

Digital Transformation of Subjective Civil Rights: Problems and Prospects

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ABSTRACT

The article examines the phenomenon of digital transformation of subjective civil rights, which is the most important characteristic of civil turnover in the information society. According to the author, digital transformation is a systemic change in the main features and content of subjective law under the influence of digital technologies, with the help of which new types of property are constructed, namely crypto-currencies, digital rights, tokens, databases, and other virtual objects. The characteristic properties of such objects, first of all, the absence of a material substrate, that is, physical, material expression, make it difficult to characterize them as things, in the traditional meaning of this concept.

However, the needs for the development of civil turnover in the context of the digitalization of the economy make it necessary and inevitable for the participation of various types of digital property as objects of both property and contractual rights. The civil turnover of digital objects becomes possible as a result of endowing the latter with the properties of things or actions, which implies the formation of appropriate legal modes. Since the legal mode, as shown in the work, includes three main elements, namely, objects of rights, subjective civil rights and regulatory means, digital transformation affects all these elements, contributing to their modification.

At the same time, the main attention in the work is paid precisely to subjective civil rights, which, in a situation of underdeveloped regulatory regulation, are the main regulator of digital property turnover. Considering the prospects for the digital transformation of subjective civil rights in the context of the digitalization of civil law and order, the author comes to the conclusion that the processes considered in the work will affect not only the sphere of real rights, but also the personal non-real rights of subjects. The analysis performed allows us to formulate some proposals for improving the current civil legislation, contributing to its further reform.

Keywords: digital objects, crypto-currency, token, legal mode of property, property law, law of obligations, incorporeal things

1. Introduction

One of hallmarks of the modern time is development a digital society, which has long been in the center of focus and actively discussed, since it resulted in dramatic changes in almost all areas of people's life, including those regulated by law. In a broad sense, digital society can be defined as an evolution stage of post-industrial civilization, characterized by accelerated growth of high technologies and their imbedding not only into science, production, education or management, but also into everyday routine life.

Among other things, wide-spread information technologies at the current stage of digital society triggered heated debates in research papers in terms of the very concepts «information» and «digital» society. Thus, most researchers believe that digital society is a synonym or another stage of information society, characterized by digitalization of social processes and a high level of digital technologies development. Meanwhile, some scholars, including M. Castells, distinguish between these concepts and define digital society as a special, «post-information» type of community, whose members are or can potentially be both human beings and digital organisms with artificial intelligence¹ ... This discussion may presents interest to a lawyer insofar as it contributes to a better understanding of social context that determines development of the system of justice. It is still early days of the issue, although there have been some suggestions to vest legal personality to cybernetic devices².

It is generally accepted that the Internet has become an important factor in spread of knowledge and technology. Development of the Internet gave rise to a brand new system of communication and dramatically transformed previously ways of communication. Not only have digital means of communication greatly expanded possibilities of relaying information

¹ See: Corazza, G.E. Organic Creativity for Well-Being in the Post-Informational Society // Europe's Journal of Psychology. 2017. Vol. 13. No. 4. Pp. 599-605.

² See: Legal Tech Development Online Conference (St. Petersburg, April 20, 2020). // Theoretical and Applied Law. No. 2 (4). Pp. 100-105. (in Russian and in English).

to an unlimited number of communication parties, thus creating conditions for their maximum interdependence³; but they seem to have changed the nature of information itself. For a long time information has been treated as a special kind of reality, different from matter and energy⁴, but now we are witnessing transformation of this concept, which is acquiring properties of things, and in some cases of biological objects, as evidenced by the term «digital organism» used by foreign researchers⁵.

The above-described trends explain innovations that are developing in the digital society and must be considered in term of digital society. What is meant here is penetration of digital technologies into economic, political and cultural spheres. One of such technologies that has recently become universally-used, is blockchain, originally applied for financial transactions in non-cash settlements in the Bitcoin system⁶. Blockchain has quickly turned into a basic model used in various sectors of economy thanks to its characteristics, mostly, due to decentralization and compressibility, which allow operations with big data, minimizing accidental or intentional damage or loss of information. However, experience shows that this technology does not provide absolute security and can be vulnerable, as evidenced by recent crypto-currency scam, the largest in the history of electronic payments⁷. The lessons of this large-scale scan warn us against being over-optimistic about digital technologies and highlight new challenges of the information age.

Despite the discussed weak points, it can be argued that the model has an important advantage – it can include virtual phenomena (in particular, crypto-currency), as if they were real, thereby opening ways for entrepreneurs and businesses to influence such phenomena. Combined effect of decentralization and self-development of blockchain technology make it a perfect tool to use in the potential instability naturally inherent in financial and, nowadays, other markets⁸. It is clear that under current circumstances unpredictability and spontaneity have ceased to be characteristics of financial markets alone, rather these features are displayed everywhere where human factor is concerned, ranging from corporate management to voting procedure at polling stations, from education to medicine. This led to the fact that blockchain and other digital models are in great demand in various areas.

It is obvious that expectations associated with digital technologies are exaggerated. Meanwhile, as it was noted, any social transformation (including digital transformation) must be considered from in the light of principle of uncertainty that makes a background of all social processes⁹. The key idea behind this principle is that any influence on a social system not only increases a degree of its order (decreases its entropy), but also increases uncertainty of the whole system, giving rise to unpredictable and not always positive consequences.

Such consequences demand new, more complex effects, which in the long run generate new uncertainty that influences operations of the system in the altered conditions¹⁰. For instance, large-scale measures around the globe taken to limit social contacts to stop spreading SARS-CoV-2 coronavirus, have an indirect, but very important consequence: spread of digital means of communication, which, in turn, lead to a total transformation of social reality.

The arguments above also relate to law, which is known to be a universal regulator of social relations. Therefore, the changes discussed are highly likely to be displayed in this sphere. It is not an overstatement to say that global trends in development of the system of justice in the digital age speak for a new stage in evolution of the system of justice, characterized by changes at all levels. First of all, we refer to new virtual objects of legal relations that contribute to a digital transformation of the nature of subjective rights that are the bedrock of such relations.

In terms of legal regulation, digital transformation of subjective rights results in structural changes of the legal system and the development of new institutions in both private and public law. Some scholars suggest considering the whole corpus

³ See: McLuhan M. The Gutenberg Galaxy: the Making of a Tipographic Man [Galaktika Gutenberga: stanovlenie cheloveka pechatayushchego]. M.: Academic Project; Foundation «Mir» [Akademicheskii Proekt; Fond «Mir»], 2005. 496 p. (transl. from English) (in Russian). P. 66.

⁴ See: Viner, N. Cybernetics, or Control and Communication in the Animal and the Machine [Kibernetika, ili upravlenie i svyaz' v zhivotnom i mashine]. Ed. 2nd. M.: Soviet radio [Sovetskoe radio], 1968. 325 p. (in Russian).

⁵ See: Pargellis, A.N. The Spontaneous Generation of Digital «Life» // *Physica D: Nonlinear Phenomena*. 1996. Vol. 91. No. 1-2. Pp. 86-96; Wilke, C.O., et al. Evolution of Digital Organisms at High Mutation Rates Leads to Survival of the Flattest // *Nature*. 2001. Vol. 412. Pp. 331-333; Wilke, C.O., Adami, C. The Biology of Digital Organisms // *Trends in Ecology and Evolution*. 2002. Vol. 17. Pp. 528-532, etc.

⁶ See: Swan M. Blockchain: Blueprint for a New Economy. Oxford: O'Reilly Media, 2015. P. 12 f.

⁷ See: Major US Twitter Accounts Hacked in Bitcoin Scam [Online source]. URL: <https://www.bbc.com/news/technology-53425822> (date of access: 25.02.2021).

⁸ Mandelbrot, B., Hudson, R.L. The Misbehavior of Markets: a Fractal Revolution in Finance [(Ne)poslushnye rynki: fraktal'naya revolyutsiya v finansakh]. M.: Publishing House «Williams» [ID «Vil'yams»], 2006. 400 p. (transl. from English). (in Russian). P. 151 et seq.

⁹ See in more detail: Chestnov, I.L. Legal Communication in the Context of Postclassical Epistemology [Pravovaya kommunikatsiya v kontekste postklassicheskoi ehpiistemologii] // *News of Higher Educational Institutions. Jurisprudence [Izvestiya vysshikh uchebnykh zavedenii. Pravovedenie.]*. 2014. No. 5 (136). Pp. 31-41. (in Russian) P. 33.

¹⁰ Advocates of institutional economic theory argue that uncertainty of external factors and internal state is an inherent characteristic of social system that gave rise to the term «new normal» characterizing post-crisis conditions. See, for example: El-Erian M.A. Navigating the New Normal in Industrial Countries. Washington: Per Jacobsson Foundation, 2010; Cohen S.I. The Russian Economy: New Normal, Past Imbalances, Future Globalization // *Journal Institutional Studies*. 2018. Vol. 10.No. 1. P. 25 ff; Hasija D., Liou R.-S., Ellstrand A. Navigating the New Normal: Political Affinity and Multinationals' Post-Acquisition Performance [Online source] // *Journal of Management Studies*. 2019.57(3). URL: https://www.researchgate.net/publication/337792251_Navigating_the_New_Normal_Political_Affinity_and_Multinationals'_Post-Acquisition_Performance (date of access: 25.02.2021).

of those institutions as a new branch of the current Russian legislation¹¹. So, digitalization, beyond a reasonable doubt, proves an idea that previously could be justified only in a diachronic retrospective. The point is that any global evolutionary changes in the system of justice first promote occurrence of new subjective rights (or transform existing rights by filling them with new content), which are later classified and captured at the normative level.

The aforesaid explains relevance of the issue of social digital transformation of society in civil jurisprudence, and the necessity to consider key trends in digitalization of civil law and civil commerce, as discussed further on in this article. In view of the above, the goal of this study is to trace how new objects of social reality (namely, virtual, digital objects) change legal mode of their commercial turnover. Moreover, those changes, initially displaying themselves in transformation of the nature and essence of subjective civil rights, which is of greatest interest to us, are further captured in the civil law system, that is, at the normative level.

To achieve the goal, the article solves following objectives:

- 1) to consider new types of objects of civil rights, namely digital rights and other digital assets, their physical and legal nature;
- 2) to study legal mode of civil commerce of digital assets, including differences between the legal mode of digital assets and that of «traditional» property benefits;
- 3) to analyze the nature and main characteristics of transformation of subjective civil rights, where digital assets serve as objects of rights;
- 4) to attempt to consider main trends in development of the civil law in terms of development of an information (digital) society.

It seems that solution of these issues promotes academic interest, since it allows us confirm the hypothesis, which states that evolution of legal regulation both in synchronous and diachronous aspects includes the following consecutive stages: emergence of new social benefits, their mediation in the form legal claims and subjective rights of the parties, which entails development of appropriate legal institutions, the latter, in turn, leading to restructuring of the whole system of objective law.

2. Objects of civil rights in terms of digitalization of property turnover

Challenges of the digital age, among other things, demand legislative solutions, defining the range of issues currently facing the law. The most important task still seems to be improvement of mechanisms for exercising and protection of subjective rights in social uncertainty. Critical nature of this issue is highlighted by V.D. Zorkin, who argues that, «big data and artificial intelligence open a window of opportunities for the legal community, but at the same time pose a threat of losing the very spirit of law and its inseparable humanistic focus, taking into account that law is, primarily, a kind of social norms, meaning, first of all, rights of man as a member of society»¹².

Since economics has been especially deeply affected by digitalization, it is safe to say that the issues considered herein have a great scientific and practical relevance specifically for civil law. Virtualization of social phenomena triggers development of new objects of rights, which requires effective ensuring of their civil turnover. To support this idea, we can refer to Article 141.1 of the Civil Code of the Russian Federation¹³, introduced by Federal Law No. 34-FZ of March 18, 2019¹⁴, which introduced digital rights as a new object of rights; the law identifies them as «obligation rights and other rights named as such in law whose content and terms of exercising are defined in compliance with the rules of an information system having the features established by law»¹⁵.

¹¹ See: Golovkin, R.B., Amosova O.S. «Digital Rights» and «Digital Law» in the Mechanisms of Digitalization of the Economy and Public Administration [«Tsifrovye prava» i «tsifrovoye pravo» v mekhanizмах tsifrovizatsii ehkonomiki i gosudarstvennogo upravleniya]. Bulletin of the Vladimir Law Institute [Vestnik Vladimirskogo yuridicheskogo instituta]. 2019. No. 2 (51). Pp. 163-166. (in Russian). P. 166.

¹² Zorkin, V. D. The Law of the Future in the Era of Numbers: Individual Freedom or a Strong State? [Pravo budushchego v ehpokhu tsifr: Individual'naya svoboda ili sil'noe gosudarstvo?] // Russian Newspaper [Rossiiskaya gazeta]. 2020. Dated 15.04.2020. No. 83 (8137) [Online source]. URL: <https://rg.ru/2020/04/15/zorkin-pravo-budushchego-eto-te-zhe-vechnye-cennosti-svobody-i-spravedlivosti.html> (Accessed date: 25.02.2021). (in Russian).

¹³ Civil Code of the Russian Federation. Part one // CC RF. 1994. No.32. Article 3301; 2019. No.51. Part 1. Article 7482.

¹⁴ Civil Code of the Russian Federation. 2019. No. 12. Article 1224.

¹⁵ See in more detail: Novoselova, L.A. On the Legal Nature of Bitcoin [O pravovoi prirode bitkoina] // Business and Law [Khozyaistvo i pravo]. 2017. No. 9. Pp. 3-15. (in Russian) Pp. 3-12; Efimova, L.G. Cryptocurrencies as an Object of Civil Law [Kriptovalyuty kak ob'ekt grazhdanskogo prava] // Business and Law [Khozyaistvo i pravo]. 2019. No. 4. Pp. 17-25; 24. Egorova, M.A., Efimova, M.G. The Concept of Cryptocurrency in the Context of Improvement of the Russian Legislation [Ponyatie kriptovalyut v kontekste sovershenstvovaniya rossiiskogo zakonodatel'stva] // Lex russica. No. 7. Pp. 130-140. (in Russian); El-Erlan, M.A. Navigating the New Normal in Industrial Countries. Washington: Per Jacobsson Foundation, 2010. 40 p Pp. 130-140; Yegorova, M.A., Kozhevina, O.V. The Role of a Cryptocurrency in the System of Objects of Civil Law Rights // Actual Problems of Russian Law [Aktual'nye problemy rossiiskogo prava]. 2020. No. 1. Pp. 81-91. (in Russian); Arslanov, K.M. History, Modern Status and Development Prospects of Cryptocurrency: Russian and Foreign Legal Experience [Istoriya, sovremennoe sostoyaniye i perspektivy razvitiya kriptovalyut: rossiiskii i inostrannyi pravovoi opyt] // Civil Law [Grazhdanskoe pravo]. 2020. No. 1. Pp. 24-27. (in Russian); Lorenz, D.V. Digital Rights in Real Estate: Legal Nature and Methods of Protection [Tsifrovye prava v sfere nedvizhimosti: yuridicheskaya priroda i sposoby zashchity] // Russian Justitia [Rossiiskaya yustitsiya]. 2020. No. 2. Pp. 57-60. (in Russian).

However, it is obvious that the corpus of digital objects together with relations arising out of them, is far from being exhausted (and, in our opinion, cannot even be clarified) by this definition, which only generally outlines the agenda of legal regulation. There are some issues to be made more certain, firstly, the nature of digital rights, chiefly, the issue of whether they are proprietary or contractual rights; secondly, the legal and actual nature of the called «digital assets», «digital property», etc. as they are called in the current legislation, including their physical parameters, property value, as well as other characteristics, which must be specially studies, since without clarity in this issue it is impossible to determine the place of digital assets in the system of objects of civil rights.

Legislative innovations in this filed can be found in the Federal Law No. 252-FZ of July 31, 2020 «On digital financial assets, digital currency and on amendments to certain legislative acts of the Russian Federation»¹⁶, which came into force and effect on January 1, 2021. In accordance with Article 2 of the Law, digital rights include monetary claims, rights exercising under equity securities, right to participate in the capital of a non-public joint stock company, right to demand assignment of equity securities, which can only be issued, registered and circulated by making (amending) entries in an information system of a distributed register, as well as other information systems.

So, the civil legislation of the Russian Federation approves that treats digital rights as those having an obligatory nature. In other words, in terms of legislation, digital objects are special actions performed by users in the virtual space (namely, making entries in the information system), while digital rights are the rights of claim performance of such actions. This conclusion can be confirmed by Article 8 of the Federal Law No. 259-FZ of 02.08.2019 «On attracting investments using investment platforms and on amending certain legislative acts of the Russian Federation»¹⁷, that classifies utilitarian digital rights into three groups, namely the right to demand assignment of an item, the right to demand assignment of exclusive rights to the intellectual deliverables and (or) the rights to use the intellectual deliverables and the right to demand performance of work and (or) provision of services.

Digital rights have become a matter of focus in the judicial practice, which, despite very few decisions, shows that relations in this area not only exist, but also cause collisions between civil parties and require settling. The act worth mentioning here is the Resolution No. 01-AP-5933/18 of the First Arbitration Court of Appeal dated 13.03.2020 in case No. A43-34718/2017. We believe that this resolution shows no well-established understanding in terms of the nature of transactions with digital objects, namely bitcoin, with the party to the case referring to the property nature thereof, and the rights to these objects. Confusion and ambiguity of the concept made it difficult to prove that the crypto-currency belongs to one of the parties in the transaction. Another source of difficulties was no official status of crypto-currencies, which allowed the court to classify bitcoin and other crypto-currencies as «a special kind of monetary surrogates»¹⁸.

The definition of crypto-currencies as monetary surrogates is also used by the courts of first instance, for example, in the decision No. 2-10560/2017 M-7339/2017 of Primorsky District Court of St. Petersburg dated October 13, 2017 in case No. 2-10560/2017¹⁹. This decision, taken before the aforementioned Federal Law No. 34-FZ has entered into force and effect, speaks about very negative attitude of the judiciary towards crypto-currencies, characterized as growth factors of the shadow economy, which, might have been caused a literal interpretation of the term with the prefix «crypto-» (from the ancient Greek κρυπτός, meaning «concealed», «hidden», «secret»). Since 2014 the same position has been taken by the Central Bank of the Russian Federation, as directly evidenced from the regulations of the Central Bank dated 04.09.2017 «On the use of private «virtual currencies» (crypto-currencies)»²⁰.

As opposed to it, the European Central Bank recognizes crypto-currencies (including bitcoin) as electronic money, issued privately and used as instrument of payment by members of the virtual community²¹. Foreign legislation contains norms regulating turnover of crypto-currencies, as evidenced by the Directive No. 2009/110/EC of the European Parliament and the Council of the European Union of 16.09.2009 on the taking up, pursuit and prudential supervision of the business of electronic money institutions amending Directives 2005/60/EC and 2006/48/EC and repealing Directive 2000/46/EC²², Article 4A of the

¹⁶ Civil Code of the Russian Federation. 2020. No. 31. Part 1. Article 5018.

¹⁷ Civil Code of the Russian Federation. 2019. No. 31. Article 4418; 2020. No. 30. Article 4738.

¹⁸ See: [Online source]. URL: <http://www.consultant.ru/cons/cgi/online.cgi?req=doc&cacheid=57D5893D3DFC1F1B5B1A0867AB15E328&mode=backrefs&SORTTYPE=0&BASENODE=256012&ts=1370159404060728827&base=RAPS001&n=101754&md=FBFC807F8B44CA63DBD2C3AE908F50A9#1ig2jpn3p3z> (date of access: 25.02.2021).

¹⁹ See: [Online source]. URL: https://sudact.ru/regular/doc/EsGMojswkf5K/?regular-txt=®ular-case_doc=2-10560%2F2017®ular-lawchunkinfo=®ulardate_from=13.11.2017®ulardate_to=®ularworkflow_stage=®0%D1%80%D0%B8%D0%BC%D0%BE%D1%80%D1%81%D0%BA%D0%B8%D0%B9+%D1%80%D0%B0%D0%B9%D0%BE%D0%BD%D0%BD%D1%8B%D0%B9+%D1%81%D1%83%D0%B4+%28%D0%93%D0%BE%D1%80%D0%BE%D0%B4+%D0%A1%D0%B0%D0%BD%D0%BA%D1%82%D0%9F%D0%B5%D1%82%D0%B5%D1%80%D0%B1%D1%83%D1%80%D0%B3%29®ular-judge=&_1594189666199 (date of access: 25.02.2021).

²⁰ Bulletin of the Bank of Russia. 2017. No. 80 (1914). P. 3

²¹ Virtual Currency Schemes. European Central Bank Report, Oct. 2012 [Online source]. URL: <http://www.ecb.europa.eu/pub/pdf/other/virtualcurrencyschemes201210en.pdf> (date of access: 21.02.2021). For more details, see: Abramova, E.N. Discussions about the Legal Nature of Cryptocurrency [Diskussii o pravovoi prirode kriptovalyuty] // Law and modern economics. Sat. materials of the I International Scientific and Practical Conference of the Faculty of Law of St. Petersburg State University of Economics [Pravo i sovremennaya ekonomika. Sb. materialov I Mezhdunarodnoi nauchno-prakticheskoi konferentsii yuridicheskogo fakul'teta SPBGEU], April 5, 2018 / under scientific. ed. N.A. Krainova. SPb.: Publishing house of SPbSUE [Izd-vo SPBGEU], 2018. Pp. 51-60. (in Russian). P. 54.

²² See: [Online source]. URL: <https://eur-lex.europa.eu/legal-content/FR/TXT/HTML/?uri=CELEX:32015L2366> (date of access: 21.02.2021).

Uniform Commercial Code of the United States or article 200.2 title 23 of the official New York Codes, Rules and Regulations (23 CRR-NY 200.2)²³.

The facts above show systemic difficulties faced when we attempt to interpret the concept of digital objects or identify their legal mode, which is treated as a combination of legal regulation tools typical of a certain industry that determine the ownership and the turnover procedure of digital objects as a special kind of property. Thus, the main components of the legal mode include: 1) objects of rights, whose special nature determines their ability of turnover (Article. 129 of the Civil Code of the Russian Federation), and persons whom these objects may belong to under private property or other real rights; 2) subjective rights determining the limits of various transactions with the objects; 3) legal norms governing turnover of property and ensuring security and protection of subjective rights²⁴.

Given that the normative regulation of property relations arising out of digital objects is still underdeveloped in the Russian Federation, it becomes obvious that currently prospects for legal regulation are determined rather by the doctrinal consideration of the digital objects and subjective rights to them than by provisions of the law. The value of this study, among other things, is based on fact that it studies a model new to the modern legal order, where subjective rights generated by general social development, precede their capture in the normative legislation. At first glance, such model contradicts doctrinal provisions, first of all, to the generally accepted concept of the mechanism of civil law regulation²⁵.

The idea behind a mechanistic approach to civil law regulation is that a condition for emergence of legal relations (hence, subjective rights and obligations that make their essence) is the existing norm of law whose regulatory effect transforms actual relations into legal ones²⁶. This idea has certain advantages, however, in the civil law the traditional scheme of legal regulation shows its abstract and incomplete nature, ignoring situations when subjective rights and obligations of parties to legal relations arise in the absence of a norm and become the only regulator of behavior in this particular case.

These situations are becoming especially common in the rapid development of civil relations, emergence of new types of property and personal non-property relations, typical for a digital society, turning subjective rights and obligations into the main source of legislative rules in a digital society. It is worth noting that lawmaking through the generalization and classification of certain life circumstances and subjective rights associated therewith was very widespread in the diachronic retrospective. It can be proved by works of the Roman lawyers devoted not to analysis of general rules but rather to analysis to real situations (incidents) from which such rules resulted.

The status of the doctrine as a source of Roman private law contributed to unification of subjective rights and obligations of parties in similar relations, and to development of uniform principles for judicial resolution of disputes between the subjects²⁷. In its turn, the doctrine successfully performed a regulatory function even in the absence of generally binding rules of conduct (norms). And despite the fact that currently the doctrine has lost its role as the source of law, historical experience makes us treat it at least, as in a generator of theoretical models that are highly likely get legislative approval in the near future, if not as legal regulations of principally new relations in the current legal order, emerging, among other things, from digital objects.

That is why our close attention should be focused on doctrinal research in digital objects which arise a particular interest given the special nature of this field on the border between technical and social worlds²⁸. However, we have to admit that there is no position on this issue described in the research papers, which may be associated with the well-established classification of objects of various subjective rights²⁹, which in many respects does not meet the digital era. Thus, most of scholars (and,

²³ See: [Online source]. URL: [\(https://govt.westlaw.com/nycrr/Document/I85908c68253711e598dbff5462aa3db3?ViewType=FullText&originationContext=documenttoc&transitionType=CategoryPageItem&contextDaa=\(sc.Default\)\)](https://govt.westlaw.com/nycrr/Document/I85908c68253711e598dbff5462aa3db3?ViewType=FullText&originationContext=documenttoc&transitionType=CategoryPageItem&contextDaa=(sc.Default)) (date of access: 21.02.2021).

²⁴ For more information, see: Titiyevskiy, A.N. Concept and Structure of Civil Legal Regime of Things from the Point Systems Approach [Ponyatie i sushchnost' pravovogo rezhima veshchei s pozitsii sistemnogo podkhoda] // Bulletin of the Tyumen State University [Vestnik Tyumenskogo gosudarstvennogo universiteta]. 2012. No. 3. Pp. 128-133. (in Russian). P. 130; Khannashi, S. To the Question about the Essence of Civil-Law Regime [K voprosu o sushchnosti grazhdansko- pravovogo rezhima] // State Councilor [Gosudarstvennyi sovetnik]. 2014. No. 4 (8). Pp. 5-7. (in Russian) P. 6

²⁵ See: Barkov, A.V. Civil-lawful Means in the Mechanism of the Lawful Regulation: Questions of the Methodology [Grazhdansko-pravovyye sredstva v mekhanizme pravovogo regulirovaniya] // Law and State: Theory and Practice [Pravo i gosudarstvo: teoriya i praktika]. 2008. No. 5 (41). Pp. 56-59. (in Russian) P. 59; Gruzdev, V.V. The Concept of Civil Law Protection and Its Place in the Mechanism of Civil Law Regulation [Ponyatie grazhdansko-pravovoi zashchity i ee mesto v mekhanizme grazhdansko-pravovogo regulirovaniya] // Law and State: Theory and Practice [Pravo i gosudarstvo: teoriya i praktika]. 2009. No. 5 (53). Pp. 37-40. (in Russian) P. 39; Rodionova, O.M. The Mechanism of Civil Regulation: Composition, Structure, Action [Mekhanizm grazhdansko- pravovogo regulirovaniya: sostav, struktura, deistvie] // Legislation [Zakonodatel'stvo]. 2012. No. 8. Pp. 21-31. (in Russian) P. 21-31.

²⁶ For more details see: Alekseev, S. S. General Theory of Law [Obshchaya teoriya prava]. In 2 Volumes. Vol. 2. M.: Jurid. lit. [Yurid. lit.], 1982. 360 p. (in Russian), P. 27.

²⁷ See: M. Kaser Das Urteil als Rechtsquelle im Römischen Recht // Festschrift für Fritz Schwing / hrsg. von R. Strasser. Wien: Metzger, 1978, P. 126.

²⁸ That is why importance of interdisciplinary research for obtaining new knowledge was highlighted by many philosophers and methodologists of science, including M.M. Bakhtin, who believed that every science develops on the borders and intersections of traditional subjects, which makes interdisciplinary synthesis viable and productive. See: Bakhtin, M. M. Problem of the Text [Problema teksta] / M.M. Bakhtin. Collected works. T. 5. Works of the 1940s-1960s. [Bakhtin M.M. Sobranie sochinenii. T. 5. Raboty 1940-1960-kh godov] M.: Russian Dictionaries [Russkie slovari], 1997. Pp. 306-326. (in Russian) P. 306.

²⁹ For more details see: Civil Law. In 4 volumes. Vol. 1: General Part [Grazhdanskoe pravo. V 4 t. T. 1: Obshchaya chast'] / ex. ed. E. A. Sukhanov. M.: Walters Kluvers [Volters Kluvers], 2006. 958 p. (in Russian). P. 198

as we could see above, the legislators) consider digital rights and other virtual assets, like works, services and money, to be objects of contractual rights, relying on their having no material form³⁰, while the objects of law property and other real rights usually include material and, moreover, specific objects³¹. Meanwhile according to L.V. Sannikova and Yu.S. Kharitonova information, being a result of human intellectual activity, is an object of intellectual rights³², while A.V. Lisachenko believes that digital objects are a special kind of property that does not belong in its pure form to things or actions³³.

It is clear that many doctrinal challenges in identification of the nature of digital rights and other virtual objects originate from scholastic ideas about properties of things in particular, their belonging to the realm of the «material», «certain physical objects», etc. Variety of virtual objects makes us rethink these ideas, not only in terms of philosophy, but legislation, too. Information, though not having material properties, is the object of the world, like other physical items, which ensures its civil turnover, acting as an object of property, including real rights.

In this case, the information structure includes heterogeneous elements that form a message as a single object. These elements are: first, **data** – coded information about actual or imaginary events (facts) in the logical space of reality³⁴; secondly, **signal** – a material data carrier, transmitted over a communication channel; thirdly, **presentation** – purely mental reproduction of information in the mind of the sender and recipient of information³⁵.

Information has important property of partiality, which provides ability to measure information in the message in quantitative units. The measure of information is determined by the Hartley formula: $I = K \log_2 N$, where N is the power of alphabet or the number of characters used in it, K is the message length, and I is the amount of information in bits³⁶. Quantitative measure makes each record in the database act, with due technologies, as an object of legally significant actions performed with physical things, including possession, assignments, consumption, identification of ownerships, protection, etc.³⁷

So, modern technologies contribute to individualization of transmitted messages and further establishment of subjective rights, including real rights of civil parties. Moreover, characteristics of such objects, even the minimum payment units (satoshi equal to 10^{-8} bitcoins), used in a peer-to-peer payment system, makes it possible to trace its movement from the first transaction to the last, while the parties in such transactions remain as anonymous as possible; that is, essentially depersonified³⁸. To put it in a nutshell, in virtual reality, digital property (electronic money, domain names, gaming property, other records in databases) receives its unique individual «attribute».

This process in general matches the tendency discussed by some scholars, i.e. loss of objective properties by material items affected by computer technologies³⁹. The owners of digital assets in this capacity remain depersonalized, anonymous, that is, we see reversed relations between objects and subjects in contrast to physical world. Finally, in terms of mental representations of digital objects, objective nature of the latter is out of question. Indeed, if the parties to a legally relevant situation agree that something is an object of transactions, recognized by the whole community, whatever the nature of such object may be, its legal reality will not require further justification.

³⁰ See, in particular: Vasilevskaya, L.Yu. Token as a New Civil Rights Object: Issues of Legal Classification of Digital Law [Token kak novyi ob'ekt grazhdanskikh prav: problemy yuridicheskoi kvalifikatsii tsifrovogo prava] // Actual Problems of Russian Law [Aktual'nye problemy rossiiskogo prava]. 2019. No. 5 (102). Pp. 111-119. (in Russian). P. 115-116

³¹ See, in particular: Sukhanov, E.A. Property Law in Modern Russia: Several Fundamental Theses [Pravo sobstvennosti v sovremennoi Rossii: neskol'ko printsipial'nykh tezisev] // Russia and the Modern World [Rossiya i sovremennyy mir]. 2001. No. 3 (32). Pp. 106-107. (in Russian); Sklovsky, K.I. Property in Civil Law [Sobstvennost' v grazhdanskom prave]. Ed. 5th, rev. M.: Statut, 2010. P. 160 (in Russian)

³² See: Sannikova, L.V., Kharitonova, Yu.S. Legal Essence of New Digital Assets [Pravovaya sushchnost' novykh tsifrovyykh aktivov] // Zakon. 2018. No. 9. Pp. 93-95. (in Russian)

³³ See: Lisachenko, A.V. Law of Virtual Worlds: New Objects of Civil Rights [Pravo virtual'nykh mirov: novye ob'ekty grazhdanskikh prav] // Russian Juridical Journal [Rossiiskii yuridicheskii zhurnal]. 2014. No. 2. Pp. 106. (in Russian)

³⁴ For more detail, see in particular: Wittgenstein, L. Logical-Philosophical Treatise [Logiko-filosofskii traktat] / L. Wittgenstein. Philosophical Works [Filosofskie raboty]. M.: Gnosis, 1994. T. 1. Pp. 1-73. (transl. from German) P. 6. Taking into account the above, we cannot agree with some researchers who believe that the true information, that is, corresponding to reality is included in the database (Savelyev, A.I. Data Commercialization Regulation in the Era of Shaping Digital Economy (Civil Law Aspects) [Grazhdansko-pravovyye aspekty regulirovaniya oborota dannykh v usloviyakh popytok formirovaniya tsifrovoy ekonomiki] // Civil Law Review [Vestnik grazhdanskogo prava]. 2020. No. 1. Pp. 60-92. (in Russian) P. 65) To say nothing of the logical circle, the definition contains refers to meaningfully irrelevant categories of «truth», «reliability», etc. In our opinion, it is more correct to assume that databases include any data; in fact, selection of such data is information, that is, minimization of uncertainty (entropy), inherent in reality.

³⁵ See: Shannon, C. Mathematical Theory of Communication [Matematicheskaya teoriya svyazi] / C. Shannon. Works on Information Theory and Cybernetics [Raboty po teorii informatsii i kibernetike]. M.: Publishing House of Foreign Literature [Izd-vo inostr. literatury], 1963. Pp. 243-332. (transl. from English) P. 245-246.

³⁶ See: R.V.L. Hartley, Transmission of Information, Bell System Technical Journal. 1928. Vol. 7.No. 3.P. 538 ff.

³⁷ See: V.A. Laptev, V.A. Digital Assets as Objects of Civil Rights [Tsifrovyye aktivy kak ob'ekty grazhdanskikh prav] // Legal Science and Practice: Journal of Nizhny Novgorod Academy of the Ministry of Internal Affairs of Russia [Vestnik Nizhegorodskoi akademii MVD Rossii]. 2018. No. 2 (42). Pp. 199-204. (in Russian) p. 201.

³⁸ See: Nakamoto S. Bitcoin: Peer-to-Peer Electronic Cash System [Online source]. URL: <https://bitcoin.org/bitcoin.pdf> (date of access: 20.02.2021).

³⁹ See: Kukhta, M.S. Design in Information Society: Disappearing Function of a Thing [Dizain v informatsionnom obshchestve: ischezayushchaya funktsiya veshchi] // Proceedings of the Academy of Technical Aesthetics and Design. 2014 [Trudy akademii tekhnicheskoi ehstetiki i dizaina]. 2014. No. 2. Pp. 36-38. (in Russian) P. 38.

Actually, in recent decades we have witnessed the same situation in relation to such new objects as non-documentary securities (this concept was totally obscure some ten years ago) and non-cash funds; nowadays, virtual game property has received a similar *sui generis* status of property within the legal definition given Article 128 of the Civil Code of the Russian Federation. Of course the virtual game property, being a special property and becoming the object of property relations, needs a legal mode that meets requirement of formal certainty, generally inherent in law⁴⁰. This means that sooner or later «other property» category turns either into ownership or into the object of obligatory requirements, which will alter the content of the subjective rights and give them new properties, as considered below.

3. The System of Subjective Civil Rights and its Digital Transformation

The main conclusion derived from the above is that an increasing level of social entropy in terms of digitalization of society, emergence of new types of property relations (and, in the future, personal non-property relations) and new objects increase regulatory role of subjective rights and obligations that make essence of legal relations. It seems that in the long run they can become the background for relevant legal institutions developing at a new stage of system of justice. At the same time, these rights are also transformed as a result of emergence of new objects, altering the balance of real rights and obligation rights, which take a central place in the system of subjective civil rights.

We believe that such transformation results in emergence of the concept of digital rights; identification of their legal nature involves two approaches. Supporters of the first approach, guided by Article 128 of the Civil Code of the Russian Federation that classifies digital rights as «other property» category, rely upon the proprietary nature of these objects⁴¹. This point of view makes the backbone of the decision taken by Ninth Arbitration Court of Appeal of Moscow 15.05.2018 in case No.A40-124668/2017, which qualifies digital assets as other property, under the legal definition above⁴². The second approach states that digital rights have the obligational nature and, strictly speaking, cannot be recognized as property, since they represent a demand to an obligated person or persons to enter a record of a completed transaction onto the block-chain⁴³. We suppose that the solution of this problem is not *ad hoc*, or contextual, but should be based on general features that distinguish real rights and obligation rights.

It is well-known that the dichotomy of real rights and obligation rights was partly known as long as in the time of Roman law, in which used two types of claims: property (*actiones in rem*) to protect ownership of property and personal (*actiones in personam*) to protect obligation claims⁴⁴. Both Roman private law and the civil science of Ancient Rome lacked a well-developed conceptual framework that would provide doctrinal comprehension and practical application of those categories. In view of the above, it becomes clear why there is a paradoxical confusion of absolute and relative rights, clearly manifested in the category *jura in re aliena*, which included, along with the *predial servitudes* as limited real rights, rights with a purely obligational nature⁴⁵.

For example, the rights to other people's items (namely, to personal servitudes) included various types of lease relations that only formally differed from the *locatio-conductio rei* contract, including *usus*, *habitatio*, *operae servorum vel animalium*, etc. It is interesting to consider the emphyteusis, which was almost a full analogue of life-long inherited land ownership (Articles 216, 265-267 of the Civil Code of the Russian Federation), in scientific writings it is often defined as «perpetual lease» of land. Lack of clear understanding of difference between absolute and relative subjective rights, including at the doctrinal level, can be proved among other things, by no distinction between methods of transfer of ownership and rights of claim. It is commonly known that speaking about assignment of any subjective rights, they uses the term *cessio* (more precisely, *in iure cessio*, that is, assignment of rights in the presence of a magistrate through a fictitious litigation).

In Roman private law cession, along with mancipation and tradition, served as a universal method of succession, while the current legislation (Article 388 of the Civil Code of the Russian Federation) defines cession only as assignment of the right of claim, that is, transfer of subjective obligation right. This means that Roman lawyers did not take into consideration such feature of real right as a link to an object, due to which transfer of ownership, as well as transfer of property, were impossible without active involvement of both the alienator and the acquirer of the right.

⁴⁰ See: Arkhipov, V.V. Virtual Property: Complex Legal Issues within the Context of Development of Online Games Industry [Virtual'naya sobstvennost': sistemnye pravovye problemy v kontekste razvitiya industrii komp'yuternykh igr] // Law [Zakon]. 2014. No. 9. Pp. 69-90. (in Russian) P. 82.

⁴¹ See: Tolkachev, A., Zhuzhzhavlov, M. Cryptocurrency as a Property – Analysis of Current Legal Status [Kriptovalyuta kak imushchestvo – analiz tekushchego pravovogo statusa] // Herald of Economic Justice [Vestnik ehkonomicheskogo pravosudiya Rossiiskoi Federatsii]. 2018. No. 9 (55). Pp. 91-135. (in Russian) P. 91.

⁴² See: [Online source]. URL: https://kad.arbitr.ru/PdfDocument/3e155cd1-6bce-478a-bb76-1146d2e61a4a/58af451a-bfa3-4723-ab0dd149aafecd88/A40-124668-2017_20180515_Postanovlenie_plljac (date of access 21.02.2021)

⁴³ See: Novoselova, L.A. On the Legal Nature of Bitcoin [O pravovoi prirode bitkoina] // Business and Law [Khozyaystvo i pravo]. 2017. No. 9. Pp. 3-15. (in Russian) P. 12.

⁴⁴ See: Savigny, F.K. The System of Modern Roman Law. In 8 volumes. Vol. III [Sistema sovremennogo rimskogo prava. V 8 t. T. III]. M.: Statut, 2013. 717 p. (transl. from German) (in Russian) P. 332.

⁴⁵ See: Benke N., Meissel F.S. Ubungsbuch romisches Sachenrecht. Wien: Manz'sche Verlag, 2008. P. 10.

Due to a number of social-economic, historical-legal and intellectual reasons, the modern system of justice has a better differentiation of real rights and obligation rights, both in terms of content and legal formalities. As a result, the number of limited real rights is reduced, and the main features that distinguish real rights from obligation rights are defined better⁴⁶. This tendency, evolving with transformation of the system of justice during transition from one historical stage to another, was manifested in the closed list of real rights (*numerus clausis*), captured the civil laws of some foreign countries⁴⁷. In particular, in the modern civil law in the Netherlands there are new types of real rights (including to such objects as domain names), although the general principle of *numerus clausis* is maintained⁴⁸. The doctrine and jurisprudence of Switzerland also recognize a limited list of real rights⁴⁹.

It should be noted that some scholars, skeptical about a closed list of subjective civil rights, believed that such limitations are only possible in a relatively static legal order with a small number of typical legal situations and a stable set of relations to be settled, which is far from the modern society, where constantly changing social realities give rise to a huge number of new relations and non-typical subjective rights⁵⁰. Hence, it is concluded that a closed list of subjective civil rights is a legislative fiction to a greater extent than their real features.

It is not taken into account that types and signs of subjective civil rights are not something conventional established by the legislator, but are manifestations of their objectively inherent features that reflect characteristics of the system of justice. Like civil law norms, subjective civil rights create the system of justice, using legally significant forms to fix both dynamics and statics of the property turnover of social benefits. In order to ensure formal certainty to the extent that satisfies the system of justice, all its elements should be formed most practically, in order to fit the whole range of objects of the social world, which increases with its historical development, into a relatively narrow standardized list of subjective civil rights. At the same time, new objects of rights are classified by abstracting from specific features at the legal level, and captured (depending on the conditions of the legal mode) as objects of either real rights or obligation rights.

The aforesaid explains transformability of subjective civil rights, which makes them cover a broader range of phenomena in public life, including «impossible» in classical terms digital rights and other digital assets. Of course, we should not deny emergence of new types of subjective rights, however, these new rights seem to arise as a result of adjustments to new needs of turnover of the content and features of existing subjective rights. For example, a large group of secondary rights relatively new for national civil law that have been thoroughly considered only in the most recent years⁵¹ is a result of transformation of some obligation rights and their convergence with real rights. It proves an active interaction between these categories, which entails promising and far-reaching consequences.

Developing economy brings new come into everyday use, and their turnover requires synthetic legal modes, including both proprietary and obligation legal modes, which contributes to convergence of corresponding types of subjective rights, their «smooth flow» into each other and, ultimately, their transformation⁵². Entwinning of proprietary and obligation right, accelerated in the digital era, affects both areas and, above all, limited real rights, whose relative nature has long been claimed by lawyers⁵³, who suggested that only property rights be considered absolute, while all other real rights be mixed and absolute-relative⁵⁴.

Hence, nothing in the nature of crypto-currencies, digital rights, and other digital objects prevents them from acting as objects of both real and obligation relations. Depending on their properties, and on legal modes mediating their participation

⁴⁶ See in more detail: Akhmetyanova, Z.A. Property Rights in Civil Law of Russia [Veshchnye prava v grazhdanskom prave Rossii] // Civilist [Tsivilist]. 2006. No. 1. Pp. 28-37. (in Russian); Khatuntsev, O.A. The Problem of Dividing Rights into Real and Obligatory [Problema deleniya prav na veshchnye i obyazatel'stvennye] // Laws of Russia: Experience, Analysis, Practice [Zakony Rossii: opyt, analiz, praktika]. 2008. No. 9. Pp. 93-97. (in Russian)

⁴⁷ See: Mager H. Besonderheiten des dinglichen Anspruchs // Archiv für die civilistische Praxis. 1993. Bd. 193. Heft 1. P. 71; Weber R. H. Dritte Spuren zwischen absoluten und relativen Rechten? // Aktuelle Aspekte des Schuld- und Sachenrechts. Festschrift für Heinz Rey zum 60. Geburtstag. Zurich: Schulthess 2003 P. 589; Sinitsyn, S. A. Numeris clausis and Subjective Rights: Concept, Meaning, Relationship [Numeris clausis i sub'ektivnye prava: ponyatie, znachenie, vzaimosvyaz'] // Civil Law Review [Vestnik grazhdanskogo prava]. 2014. No. 3. Pp. 100-147. (in Russian)

⁴⁸ See: W. Snijders, De openheid van het vermogensrecht. Van syndicaatszekerheden, domeinnamen en nieuwe contractsvormen // Onderneming en 10 jaar nieuw Burgerlijk Recht. Leiden: Kluwer, 2002. Pp. 27-58; Van der Steur J. C. Grenzen van rechtsobjecten. Een onderzoek naar de grenzen van objecten van eigendomsrechten en intellectuele eigendomsrechten. Leiden: Kluwer, 2003. P. 39 ff; Struycken T.H.D. De numerus clausus in het goederenrecht: een wetenschappelijke proeve op het gebied van de rechtsgeleerdheid. Deventer: Kluwer, 2007. Pp. 111-115, etc.

⁴⁹ See: Sinitsyn S.A., Op. cit., P. 118-119.

⁵⁰ See: E. Fuchs Das Wesen der Dinglichkeit. Ein Beitrag zur allgemeiner Rechtslehre und zur КМ des Entwurfs eines Bürgerlichen Gesetzbuches für das Deutsche Reich. Berlin: Heymanns, 1889, P. 75.

⁵¹ See: Em, V.S., Sukhanov, E.A. About the Types of Subjective Civil Rights and the Limits of Their Implementation [O vidakh sub'ektivnykh grazhdanskikh prav i o predelakh ikh osushchestvleniya] // Civil Law Review [Vestnik grazhdanskogo prava]. 2019. Vol. 19. No. 4. Pp. 7-21. (in Russian) P. 13 et seq.

⁵² See: Braginsky, M.I., Vitryansky, V.V. Contract Law. In 6 books. Book 1. General Provisions [Dogovornoe pravo. V 6 kn. Kn. 1: Obshchie polozheniya]. M.: Statut, 2011. 850 p. (in rus) P. 223.

⁵³ See: Efimova, L.G. About the Relationship between Property and Liability Rights [O sootnoshenii veshchnykh i obyazatel'stvennykh prav] // State and Law [Gosudarstvo i pravo]. 1998. No. 10. Pp. 37-44. (in Russian) P. 16-22.

⁵⁴ See: Raikher, V.K. Absolute and Relative Rights (to the Problem of Dividing Economic Rights) [Absolyutnye i otnositel'nye prava (k probleme deleniya khozyaystvennykh prav)] // Civil Law Review [Vestnik grazhdanskogo prava]. 2007. No. 2. Pp. 144-204. (in Russian)

in the civil turnover, digital property acts both as «items», distinguished from other objects by identity signs, and as actions with obligatory execution. As a result, such property is legally captured either in real rights or obligation rights.

For example, tokens, crypto-currency, domain names and accounts, virtual game property, having all features of physical items, can belong to the parties in the turnover under ownership or other real rights. On the other hand, the content of web resources, Big Data and other information, as well as electronic securities, as a rule, act as objects of relative rights, including obligation rights, and their turnover is governed by appropriate regulatory means. This conclusion, being essentially correct, still needs important explanations. The fact is that practically the digital phenomena under consideration in their real and obligatory natures often promote blurring of rigid (and largely conventional, even when it comes to ordinary things or actions) boundaries between absolute and relative rights, and facilitate active interaction and convergence of these types of subjective rights. It seems to be the most important and interesting trend in transformation of subjective civil rights in the digital age.

This trend can be seen in the foreign practice when it comes to regulation of one more type of digital objects, namely tokens, or digital signs⁵⁵. The report No. 80207 of the US Securities and Exchange Commission dated June 25, 2017, treats tokens as databases (data access objects) used in digital money management and defines them in accordance with section 21 (a) of the Secure Exchange Act 1934 as taxable property assets⁵⁶, which is supported by case-law of the Supreme Court of the USA⁵⁷. At the same time, law enforcement officials remark that tokens are treated both as securities that secure obligatory requirements and digital means of payment⁵⁸. Hence, transforming due to digitalization of social relations, obligation rights not only converge with real rights in the nature, essence and content, but can act as objects of real rights, and vice versa, which is especially important to consider when speaking about civil turnover of digital rights and other digital objects.

M.I. Braginsky drew attention to this feature, when considering the balance of real rights and obligation rights of a corporation as a property facility, including, among other things, rights of claim, debts, rights to means of business identity, works and services, and other exclusive rights, unless otherwise mentioned in law or contract⁵⁹. Corporations in general and their components, including obligation rights and other rights, may be objects of transactions aimed at establishing, changing or terminating real rights (clause 2 Article 132 of the Civil Code of the Russian Federation). In recent years, scientific research has highlighted prevailing situation when a corporation as property facility can include non-documentary securities and non-cash funds assigned in full or in part in case of transactions with the corporate shares⁶⁰. In a similar fashion, we can also talk about fundamental possibility of acquiring and disposal of real rights to digital property (tokens, crypto-currencies, other digital rights, including the right to claim) arising out of current civil legislation.

A shift to a post-industrial economy boosts digitalization of civil turnover and gives rise to more and more common situation when property facilities either include digital rights as an integral part, or consist only of digital rights. Logic of legal regulation requires that such facilities should be recognized as corporations not only in fact, but in law, as well. Returning to the case under consideration, it will imply either amending paragraph 1 Article 132 of the Civil Code (currently recognizing a corporation as real estate, not including digital objects), or revising legal definition of the very concept of a thing. It is worth noting that some steps in this direction are already being taken in the civilistic doctrine. A comprehensive examination of «digital things» has been recently made by V.V. Arkhipov, who introduced the concept of virtual property into research⁶¹.

This implies a paradoxical, at first glance, conclusion, which fully corresponds to the development trends of a computerized society, including digitalization of social reality and emergence of so-called «imaginary landscapes» that exist only in virtual space⁶². Namely, if we recognize the digital things as are objects of virtual property as real, digital property will be quite real, too, and its identity means will be an entry in the electronic register. We believe, that such step, caused by practical needs, will contribute to transformation of the whole system of objects of civil rights and, ultimately, of these rights.

⁵⁵ See: Kornienko, N.Yu., Korolev, G.A. Development of Approaches to the Legislative Regulation of Cryptocurrency Turnover as a New Type of Financial Instruments in the EAEU Countries [Razvitiye podkhodov k zakonodatel'nomu regulirovaniyu oborota kriptovalyuty kak novogo vida finansovykh instrumentov v stranakh EAEHS] // Taxes and Finance [Nalogi i finansy]. 2018. No. 4. Pp. 18-25. (in Russian) P. 19.

⁵⁶ See: Report of Investigation Pursuant to Section 21 (a) of the Securities Exchange Act of 1934: the DAO [Online source]. URL: <https://www.sec.gov/litigation/investreport/34-81207.pdf> (date of access: 21.02.2021).

⁵⁷ See: SEC v. C. M. Joiner Leasing Corp., 320 U.S. 344, 351 (1943); Reves v. Ernst & Young, 494 U.S. 56, 61 (1990).

⁵⁸ See: Financial Action Task Force (FATF) Report Virtual Currencies Key Definitions and Potential AML / CFT Risks (June, 2014) [Online source]. URL: <http://www.fatf-gafi.org/media/fatf/documents/reports/Virtual-currency-key-definitions-and-potential-aml-cft-risks.pdf> (date of access: 21.02.2021).

⁵⁹ See: Braginsky, M.I. On the Issue of the Relationship between Property and Obligations [K voprosu o sootnoshenii veshchnykh i obyazatel'stvennykh pravootnoshenii] // Civil Code of Russia: Problems. Theory. Practice [Grazhdanskii kodeks Rossii: Problemy. Teoriya. Praktika] / ex. ed. A.L. Makovsky. M.: Publishing House of International Center of Financial and Economic. Development [Izd-vo Mezhdunar. tsentra finansovo-ekonomich. razvitiya], 1998. Pp. 113-130. (in Russian) P. 125.

⁶⁰ See: Usmanov, I.P. Non-Documentary Security – Is It Fiction? [Bezdokumentarnaya tsennaya bumaga – fiktsiya li ehto?] // Society and Law [Bezdokumentarnaya tsennaya bumaga – fiktsiya li ehto?]. 2009. No. 2 (24). Pp. 7376. (in Russian) P. 76.

⁶¹ See: Arkhipov V.V., Op. cit. P. 69-90.

⁶² See: Appadurai A. Modernity at Large: Cultural Dimensions of Globalization. Minneapolis: University of Minnesota Press, 1996.

4. Trends in Digital Transformation of Subjective Civil Rights

We saw that emergence of digital objects that are gradually captured at the legislative level, stimulates digital transformation of subjective civil rights, which, in case of lacking detailed regulation, serve as a main regulator of emerging relations. Having said this, we not imply that subjective rights and obligations are dominating in regulatory terms. Both norms and subjective civil rights are the means of the system of justice that bring order to social reality by selecting legally significant components and unifying them within the legal system. These means help to minimize uncertainty inherent in non-equilibrium social processes, reducing the degree of entropy that characterizes civil turnover, and thereby performing a constructivist function⁶³.

Legal constructions, discussed above, play an important role in creation of the system of justice. In the broad sense, they represent obligatory statements about actual circumstances of a possible, proper or prohibited behavior of subjects to the regulated relations. In this way, legal constructions create a subject field within which members of society can exercise their legal behavior, and indirectly regulatory effect such behavior. Consequently, legal constructions consisting of both norms and subjective rights and obligations of the parties, determine basic characteristics of legal reality, including civil turnover as one of its aspects.

Their formal and logical relations with other elements of the legal system (first of all, with rules of behavior at various levels) determine a systemic transformation of legal reality that occurs as a result of creation of new structures based on either definitive statements or modifications of already existing structures. It should be remarked that all components of legal reality included in those structures have sign-symbolic properties, which means that their legal manifestations are relatively independent in from the nature and essence of objects of the natural or social world that act as referents of these signs.

This, returning to the example of «virtual», or digital, property, it is necessary to explain that the case does not mean a fictitious nature of the property or loss of its physical characteristics. We are talking about emergence of a new legal mode that is based on the structure and includes new subjective rights with legal obligations and, as a result, a method of normative regulation, which serves as a new model of behavior for parties in civil turnover. If we theoretically suppose that there can be a legal corporation that includes only digital rights, crypto-currency and other digital objects, the legal mode of such property will be identical to the mode applied to an ordinary property.

In particular, information about such property shall be entered into the Unified State Register of Real Estate, as prescribed by Article 7 of the Federal Law No. 218-FZ of 13.07.2015 «On state registration of real estate»⁶⁴, the title to this object will arise after state registration (Articles 219 and 223 of the Civil Code of the Russian Federation), transactions will be made in accordance with the general rules for transactions with real estate (Articles 131 and 164 of the Civil Code), etc. It is necessary to highlight that emergence of new subjective rights and creation of legal modes of digital property do not arise from a physical or social nature of things, but are brought into being by the internal logic of development of the system of justice.

Physical characteristics of digital objects are defined by legal means (norms of law, subjective rights and obligations), which establish a procedure and conditions for turnover of this property. It is noteworthy that such situations are not uncommon for civil law regulation. Emergence of any new types of property and, accordingly, new relations developing in connection therewith, led to a radical restructuring of legal modes and emergence of new legal instruments to regulate such relations and means to protect the rights and legitimate interests of their participants.

For instance, according to L.A. Novoselova, disposal of a security, meaning that transfer of a document is transfer of the right certified by it, creates a new legal mode totally different from circulation of material objects (things)⁶⁵. More far-reaching legal and economic effects are caused by disposal of non-documentary securities, digital rights, information, and other non-material objects, which confers the same status to transfer of the right, including the right to claim under the obligation, to a traditional thing and transfer of ownership thereto. We suppose that experience of French legislation may be very interesting, in particular, The Digital Republic Law No. 2016-1321 of 07.10.2016⁶⁶, which give the right to consumers of electronic communication services to demand that the Internet operator fully return their personal data, like vindication of property from someone else's illegal possession⁶⁷ ...

The subjective rights are also undergoing a transformation, which involves expanding range of opportunities for their owners, detailing the powers and emergence of new types of claims against the obligated persons. This transformation of subjective rights, occurring amidst systemic interconnections of all elements of the legal mode, can be defined as digital

⁶³ See: Khalabudenko, O.A. Legal Norms in the Focus of the Constructivism Theory // Theoretical and Applied Law. 2020. No. 2 (4). Pp. 31-43. (in Russian and in English) P. 37 et seq.

⁶⁴ Civil Code of the Russian Federation. 2015. No. 29. Part 1. Article 4344; 2020. No. 22. Article 3383.

⁶⁵ See: Digital Rights – a New Object of Civil Rights [Tsifrovye prava kak novyi ob'ekt grazhdanskogo prava] // Zakon. 2019. No. 5. Pp. 31-54. (in Russian) P. 32.

⁶⁶ See: Loi No. 2016-1321 du 7 octobre 2016 pour une Republique numerique [Online source]. URL: <https://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000033202746&categorieLien=id> (date of access: 21.02.2021).

⁶⁷ See: Talapina, E. V. Digital Transformation in France: legal Innovations [Tsifrovaya transformatsiya vo Frantsii: pravovye novelly] // Law. Journal of the Higher School of Economics [Pravo. Zhurnal Vysshei shkoly ehkonomiki]. 2019. No. 4. Pp. 164-184. (in Russian) P. 172-173.

transformation⁶⁸. The most important factor for the latter is emergence of digital legal relations⁶⁹, which, as a totally new element of the modern system of justice, cannot be described in terms «ordinary» proprietary or obligatory subjective rights⁷⁰. Nevertheless, being matched to objects of real right or obligations rights in the legal mode, digital assets are involved in civil turnover, contributing to transformation of subjective rights in order to ensure full and comprehensive exercise of property interests of the parties.

To give an example of what was described above, let us consider electronic securities accumulated on the brokerage accounts of stock exchange traders. Having no traditional paper form, but possessing all necessary details under Article 143.1 of the Civil Code, such securities lose their relations to a material carrier, becoming simply records in electronic databases, which nevertheless does not prevent them from certifying subjective rights that the holder of any security possesses (the right to take part in management of a corporation, receive shares in profit and in the liquidation balance, etc).

As other scholars remark, «the nature ... of a security serves as an example of a high abstraction that separates the external form, the shell, i.e. the legal structure of a financial instrument, from its substrate, that is, combination of rights and obligations given by the financial instrument»⁷¹. So, in the digital age, many assets, in particular, financial assets⁷² are losing their material or substantive form, but at the same time retaining their legal form – subjective rights and obligations.

Obviously, this process also involves transformation of subjective rights and obligations, which will bring new social benefits into the legal reality, creating necessary factors for emergence of legal relations with such objects. At the same time, transformation of subjective rights as a result of emergence of new objects (in this case digital assets) makes a serious impact on the whole system of justice, when captured at the regulatory level. When we adopt normative legal acts regulating digital relations, transformation affects the system of objective law, resulting in its restructuring, which manifests itself in emergence of new legal institutions that dramatically transform not only the system of subjective civil rights, but the processes of legal regulation in general.

5. Conclusions

Development of a digital society deeply affected legal regulation in general and regulation of civil law in particular. The most important result of those processes is emergence of digital objects, which are databases used as virtual analogues of material benefits in commercial turnover. Not being traditional things, digital objects still have reduced physical properties and have a semiotic symbolic nature, so, they can be used as universal symbolic substitutes for any kind of property. Nowadays we can most often see how digital objects are used as settlement instruments for transactions made on commodity, stock, financial and other exchanges.

Digital property as a phenomenon of social reality is created by electronic means and operates in the virtual space, which does not prevent transactions with them various life situations, and most of property relations have a legal nature and, as a result, need legal regulation ... We are referring to creation of a special legal mode that determines the place of digital objects in the system of civil (and other) rights, procedure and conditions for their turnover, supporting reasons of ownership, validity conditions of transactions with such objects, and procedure for protecting the rights to them. Considering that normative regulation of digital turnover, at least in the Russian Federation, is in its infancy and requires further development, subjective rights play the leading role in creation of that digital legal mode. Being the main means of capturing digital objects in the legal reality, subjective civil rights are subject to transformation that dramatically alters their nature and content.

Transformation that occurs when subjective rights are integrated into virtual reality is called digital transformation. One of the most obvious manifestations of digital transformation is convergence of real subjective rights and obligatory subjective rights, resulting from characteristics of digital objects. As demonstrated in this paper, digital property, primarily digital rights, is a typical example of non-material benefits that may belong to parties in civil turnover under the right of ownership or other subjective civil law. The variety of digital, virtual objects, which include crypto-currency and other electronic financial assets, records in databases (Big data), domain names and accounts, game property, other virtual

⁶⁸ The problem of digital transformation of both law in the objective sense and subjective rights is already being considered in the publications of some Russian authors. See, for example: Kartschia, A.A. Digital Transformation of Law [Tsifrovaya transformatsiya prav] // Monitoring of Law Enforcement [Monitoring pravoprimeneniya]. 2019. No. 1 (30). Pp. 25-29. DOI: 10.21681/2226-0692-2019-1-25-29 (in Russian)

⁶⁹ See in more detail: Andreev, V.K. Dynamics of Regulating of Artificial Intelligence [Dinamika pravovogo regulirovaniya iskusstvennogo intellekta] // Journal of Russian Law [Zhurnal rossiiskogo prava]. 2020. No. 3. Pp. 58-68. (in Russian) P. 60-61.

⁷⁰ See: Dmitrik, N. A. Digital Transformation: Legal Dimension [Tsifrovaya transformatsiya: pravovoe izmerenie] // Jurisprudence [Pravovedenie]. 2019. Vol. 63. No. 1. Pp. 28-36. (in Russian) P. 31.

⁷¹ Chikulaev, R.V. Issues of Electronic Financial Instruments [Voprosy ehlektronnykh finansovykh instrumentov] // Perm Legal Almanac [Permskii yuridicheskii al'manakh]. 2019. No. 2. Pp. 528-543. (in Russian) P. 529.

⁷² Once, this tendency was noted by the French philosopher J. Baudrillard, who treated loss of material form of objects as manifestation of «simulation», in his opinion, characterizing the postmodern era. See: Baudrillard, J. Symbolic Exchange and Death [Simvolicheskii obmen i smert']. M.: Dobrosvet, 2000. 387 p. (transl. from French) P. 73-79.

property, make them, depending on the legal mode, serve as objects of real rights and obligation rights. Moreover, while these subjective civil rights are digitally transformed, we can witness their convergence, active interaction, and in some cases, interpenetration, due to the essential properties inherent in the class of digital objects.

Digital transformation of the content of subjective rights makes them a flexible and effective tool for regulating civil turnover of virtual objects, and contributes to virtualization of any types of material benefits. In particular, emergence of a large number of property facilities (corporations), which include digital rights, electronic money and securities, and other databases, give rise to development of digital property, whose legal mode is similar to material property, although applied to wholly or mostly digital objects. Apart from that, the fact that digital corporations as property facilities have characteristics of subjects of rights transforms the sphere of corporate rights and can, as has happened in the past, serve as a factor for emergence of new types of legal entities with organizational and legal forms already captured in civil legislation due to digital transformation.

This article deliberately left aside the sphere of personal non-property rights, whose prospects of digital transformation are actively discussed. Virtualization of intellectual, in particular, creative deliverables and emergence of new technologies show that concepts formulated by the civil doctrine in relation to digital rights are applicable here, too. In particular, we can talk about development of digital copyright in the near future, which will require rethinking of Article 1255 of the Civil Code of the Russian Federation, as well as digital rights to corporate identity means, goods, works, services and corporations. When a corporation treated as a property facility undergoes digital transformation, it seems necessary and logical to reformulate Part IV of the Civil Code of the Russian Federation. We believe that the range of issues discussed here can lead to fruitful discussions that open new horizons in development of legislation and the science of civil law.

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