

Reviews

Review

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The Russian Legal Researches on Metaverses: a Scholar Review



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Abstract

Over the past few years, the subject of metaverses has become an object of research of scientists from various fields of knowledge. Most specialists believe that in the next 7–10 years the direction of metaverses will be integrated into many spheres of society. The issue does not remain without attention of the state. Today we observe the first stages of formation of the international «metaverses race» in order to strengthen the leading positions of countries in terms of digital transformation of the economy and ensuring their own digital sovereignty. Russia will soon become a participant in the race mentioned. The development of metaverses will inevitably lead to the transformation of many legal institutions. Therefore today Russian scholars are beginning to explore questions about the symbiosis of law and metaverses. Since the interest to the regulation of the metaverses sphere will increase, it seems right to conduct a comprehensive study of the works of Russian explorers devoted to the transformation of legal relations in the conditions of emerging metaverses. The aim of the research presented: to systematize the Russian legal literature on the subject, to identify the most relevant aspects of regulation in the field, to form a general research trend in the development of law in metaverses, as well as to discover the first research conflicts. The selection of academic papers was based on two interrelated methods: substantive and personal. The use of the first method helped to identify only those studies that are devoted exclusively to the subject. On this basis, the review did not include those academiic works that only indirectly address the issue of metaverses. Thanks to the second method, it was possible to exclude studies by scholars from related sciences and student papers too. In this regard, attention is paid mainly to the studies of authors who have a scholar degree and/or extensive practical experience. In addition, the methodology is formed by general methods of study: analysis, synthesis, generalization and others. As a result

of the work carried out, its purpose has been fully achieved and the most important key aspects are reflected using graphic illustrations.



Keywords

metaverse; metaverse law; digital law; virtual worlds; scholar review; Internet; public law; private law.

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Introduction

Russian scholars have been interested in the law transformation in the era of rapid development of digital technologies for many years. Over the past five-seven years, Russian researchers have published a great number of research papers in the form of research articles, reviews, textbooks and monographs that explore the synergy between law and such phenomena as, e.g., artificial intelligence, digital currencies, blockchain, Big Data.

Furthermore, several candidate and doctoral dissertations on the legal speciality have been fulfilled [Morhat P.M., 2018]; [Marchenko A.Y., 2022]; [Razdorozhny K.B., 2021]; [Mochalkina I.S., 2022], etc. The main reason for writing paper presented is relatively few studies by Russian scholars published to date that explore the issues of law and meta-universe.

The author of the article has searched for studies using keywords (law in the meta-universe, meta-universe regulation, meta-universe law, digital sovereignty and meta-universe law, meta-universes and legislation) in scholarly databases such as Elibrary.ru, Google Scholar, and Web of Science. As a result, it was found that by the time this paper was written, Russian scholars had published 16 research articles on the convergence of law and meta-universe. Below, the author provides statistical data regarding the time of publications (Figure No. 1) and their topic (Figure No. 2).

Apparently, the excitement in the academic community about the topic of meta-universes began in the autumn of 2021. This was caused by the fact that at that time Mark Zuckerberg has presented the Meta project¹ focused

¹ Meta's operations are prohibited in the Russian Federation.

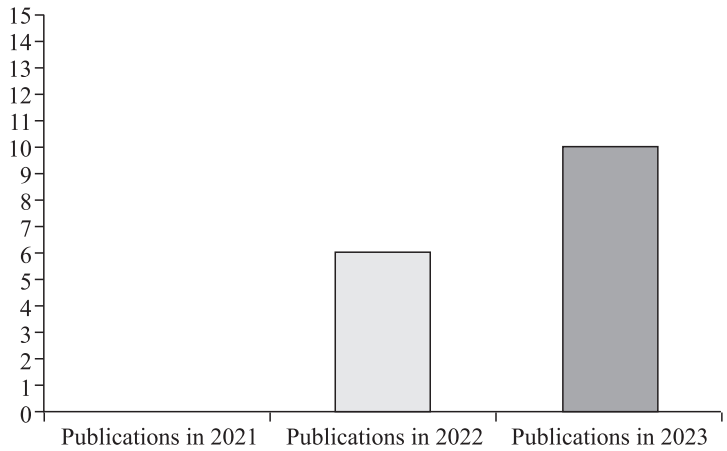


Fig. 1. Number of publications in 2021–2023

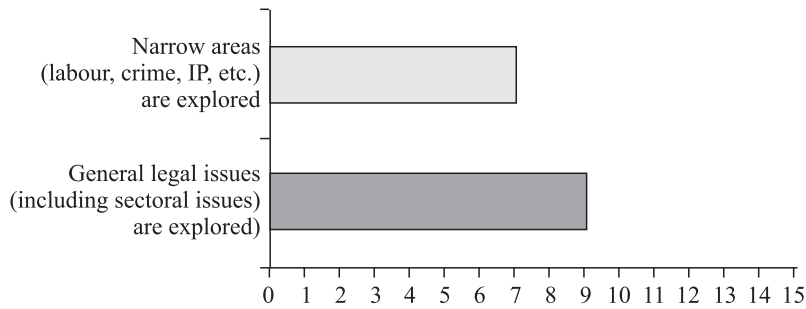


Fig. 2. Publication topics

on the construction of its own meta-universe. In view of this, scholars faced the question of considering the concept of meta-universe from the legal regulation perspective. This process took a considerable amount of time; hence it is not surprising that there were no publications by Russian scholars on the topic of law in 2021. Starting in 2022, the first research papers appear in the publications. During the year 2022, six research papers were published, of which one was indexed in Core RSCI (RSCI 1000), four in VAK,² and one in RSCI. Almost twice as many papers—namely ten—were published in 2023, of which one was indexed in Scopus, seven in VAK, one in RSCI, and one in another publication.

A little more than half of the works submitted for review (almost 53%) address general issues of law modification against the background of rapid

² The Higher Attestation Commission under Ministry of Science and Education of the Russia.

development of meta-universes. This is quite easy to explain. To date, there is no clear understanding of the future existence of law in the age of meta-universes. It is difficult to conduct research on narrow questions while the world is in search of consensus. However, publications of a highly specialised nature are noteworthy because, as will be shown below, they often raise constructive thoughts.

Studies by Russian Researchers

It is right to start with research by I.A. Filipova “Creation of a Meta- Universe: Consequences for Economy, Society, and Law”. Even without going into content of the paper, it is easy to see its obvious merit— it is the application of an interdisciplinary approach. The beginning of the work is marked by a powerful introduction, which, in clear language, formulates the general concept of a meta-universe: “A meta-universe (parallel digital universe) is a virtual world of the future that will exist alongside the physical world ‘populated’ by digital avatars of real people”. The author of article does not think this interpretation of the meta-universe should be taken as the most correct and complete one. The definition provided does not say anything about such aspects as, e.g., the use of virtual and augmented reality technologies, the possibility of the existence of digital avatars in the form of game bots (NPCs), or the form of existence of the meta-universe (decentralised or centralised). Overall, the main idea of the whole introduction boils down to the following: the meta-universe is a new step in the development of the entire Internet, which will inevitably lead to the transformation of economics, sociology, and law.

The main content of the paper falls into four parts. In the first part I.A. Filipova explores the question whether changes are possible in economic processes under the pressure of the development of meta-universes. Her opinion that the meta-universe will be the next stage of existence of the economy, which she calls Industry 5.0, looks quite interesting. Based on the content of individual provisions of the paper, you can say she believes people will inevitably use the meta-universe, which will lead to economic modifications: “Before too long, many people will likely have to spend most of their time in virtual reality: shop in virtual shopping centres, chat in virtual forums, and complete online work tasks”. I.A. Filipova then continues to say she believes that the entire existence of mankind will be in direct dependence on the meta-universe. The author partially addresses the issue of the digital divide in relation to the acquisition of virtual and augmented reality technologies to access the meta-universe. She is sure that over time virtual and augmented reality technologies will become as commonplace

for people as smartphones and computers. A separate bullet point in the article discusses forthcoming changes in the labour market. For instance, the author states that the meta-universe will become a workplace and there will be new jobs related to making the meta-universe work. Concluding her consideration of the issue of economic transformation, the researcher points to the change in the marketing sphere, which will allow to collect data on users thus ensuring the commercial component of business entities' activities [Filipova I.A., 2023: 8, 10–13].

I.A. Filipova's futurological views and ideas on the transformation of economic ties in the conditions of meta-universes are difficult to assess in terms of their credibility. This is exclusively her personal opinion, logically based on the study in provisions of Russian and foreign doctrine, and statistical data.

The second part of her paper deals with the issue of human socialisation in the meta-universe. No doubt, the implementation of meta-universes will have an impact on the social sphere. Here she formulates the main social problems: emergence of new social needs related to the acquisition of virtual property, inequality in access to digital gadgets, the level of a person's digital literacy, degradation of moral values, the need to ensure the safety of children and of human health in general, etc. Of all the issues covered in this part of the paper, our attention was drawn to her position on digital inequality in the acquisition of necessary gadgets. It is highly likely that we are talking mainly about virtual and augmented reality headsets. It is possible to assume in the case she contradicts herself, because it was mentioned above that, in her opinion, acquiring the necessary equipment would not be on the list of particularly acute problems in the economic sense. However, it is admissible to think that in reality the explorer wanted to describe something different. Maybe I.A. Filipova recognizes the existence of the problem in the future and, with a certain degree of probability, says that over time (taking into account the development of technologies) the digital divide issue will be solved with respect to acquiring necessary gadgets.

It is hardly likely that anyone will consider the social problems outlined by Professor Filipova to be far-fetched or of little relevance. Indeed, each of the issues outlined requires a specific solution. Apparently, she wants to convey the idea that it is necessary to start thinking about these challenges now. The use of the meta-universe holds great economic opportunities, so the state faces a most important task of ensuring favourable social adaptation of a person within the virtual world.

The third part of the work lays the foundation for legal regulation. In this section, Filipova analyses the possibility/necessity of constitutionalising

new subjective rights arising in connection with the potential functioning of the meta-universe. She notes that in this case the task of constitutional law is to maximise the elimination of the following risks: “discrimination and digital inequality; loss of political rights; reduction of the right to privacy; manipulation of human consciousness”. She concludes that to ensure personal security the following list of subjective rights should be elevated to the constitutional level: the right to access the Internet; the right to protection of personal data; a set of neuro-rights (mental inviolability, mental integrity and intellectual self-determination). It is worth noting that in her other work she points to the possibility of changes in the concept of constitutional subjective rights generated by the development of AI technologies [Filipova I.A., 2021].

Filipova’s attempt to reflect the need to amend Chapter 2 of the Russian Federation Constitution should be regarded as nothing less than courageous. Far from every scholar would venture to identify “digital” gaps in Chapter 2 of the Constitution. However, it should be noted that such ideas are being expressed. E.g., several analytics [Avakyan S.A., 2023]; [Kleandrov M.I., 2023] think in this direction. If we take into account only the area of the meta-universe, this arises a discussion related to the fact that perhaps the subjective rights formulated by Filipova are not new in their essence. It can be assumed that their content is derived from the constitutional norms in force today: the right to access the Internet goes back to Part 4, Article 29 of the Russian Constitution, the right to protection of personal data is derived from the content of Article 23 of the Constitution, and the exercise of cognitive rights requires the realisation of freedom of thought guaranteed by Part 1 of the Constitution Article 29.

The fourth part of the paper deals with industry regulation. Filipova gives a brief and substantial description of some important aspects that need to be addressed in reforming the law: The security of the digital profile of the meta-universe user; legal regime/legal status of the user’s avatar; increase in crime rate; ownership of a physical object projected in the meta-universe; intellectual property rights (copyright infringement and legal regime of objects generated by AI technologies); right to use an image (possibly, a hologram) of a deceased person; possibility of engaging in labour activity; procedural aspects of settling possible disputes [Filipova I.A., 2023: 15, 18, 19–22].

Another her study is “Meta-Universes: How Their Development Will Affect Employees and Employers” dealing with changes in the sphere of labour amid the emerging meta-universes [Filipova I.A., 2023b]. When comparing this paper with the above-mentioned one, it is easy to notice some identical provisions concerning, e.g., the definition of the meta-

universe, the interaction between AI and the meta-universe, the possibility of developing monetisation in the meta-universe, and the problem of digital user profiling. As a result of the study, she agrees with the position of scholars who believe that the development of meta-universes will affect labour relations [Filipova I.A., 2023b: 46, 56–57, 61]. Since her study is focused primarily on the legal sphere, it would be appropriate to formulate the prospects for the development of labour relations in connection with the formation of meta-universes. Although the paper does not propose any specifically formulated problems, Filipova presents a large list of 19 clearly stated questions that need to be answered before proceeding to create new/improve the current labour legislation.

The next paper deserving attention is “Legal Aspects of Digital Enhancement of Meta-Universes”. From the first lines of the article we see N.N. Kovalyova’s positive attitude to the development of the sphere of meta-universes. She notes that the meta-universe should be seen as the next step in the functioning of the Internet [Kovaleva N.N., 2022: 82]. According to her, the first key issue largely blocks the improvement of the legal framework on meta-universes, is a lack of a legal definition of the term ‘meta-universe’. The paper proposes following definition: “A digital space based on the principles of NFT (non-fungible token) and blockchain technologies and other breakthrough technologies, incorporating digital diffusion to combine all elements of the global digital environment and the possibility of seamless user interaction in different parts of the global web space, based on economically sound ways of building business models and tools for the production and interchange of goods”. Many scholars will definitely agree with her view on the need to develop a legal definition of the category “meta-universe”. However, the interpretation proposed in the paper is likely to meet with resistance, as it is difficult to discern its legal substance. It may be suggested that the said definition should not be positioned as a legal one, as it has a general nature.

N.N. Kovalyova proposes an unusual model of interaction within the Russian model of industrial meta-universe, where the government is to play the leading role in the formation of infrastructure. It will help to bring the country to a new level of economic development. The lack of a unified jurisdiction of the meta-universe deserves attention indeed. According to her opinion, the issue largely complicates the improvement of legislative regulation. After examining her position on reforming intellectual property law, one can say she considers it necessary to revise the criteria of creative labour in relation to objects created with the help of AI technologies and (or) to formulate a special concept of protection of such objects. In this case, we can find similarities between the studies of N.N. Kovalyova and I.A. Fili-

pova regarding the further mutual coexistence of two technologies, AI and meta-universe. In conclusion N.N. Kovalyova presents a list of actions on legal transformation of public relations in the sphere of meta-universes: Develop and adopt an international agreement to regulate relations in meta-universes, develop and adopt a Russian strategy on meta-universes, develop legal terminology, and use the mechanism of regulatory sandboxes and provide various benefits in the field of AI, “create a system of standardisation and quality control of the formation of the environment, create a Technical Committee under the notional name “Meta-Universes in the Structure of Rosstandart” [Kovalyova N.N., 2022: 82–84]. She expressed similar conclusions in another paper presented at the academic conference in Saratov “Public Authority and Artificial Intelligence: Legal Regulation” [Kovalyova N.N., 2022b].

Each point in the paper describes the legal challenges that all of humanity will soon face. The academic community may have questions about the proposed definition (as discussed above) and the development of international co-operation, as it seems almost impossible to come up with a single international instrument in view of the current political climate. We assume that only when there is a real threat will the international community think about the need to adopt an appropriate instrument. At the same time, the issue of developing national meta-universes in individual countries has recently been gaining relevance. In such a case, the problem of international interaction fades into the background.

I.V. Ponkin’s study “Cyber-Meta-Universe: a Legal View” looks quite extraordinary one. It is clear from the title of the paper that instead of the standard term “meta-universe”, the author explores a different interpretation, although this hardly affects the essence of the term. Probably, the reason for this is that no meta-universe can exist outside of cyberspace. I.V. Ponkin calls the cyber-meta-universe technology a promising technology. However, in his opinion, it is difficult to make any reasonable forecasts of its further development. It is not difficult to notice some complexity related to the conceptual apparatus. For example, I.V. Ponkin understands the cyber universe as “a complex virtual-real (hybrid) homeostatic and persistent digital multi-user meta-space formed and maintained through interoperable dynamic digital modelling and synthesis, and including a set of decentralised and/or intersectional real-virtual multi-scale (and scalable) three-dimensional spatial worlds (eco-systems, universes) of complex-cognitive and holographic-visual orders (augmented or reproduced reality — coherently and consistently with the natural laws of physical existence and human perception, understanding and transformation of the world), with ensuring the interactivity of the users’ engagement (participation, in-

teraction, active transformation) through their avatar and with ensuring the immersion of the users' presence in the ontologies of these worlds". Along with the cyber-meta-universe, the author provides definitions of such phenomena as avatar (meaning a user's digital avatar), immersion and persistence as properties of the cyber-meta-universe, and augmented reality, among others.

Turning to legal part of the study, we cannot ignore that, like N.N. Kovalyova, I.V. Ponkin singles out the issue of jurisdiction of the meta-universe. Along with this, he formulates a number of issues related to such points of contact as, e.g., contract law (conclusion and execution of a contract), tort law (peculiarities of its application), property law (existence of ownership of virtual property), criminal law (theft of property, slander, rape of a child avatar, extremist propaganda, etc.), user responsibility (identification of a real person behind the "shell" of an avatar, possible legal personality of an avatar). Of particular interest is I.V. Ponkin's thought concerning "...the factual and legal possibility of assigning an anthropomorphic avatar to a legal entity and giving it a certain legal personality...". This case concerns the use of the avatar of the meta-universe through the lens of a legal entity rather than a physical person. A separate part of his paper focuses on the problem of AI technology functioning in the context of intellectual property law. In considering this issue, he describes cases in the USA related to establishment of the "legal status" of AI as the creator of an object and to the possible infringement of copyright when training neural networks. He suggests it is possible to use the cyber-meta-universe for various types of legal activities. Examples he cites include: conducting an investigative experiment, modelling legally significant processes (apprehension and/or neutralisation of criminals), training students based on real-life situations, and preparing and conducting further training courses for investigators and criminologists [Ponkin I.V., 2023: 119, 122–124].

Upon analysing I.V. Ponkin's paper, we can say that in its essence it has some similarities with I.A. Filipova's studies, since Ponkin, like Filipova, does not make specific proposals, but formulates issues that require a solution. Undoubtedly, most of the issues covered need to be addressed. It is worth noting that I.V. Ponkin's position on the use of avatar as a digital representation of a legal entity looks truly special. We believe scholars will offer their thoughts on this on more than one occasion.

The study by K.S. Evsikov "Meta-Universes as a New Object of Regulation for Information Law" arouses considerable curiosity. Looking ahead a little, we would like to note that his key idea comes down to his own legal definition of the meta-universe: "A meta-universe is an information system that exists in the form of a digital platform and/or a social network and pro-

vides the ability to create and transfer digital rights between users, for access to which an individual can use virtual and/or augmented reality information technologies and project virtual objects into reality”. As it is possible to see, he considers the meta-universe to be a special case of an information system. This approach fits very well into the model of Russian law. Based on the definition provided, one can conclude that the meta-universe is only accessed through the use of virtual and/or augmented reality technologies. At the same time, disputes will certainly arise related to the following aspects of his definition:

Description of the meta-universe in the form of a digital platform and/or social network. The fact is that the Russian legislator is not familiar with such categories as digital platform and social network, despite the abundance of legal literature on the subject.

Foreign studies have repeatedly noted the development of meta-universes will affect many aspects of society, including the circulation of digital rights (medicine and health care, sports, education, leisure, etc.). In this regard, it seems questionable to limit the functioning of the meta-universe only to the economic sense in the context of the circulation of digital rights.

K.S. Evsikov’s position on regulating the sphere of meta-universes by analogy with social networks through the adoption of relevant legislation rather than a recommendatory regulation looks very interesting one. His view of the future picture of legal regulation shows that, in all probability, the development of meta-universes will at first move towards the creation of individual virtual worlds rather than their system. It is possible that going forward, when high technological capacities are available, the prototypes of meta-universes that exist today or will be developed in the future will gradually merge with each other. He focuses the reader’s attention on two interrelated aspects: Protection of users’ personal data and manipulation of their consciousness on the basis of the data obtained with the help of technologies “based on information signals not perceived by the consciousness (by analogy with the 25th frame effect)”. It is difficult to disagree with him. Indeed, the regulation of the process of information circulation and the use of various information technologies should not be neglected by the state. In this regard, he uses an interesting metaphor: “digital Luddism” [Evsikov K.S., 49, 52, 53–54].

S.P. Fedorenko is interested in the topic of law development in the conditions of meta-universes. In his research “Meta-Universe as a Factor of Transformation of Legal Regulation”, S.P. Fedorenko tells about aspects of legal regulating social relations in meta-universes through the prism of AI technologies. He discusses the need for a legal framework and cites the

experience of South Korea, whose authorities are contemplating regulation in meta-universes. South Korea has been without doubt developing legislative and ethical standards. South Korea is an undisputed leader in integrating meta-universes into the country's economic structure, thanks to its own meta-city project 'Metaverse Seoul.' The experience of the country's authorities in creating a legal/ethical framework cited by S.P. Fedorenko can be used to shape the regulation of the meta-universe sphere in other countries, including Russia.

Like some other researchers, S.P. Fedorenko sees main issue of development of legal framework on meta-universes in the framework's transnational nature. Based on this, he identifies other issues in the legal sphere, including, *inter alia*, increase in crime rate (extremism, sexual violence), circulation of information, regime of transactions (possibility of invalidation, payment of taxes, respect for copyrights), development of international co-operation, settlement obligations using crypto currencies, gaming currencies, and smart contract currencies. Summarising all of this, he speaks about the possibility of adapting legal institutions to regulate relations in the emerging meta-universes [Fedorenko S.P., 2023: 58-60]. As we can see, the paper under consideration reflects issues are not raised in other articles by Russian authors. It relates to the issue of settlements in meta-universes. We should also mention his another work dealing with realizing right to education in the meta-universe "The Meta-Universe and the Right to Education: Theoretical and Legal Aspect" [Fedorenko S.P., 2022]. The first part of the paper may be characterised as a description of the significance of the field of education for the socio-economic development of the whole society and the possibility of using distant learning format in the educational process. The second part focuses on the development of the sphere of meta-universes. The final part concludes that the introduction of meta-universes will transform many sectors of society, including the education industry. He notes the main risk of using digital technologies lies in the possible loss of state control in this area. On this basis he suggests that "...today, it is necessary to work constantly to improve the strategy for the development of the education system in the Russian Federation, in accordance with which national interests will be protected and the rights of teachers as the basis of classical education will be prioritised" [Fedorenko S.P., 2022: 62, 63, 65].

It is difficult to overestimate the relevance of the topic of education in the context of meta-universes. This is confirmed, in particular, by studies of foreign researchers, e.g. [Inceoglu M.M., Ciloglulil B., 2022]; [Zhang X. et al., 2022]. S.P. Fedorenko is the first Russian scholar who undertook to study the issue in the context of law. While the paper is somewhat abstract in its nature due to excessive focus on the description of the importance

of education and the meta-universe, its content will be useful for future writings on this topic because it will help to more closely investigate such issues as, e.g., guarantees of exercising the constitutional right to education, peculiarities of realisation of the process of education in the meta-universe, provision of participants of the process of education with necessary equipment, possible specifics of temporary use of the meta-universe to reduce the probability of threat to the psychological health of students and teachers, use of AI in the process of education and others.

The next paper is by V.I. Fathi “Meta-Universes: Legal Regulation Issues”. From overall idea of the study, according to him, the state should promote the development of meta-universe technology because it affects security interests of society as a whole. E.g., the author notes that China has established a separate state committee on meta-universes. The rudiments of government attention to meta-universes are emerging in Russia (speech by the President of the Russian Federation at the AI Journey 2022 conference ³; 2022 discussion of legal risks and opportunities of meta-universes in the Federation Council ⁴). Throughout the article, V.I. Fathi tries to find an answer to the question of how to regulate the sphere of meta-universes. The author’s interesting thoughts revolve around two options: use user agreements as a basis for regulation, and develop international co-operation to build a new “meta-jurisdiction”.

Speaking of user agreements, the author presumes that each meta-universe has its own owner, which, in all likelihood, should be presented as a global corporation. Fathi writes: if the model of user agreements is used, “.... the rights holder turns into a sole representative of virtual power that independently establishes and enforces rules binding on the user, the case may well be classified as an offence in real life”. The state cannot allow such a threat to arise, hence a different format for establishing regulation must be chosen. In this regard, Fathi points to possibility of implementing a single “meta-jurisdiction.” The main disadvantage of “meta-jurisdiction”, according to Fathi, is that “...it may lead to the loss of the status of the state as a monopolist in the sphere of law-making, governance, currency regulation, etc. One should not deny, that in these conditions, the cultural, national and indigenous roots and peculiarities of the system of state governance can be lost”.

Regardless of all the merits of the “meta-jurisdiction” concept, one can hardly speak of its potential viability, as discussed above (comments on N.N. Kovalyova’s study). At the same time, the final sentence of Fathi’s

³ Available at: 2022/11/24/na-snag-vpered.html (accessed: 30.11.2023)

⁴ Available at: [council.gov.ru>events/main themes/13849/](https://council.gov.ru/events/main-themes/13849/) (accessed: 11.01.2024)

study looks very interesting because it makes us think: "...it is the state as a guarantor of the protection of citizen's rights that should give an answer to the question: "Should law adapt to the rules of the virtual universe or should the virtual universe adapt to the existing rules of law?" [Fathi V.I., 2022: 14–15, 16, 17].

It is my duty to mention in the study an article by A.V. Minbaleyev and E.V. Titova "Legal Issues and Risks of Sporting Events in the Meta-Universe". The authors are convinced that in the future, due to the development of the meta-universe, there will be a new way to look at the world of sports industry, including cyber sports. In particular, they point out that it will be possible to organise and host a variety of sporting events in the meta-universe, and the large emerging range of tools will help to attract fans to the immersive environment. Fans will not only have the opportunity to watch live broadcasts of events with full immersive experience, but also to train with athletes as a reward for purchasing a particular NFT. This will have a positive impact on increasing the sports brands' economic flows. At the same time, all geographical and physical boundaries will be erased. This will allow to achieve the following: "Using their avatar and other digital profiles and participation patterns in the meta-universe, the fan has new possibilities, such as walking on the field with the players, watching the sporting event from different locations, receiving all relevant information about the athletes, and interacting with other fans, including using inbuilt foreign language translators". It is difficult to assess to what extent the ideas presented by authors can be implemented. They cite the case of the English Premier League that has entered the meta-universe.

As for definition of meta-universe, the authors use one of the interpretations formulated in foreign academic circles: "The meta-universe is understood as "a computer-generated permanent immersive environment that can include elements of augmented reality and virtual reality. The user, depicted as an avatar, can interact with others, consume goods and travel just as they would in the physical world, which in turn provides opportunities for interaction that were previously impossible".

To organise and host sporting events in the meta-universe, some legal risks need to be resolved. The first area that two authors focus on is the definition of the regime of new digital objects (stadiums, arenas, fan houses, etc.). The second area relates to intellectual property law and requires answers to questions such as, e.g., is it the team's duty to copyright their avatars? Are there any specifics about broadcasting procedures and the use of licence agreements in the meta-universe? The third area focuses on expanding labour law to include persons who will be providing services to sporting events. The fourth area includes the protection of personal data

of fans and athletes, including scraping (person collecting the data, list of data collected, user anonymity, purpose of data collection, etc.). It also can include the fifth area related to counterfeiting (including the use of deep-fake technology) of digital profiles / digital avatars of fans and athletes. The sixth area deals with the unlimited use of electronic faces in the context of AI technologies for various purposes (e.g., scoring, social rating). Two authors conclude the study by pointing to the need to strengthen information security and cyber security measures [Minbaleev A.V., Titova E.V., 2023: 137–140].

Theirs study suggests that the development of meta-universes affects not only long-established branches of law, such as civil law, financial law and administrative law, but also more innovative legal formations, such as sports law. A.V. Minbaleyev and E.V. Titova show how the general issues of meta-universe sphere regulation highlighted by many scholars influence the world of sports. Based on its title, this paper should probably be recognized as the most extravagant one in this review.

It was noted above one of the aspects in development of the law on the meta-universe is caused by the lack of understanding of the legal status of the user's digital avatar. V.V. Sarkisyan and I.V. Fedorova bring some clarity to this issue in research "On Legal Personality of an Avatar in the Meta-Universe". While the paper lacks a definition of meta-universe, it contains constructive thoughts. The article notes that the concept a digital avatar should not ignore the sphere of law, as it (the digital avatar) personifies the user of the meta-universe. There is no provision on digital avatars in the content of the "Persons" subsection of the Russian Federation Civil Code, which raises the need to define the avatar's legal status/legal regime.

They offer three possible options to solve the question raised: the avatar has full legal personality, the avatar has a quasi-subjective nature, and the avatar is viewed as an object of civil rights. When analysing the possibility of recognising a digital avatar as a subject of law, the authors write that "...the identification of humans with avatars, and the granting of rights to the avatars may lead to a significant dilution of the concept of human rights." Along with this, the authors argue that this approach would raise other issues: the avatar's financial liability, ability to be a plaintiff and defendant in court, ability to participate in inheritance procedures, etc. The authors give an interesting description of the quasi-subject avatar model. Based on the intended meaning, if the quasi-subjectivity regime is applied, the avatar should be treated as an electronic person. Co-authors note that a user can only create one avatar, which will need to be registered in a special registry; this will ensure the identification of the user by using a tool that pierces the corporate veil. It will also help to use various options for the

participation of an electronic person in public relations such as insurance of the liability risk, setting a minimum capital requirement etc. Despite the seeming benefits of this solution, the authors reasonably believe that the source code of an electronic person can be modified, which will lead to unwanted legal consequences.

The point of V.V. Sarkisyan and I.V. Fedorova looks logical and reasoned one. In all probability, questions about the possible legal capacity and competence of an avatar are not quite correct, since in such a case, two subjects appear in theory: the user and the avatar. Since the avatar is a digital personification of the user, there is no need to give the avatar a separate legal personality in any form. In this connection, they draw attention to the possibility of qualifying a digital avatar as an object of civil rights. According to the authors, three options are possible in this case: recognize the avatar as a special object of intellectual property, view the digital avatar as a digital right, formulate a model of the digital avatar as a separate (independent) object of civil rights [Sarkisyan V.V., Fedorova I.V., 2023: 115–118]. It is hard to say still, which of the options is the most appropriate. The authors' main conclusion comes down to the fact that the digital avatar should be viewed as an object model.

Scholars working in the field of criminal law science are interested in the topic of meta-universe development. One vivid example is the paper by A.T. Mursalimov “Meta-Universe: a New Space for Committing Fraud in the Field of Credit”. A.T. Mursalimov points out in his study that the creation of a meta-universe will aggravate the situation with the lack of control over transactions within this virtual space. It will lead to an increase in fraudulent activities. If a meta-universe is launched in Russia, the amount of uncontrolled investment in meta-universe projects will increase, which may result in large financial losses for investors. At the same time, A.T. Mursalimov believes that there is already a turnover of funds in the meta-universe. He cites the activities of TerraZero, which has entered into the world's first mortgage lending agreement in the meta-universe. The author acknowledges the lack of real cases of fraud in the meta-universe, but focuses his view on a situation involving sexual violence against an avatar. In connection with the emerging risks of offences, A.T. Mursalimov makes a number of proposals regarding the improvement of the legal framework. These include, among others, establishing digital borders of the state, and creating a separate structural unit in the Federal Security Service whose tasks will be ensuring digital borders and extending the current legislation to the sphere of meta-universes [Mursalimov A.T., 2023: 120, 122].

Based on the practical cases, A.T. Mursalimov shows a decent legal regulation of the meta-universe sphere should be developed. Having analysed the whole paper, one can say the main problem that blocks the extension of

criminal law norms to the virtual world lies in the lack of state control. In this connection A.T. Mursalimov probably wants to say that the individual and society need protection and defence from the point of view of criminal law, but it is difficult to discuss prospects in this area, because there is a problem of lacking state control. For this reason A.T. Mursalimov proposes to start with solving this very issue. This step will ensure national security within virtual space.

In continuation of the topic of ensuring national security in meta-universes, we would like to draw attention to the research paper by A.I. Ovchinnikov “Traditional Spiritual and Moral Values, Sovereignty and Legal Regulation of Meta-Universes”. The author immediately puts forward a thesis that allows us to understand what this article is about: “This short article deals with the rapidly growing popularity of the digital phenomenon of virtual universes, or meta-universes. A virtual universe, or meta-universe, is a digitally modelled virtual reality alternative to the physical world”. The author puts forward a reasonable point of view that it is now correct to speak about two variants of establishing the regulation of meta-universes.

The first option can be described as liberal. It ensures rapid growth of technologies, involvement of billions of users, and unlimited growth outlooks, but abolishes state borders, there is no control on the part of the state, and there are risks of monopolisation by big business. The second option is referred to as conservative-etatist, where national sovereignty and state interests form the cornerstone. In assessing the second approach, the author cites the experience of the People’s Republic of China. A.I. Ovchinnikov notes that the meta-universe trend should be developed, and Russia needs its own state concept for meta-universes. The author analyses in general terms numerous issues related to taxation, antitrust regulation, protection of personal data, etc., all of which is clearly important for future socio-economic development. The author therefore concludes: “The meta-universe must depend on a centralised block chain owned and controlled by the state. Crypto currencies within the meta-universe must be prohibited, and only government securities and public finance allowed. All meta-applications, which connect to virtual reality, and all software developers should be under state control and must be checked both by the state and civil society” [Ovchinnikov A.I., 2023: 36-37, 40, 41–42]. In addition to it we have an opportunity to cite one more study: A.I. Ovchinnikov in co-authorship with P.I. Shirinskikh “Meta-Universes and Law: Challenges of New Technologies in the Conditions of Further Development of the Internet”. This paper offers very similar conclusions. It says also that an age criterion must be introduced to enter the meta-universe [Ovchinnikov A.I., Shirinskikh P.I., 2023: 32].

Indeed, the current situation is pushing the state to pay attention to meta-universes and ensure control over them. On the one hand, the idea that a state-owned meta-universe must be developed in Russia may be somewhat controversial, as it may negatively affect economic interests of business entities wishing to create their own meta-universes. On the other hand, it is easy to imagine that, in a state-controlled meta-universe, entrepreneurs would integrate their businesses. It would seem to us that the only threat in this case lies in finding the right balance between private and public interests, so as not to come to the materialisation of famous *1984* by George Orwell.

Author of the article must mention the article by B.A. Shakhnazarov “Meta-Universes: Legal Protection of Intellectual Property in Transboundary Virtual Space”. He shows a close connection between such phenomena as meta-universe and Web 3.0. He notes that since Web 3.0 is the concept of a decentralised network, it can serve as a basis for building communication channels in the meta-universe. By referring to foreign studies, he gives a general concept of meta-universe: “...a meta-universe is a digital world in which the possibility to interact with three-dimensional objects in virtual reality is realised.” The paper clearly reflects that today, thanks to Web 3.0, different kinds of property relations (transactions) arise that enable a monetisation procedure in the form of crypto currency or NFT. Indeed, it is the current state of affairs. This is particularly true for the Decentraland platform.

Further on, B.A. Shakhnazarov singles out the issue of legal regime of objects that are used in transactions. In this case, the dilemma arises between a right in rem and an intellectual property right. In this regard he asks: “Can an intellectual property object expressed in virtual form and represented in an objective form in the meta-universe have an owner from the point of view of property law or related institutions?” On the basis of data from foreign experts (report of the international law firm Reed Smith) he concludes that property rights within the meta-universe are out of the question. In reality, there are always true owners; usually, platform operators. Therefore he inclines to the viewpoint about the circulation of special intellectual property objects in meta-universes. He puts forward the idea that this state of affairs raises a number of questions, e.g., with respect to the licence agreement, scope of rights to existing/projected objects in the meta-universe, their patenting, or identification of the author of the created object in the absence of identification procedure.

Summarising his thoughts, you may see that, in his opinion, taking into account the transboundary nature of meta-universes, it is essential to ensure that state jurisdiction is extended over meta-universes. In other words, states

must establish their own presence in the meta-universe. He cites in this case the experience of the small country of Barbados, which has entered into an agreement with the Decentraland platform to integrate its own embassy in the meta-universe. From the meaning of the paper, that step is necessary for the applying conflict of laws rules [Shakhnazarov B.A., 2022: 18, 19, 22–25].

Certainly, most researchers would agree that ideas of B.A. Shakhnazarov are worth considering. It is difficult to find any significant flaws in his paper. At the same time, we may debate the final conclusion. On the one hand, the solution seems to be well-grounded. On the other hand, some questions may arise regarding information security and state sovereignty, as it can be assumed that, despite the experience of Barbados, world economic leaders would be reluctant to participate in such a process.

In conclusion it has a sense to cite an entertaining article by a person from the world of practice, namely V.A. Zhukov. In his article “Law and Ethics of Meta-Universes”, he analyses possible scenarios for the development of legal regulation and ethical norms in the age of meta-universes. It has a sense to focus attention on analysing the legal content of that article.

V.A. Zhukov uses the ideas of the American researcher M. Ball to describe the essence of the meta-universe model. He thinks the meta-universe should be seen as “a scalable and interoperable network of 3D virtual worlds displayed in real time that can be perceived simultaneously and continuously by a virtually unlimited number of users with an individualised sense of presence and data continuity”. V.A. Zhukov’s reference to the correlation between the meta-universe and online multiplayer games is noteworthy. He notes in this regard that scholars have long explored the legal aspects of online gaming, but that it is difficult to apply such regulation to relations in the meta-universe, as the latter encompasses much broader areas of life, including gaming. According to him, meta-universes will be integrated into the life of society gradually. Transformation of the gaming sector will be the first step in this direction; then, depending on the technology maturity, we can talk possible integration, e.g., of theatres, cinema, and education into the meta-universe.

In his study V.A. Zhukov distinguishes three main vectors of law development in meta-universes:

- regulating aimed at encouraging economic progress;
- regulating aimed at restricting circulation of information;
- regulating related to the functioning of meta-universes.

In the first area he analyses questions concerning two key branches of the civil law sector: intellectual property law, and property law. Concern-

ing intellectual property, V.A. Zhukov concludes that "...a trend will take shape in the regulation aimed at granting the user an exclusive right to the created objects with the transfer of the minimum necessary rights to the platform operator for technological capabilities in the reproduction and transfer of the object". In his opinion, despite the features, legal regime of virtual property should be as close as possible to the most "objectified" one. This will help simplify further civil turnover to the greatest degree possible. At the same time, he notes that for economic development purposes, the circulation of virtual property and ownership of digital assets should be liberalised as much as possible, subject to user identification.

V.A. Zhukov develops a very unusual explanation of issues related to information turnover requirements. He recognises that the issue of personal data protection will play an important role in the development of meta-universes. However, he believes there is no need to restrict the meta-universe developers from collecting information. He writes: "Imposing such a restriction may also not be in line with the user's intention to express consent to the processing of more personal data for a better digital experience". He also presents a possible solutions to the issue of personal data protection: "...introduce time delays on the processing of such data or do not apply them in specific cases." Moreover, in order to regulate the information circulation sphere, rules for recommendation systems must be established as carefully as possible (without significant prohibitions), because in the absence of such rules, digital products offered by businesses will not be of interest to users in the meta-universe. His viewpoint on advertising in the meta-universe is interesting one. Since the current law stipulates special rules for advertising on certain media (print media, radio, etc.), it is very likely that there should be special rules for the meta-universe as well. Maybe ethical standards would be appropriate in this case.

The third area looks particularly special. It covers the issue of mismatching realities that manifests itself in "the difference in objective circumstances perceived by users at the same time". V.A. Zhukov notes when it comes to such spheres as, e.g., medicine and finance, the issue may have a legal nature. He suggests "establishment of technological requirements aimed at eliminating discrepancies in factors perceived by users".

In conclusion V.A. Zhukov points out an interdisciplinary approach between such spheres as law, ethics, medicine, psychology, and engineering must be followed for creating a safe meta-universe infrastructure. Current challenges and potential future challenges should not prohibit the spread of meta-universe technology [Zhukov V.A., 2023: 149–150, 153–154, 156–157, 163].

We don't think anyone can find any significant flaws and/or contradictions in his paper. Indeed, he has expounded every issue in a very detailed

manner that does not raise questions. At the same time there are confrontation between the conclusions of V.A. Zhukov and A.I. Ovchinnikov covering general model of regulation. V.A. Zhukov is sure laws and regulations on meta-universes should be built on the principles of liberalization, while A.I. Ovchinnikov believes regulation should be based primarily on state control.

Conclusions

The meta-universe has gradually acquired the signs of a new scholarly niche alongside/in synergy with the topic of AI, which annually attracts the attention of researchers from various areas. This is driven by economic, political and social reasons and challenges. The legal doctrine is no exception here. The author of this paper believes that further development of meta-universe technology should take place at the same time with law. We can clearly observe an increase in the need for a legal solution to the issues of creation and functioning of meta-universes that would take into account both private and public interests. Our analysis offers a systematised review of research papers by Russian legal scholars according to the following criteria: a list of the most relevant problems (Figure 3) and a summary of the research results (Figure 4).

In eight of papers analysed (50 per cent of total), authors note the most acute legal problem for further development of meta-universes is that virtual space is not bound to the national legislation. In view of this it is almost impossible to ensure a sufficient level of state control. Consequently, the meta-universe could become a “digital oasis” functioning in a chaotic

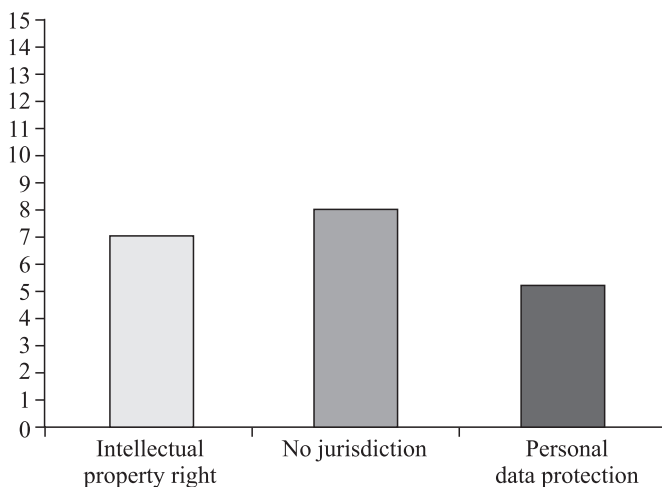


Fig. 3. List of most important issues

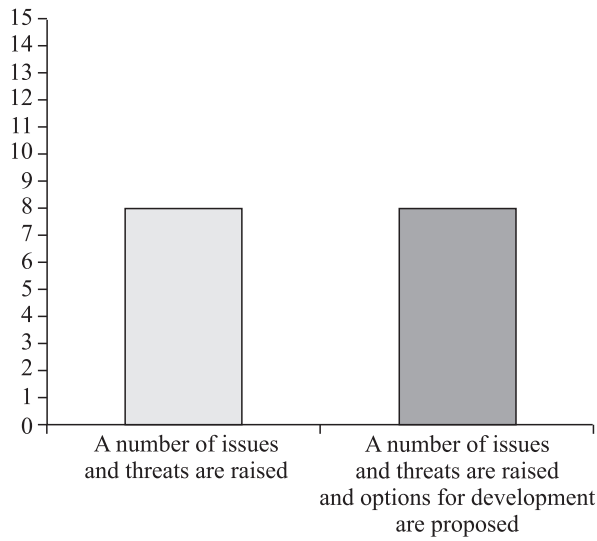


Fig. 4. Summary of the study results

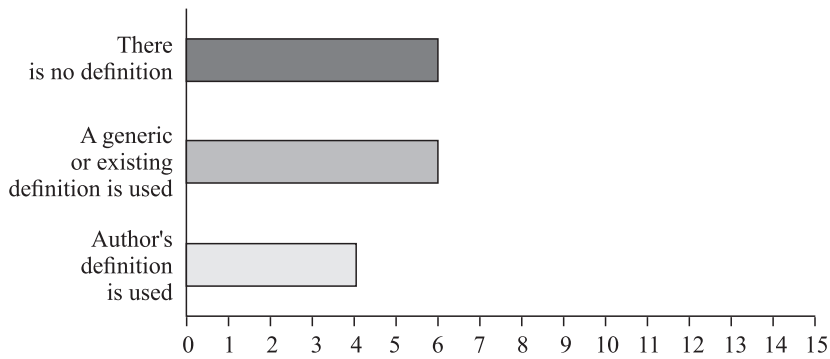


Fig. 5. Meta-Universe definitions occur in paper

manner. Seven papers (about 44 per cent) discuss issues in the field of intellectual property law. They analyse a range of questions related in particular to whether it is possible to qualify a user’s digital avatar as an intellectual property object, to extend the copyright to objects created with the help of AI technologies, and to legally project physical objects in the meta-universe. In five papers (about 31 per cent of total), the authors believe that a functioning mechanism (possibly, a system using AI technologies) for data privacy should be provided.

Upon summarising all papers, it can say in one half of them the authors formulate a list of issues and threats that the state will have to deal with in order to build a legal framework for meta-universes. In the other equivalent

half, in addition to describing key challenges, the authors propose various options for further modification of legal regulation. In this case, one should not underestimate the nature of the papers from the first half because they are just as informative as the studies from the second half. At the same time, the author formulated one of the main problems, which is characteristic of scholars dealing with the issue of law transformation in the conditions of rapid development of meta-universes. The essence of the problem manifests itself in the presence/lack of a definition of the meta-universe (Figure 5).

The content of the graph clearly shows that not all the papers contain a definition of meta-universe. The authors develop their own concept of the meta-universe in only four papers (25 per cent). In six papers (37.5 per cent), the authors have used a general description of the meta-universe or borrowed the definition from other scholars and/or specialists. We have to state there is no definition of the meta-universe in the remaining 6 papers (37.5 per cent).

Based on all the said above, it is possible to try to predict the overall trend of further development of the legal science on meta-universes. The innovative nature of the topic will attract a lot of interest from scholars just as it did with the enthusiasm for AI. It will result in a build-up of research materials. In addition to research articles, monographs may well be published. It is also possible to see dissertations addressing this topic.



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