Вестник РУДН. Серия: Юридические науки 2023 Т. 27. № 1. 117—134
RUDN JOURNAL OF LAW. ISSN 2313-2337 (print), ISSN 2408-9001 (online) http://journals.rudn.ru/law

https://doi.org/10.22363/2313-2337-2023-27-1-117-134

Research Article / Научная статья

Legal support for digitalization of art

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Abstract. The relevance of digital art and digitalization of art, as a more general category, reflecting the modern technological approach to this sphere of human activity, is manifested in mainstreaming of legal regulation of various aspects of digital technologies impact on the sphere of creativity and their inclusion in the legislative agenda. The article reveals the legal features of digitalization of art at the present stage. It examines the main areas of digitalization of art and legal means to ensure their support. The broad and narrow approaches to the concept of "digital art" have been outlined. The issues of defining intellectual property rights for the results of creativity (works) produced with artificial intelligence and increasing access to works of art and cultural objects in the digital age have been analyzed. The paper applies interdisciplinary approach, methods of analysis and synthesis, abstraction as well as formal-legal and comparative-legal methods. Based on the analysis the author forms the concept of three determinative directions which enable complex processes of combination of creativity and technologies in an integrated way of "development", "circulation" and "distributed security" of art.

Key words: intellectual property, art, NFT, non-interchangeable token, digital security, digital environment, digitalization, digital art, creativity

Conflict of interest. The author declares no conflict of interest.

Article received 15th November 2022
Article accepted 15th January 2023

For citation:

Mikhaliova, T.N. (2023) Legal support for digitalization of ART. *RUDN Journal of Law.* 27 (1), 117—134. https://doi.org/10.22363/2313-2337-2023-27-1-117-134

Правовое обеспечение цифровизации искусства

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Аннотация. Актуальность цифрового искусства и цифровизации искусства как более общей категории, отражающей современный технологичный подход к этой сфере жизнедеятельности человека, проявляется в активизации правового регулирования различных аспектов влияния цифровых технологий на сферу творчества и их внесения в законодательную повестку. Раскрыты правовые особенности цифровизации искусства на современном этапе. Рассмотрены основные сферы цифровизации искусства и юридические средства, обеспечивающие их надлежащее сопровождение. Охарактеризованы широкий и узкий подход к понятию «цифровое искусство», проанализированы проблемы определения прав интеллектуальной собственности на результаты творчества (произведения), полученные с использованием искусственного интеллекта, расширение доступа к произведениям искусства и объектам культуры в цифровую эпоху. В работе использован междисциплинарный подход, метод анализа и синтеза, метод абстракции, а также формально-юридический и сравнительно-правовой методы. На основе анализа автор формирует концепцию трех детерминирующих направлений, которые позволят комплексно подойти к сложным процессам сочетания творчества и технологий, реализовав их «развитие», «регулирование оборота» и «распределенную безопасность».

Ключевые слова: интеллектуальная собственность, искусство, невзаимозаменяемый токен, NFT, цифровая безопасность, цифровая среда, цифровизация, цифровое искусство, творчество

Конфликт интересов. Автор заявляет об отсутствии конфликта интересов.

Дата поступления в редакцию: 15 ноября 2022 г.
Дата принятия к печати: 15 января 2023 г.

Для цитирования:

Михалёва Т.Н. Правовое обеспечение цифровизации искусства // RUDN Journal of Law. 2023. Т. 27. № 1. С. 117—134. https://doi.org/10.22363/2313-2337-2023-27-1-117-134

Introduction

In recent decades, many issues of the sphere of art related to its creation, distribution, possession, significance for a man and interaction of subject and object are being revised. Digital technologies have firmly settled in the world of art — visual, poetic, musical, theatrical, etc. — in a peculiar way reuniting through the millennia the once single ancient concept of *techne*. (Zolotareva, 2019:92; Adiwijaya & Rizky, 2018).

The first steps of “technologization” of art were taken in the second half of the last century. A. Hitchcock used the bumpers of computer graphics by J. Whitney for his films, D. Paul Henry invented a drawing machine, and A. Warhol, having taken a photograph of the famous actress, digitized and colored it in the computer program. Today, the use of digital technologies and even artificial intelligence in designing art objects and works of art of various genres is very common, and digital art is estimated from several thousand to millions of rubles. For example, in 2018 one

of the works of artificial intelligence in a series generated in Rembrandt style, Portrait of Edmond de Belami, was sold at Christie's auction for 432.5 thousand USD; the signature algorithm is placed in the corner of the picture. In 2021, a digital collage of the artist Beeple was sold on the same auction for $ 69.4 million and has been the most expensive non-interchangeable token (NFT) ever sold. The year 2022 witnessed a decline in the interest to NFT investments. The hype around digital assets as "doubles" of analog art is perceived both with enthusiasm and skepticism. Digitized and stored as certificates of a unique code, protected by blockchain technology and containing certain information about the content, such assets can be accepted by the audience as a value in itself (as, for example, Michelangelo's Madonna Doni), but also become a "souvenir from a museum store" (as, for example, unsold NFT fragments of Klimt's Kiss for St. Valentine's Day). As a relatively new economic category, digital assets in the field of art will still face fluctuations in demand and "alignment" of positions. Nevertheless, creativity and art have a large potential for development as a sector of economy[1]. The creative economy, or the economy of ideas, is the next stage in the economy of knowledge development; it is a kind of fusion of technology and creativity, so improving legal regulation of the works of digital art circulation is one of the most urgent tasks.

Being a new challenge for jurisprudence, digitalization of art has given rise to serious legal discussions of both applied and ontological nature. A number of issues still remain unresolved or are characterized by legal uncertainty including the problem of determining intellectual property rights to digital works, disclosure of information, ensuring security of all participants in the field of digital art, defining the notions of "digital art", "digital work" and some others. Digitally created works reflect the proximity of artificial intelligence to human thinking and ability to create thus raising issues of human uniqueness, ethics, philosophy, legal theory, and civil law.

The objective of research. The purpose of this study is to identify the problem area of theoretical and practical aspects of art digitalization, to determine the scope of the concept of digital art, to analyze legal mechanisms aimed at regulating its turnover and ensuring the development of creativity and culture in the context of new technologies and their secure application.

Materials and methodology. While working on the issues of legal regulation of digital art, the author paid attention to the main areas of interaction between law and art, axiological discourse of law, science and art (Malyshkin, 2018; Kucherenko, 2015). The works that reveal the essence of creativity as material and ideal act in the

[1] The Concept of Creative Industries Development and Mechanisms of State Support in Large and Major Urban Agglomerations until 2030, approved by the Government of the Russian Federation in its Order No. 2613-r of September 20, 2021 (hereinafter referred to as the Creative Industries Development Concept), states that "the average share of creative industries sector in world GDP is 6,6%.... In the Russian Federation, despite the high level of education and science and rich historical and cultural heritage, the potential of the creative economy sector is not sufficiently realized — the share of creative industries in the economy of the Russian Federation comprises only 2,23 percent".

content of art works from the standpoint of legal science (Kozlova, 2015; Deryugina, 2015) are important for understanding the purpose and mechanisms of legal support of art, including digital art (Kozlova, 2015; Deryugina, 2015). There are some peculiarities in legal regulation of certain types of art (Nagrodskaia, 2015; Piryazeva, 2020; Volozhanina, 2019), which are also worth of attention. To determine the main directions of legal support for digital art, the author turns to the outcome of the studies on identifying the most effective approaches to understanding and legislative consolidation of digital rights (Kuznetsov & Chumachenko, 2018; Konobeevskaya, 2019), describing digital works as objects of civil circulation (Rusakova, Frolova & Gorbacheva, 2020; Ovchinnikov & Fathi, 2019; Teliukina, 2018), legal analysis of digital platforms (Gabov, 2021; Altukhov & Kashkin, 2021; Lobel, 2016). The doctrine pays much attention to the issues of protectability and intellectual property rights for works of art in the digital sphere, copyright in virtual environment (Ippolitov, 2021; Tolochko, 2021; Rakhmatullina, 2020; Grin, 2020; Entin, 2017; Bonadio, Lucchi & Mazziotti, 2022; Levin, 2021; Ramalho, 2021), as well as status of artificial intelligence and emergence of digital identity (Bridy, 2012; Barfield & Pagallo, 2020; Krysanova, 2021; Aleshkova, 2021; Vlasov, 2021; Kharitonova & Savina, 2020). At the same time, there are no comprehensive studies of the concept, types, legal status of digital art, and areas of legal support for art digitalization.

Results and discussion

On the concept of "digital art"

Digital art exists as a result of the interaction of art and scientific technologies. In the branch literature on art history and economics, it is noted that the concept of "digital art" exists in parallel with the terms "computer art", "multimedia art", "machine creativity", "art of new forms", "cyber art", "virtual art", "digital art", etc., without distinguishing the terms by their essential and legal characteristics (Piryazeva, 2020; Volozhanina, 2019). From the point of view of jurisprudence, it is important to clearly determine the essential features of the object of legal relations in order to distinguish them from related categories, concepts, similar legal status, legal consequences, etc.

The concept of "art" is based on "creative reflection, reproduction of reality in artistic images"[2] (Ozhegov, 1982: 226). Each type of art has its own means of creating artistic images (gestures, movements, body posture characterize choreographic art; color, drawing, composition characterize painting, etc.) In a broad sense, digital art is a type of creative activity resulted in creating a representation of reality or modifying it with the help of digital technologies. When creating works, digital

[2] Ozhegov S.I. (1982) Dictionary of the Russian Language. 14th ed., ed. by N.Y. Shvedova. Moscow, Russian language Publ.

technologies are used both as an auxiliary tool and as an integral part of the idea of achieving a certain creative result.

Digital art in the narrow sense is the actual creation of a work of art, in whole or in part, by digital means. It is machine art or cyber art, as it is inherent to the cybernetic mechanism. One of the cyber art types is an art (re)produced by artificial intelligence. Some researchers distinguish between digital and network forms. The network form includes works posted on the Internet. However, there is an opinion that posting on the Internet in itself does not affect the objective form of the work, so there is no need to single out the network forms of artworks (Nagrodskaia, 201570).

Within the framework of this type, it is also necessary to distinguish those works that are produced by artificial intelligence independently or generated with significant or insignificant human intervention and / or under his guidance. This difference is reflected in discussions within the World Intellectual Property Organization (WIPO Conversation on Intellectual Property (IP) and Artificial Intelligence (AI)[3].

In case of modification an existing work is digitally transformed. The terms "digitization" and "digitalization" are often used as synonyms (Teliukina, 2018:72). Digital transformation is associated with transfer from analog to digital environment for the purpose of storage, reproduction or other inclusion in civil legal circulation, in whole or in part, as an information resource. The identical transfer of works from an analog form to a digital format will not lead to emergence of a new derivative object. As R. Rakhmatullina notes that in this case, "we should speak about technical and organizational assistance (subparagraph 2 of paragraph 1 of Art. 1228 of the Civil Code)" (Rakhmatullina, 2020:36). However, it is possible that digitalization of a work may also mean actions of a creative nature when the degree of original contribution may well become a criterion for classifying a work as a derivative, rather than a reproduction of the original analog work in digital format. The scholars also note the possibility of the reverse process: a work can be created digitally and transformed into a traditional form (Teliukina, 2018:70).

In both the cases of using digital technologies in the field of art, the most recent developments are digital (blockchain) technologies, which are characterized as a safe alternative to many cyber-processes in various spheres (Kuznetsov & Chumachenko, 2018:99; Kartschia, 2018:29). Tokenization of works leads to additional commercialization. The storage of all information about the digital object, copyright, all transactions with it through NFT has a synergy effect as well: the more secure the circulation environment is, the more attractive the object becomes; in legal terms it means that the more interested subjects seek to streamline such legal relations.

[3] WIPO Conversation on Intellectual Property (IP) and Artificial Intelligence (AI). Second Session. WIPO/IP/AI/2/GE/20/1. Available at: https://www.wipo.int/edocs/mdocs/mdocs/en/wipo_ip_ai_2_ge_20/wipo_ip_ai_2_ge_20_1_rev.pdf [Accessed 10th October 2022].

Digitalization of art is not only about creation of qualitatively new works, but about general expansion of access to cultural objects. Digitization of museum exhibits and creation of virtual museums using VR/AR technology opens up new ways to transfer and disseminate the results of creativity and cultural heritage.

One of the special categories in the field of culture and art are objects of cultural heritage, and due to their importance, the influence of digitalization cannot be ignored in this sphere. Creation of 3D repositories of scans of cultural and natural heritage (something similar exists in the Google Open Heritage project) is suggested in the specialized literature and requires special regulation. In this regard, an emergence of a new complex industry at the junction of digital economy, creative industries, culture and intellectual property is being discussed (Ippolitov, 2021:13). It is worth noting that within the CIS framework the initiative of the Virtual Museum of Cultural Heritage of the CIS member states is being implemented, and on May 20, 2020 the CIS Executive Committee approved the proposal to form a section on its web resources with links to virtual exhibitions of museums of the CIS countries before completing such a Virtual Museum.

Moreover, there are a few complementary actions employing digital technologies that may improve legal relations in the sphere of art: for example, applying technology for forensic art examination, introducing innovative marketing tools, methods of sale, authentication, payment, insurance, logistics, etc.

Digital art as an object of legal regulation

The main forms of interaction between art and law are realized in protection of intellectual rights by law, regulation of creation and use of works through prohibition, obligation, permission, recommendation or encouragement, reflection of legal reality in works of art, strengthening or weakening of legal regulators and direct impact on human behavior (Malyshkin, 2018:49). These forms are applicable for art created or included in circulation by means of digital technologies. Moreover, a number of issues become more acute because of the initial stage of considering the place of digital objects in the legal environment.

In the legal lexicon, the phrases “digital law”, “digital asset”, and “digital platform” are increasingly common. The introduction of digital works into civil circulation requires answers to the questions: What is the nature of rights to them? Are they a special object of regulation? Is it necessary to supplement the traditional civil law concepts and institutions with new legal categories of digital law?

V. D. Zorkin refers to digital rights as “the rights of people to access, use, create and publish digital works”[4]. Digital rights can certify rights to things, other property, results of works, provision of services and exclusive rights. Materialization of these property rights is carried out by electronic means in the information system

[4] Zorkin V.D. The task of the state is to recognize and protect the digital rights of citizens. Rossiyskaya Gazeta. 2018. No 115(7578). Available at: https://rg.ru/2018/05/29/zorkin-zadacha-gosudarstva-priznavat-i-zashchishchat-cifrovye-prava-grazhdan.html [Accessed 06th October 2022].

(Ovchinnikov & Fathi, 2019:109). According to I.M. Konobeevskaya, attributing digital rights to objects of civil rights is misleading (Konobeevskaya, 2019:333). At the same time, we share the position on the dual nature of digital rights as objects of civil rights and — in a broader sense — as a legal imperative in a society based on information and modern technology, whose implementation and ensuring the state must guarantee (Rusakova, Frolova & Gorbacheva, 2020; Rusakova & Frolova, 2022: 697).

A.A. Kartskhiya points out the importance of forming electronic registries that confirm digital rights to the objects specified in such registries by maintaining appropriate records, codes (a certain sequence of characters), as well as rethinking of the institute of collective copyright management in the context of new technologies; the author poses the question of "formatting" in the near future of digital law in a broader sense, not limited to the classical civilistic, private law doctrine (Kartskhiya, 2019:32-33). The Creative Industries Development Concept emphasizes the need for publicly available intellectual property services, platforms for monetizing creative products, crowding platforms, consulting and advisory services, including legal and accounting support.

There is an opinion that digital environment, including platforms, needs personalized legal norms, and new legal institutions are gradually forming "platform law" (Altukhov & Kashkin, 2021:89; Lobel, 2016). A.V. Gabov notes that "as soon as the issues of platforms moved from the task of describing them in programs, concepts, strategies to formulating specific legal solutions, the question immediately arose of how to regulate. At first thought, this issue concerns the anti-trust agenda. It is already clear that the platform as a phenomenon, an economic phenomenon, leads to a redistribution of market power... Platforms are a change in the economic relations of ownership; in some works this is noted in the form of a shift from possession to access ... this is a serious challenge for law; here we may not be talking about separate changes, but changes of a paradigmatic nature" (Gabov, 2021:76-77).

In recent years, Russian legislation has significantly developed regulation of digital environment. The amendments to the Civil Code of the Russian Federation on digital rights came into force; Federal Law No 259-FZ of 02.08.2019 On Attracting Investments Using Investment Platforms and on Amendments to Certain Legislative Acts of the Russian Federation, Federal Law No 259-FZ of 31.07.2020 On Digital Financial Assets, Digital Currency and on Amendments to Certain Legislative Acts of the Russian Federation and Decree of the President of the Russian Federation No 490 of 10.10.2019 approved the National Strategy for the Development of Artificial Intelligence up to the year 2030 (hereinafter the Strategy 2030) have been adopted.

Although digitalization of art is not directly covered by innovations, a few of them are important for introduction of new technologies in the creative industries. For example, one of the priorities of Strategy 2030 is the expansion of patents and applied technological solutions. The above-mentioned Concept for the Development of Creative Industries establishes as one of the tasks promoting, creating and

implementing modern digital technologies for producing and distributing goods and services by domestic creative industries; it outlines such areas of state support as the development of a service system for legal protection of intellectual property transactions and protection of intellectual property rights in online and offline environments and other necessary legal and financial services.

In 2022 a bill on the regulation of non-interchangeable tokens was submitted to the State Duma but it has not yet found further support. It should be noted that non-exchangeable tokens are used not only in the field of digital art; they can certify absolutely different identification properties, not only authorship, but also proprietary rights, obligations, etc.

Legal nature and protectability of created digital works of art

Works of art may be analog or digital. In accordance with para. 1 of Art. 1259 of the Russian Civil Code, both are objects of copyright. As V.L. Entin mentioned that to disseminate the rules and norms for the use of works developed in the 19th century and enshrined in the Berne Convention for the Protection of Literary and Artistic Works of 1886 on new objects generated by scientific and technological progress, three methods were applied: broad interpretation, assimilation and legal fiction; a broad interpretation of the concept of "art" allowed to consistently extend legal protection to photographs (since 1896) and cinematographic works (since 1908) (Entin, 2017).

From the point of view of jurisprudence, a work of art is considered as a complex of ideas, images that have received their objective expression in the finished work, an ideal object created as a result of creative activity. The features of an artwork include novelty, originality, uniqueness, possibility of valuation, non-consumability, aesthetic or informational content. Some scholars emphasize that the form of expression, i.e. material embodiment, is just as important as the ideal content (Deryugina, 2015:90). The material embodiment helps to introduce the work into civil turnover, but it is not mandatory for the protection of the author's rights.

M.V. Teliukina refers to the characteristic features of digital works, which include digital works of art, their numerical nature, detachability from information medium, dissemination without loss of quality, possibility of existing only in a virtual framework, rejection of stereotypes of presentation and possession over material objects, editability, disappearability, and interactivity (Teliukina, 2018). The last three characteristics have ceased to be typical with the increasing use of blockchain technology and inherent non-fungible tokens as the basis for digital works.

A special role in the development of new forms of the creative industry belongs to artificial intelligence. S.S. Ippolitov asserts that artificial intelligence can participate in the regulation of the art market, but also be an author of digital works of art (Ippolitov, 2021:10). The extensive use of artificial intelligence in various spheres of digitalization of art has been described above, but the provision regarding authorship in the legal sense of the word requires separate attention and analysis.

According to R.Sh. Rakhmatullina, it is necessary to introduce at the legislative level such criterion of protectability as originality for digital objects of copyright in virtual space but the exclusive right to the object created by the machine must be granted to the author of the software product (Rakhmatullina, 2020:35). Exploring the legal nature and protectability of the virtual image, E.S. Grin draws attention to the fact that it is necessary to determine whether objects are the result of creative work (Grin, 2020:147).

M.Yu. Kozlova is of the opinion that "creativity is not always accompanied by awareness. It is important that creative act comes from a person but not from an animal or a computer program. The definition of creativity as a spiritual activity resulted in the creation of original values, establishment of new, previously unknown facts, properties and patterns of the material world and spiritual culture seems quite successful... As a rule, when assessing an object of creative activity such criteria as novelty, uniqueness, and originality are applied" (Kozlova, 2015:83).

The creative component is the cornerstone of applying copyright to works created by or with the help of artificial intelligence. Creative activity is identified with intellectual activity, but not all intellectual activity is creative in nature. Routine actions leading to template results, as a rule, are not of a creative nature.

As Kharitonova Yu.S. and Savina S.V. point out that most jurisdictions proceed from the fact that the results of artificial intelligence work are not protectable, since they are not based on creative abilities. Examples include legislation and jurisprudence of the United States, Australia and the EU (Kharitonova & Savina, 2020:532-533).

Of interest in this regard is how American legal doctrine with respect to artificial intelligence copyright has evolved. Subjective characteristics were often prevalent: computers should not be regarded as authors because they "do not need incentives to create" (Samuelson, 1986); since computer programs cannot be "authors" in the legislative sense, works created by computers are not copyrightable (Clifford, 1997; Barfield & Pagallo, 2020:123); the U.S. copyright system cannot vest rights in a computer that has no legal personality, instead the doctrine of "works created for hire" has been proposed (Bridey, 2012). Enforcement follows the same legal logic, one recent example being the February 2022 rejection by the Copyright Review Board of a copyright application for an artificial intelligence work entitled A Recent Entrance to Paradise.

Until recently, lawmakers and law enforcers in China held the view that a work produced by artificial intelligence was not entitled to copyright protection. However, in December 2019, a District Court in China ruled that an article generated by an algorithm could not be copied without permission (Krysanova, 2021:228). UK law provides copyright protection for computer works whose author is considered to be the person who has undertaken the necessary actions to create the work. Similar legislation is in force in New Zealand, India, Hong Kong, and Ireland.

The European Commission in its report Trends and Developments in Artificial Intelligence — Challenges for the Intellectual Property Rights System (2020)

investigated how to apply the conditions set out by the EU Court of Justice[5] on the protectability of works to the results obtained by artificial intelligence. Among other issues it drives to some important conclusions relevant to the topic under study: the lack of harmonized rules has led to different solutions in the national legislation of different Member States with respect to works created by means of artificial intelligence, therefore, harmonization is necessary[6]; there are risks of false attribution of authorship to works of artificial intelligence which are "similar to works of art"; related rights regimes in the EU potentially can be applied to works of artificial intelligence that have no author (audio recording, broadcasting, audiovisual recording and news); further exploration of the role of alternative intellectual property regimes for the protection of artificial intelligence-generated results, such as protection of trade secrets, unfair competition and contract law, is worthwhile.

The doctrine considers different versions of authorship — both qualification of such works as *sui generis* objects (Kharitonova & Savina, 2020:533), and recognition of authorship by artificial intelligence with the assignment of legal personality to the so-called electronic person (Tolochko, 2021:278), and the joint authorship of the software developer and the software user (Bafield & Pagalo, 2020:130-131).

The latter option has been criticized for unfairly equating the rights of the real inventor and the owner of the system (Tolochko, 2022:278). However, in certain cases, the rights of not only the authors, but also the organizers of the creative process are protected through the system of intellectual rights. Thus, a person who organizes the creation of a complex object, which includes several protected results of intellectual activity, acquires the right to use the specified results under agreements on alienation of exclusive rights or licensing agreements with the holders of exclusive rights to the results of intellectual activity (article 1240 of the Civil Code). Certainly, we are not speaking about a "thing" but about a protected result of intellectual activity (such as a motion picture, theatrical performance, multimedia product, database). However, the very principle of protecting the rights of the organizer of the creation of a complex object of intellectual rights deserves attention (Alexandrov, 2015:32). For example, when using the result of intellectual activity as part of a complex object, the person who organizes the creation of that object has the right to indicate his name or to require such an indication (para 4 of article 1240 of the Civil Code of the Russian Federation). The copyright for the selection or arrangement of materials (compilation) for a collection, anthology, encyclopedia, database, website, and other

[5] The work must be "original," that is, it must reflect the personality of its author and be an expression of his or her free and creative choice. If the subject matter is dictated by technical considerations, rules, or other constraints, leaving no room for creative freedom, such a subject matter will not be considered "original". The subject must be identifiable with sufficient accuracy and objectivity. — Para. 29-32 of Cofemel C-683/17 of 12.09.2019, para.37-39 of Infopaq International, C 5/08, para. 35-37 of Levola Hengelo, C 310/17 of 13.11.0218.

[6] Harmonization of copyright issues in digital works across the EU is widely supported in European legal doctrine and is reflected in the EU Directive 2019/790 of 17 April 2019. On copyright and related rights in the EU Single Digital Market — see (Synadinou, 2021; Levin, 2021; Ramalho, 2021).

similar works is protected by law (para 2 of Article 1260 of the Civil Code of the Russian Federation).

The issue of attributing authorship to artificial intelligence as an electronic person or a legal entity of a special kind should be considered in the context of the general discussion about the status of artificial intelligence. The discussion involves a variety of views, including the absence of consciousness and will of artificial intelligence, its nature as a derivative from the results of human intellectual activity. Suggestions are made that a methodology allowing to distinguish certain types of artificial intelligence that could become full-fledged participants of legal relations is needed (Aleshkova, 2021:196).

A question arises of whether "claims such as authorship and originality may continue to matter, given the difficulty of distinguishing fully generating machines from other technologies that simply assist people in the creative process in rapidly developing markets where AI-generated works are becoming more common..." (Bonadio, Lucchi & Mazziotti, 2022:1195).

Distributed security in digital art

Today there are a lot of works which are new in nature and form, new ways of selling and paying, and new opportunities for interaction among all art market participants. All these develop the volume and quality of the emerging relationships. However, we cannot unconditionally agree that they are making the art market "open and transparent" (Yakushina, 2021:143). Digital technologies increase the risks of counterfeiting, illicit trafficking, exploitation of low awareness and even digital illiteracy for the benefit of attackers. The scholars rightly note the importance of security in the "crypto-art market", suggest developing blockchain legislation, launching a state program of mass tokenization of state-owned digital art objects and digital copies of artworks (Yakushina, 2021:143). Indeed, it is possible to trace the artwork's provenance with the help of technology, via blockchain, without involving an expert, and/or an art dealer, since the entire "biography" of the artwork is recorded; this allows tracing the entire fate of the artwork, avoiding fakes, hidden encumbrances, unscrupulous counterparties, etc.

Sharing the position on the importance of security in digital markets, we propose to regulate this issue according to the principle of "distributed security". "Distributed" does not mean vague; we speak about a kind of complementary regulatory and legal obligations, as well as technical standards and recommendations of different legal nature for all involved, which altogether let us achieve a balanced state of innovation implementation and reduce the threats of their uncontrolled exploitation.

Here are several examples of regulatory norms of various nature. Article 1299 of the Russian Civil Code provides technical means of copyright protection recognized as any technologies, technical devices or their components, which control access to the work, prevent or restrict implementation of actions not authorized by the author or other copyright holder in relation to the work. The law prohibits the

creation of such technologies, technical devices or their components, as well as their use for the specified purposes (Kartskhiya, 2018:31).

Another option of legal regulation is harmonizing rules at the level of an integration association. For example, art. 6 and art. 7 of Directive 2001/29/EC on the Harmonization of Certain Aspects of Copyright and Related Rights in the Information Society provide for provisions on technical means of copyright protection (software, technology, technical device, etc.), and information on rights management (disposal) under which the EU member states ensure legal protection against "acts of circumvention of any effective technological measures" and "any action aimed at removing or altering any information on rights management".

The role of technical standards and regulations is also significant. Standardization at the level of technical safety regulations or their analogs must be in place for both hardware and software, making the entire technology safe. The Russian Strategy 2030 defines artificial intelligence as a set of technological solutions[7]. These solutions may be objects of standardization since in accordance with the Federal Law No 162-FZ of 29 June 2015 (as amended on 03.07.2016) On Standardization in the Russian Federation (subpara. 6 of Art. 2) such objects may be: products (works, services), processes, management systems, terminology, symbols, research (tests) and measurements (including sampling) and test methods, labelling, conformity assessment procedures and others. Such approach, according to Yu.S. Kharitonova and V.S. Savina, is in line with the Strategy for the Development of Information Society in the Russian Federation, approved by the President in 2017 (Kharitonova & Savina, 2020:541).

A complementary system of obligations to minimize the risks of digitalization of the creative sphere is also very important for all subjects of such legal relations. Ensuring security of applying new technologies in the process of art creation, its informational "reification" for the purpose of including in civil legal circulation, registration and any further transactions, use and transfer of data in connection with this, etc. should be carried out not only by public authorities, authorized persons (professional participants)[8], including providers of digital services for the arts, digital intermediaries in the arts, but also by users and persons providing access. An independent system of authentication, evaluation and transactions in the digital arts,

[7] Comparing the approaches in the Strategy-2030 and European acts, they indicate that the strategy reflects an integrated approach, while "the authors of the European project clearly adhere to a more practical approach and disclose the concept of an AI system descriptively, based on a list of those methods and technical solutions that turn conventional software into AI technology" (Vlasov, 2021:209).

[8] A particular example is the European Parliament's 2017 report, which recommended to the Commission of Civil Law Rules on Robotics, reads as follows: "the trend towards automation requires that those involved in the development and commercialization of artificial intelligence applications build security and ethics at the outset, thereby recognizing that they must be prepared to accept legal liability for the quality of the technology they produce" (Trends and Developments in Artificial Intelligence. Challenges to the Intellectual Property Rights Framework: Final report. Available at: https://op.europa.eu/en/publication-detail/-/publication/394345a1-2ecf-11eb-b27b-01aa75ed71a1/language-en) [Accessed 10th October 2022].

which is positioned as an achievement of the digital age, distinguishing it from traditional art, cannot be outside security standards either.

The nature and scale of the digital environment require special approaches to security issues; expansion of the digital art market and transition to a creative economy force us to think about effective security mechanisms for digital art, transactions, data and combination of analog and digital forms of art and creativity. The principle of distributed security ensures the goal of minimizing the risks of rights violations, abuse of rights in a flexible and dispersed digital flows and systems, without slowing down the development of digital art and ensuring the necessary volume, quality, efficiency of regulation, "support" of security and compliance with its standards by all actors.

Conclusion

The active introduction of digital technologies in the field of art has many positive consequences: the improvement of artistic means, the creation of fundamentally new works, the expanded access to cultural objects, etc. In other words, the use of technology is aimed at developing and improving the environment, in our case — the cultural environment.

From the point of view of jurisprudence, the main question is whether technology is used as a means, and the criterion of creativity is attributed to a man, or it is a new quality of creating works, particularly, cyber-art. After all, in most jurisdictions, it is creativity and originality that lie at the heart of intellectual property rights.

In the case of attributing digital technologies to the aids for creativity, or to the ways of reproducing a creative idea, as any modification to enhance and change the means of artistic expression, the nature and status of a digital artwork can be considered within the usual theoretical-legal and civilistic constructions. A new type of rights enshrined in Russian civil legislation — digital rights — has a positive regulatory impact, as it is not only a digital way of establishing property, liability, and exclusive rights. Digital rights correlate with the emergence of new values in the economy and society, so-called digital assets, which are intangible and informational in nature. For works of digital art, this also means replacing the material embodiment of an objectified idea by its cyber embodiment.

In the case of the functioning of digital technologies as a source of creative ideas, which so far, we see only as a probable prospect, we can speak about various ways of legal conjugation of human and machine. In the formation of a new legal fiction — an electronic person — in order to isolate the legal nature and legal status of artificial intelligence the issue of cyber-creative essence will require significant revision of approaches to many ethical, philosophical, theoretical, legal and civilistic principles.

At the same time, the progressive regulation of the digital environment, as is the case with civil legislation (strategic programs), provides an opportunity to test non-

traditional approaches to regulating special objects of rights. With such regulation there is an organic combination of several determinants of art digitalization: development of the sphere of creativity, regulation of digital art works circulation, rights to them and distributed security.

The influence of digital technologies is manifested in providing access of a wide audience to various works, improving the means of artistic expression, and creating fundamentally new works. Therefore, the *development* of the creative environment and the sphere of art is ensured, and neo-culture is enriched. *Regulation of circulation* of digital artworks as an integral part of creative economy is based on classical approaches of civil law, supplemented by new institutes of "digital rights", "digital assets" and "digital platforms". Ensuring the *distributed security* of new creative technologies, transactions in the field of digital art are achieved through a system of regulators of legal and technical-legal nature and complementary obligations to minimize risks for all subjects of legal relations in the field of digital art and creativity. We emphasize that none of these areas can be provided independently, separately, without due consideration of the other two, so a comprehensive legal regulation of digitalization of art should take into account all three important factors which the new era combining technology and art brings to "*homo informaticus*".

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