data.

3. Results

The potential for blockchain use to manage IP rights is enormous. The very fixation of IP rights in a distributed ledger rather than in a traditional database could turn them into "smart IP rights" [10].

Related to this is the use of distributed ledger technology by IP offices to create "smart IP registries" that could provide a single solution for the IP offices in charge. In this case, the Offices would create an immutable record about one or another event related to the registered IP right: for example, about the first application for registration of a trademark, its registration, the first use in commercial activity; about licensing a design, trademark or patent, assignment or other actions. In addition, it would greatly simplify the practical aspects of collecting, storing, and providing relevant evidence.

The ability to track the entire lifecycle of a given right could be very useful, including in terms of optimizing the audit of IP rights. In addition, it would become easier to conduct due diligence in IP-related transactions such as mergers and acquisitions. Confidentiality issues that may arise from IP owners could be addressed through an explicit consent scheme [10].

Having a registry showing who owns what can provide brand owners with guidance on their rights and the extent to which they are used in the marketplace. This may be especially true in jurisdictions where evidence of first or actual use is required, or where the scale of use is of great importance, for example, in disputes or other proceedings related to the recognition of well-known marks, or in the case of defense in cases involving cancellation claims due to non-use.

Collecting information on the use of a trademark in trade or commerce through an official blockchain trademark registry would allow the relevant IP office to obtain information almost

instantly. It would have reliable time-stamped evidence of the actual use and frequency of use of the trademark in trade. Both categories of data are important in terms of confirming the first use, actual use, and acquired distinctiveness/secondary meaning or goodwill of the trademark. Likewise, distributed ledger technology could be used to publish information about technologies for security purposes, as information about the prior art, to prevent others from obtaining patents on such technologies [10].

Blockchain can also play an important role in the context of unregistered IP rights such as copyrights (which in many jurisdictions and under the Berne Convention for the Protection of Literary and Artistic Works [11] are not registered IP rights) and unregistered design rights because it can provide evidence of their creation, use, eligibility (such as originality and the country in which the patterned goods were first introduced to the market) and status. When an original sample or work is uploaded to the blockchain, a time-stamped record is created along with information about its author, which is reliable evidence from the point of view of the above aspects.

Several blockchain startups are already working on the creation of repositories for unregistered IP rights based on distributed ledger technologies. Such repositories can be an interesting and quite realistic solution in the field of copyright protection and digital rights management [10].

Smart contracts and digital rights management blockchain and related distributed ledger technologies offer interesting perspectives in terms of IP protection and registration, as well as the provision of evidence – both at the registration stage and in court. In addition, these technologies provide an economical way to speed up these processes.

In connection with blockchain, the concept “smart contracts” is often mentioned. Since some blockchain solutions provide opportunities for storing, executing, and monitoring the code of contracts, such as “smart contract execution”, they may be of interest from the perspective of digital rights management and other IP-related transactions.

Smart contracts can be used to enter into and execute IP-related agreements, such as licenses, and transfer payments to IP holders in real-time, while smart information about IP rights in protected content – such as a song or image – can be encrypted into digital form (in a music or graphic file). The rapid rise in popularity of these ideas is evidenced by the recent launch by Kodak of its own blockchain platforms for managing image rights and creating their own cryptocurrency [9].

If there was a register containing information about owners, legal licensees, and other similar data, then any link in the supply chain, including consumers and customs authorities, could verify the authenticity of a product and distinguish it from a fake. Blockchain registries containing information

on IP rights allow verifying the origin of goods since they can record objectively verifiable information about the place and time of production of goods, data on the production process and sources of raw materials. Blockchain solutions of this kind are rapidly spreading, allowing users to verify the authenticity of a product and giving confidence and assurance to companies, regulators, consumers, and insurers.

Placing scannable blockchain tags, secure tags, or other tags (both implicit and explicit) on products is arguably one of the most compelling uses of distributed ledger technology that can play an important role in the fight against counterfeit products. Brand owners could inform the customs authorities about the protections that are provided on their goods. In this case, for border officials, checking the availability of such funds would be an easy way to determine the authenticity of the goods. Blockchain tags like these also have great potential in terms of engaging consumers and communicating the risks of counterfeit products and enabling them to verify the authenticity of purchased goods. This technology can also be used in connection with certification marks to confirm that products meet specified criteria or standards. For example, Woolmark guarantees that the products with their mark are made from 100% wool [10].

Providing brand owners with the ability to track their goods using an immutable blockchain will enable them to enforce contractual distribution clauses and identify leaks in their distribution system, as well as help identify parallel imports and the gray market. In addition, tracking the distribution of goods can be used to ensure compliance with regulatory requirements, in particular in the pharmaceutical industry, and verify the validity of the guarantee.

In Russia, various registers of the results of intellectual activity are maintained by organizations for the collective management of copyright (for example, the Russian Authors' Society, the Russian Union of Right-holders, etc.) and commercial organizations (the Unified Depository of the Results of Intellectual Activity, the Unified Register of Authors and Certified Works of Fine Art (Art Reestr), etc.). The use of blockchain allows recording the rights to the results of intellectual activity for the further creation of a unified register of the results of intellectual activity [12]. Thanks to the unified register, it will be possible not only to obtain information about the author of a work but also to create a register of actions with information, allowing to display a chain of actions with copyright without limitation in nature, source, and time. The Skolkovo Foundation, in cooperation with the Russian Organization for Intellectual Property (VOIS) and several other organizations, created and launched a national Russian project IPChain – a public open decentralized network based on blockchain, uniting large owners and aggregators of digitized results of intellectual activity. The platform was created for effective interaction of authors, right-holders, individuals, and legal entities

using IP and providing services for the management, legal protection, and protection of rights to it. It allows to record transactions with IP objects and rights to them, store digitized IP property objects, as well as provide access to them using smart contracts [13]. When placing information about an IP object in the register, information appears about the name of the object, the date of its creation and registration in the register, the participants in the creation (the author indicating the percentage of authorship in percentage, the copyright holder, for example, the heir, etc.), the creation code, type, description, access (how this object can be used), and transaction register. IPChain is an infrastructure for digital services providing services in the field of legal protection and disposal of IP rights [14].

4. Discussion

Blockchain for the protection of intellectual rights is currently widely used in states that are moving towards the early recognition of digital technologies and their introduction in various areas of government and legal regulation. These states include the countries of Latin America, in some of which the structure of the economy, the main socio-economic indicators are similar to those in Russia.

Many governments in Latin America are interested in this technology as blockchain provides an opportunity to move away from the weak state institutions that led to banking crises, constant corruption, and political instability [15]. The Mexican government is exploring the possibility of using blockchain to track and confirm applications for government contracts [16]. Countries participating in the North American Free Trade Agreement (NAFTA), including Mexico, have developed blockchain-based systems that take into account registration and support trademarks on the Internet. The Mexican Institute of Industrial Property has introduced the Trademark Electronic Application System, which allows an applicant to complete and file a trademark application electronically, as well as pay for a submitted application online, and protects trademarks. Through the portal of payment and electronic services, the applicant can prepare, apply for a trademark and make payment [17]. It should be noted that this system protects the trademark database, which is reviewed by the applicant to eliminate coincidences before he applies for registration of his trademark [18].

Brazil also has successful blockchain use cases in relation to software. Previously, the program code had to be retained for 50 years. The main thing now is to assign a hashtag using the initial code and require registration. In the event of a dispute, the author of the information submits this code, and if it matches what is stored in the INPI, the program is recognized as authentic. The new technology allowed in 2017 to reduce the time for registering software to 10 days and managed

to simplify the licensing of services and their payment. Blockchain helps prevent the illegal use of software.

Despite the obvious advantages of using blockchain in the field of IP and the existing examples of its successful practical use, several problems exist mainly in the legal field and related to the novelty of the technology. An obvious and important problem is the lack of a legislative basis for blockchain use in Russia, therefore, these projects are outside the legal framework.

5. Conclusion

Blockchain creates a new and simpler level of the entitlement system, provides users with a modern tool that does not replace, and complements the existing system. However, for the successful functioning and development of blockchain as a tool for copyright protection in Russia, many problematic issues need to be resolved. First of all, this is the legal recognition of blockchain and the possibility of using it in various areas of the economy and government. Sooner or later, the legislation will take into account potential obstacles to the large-scale legal use of this technology: for example, issues of applicable law and jurisdiction, the implementation of smart rights, data security and confidentiality, the existence of reliable rules and conceptual framework for smart contracts. Only then blockchain will become part of IP legislation and practice in this area. Thus, the hypothesis of the study seems to be proven.

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