



ISSN 2949-2483

Volume

Number

2

1

JOURNAL OF DIGITAL TECHNOLOGIES AND LAW

2024

ELECTRONIC
SCIENTIFIC
AND PRACTICAL
JOURNAL





Editorial Board

Chief editor

Ildar R. Begishev – Dr. Sci. (Law), Associate Professor, Honored Lawyer of the Republic of Tatarstan, Chief Researcher of the Institute of Digital Technologies and Law, Professor, Department of Criminal Law and Procedure, Kazan Innovative University named after V. G. Timiryasov (Kazan, Russian Federation)

Editor-in-chief

Anna K. Zharova – Dr. Sci. (Law), Associate Professor, Director of the Center for Cyberspace Research, Associate member of the International scientific-educational Center “UNESCO Chair on Copyright, Neighboring, Cultural and Information Rights”, National Research University Higher School of Economics, Senior Researcher of the Institute of State and Law, Russian Academy of Sciences (Moscow, Russian Federation)

Deputy editors-in-chief

Elizaveta A. Gromova – Cand. Sci. (Law), Associate Professor, Deputy Director of the Law Institute on international activity, Associate Professor, Department of Entrepreneurial, Competition and Environmental Law, South Ural State University (national research university) (Chelyabinsk, Russian Federation)

Maksim V. Zaloilo – Cand. Sci. (Law), Leading Researcher, Department of the Theory of Law and Interdisciplinary Research of Legislation, Institute of Legislation and Comparative Law under the Government of the Russian Federation (Moscow, Russian Federation)

Irina A. Filipova – Cand. Sci. (Law), Associate Professor, Associate Professor, Department of Labor Law and Environmental Law, National Research Lobachevsky State University of Nizhny Novgorod (Nizhny Novgorod, Russian Federation)

Albina A. Shutova – Cand. Sci. (Law), Senior Researcher of the Institute of Digital Technologies and Law, Associate Professor, Department of Criminal Law and Procedure, Kazan Innovative University named after V. G. Timiryasov (Kazan, Russian Federation)

Editorial

Head of the editorial office – Gulnaz Ya. Darchinova

Executive editor – Oksana A. Aymurzaeva

Executive secretary – Anastasiya D. Lapshina

Editor – Gulnara A. Tarasova

Technical editor – Svetlana A. Karimova

Designer – Gulnara I. Zagretidinova

Translator – Elena N. Belyaeva, Cand. Sci. (Pedagogy), member of the Guild of Translators and Interpreters of the Republic of Tatarstan

Specialist in the promotion of the journal on the internet – Polina S. Gulyaeva

Address: 42 Moskovskaya Str., 420111

Kazan, Russian Federation

Tel.: +7 (843) 231-92-90

Fax: +7 (843) 292-61-59

E-mail: lawjournal@ieml.ru

Website: <https://www.lawjournal.digital>

Telegram: https://t.me/JournalDTL_world

Vkontakte: <https://vk.com/JournalDTL>

Yandex.Dzen: <https://dzen.ru/JournalDTL>

Odnoklassniki: <https://ok.ru/JournalDTL>

Founder and publisher of the Journal

Kazan Innovative University named after V. G. Timiryasov. Address: 42 Moskovskaya Str., 420111 Kazan, Russian Federation. Tel.: +7 (843) 231-92-90. Fax: +7 (843) 292-61-59. E-mail: info@ieml.ru. Website: <https://ieml.ru>



© Kazan Innovative University named after V. G. Timiryasov, compilation and formatting, 2023.

Certificate on registering a mass medium: EL no. FS 77-84090 of 21.10.2022, issued by Roskomnadzor.

Territory of distribution: Russian Federation, foreign countries.



The articles are Open Access, distributed under the terms of the Creative Commons Attribution license 4.0 International (CC BY 4.0) (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted re-use, distribution and reproduction, provided the original article is properly cited.



When citing any materials of the Journal, reference is mandatory. The authors are responsible for the verity of the facts stated in articles. The opinions expressed in the articles may not be shared by the Editorial Board and do not impose any obligations on it.



Age classification: Information products for persons over 16 y.o.



Date of signing the issue for publication: 2024, March 15. Hosted on the website <https://www.lawjournal.digital>: 2024, March 20.

International editors

Chiara Gallese Nobile – PhD, post-doc, Department of Mathematics and Earth Sciences, University of Trieste (Trieste, Italy)

Mohd Hazmi Mohd Rusli – PhD, Associate Professor, Faculty of Shariah and Law, International Islamic University Malaysia (Kuala-Lumpur, Malaysia)

Karuppannan Jaishankar – PhD, Founding Principal Director and Professor of Crime Sciences, International Institute of Crime and Security Sciences (IICSS), (Bengaluru, India)

Jose Antonio Castillo Parilla – PhD in Digital Law (University of Bologna) and PhD in Civil law (University of Granada); Master in New Technologies and Law (University Pablo de Olavide, Seville); Degree in Law (University of Granada), Juan de la Cierva Research Fellow at University of Granada (Spain)

Members of the editorial board

Aleksey A. Efremov – Dr. Sci. (Law), Associate Professor, Professor of the Department of International and Eurasian Law, Voronezh State University (Voronezh, Russian Federation)

Aleksey V. Minbaleyev – Dr. Sci. (Law), Associate Professor, Head of the Department of Informational Law and Digital Technologies, Kutafin Moscow State Law University (Moscow, Russian Federation)

Anatoliy A. Streltsov – Dr. Sci. (Law), Doctor of Engineering, Professor, Honored Researcher of the Russian Federation, Corresponding member of the Academy for Cryptography of the Russian Federation, Leading Researcher of the Center for the Informational Security Issues, Lomonosov Moscow State University (Moscow, Russian Federation)

Anna A. Chebotareva – Dr. Sci. (Law), Associate Professor, Head of the Department of Legal Provision of State Governance and Economy, Russian University of Transport (Moscow, Russian Federation)

Armen Zh. Stepanyan – Cand. Sci. (Law), Associate Professor, Department of Integrational and European Law, Kutafin Moscow State Law University (Moscow, Russian Federation)

Diana D. Bersey – Cand. Sci. (Law), Associate Professor, Associate Professor, Department of Criminal Law and Procedure, North Caucasus Federal University (Stavropol, Russian Federation)

Dmitriy V. Bakhteev – Dr. Sci. (Law), Associate Professor, Department of Criminology, Ural State Law University named after V. F. Yakovlev, Head of CrimLib.info projects group (Ekaterinburg, Russian Federation)

Dmitriy A. Pashentsev – Dr. Sci. (Law), Professor, Honored Figure of Higher Education of the Russian Federation, Chief Researcher, Department of the Theory of Law and Interdisciplinary Research of Legislation, Institute of Legislation and Comparative Law under the Government of the Russian Federation (Moscow, Russian Federation)

Elina L. Sidorenko – Dr. Sci. (Law), Associate Professor, Director of the Center for Digital Economy and Financial Innovations, Professor, Department of Criminal Law, Criminal Procedure and Criminalistics, MGIMO of the Ministry of Foreign Affairs of Russia, CEO of the platform <https://забизнес.рф> (Moscow, Russian Federation)

Elvira V. Talapina – Dr. Sci. (Law), Doctor of Law (France), Chief Researcher of the Institute of State and Law of the Russian Academy of Sciences, Leading Researcher of the Center for Public Governance Technologies, Russian Presidential Academy of National Economy and Public Administration (Moscow, Russian Federation)

Evgeniy A. Russkevich – Dr. Sci. (Law), Professor, Department of Criminal Law, Kutafin Moscow State Law University (Moscow, Russian Federation)

- Gulfiya G. Kamalova** – Dr. Sci. (Law), Associate Professor, Head of the Department of Informational Security in Management, Udmurt State University (Izhevsk, Russian Federation)
- Karina A. Ponomareva** – Dr. Sci. (Law), Leading Researcher, Center for Taxation Policy, Financial Research Institute of the Russian Ministry of Finance, Professor, Department of Public Law, National Research University Higher School of Economics (Moscow, Russian Federation)
- Kseniya M. Belikova** – Dr. Sci. (Law), Professor, Professor, Department of Business and Corporate Law, Kutafin Moscow State Law University (Moscow, Russian Federation)
- Lana L. Arzumanova** – Dr. Sci. (Law), Associate Professor, Professor, Department of Financial Law, Kutafin Moscow State Law University (Moscow, Russian Federation)
- Lyudmila V. Terentyeva** – Dr. Sci. (Law), Associate Professor, Professor of the Department of International Private Law, Kutafin Moscow State Law University (Moscow, Russian Federation)
- Maria A. Bazhina** – Dr. Sci. (Law), Associate Professor, Associate Professor, Department of Entrepreneurial Law, Ural State Law University named after V.F. Yakovlev (Yekaterinburg, Russian Federation)
- Maria A. Egorova** – Dr. Sci. (Law), Professor, Head of the Department of International Cooperation, Professor, Department of Competition Law, Kutafin Moscow State Law University (Moscow, Russian Federation)
- Marina A. Efremova** – Dr. Sci. (Law), Associate Professor, Professor, Department of Criminal-Legal Disciplines, Kazan branch of the Russian State University of Justice (Kazan, Russian Federation)
- Marina A. Rozhkova** – Dr. Sci. (Law), Chief Researcher, Institute of Legislation and Comparative Law under the Government of the Russian Federation, Dean's Counselor on science, Law Faculty, State Academic University for Humanities, President of IP CLUB (Moscow, Russian Federation)
- Mark V. Shugurov** – Dr. Sci. (Philosophy), Associate Professor, Professor of the Department of International Law, Saratov State Juridical Academy, Chief Researcher, Altay State University (Saratov, Russian Federation)
- Natalya N. Kovaleva** – Dr. Sci. (Law), Professor, Head of the Department of Law of Digital Technologies and Biolaw, Faculty of Law, National Research University «Higher School of Economics» (Moscow, Russian Federation)
- Roman I. Dremlyuga** – Cand. Sci. (Law), Associate Professor, Deputy Director on development of the Institute for Mathematics and computer Technologies, Professor, Academy of Digital Transformation, Far East Federal University (Vladivostok, Russian Federation)
- Ruslan A. Budnik** – Dr. Sci. (Law), Professor, Deputy Director of the International scientific-educational Center “UNESCO Chair on Copyright, Neighboring, Cultural and Information Rights”, National Research University Higher School of Economics (Moscow, Russian Federation)
- Sergey A. Petrenko** – Dr. Sci. (Engineering), Professor, Professor, Department of Informational Security, Saint Petersburg State Electrotechnical University “LETI” named after V.I. Ulyanov (Lenin), Professor of Innopolis University (Innopolis, Russian Federation)
- Svetlana M. Mironova** – Dr. Sci. (Law), Associate Professor, Professor of the Department of Financial and Business Law, Volgograd Institute of Management – branch of the Russian Presidential Academy of National Economy and Public Administration (Volgograd, Russian Federation)
- Tatyana A. Polyakova** – Dr. Sci. (Law), Professor, Honored Lawyer of the Russian Federation, Acting Head of the Section of Informational Law and International Security, Institute of State and Law of the Russian Academy of Sciences (Moscow, Russian Federation)
- Tatyana M. Lopatina** – Dr. Sci. (Law), Associate Professor, Head of the Department of Criminal-Legal Disciplines, Smolensk State University (Smolensk, Russian Federation)

Kirill L. Tomashevski – Dr. Sci. (Law), Professor, Deputy Dean of the Faculty of Law for Research, Professor of the Department of Civil and Business Law of Kazan Innovative University named after V.G. Timiryasov (Kazan, Russian Federation)

Viktor B. Naumov – Dr. Sci. (Law), Chief Researcher, Section of Informational Law and International Security, Institute of State and Law of the Russian Academy of Sciences (Saint Petersburg, Russian Federation)

Yuliya S. Kharitonova – Dr. Sci. (Law), Professor, Head of the Center for Legal Research of Artificial Intelligence and Digital Economy, Professor of the Department of Entrepreneurial Law, Lomonosov Moscow State University (Moscow, Russian Federation)

Zarina I. Khisamova – Cand. Sci. (Law), Head of the Department for planning and coordination of scientific activity of the Scientific-research Division, Krasnodar University of the Russian Ministry of Internal Affairs (Krasnodar, Russian Federation)

Foreign members of the editorial board

Aleksei Gudkov – PhD (Law), Senior Lecturer, Tashkent Westminster University (Tashkent, Uzbekistan)

Andrew Dahdal – PhD, Associate Professor, College of Law, Qatar University (Doha, Qatar)

Aysan Ahmet Faruk – PhD, Professor and Program Coordinator of Islamic Finance and Economy, Hamad Bin Khalifa University, Qatar Foundation (Doha, Qatar)

Awang Muhammad Nizam – PhD, Professor, Faculty of Shariah and Law, University Sains Islam Malaysia (Negeri Sembilan, Malaysia)

Baurzhan Rakhmetov – PhD, Assistant Professor, International School of Economics KazGUU (Nur-Sultan, Kazakhstan)

Christopher Chao-hung Chen – PhD, Associate Professor of Law, National Taiwan University (Taipei City, Taiwan)

Daud Mahyuddin – PhD, Associate Professor, Department of Civil Law, International Islamic University of Malaysia (Kuala Lumpur, Malaysia)

Daniel Brantes Ferreira – PhD, Senior Researcher, National Research South Ural State University (Russia), Professor, AMBRA University (USA), CEO, Brazilian Centre for Mediation and Arbitration (Rio de Janeiro, Brazil)

Danielle Mendes Thame Denny – PhD, Researcher, Asia-Pacific Centre for Environmental Law, National University of Singapore (Singapore, Singapore Republic)

Denisa Kera Reshef – PhD, Lecturer, Centre for Distributed Ledger Technologies, University of Malta (Msida, Malta)

Douglas Castro – PhD, Professor of International Law, School of Law, Lanzhou University (Lanzhou, China)

Edvardas Juchnevicius – Dr. habil., Professor, Department of Financial Law, University of Gdańsk (Gdańsk, Poland)

Gabor Melypataki – PhD, Professor, Department of Agrarian and Labor Law, University of Miskolc (Miskolc, Hungary)

Gergana Varbanova – PhD, Associate Professor, University of Economics (Varna, Bulgaria), University of World Economy (Sofia, Bulgaria)

Gosztonyi Gergely – Dr. habil., PhD, Associate Professor, Department of History of Hungarian State and Law, Eötvös Loránd University (Budapest, Hungary)

- Iryna Shakhnouskaya** – PhD (Law), Head of the Department of Constitutional Law and Public Administration, Polotsk State University (Novopolotsk, Belarus)
- Ivanc Tjasa** – PhD, Associate Professor, Department of Civil, International Private and Comparative Law, University of Maribor (Maribor, Slovenia)
- Ioannis Revolidis** – PhD, Lecturer, Department of Media, Communication and Technology Law, University of Malta (Msida, Malta)
- Jayanta Gosh** – PhD, Research Fellow, West Bengal National University of Juridical Sciences (Kolkata, India)
- Joshua Ellul** – PhD, Director of the Centre for Distributed Ledger Technologies, University of Malta (Msida, Malta)
- Juliano Souza de Albuquerque Maranhão** – PhD, Associate Professor, Faculty of Law, University of São Paulo (São Paulo, Brasil)
- Kamshad Mohsin** – PhD, Assistant Professor, Faculty of Law, Maharishi University of Information Technology (Maharishi, India)
- Karim Ridoan** – PhD, Lecturer, Department of Business and Tax Law, Monash University (Sunway, Malaysia)
- Maria Ablameyko** – PhD (Law), Associate Professor, Associate Professor, Department of Constitutional Law, Belarusian State University (Minsk, Belarus)
- Mehrdad Rayeajian Asli** – PhD, Professor, Institute for Research and Development in Humanities, Assistant Professor, UNESCO Chair for Human Rights, Peace and Democracy, Deputy of Research, Allame Tabatabaei University (Tehran, Iran)
- Mensur Morina** – PhD, Associate Professor, Vice Dean, Faculty of Law, University for Business and Technology (Pristina, Kosovo)
- Mokhinur Bakhramova** – PhD, Senior Lecturer, Department of the Intellectual Property, Tashkent State Law University (Tashkent, Uzbekistan)
- Muhammad Nuruddeen** – PhD, Senior Lecturer, Department of Public Law, Bayero University, (Kano, Nigeria)
- Niteesh Kumar Upadhyay** – Doctor of Law, Associate Professor, Faculty of Law, Galgotias University (Greater Noida, India)
- Noor Ashikin Basarudin** – PhD (Law), Senior Lecturer, MARA University of Technology (Sintok, Malaysia)
- Pablo Banchio** – PhD, Professor at the University of Buenos Aires, Postdoc in fundamental Principles and Human Rights, Member of the Centre for Private law, National Academy of Science (Buenos Aires, Argentina)
- Pavlos Kipouras** – PhD, Professor, School of Forensic Graphology (Naples, Italy)
- Prayudi Yudi** – PhD, Professor, Department of Computer Science and Electronics, Universitas Gadjah Mada, (Bulakumsur, Indonesia)
- Serikbek Murataev** – PhD (Law), Head of the Department of Theory of State and Law, Tashkent State University of Law (Tashkent, Uzbekistan)
- Stevan Gostojić** – PhD, Associate Professor, Head of Digital Forensics Laboratory, Faculty of Technical Sciences, University of Novi Sad (Novi Sad, Serbia)
- Tatjana Jovanic** – PhD, Associate Professor, Faculty of Law, University of Belgrade (Belgrade, Serbia)
- Tran Van Nam** – Doctor of Law, Associate Professor and Dean, Faculty of Law, National Economics University (Hanoi, Vietnam)
- Wan Rosalili Wan Rosli** – PhD, Lecturer at School of Law, University of Bradford (Bradford, United Kingdom)
- Woodrow Barfield** – PhD, JD, LLM, Visiting Professor, University of Turin (Turin, Italy)

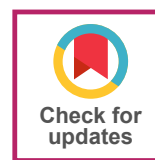


Content

Begishev I. R., Zharova A. K., Gromova E. A., Zaloilo M. V., Filipova I. A., Shutova A. A. “Digital turn” in Legal Research	7
Lonskaya S. V. Digital History of Law: Principles of Methodology	14
Galindo Ayuda F. Algorithms, Sociology of Law and Justice	34
Filipova I. A. Legal Regulation of Artificial Intelligence: Experience of China	46
Sposini L. Impact of New Technologies on Economic Behavior and Consumer Freedom of Choice: from Neuromarketing to Neuro-Rights	74
Popova S. S. Use of Artificial Intelligence in the Activities of Religious Associations and Control Over Them	101
Ilin I. G. Personal Data in Artificial Intelligence Systems: Natural Language Processing Technology	123
Sápi E. Authors’ Moral Rights in the Digital Environment	141
Lyutova O. I. Digital Transformation of Tax Law Principles	163
Kuchina Y. Legal Approaches and Regulatory Methods for Fintech in the Guangdong – Hong Kong – Macao Greater Bay Area	181
Sitnikov M. S. Financial and Legal Development of Social Relations Using Digital Currencies in Metaverses	200
Correia P. M. A. R., Pereira S. P. M., Bilhim J. A. de F. Research of Innovation and Digital Transformation in Justice: A Systematic Review	221



Editorial
UDC 34:004
EDN: <https://elibrary.ru/iwwubp>
DOI: <https://doi.org/10.21202/jdtl.2024.1>



“Digital turn” in legal research

Ildar R. Begishev

Kazan Innovative University named after V.G. Timiryasov, Kazan, Russia

Anna K. Zharova

National Research University «Higher School of Economics», Moscow, Russia

Elizaveta A. Gromova

South Ural State University (national research university), Chelyabinsk, Russia

Maksim V. Zaloilo

Institute of Legislation and Comparative Law under the Government of the Russia, Moscow, Russia

Irina A. Filipova

National Research Lobachevsky State University of Nizhny Novgorod, Nizhniy Novgorod, Russia

Albina A. Shutova

Kazan Innovative University named after V.G. Timiryasov, Kazan, Russia

The topic of digitalization and technologization of social relations and public administration, caused by the scientific and technological progress, has become ingrained in the academic legal framework. It now predominates, which can be seen in the rapid growth of publications and scientific events worldwide; in the amount of funding for innovative research in both developing and advanced countries; in laws being drafted and adopted in the field of high-tech industry; in strategic documents approved at the highest national and international levels and aimed at the development of the information society, artificial intelligence and other technologies. Digitalization has become a relevant and promising direction in several areas. The orbit of this “digital turn” has also involved the academic sphere, whose traditional methods and tools have been enriched by digital technologies, significantly influencing the system and research techniques of social sciences and humanities.

The demand for scientific research and new results in this direction is confirmed by the high interest in the Journal of Digital Technologies and Law and its publications covering the problems of digital technologies and law. During the first year of its operation,



This is an Open Access article, distributed under the terms of the Creative Commons Attribution licence (CC BY 4.0) (<https://creativecommons.org/licenses/by/4.0>), which permits unrestricted re-use, distribution and reproduction, provided the original article is properly cited.

the Journal published four issues of the first volume, which included 48 scientific articles. Their authors were Doctors of Science (30), Candidates of Science (12) and specialists, practicing lawyers, experts, and young researchers (15). In total, 57 authors from 19 countries (Australia, Belarus, Bulgaria, China, Egypt, Great Britain, Hungary, India, Iran, Italy, Kazakhstan, Malaysia, Netherlands, Nigeria, Russia, South Africa, Spain, USA, and Uzbekistan) published their original articles in the scientific journal in 2023. The website of the journal was visited by representatives of more than 120 countries during its first year of operation (Fig. 1).



Fig. 1. Geography of visitors of the Journal of Digital Technologies and Law website (as of 1 March, 2024)

The Journal seeks to actively interact with leading Russian and foreign researchers and specialists who develop methodological and technological issues in the new research areas of law and digitalization, evolution stages and prospects for their future transformation.

The analysis of the Journal of Digital Technologies and Law publication activity shows, on the one hand, the diversity and convergence of the presented scientific approaches to digital technologies and law; and, on the other hand, the predominance of several basic research areas. One of them is the algorithmization of regulation, which implies the increased use of artificial intelligence algorithms in social regulation and in managerial decision-making. Closely related to this dominant area is another one – personalization of regulation due to the introduction of automation in data processing, including personal data, based on digital technologies, big data among them. It should

be noted that cybersecurity and data breach prevention are going to be highly relevant, especially with the further development of artificial intelligence. There is competition and convergence of humanitarian and technical (technological) knowledge.

New technological achievements, current solutions and products expected this year may lead to further changes in our world and its perceptions. The social relations established and regulated on the basis of law are changing under the influence of the technological factor. These changes will continue in the future, leading to the emergence of new spheres of social relations, and, accordingly, possible subjects of legal regulation. This will inevitably prompt legal scholars to seek answers to new questions about legal response, optimal ways and effective means to harmonize relations, gain protection from the negative impact of digital technologies, and minimize risks. Legal doctrine is actively responding to these issues and is ready to offer new ideas and concepts in the context of emerging trends in the society and state development.

In the light of digital and technological trends, law is changing too. It is relevant to recall the recent discussions about creating a digital (info-communication) code in some states, projected and adopted strategies and laws on artificial intelligence, experimental and special legal regimes for innovation and new regulatory sandboxes, digital currencies and decentralized finance, tokenization, etc.

Summarizing the Russian and foreign literature, researchers explore the methodological aspects of the formation and development of new interdisciplinary areas caused by the “digital turn” in fundamental legal science. It is encouraging to note that such a turn is becoming attractive for historians of law who use promising scientific approaches. The first issue of 2024 opens with the article “Digital History of Law: Principles of Methodology” (**Svetlana Lonskaya, Russia**), devoted to new directions in studying the past of law and state using digital information and communication technologies and tools. This research will be of interest not only to historians, but also to legal theorists, because it substantiates at the theoretical level the basic methodological principles of a new interdisciplinary direction in socio-humanities – the digital history of law. The work also shows the heuristic potential of digital technologies in the historical-legal studies, shapes the contours of historical-legal source study, and demonstrates the possibilities to expand the understanding and knowledge of historical-legal facts, phenomena, and processes.

Many people know that “neural network” and “artificial intelligence” are the words of the year 2023. The emergence of generative artificial intelligence has greatly impacted human life. ChatGPT became widely known for its impressive abilities in self-learning, natural language production and comprehension, which led more than a thousand experts, including Tesla and SpaceX CEO Elon Musk and Apple co-founder Steve Wozniak, to publish an open letter in which they called on ChatGPT developers, Open AI, to impose a moratorium on further artificial intelligence training. The year 2024 will see continued

rapid growth of such technologies and, accordingly, new regulatory issues will arise in this area due to new challenges and risks in the development of generative artificial intelligence and the emergence of more complex models of other types of artificial intelligence.

The topic of artificial intelligence remains central for lawyers. This issue of the Journal poses the questions of the legal regulation of artificial intelligence and the possibility of using algorithms in lawyers' professional activities. Lawyers continue discussing whether high-tech algorithms can replace a highly professional lawyer or they should perform only optional (auxiliary) functions, whether algorithms can be used in justice (law enforcement) and whether the latter can be automated. These and many other questions are posed in the article "Algorithms, Sociology of Law and Justice" (**Fernando Galindo, Spain**), which reveals the achievements of sociology of law through the principles of communicative and communicational theories of law. These achievements allow creating a system or programs that help to solve legal conflicts. The article emphasizes the complexity of developing legal solutions based on artificial intelligence in the administration of justice, as well as the problems that arise when applying the advances of sociology of law for creating and interpreting laws.

A special study is devoted to the issues of artificial intelligence regulation in China, its advantages and disadvantages in comparison with the main legal models established in the modern world (**Irina Filipova, Russia – Uzbekistan**). The race for leadership in the field of artificial intelligence determines a high interest in studying and comparing the advanced approaches in terms of the level of digital technologies development and their legal regulation. The Chinese approach plays a significant role in this sense, as it creates the basis for exporting artificial intelligence throughout the Global South and in the countries participating in the One Belt, One Road initiative. The comparison of the Chinese approach with the competing European, American and Asian models is noteworthy.

Artificial intelligence development has stimulated the transition from a commodity economy to an impression economy as a new socio-economic stage, focused on creating positive and unforgettable emotions in customers as a source of a company's value and competitive advantage. New and more effective sales practices used by large companies have begun to take into account data generated and processed by emotional artificial intelligence. The sales practices generated on this basis cause ambiguous assessments of ethical and legal nature, as they can influence a buyer's decision-making process. This is especially important when the current legislation leaves the emerging questions unanswered. The article "Impact of new technologies on economic behavior and consumer freedom of choice: from neuromarketing to neuro-rights" (**Ludovica Sposini, Italy**) identifies trends in the emotional artificial intelligence development and assesses possible risks of limiting the freedom of economic behavior and decision-making. The paper examines in detail the consumers' decision-making

process through the prism of new approaches in economics, psychology and law and identifies ethical problems arising from the use of neuromarketing methods in relation to fundamental values. The main emphasis is placed on protecting a consumer from ungrounded influences of modern digital technologies.

The research on interdisciplinary aspects of digital technologies continues with the article "Use of artificial intelligence in the activities of religious associations and control over them" (**Svetlana Popova, Russia**), which touches upon the main areas of interaction between law, religion, ethics and digitalization in the context of artificial intelligence application. The basic ethical principles of using digital technologies in the activities of religious organizations are studied; gaps in the legal regulation of missionary activity under the digital modernization are identified; the role of control, supervision and management in the religious sphere is defined by establishing legal responsibility for the consequences of decisions made by artificial intelligence and minimizing the risks of its application.

The article on natural language processing and personal data in artificial intelligence systems (**Ilya Ilin, Russia**) familiarizes readers with the definition and legal regime of personal data as part of a linguistic corpus; qualification of voice as personal data in different jurisdictions; the limits of ensuring the legality of personal data processing as part of natural language processing technology; mechanisms of using personal data to pay for digital products based on natural language processing.

Digitalization of the economy, fintech, digital currencies of the states, decentralized finance and cross-platform solutions remain in the focus of researchers from different countries. For example, over 100 countries are considering options for creating national digital currencies. In most of them, the issue is being discussed at the expert level; several states are at the research or development stage, and some are at the testing stage. Today, digital currencies have been fully implemented in more than 10 countries, mainly small Caribbean states, Nigeria, etc. There are pilot versions of digital currencies in India (digital rupee), China (digital yuan), Uruguay (digital peso) and others. In 2024, there will be even more pilot platforms of national digital currencies as their launching is planned by Singapore, Brazil, Hong Kong, Thailand, etc.

In the current issue of the Journal, several studies are devoted to this topic. They compare different approaches to financial technologies regulation, taking into account the level of innovation and trajectories of the fintech market. Of interest in this regard are the rapidly developing territories, which include the special administrative regions of Guangdong – Hong Kong – Macao Greater Bay Area, where a peculiar system of legal response approaches and methods is being developed that has no analogues in the modern world. A comparative legal study (**Yaroslava Kuchina, China**) is devoted to analyzing this unique experience of regulatory policy and regulation system formed in the south of China.

Convergence of financial law and digital technologies pushes states to search for improved mechanisms of financial and legal regulation of social relations under

the new reality and modern concepts. One of them, gaining more and more popularity, is the concept of metaverse, which in the future, as experts predict, will have its own economic system using digital currencies. In the light of this concept, the financial and legal policies of some states are already beginning to change in order to enhance their socio-economic potential and consolidate their leadership positions in terms of digital development. In this issue of the Journal you can find reflections on the prospects of legal regulation of transactions in metaverse from the standpoint of financial control and monitoring (**Maksim Sitnikov, Russia**).

The possibilities of information and communication technologies serve as the basis for tax monitoring mechanism and risk-oriented approach as its characteristic, as well as the features of organization and conduct of preliminary tax control. At the same time, the development of other institutions, including new institutions of tax law and tax legislation in general, will be conditioned by the pace of creation and application of new information and communication technologies used in tax relations and adjacent spheres. The issues of tax and legal doctrine, retaining its theoretical importance under the economy digitalization, continue the discussion in this area, as undertaken in the articles of some researchers (**Olga Lyutova, Russia**).

One of the articles in this issue (**Edit Sápi, Hungary**) closely intertwines a whole set of questions related to the development of social networking platforms, artificial intelligence and tokenization, viewed through the prism of creativity and author's moral rights. Copyright law also often faces the challenges of technological progress. This is especially true for author's moral rights, the protection of which is ambiguous: it is poorly harmonized at the international level, while implying greater reflection at the level of national legislation, which is the case in a number of states. At the same time, the effectiveness of the protection of such rights is often debated. The violation of author's moral rights is much more difficult to quantify in terms of the damage caused, in contrast to the simpler quantification of economic rights. This article answers questions such as whether the author's moral rights in the digital environment are consistent with their original purpose; the nature of moral rights; the relationship between the author's moral rights and social media platforms, the author's moral rights and artificial intelligence technology, and the author's moral rights and a non-fungible token.

The issue of the Journal is concluded with a systematic review of research on innovation and digital transformation in justice (**Pedro Correia, Sandra Pereira, João Bilhim, Portugal**). The review adapts and applies to the legal field a heuristic model for studying innovation in the public sector, thus presenting a research map and the main trends in the digitalization of justice for the years 2001–2022. The work is based on current theories and approaches in accordance with the PRISMA protocol, which defines the order, criteria and parameters of the research.

We hope that the next issue of the Journal of Digital Technologies and Law will be of interest to a wide range of readers, and the articles that have been reviewed,

edited and published will serve as an example for those potential authors who are ready to demonstrate their promising scientific results and developments in the field of innovation and law on the pages of our Journal. In order to further form the international dialog and space for scientific communication, we are open for cooperation with leading and young Russian and foreign scholars, experts, practicing lawyers. We will gladly publish their ideas on improving the current and developing new approaches to solving the problems of legal regulation and protection of social relations in the sphere of digital technologies.

In the previous year, the Journal of Digital Technologies and Law received the **DOAJ Seal** of Approval, awarded to scholarly journals that demonstrate best practices in open access publishing. This confirms that the journal meets the publishing standards and ensures transparency and reproducibility of research results. In a short period of time, the Journal has been fully indexed in the databases of the world largest libraries and leading universities, included in the catalogs of high quality peer-reviewed open access journals, became available on the portals of scientific electronic libraries and academic publication platforms. Electronic version of the Journal is also available on the website of the Garant legal reference system online database (Fig. 2).

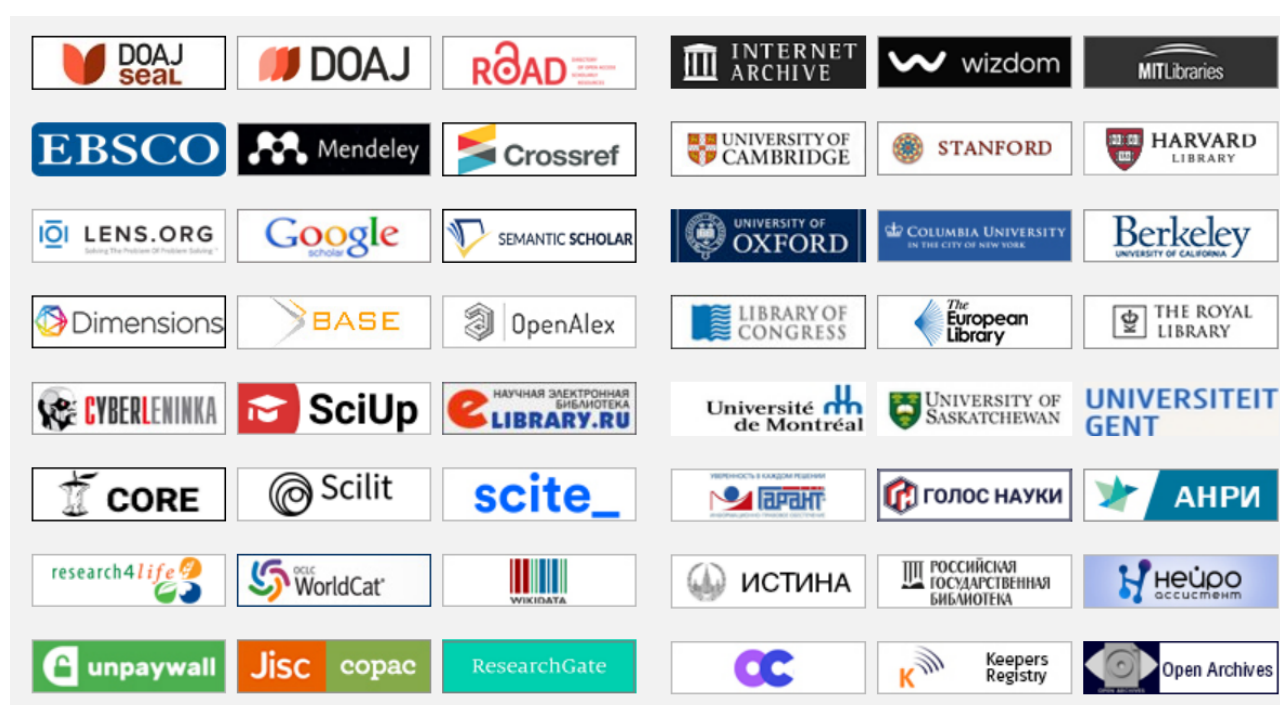
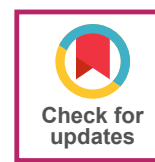


Fig. 2. Journal of Digital Technologies and Law indexed in the largest international and Russian citation databases, catalogs, libraries and open repositories (as of 1 March, 2024)

We thank the authors, reviewers, editorial staff, and ambassadors of the Journal, members of the international Editorial Board and readers for their cooperation and growing interest in our periodical. These are important indicators of the success of our work.



Research article
UDC 34:004:930:001.8
EDN: <https://elibrary.ru/cfnahc>
DOI: <https://doi.org/10.21202/jdtl.2024.2>



Digital History of Law: Principles of Methodology

Svetlana V. Lonskaya 

Immanuel Kant Baltic Federal University, Kaliningrad, Russia

Keywords

coding (decoding)
of information,
digital history of law,
digital humanities,
digital qualification
of a researcher,
digital technologies,
digitization of sources,
history of law,
juridical source studies,
law,
methodology of legal studies

Abstract

Objective: to theoretically substantiate the basic principles of methodology of a new interdisciplinary area of socio-humanities – the digital history of law; to demonstrate the heuristic potential of digital technologies in legal historical sciences.

Methods: the study is based on systemic, formal-logical, and comparative general scientific methods.

Results: it is concluded that the methodology of the digital history of law is based, first of all, on the source-centric approach, which considers a source as a macro-object of humanitarian and social sciences, through which information exchange takes place (O.M. Medushevskaya's concept of cognitive history). Secondly, it is based on the combination of traditional methods of legal history with digital techniques and technologies and methods based on them – within a research program of historical-legal (historical-juridical) source studies. The article attempts to summarize the existing digital technologies and techniques, as well as methods based on them, as applied to legal historical sciences; their heuristic potential is shown in case studies.

Scientific novelty: for the first time in the Russian legal history science, the author substantiates the methodology of the digital history of law as an interdisciplinary field that studies the past of state and law using digital information and communication technologies and tools.

Practical significance: under the shifts in socio-humanities (digital, linguistic, visual ones, etc.), which have become relevant in recent years, and the development of the digital type of social communication, methodological approaches to obtaining new knowledge are changing, new interdisciplinary branches of scientific knowledge are emerging, as well as new requirements for the qualification of researchers. The ongoing changes affect legal historical sciences: digital history of law is formed as

© Lonskaya S. V., 2024



This is an Open Access article, distributed under the terms of the Creative Commons Attribution licence (CC BY 4.0) (<https://creativecommons.org/licenses/by/4.0>), which permits unrestricted re-use, distribution and reproduction, provided the original article is properly cited.

an interdisciplinary area within digital humanities, at the confluence of history, legal science, and information science. The understanding and application of digital technologies and the scientific cognition methods based on them in legal historical research open up new opportunities for legal historians in determining the directions of their scientific research and obtaining new scientific results. This ultimately expands our understanding of historical and legal facts, phenomena and processes.

For citation

Lonskaya, S. V. (2024). Digital history of law: principles of methodology. *Journal of Digital Technologies and Law*, 2(1), 14–33. <https://doi.org/10.21202/jdtl.2024.2>

Contents

Introduction

1. Model of the methodological knowledge structure applied to a particular scientific discipline
2. Philosophical and general scientific levels of methodology of the digital history of law
3. Specific-scientific and instrumental-operational levels of the methodology of the digital history of law
 - 3.1. Methodology of digital history of law in the aspect of research subject and sources
 - 3.2. Terminology and structure of the instrumental-operational level of the methodology of the digital history of law
 - 3.3. Methodology of the digital history of law in action: how does it work?

Conclusions

References

Introduction

Understanding science as a sphere of human activity, where new knowledge is produced and exchanged, allows considering this process from the information perspective: information per se is data, knowledge about the world¹. The connection between the ways of storing, processing and transmitting information, on the one hand, and the forms of human perception and thinking, on the other hand, that has long been established in science (MacLuhan, 2018) gives grounds to assert that the types of information transmission in society also influence scientific knowledge in terms of its methodology. Therefore, we understand the digital turn in science as a state of change in methodological approaches to obtaining new knowledge as a result of the emergence of electronic (digital) type of social communication.

¹ ISO/IEC 10746-2: 2009. Information technology – Open distributed processing – Reference model: Foundations – Part 2. <https://clck.ru/37zw3i>

In recent decades, the disciplinary structure of science in the world has been enriched by a complex of digital sciences. Digital humanities, as an example of such a complex of academic disciplines based on digital technologies, has already gained sufficient influence, formed a wide community, and is evolving in terms of theoretical issues development, despite some skeptical researchers (Goebel, 2021).

The digital history of law is gradually maturing within the framework of digital humanities. While remaining within its subject (the study of the past of law and state), digital history of law acquires new knowledge using digital information and communication technologies and tools, which in the disciplinary structure of science brings it into the circle of interdisciplinarity in terms of methodology. Formulating the principles of this methodology for legal historians is an emerging important scientific problem, the solution of which has begun in recent years (Birr, 2016; Robertson, 2016; Tanenhaus & Nystrom, 2016b; Küsters et al., 2019; Volkaert, 2021). Below we define the main levels of methodological knowledge and their content in relation to the digital history law, summarize and demonstrate the heuristic potential of modern digital technologies and methods based on them in the application to legal historical sciences.

1. Model of the methodological knowledge structure applied to a particular scientific discipline

The methodology of the digital history of law can be justified as a model based on general ideas about the structure of methodology (methodological knowledge). According to a philosopher E. G. Yudin (Yudin, 1978), four levels can be distinguished:

- philosophical methodology: general principles of cognition, prerequisites and guidelines of cognitive activity, categorical structure of science;
- general scientific methodology: concepts affecting a group of fundamental scientific disciplines, relatively indifferent to a specific subject area;
- specific-scientific methodology: a set of methods, research principles and procedures applied in a particular scientific discipline, with appropriate subject interpretation and development;
- methodology and technique of scientific research: a set of procedures that ensure the acquisition and primary processing of empirical material, provided the requirements of reliability and uniformity are observed.

Approximately the same four-level structure is proposed by a legal scholar N. N. Tarasov: philosophical means, general scientific means, special legal means, research methods and techniques (Tarasov, 2001).

D. A. Kerimov also distinguishes four levels: dialectical and world outlook level, general scientific (interdisciplinary), specific scientific, and transitional from cognitive-theoretical to practical-transformative activity (Kerimov, 2001). At the same time, the scholar does not include research methods and techniques in some of the levels, as they “do not reflect objective regularities of cognition and therefore lack methodological significance” (Kerimov, 2001).

S. V. Kodan, substantiating the methodology of historical and legal source study as a separate academic discipline, proceeds from five levels of methodological means: methodological principles, methodological approaches, specific scientific methods, research methodology, and research techniques (Kodan, 2018). He also distinguishes two generalized levels of methodological knowledge: specific-academic methodology (principles, approaches, methods) and procedural-academic methodology, which includes methods, techniques (resources and means) and technologies (methods of using techniques and ways to organize activities). The first level contains general requirements and determines a set of cognitive tools, while the lower level is operational, acting as a set of methodological tools-operations (Kodan, 2022a).

This, however, does not mean that the two higher levels (philosophical and general scientific) fall out of the general picture. They remain, because they are “relatively indifferent”, according to E. G. Yudin (Yudin, 1978), to a specific subject area, but, taken as a whole, they set the research paradigm or research program (Kotenko, 2006; Kun, 2003; Lakatos, 1995). As for the inclusion of methods, techniques and technologies into the scientific cognition methodology, it is justified precisely because of their isolation as an instrumental-operational component (level) of scientific research methodology, especially in the context of information (computer, digital) technologies application. We believe that the digital research methodology originates from the techniques and technologies formed since the middle of the last century, when the computer era began. Information and communication techniques and technologies, in turn, have formed new techniques and methods or brought significant transformations to the already existing ones.

In fact, the philosophical, general scientific and specific scientific levels of methodology have a similar structure and can be united into a single macro-level, which we may call paradigmatic (normative), since research principles, approaches and methods (general scientific paradigm, general scientific and specific scientific research program) are defined at this level. As we have already noted, means, techniques and technologies taken together form not just procedural, but instrumental level of methodology. It is this structure of methodological knowledge that we will further stem from.

2. Philosophical and general scientific levels of methodology of the digital history of law

E. G. Yudin defines a methodological approach as “a principal methodological orientation of research, a point of view from which the object of study is viewed (a way of defining the object), a concept or principle guiding the general strategy of research” (Yudin, 1978). Let us note another important remark of the philosopher: scientific research is built, as a rule, on a set of approaches, provided that they do not mutually exclude each other and are adequate to certain types of research tasks (Yudin, 1978).

The philosophical level determines a researcher's most general worldview positions – both ontological and epistemological. In this article we will not analyze and describe in detail the philosophical and worldview foundations of scientific research, but will just assert the fact that traditionally, in the scientific-methodological and educational literature of this level, the opposing metaphysical and dialectical approaches are distinguished², although modern post-classical science is moving away from this dichotomy (Chestnov, 2012).

Descending to the level of general scientific concepts affecting a group of scientific disciplines and serving as a transitional link from general philosophical matter to specific disciplines, we obviously get into the circle of concepts within the framework of digital socio-humanities (digital humanities) and general research tasks solved within the digital turn in humanitarian knowledge. The academic status of digital humanities as a very new field is still not completely defined. The metaphor of a certain methodological or technological “umbrella” over the humanities, we believe, cannot be regarded as a scientific category. However, the main lines of research in the digital humanities, and thus the tasks, are already clear, and there is a key aspect that unites them: digital research is about working with data using digital tools³.

But where do the data come from? The answer is obvious: from a variety of sources. Searching, processing and interpreting sources, obtaining new information from them, further work with this information recoded into data, and other scientific work – these are the basic research procedures carried out with digital methods, techniques and technologies. Hence, we believe that the concept of cognitive history by O. M. Medushevskaya (Medushevskaya, 2008), based on the phenomenological paradigm, can be accepted as the leading general scientific methodological concept of digital humanities. It considers a source as an empirical reality, a macro-object of all disciplines studying man and society, through which information exchange in society takes place. In our opinion, this “source-centered” methodological approach and, within its framework, the general scientific source method set the paradigm of digital socio-humanitarian research. S.V. Kodan calls it a source-study paradigm (Kodan, 2022b).

The source-centered approach, defined as the main research reference point, can be combined with other well-known general scientific principles and approaches: objectivity, historicism, systemic, comparative, structural-functional, anthropological, activity-based, network, institutional approach, etc. The concrete combination of general scientific principles, approaches and methods (theoretical and empirical) will depend on the subject, problems and objectives of a particular study, formulated at the next level of methodological knowledge, as well as on the data at the researcher's disposal.

² Nemytina, M. V., Mikheeva, Ts. Ts., Lapo, P. V., & Gulyaeva, E. E. (2022). History and Methodology of Legal Science: tutorial for Master students (2nd ed.). Moscow: RUDN.

³ Puchkovskaya, A. A., Zimina, L. V., & Volkov, D. A. (2021). Introduction to digital humanitarian research: teaching and methodological manual. St. Petersburg: ITMO University. <https://clck.ru/37zwUL>

3. Specific-scientific and instrumental-operational levels of the methodology of the digital history of law

3.1. Methodology of digital history of law in the aspect of research subject and sources

History of law is an inherently interdisciplinary area at the intersection of history and jurisprudence. By definition, digital history of law expands its boundaries even further. We understand it as an interdisciplinary field within digital humanities, at the intersection of history, jurisprudence, and computer science. At the same time, digital history of law remains within its traditional subject – the study of legal facts, phenomena and processes of the past, the synthesis between historical analysis of legal situations and legal analysis of historical situations. The connection with digital humanities and informatics at the digital turn enriches the history of law not in terms of subject matter, but in terms of methodology.

At the level of the specific scientific methodology of legal history research, the general scientific source-centered approach and the source study method (source study paradigm) are mainly transferred to the methodology (research program) of the history of law (historical-juridical) source studies (Kodan, 2018, 2022a, 2022b). A historian of law deals with historical-legal sources, through which the history of state-legal phenomena and processes is cognized. Because of this, a set of traditional principles, approaches and methods, inherent in historical-legal studies, is preserved. Historical-genetic, comparative-historical, comparative-legal, formal-legal methods, the method of interpretation of law and others remain in the arsenal of a digital historian of law, especially at the stage of primary processing and interpretation of sources. However, the problem of sources is approached differently, as at this methodological level a researcher works not just with sources, but also with data.

Humanitarian data are various. The authors of the manual Introduction to digital humanities research⁴ give the following examples: text files; data collected through parsing and APIs from the Internet; digital images; geospatial data; audio files; metadata. The main property of the data that can be handled using digital technologies is their formalization. Some data must be pre-transformed to acquire a formalized machine-readable form. For example, text files are marked up (this is called data annotation), accumulated into text corpora, and then they are suitable for processing and retrieving new information using, for example, mathematical linguistics methods and computer tools.

Can humanitarian data be a legal-historical source? It seems that the development of modern historical and legal source studies gives a positive answer to this question. Data are extracted from sources; sources are transformed into data. It is probably more important to consider the problem from a technological point of view: how to carry out procedures of coding “texts” (historical and legal sources in the broadest sense) into “data”, how to apply computer tools in research and how to analyze the data. This, undoubtedly, requires a sufficient level of a researcher’s digital qualification.

⁴ Puchkovskaya, A. A., Zimina, L. V., & Volkov, D. A. (2021). Introduction to digital humanitarian research: teaching and methodological manual. St. Petersburg: ITMO University. <https://clck.ru/37zwUL>

3.2. Terminology and structure of the instrumental-operational level of the methodology of the digital history of law

Above we did not give separate definitions for methodological principles and research methods, believing that, despite the variety of existing definitions, the meaning of these concepts is clear to the reader. The definition of a methodological approach is given according to E. G. Yudin (Yudin, 1978), as it has passed the test of time and is not outdated. One may argue, for example, what is more primary – principles or approaches, but here we do not seek to resolve this dispute. We hope that the author's position is clear: we prioritize principles as initial ideas and provisions. The detailed development of methodological principles of digital history of law is a separate big question, and we put it out of the scope of this article. It seems that, in addition to the traditional principles of the history of law, we can first of all talk about the principles related to information technologies and data: for example, the principles of data quality (completeness, reliability, comparability), principles of interpretation, visualization, etc.

As we have already shown, when describing the content of the instrumental-operational level of methodological knowledge authors mainly use the categories of “methodology” and “technique”. S. V. Kodan adds technology to this (Kodan, 2022a). In a very simplified form, we would reduce it all to methods and means, but the requirements of sufficiency and completeness make it necessary to put everything in its place, at least in the context of this paper.

In contrast to a method, methodology is the practical implementation of a method. While a method defines the way to achieve a scientific result, a methodology is a sequence, an algorithm of actions and procedures aimed at achieving a scientific result. For example, if you apply the method of correlation analysis, the methodology will include data collection, selection of the type and measure of correlation of signs, and numerical calculations per se.

Assumingly, fulfillment of the specific elements of methodology will involve using cognition tools, with the help of which the research will be carried out. These may not necessarily be material things (computers, for example). A cognition tool is language, with which we name phenomena and introduce unambiguous concepts and definitions. A tool is logic, which helps us to make judgments and inferences. Tools are computer programs, measuring scales, etc.

In our opinion, one may unite tools and resources under the notion of “means”, especially since the Encyclopedia of Philosophy defines technique through the generic notion of “means”, mentioning also “tools”, and makes a reservation that technique also includes knowledge and skills with the help of which people use these means⁵. However, in methodological literature the term “technique” is more often used, and we will adhere to it.

A tool can be operated using various techniques, i.e. specific ways of application. For example, you have chosen a chart tool to visualize and analyze data. Selecting a chart type, captioning data on the chart and other operations are part of the techniques for using this tool. To build a chart, you choose another digital tool – a special computer program

⁵ Rozin, V. M. (2010). Technique. New philosophical encyclopedia. In 4 vol. Vol. IV. Moscow: Mysl.

(editor), the techniques of working with which you also need to master. The techniques are no longer an instrumental, but an operational component of the research, associated with the concept of technology.

The meaning of the “technology” concept and its correlation with technique is very ambiguous. A philosopher E. V. Ushakov notes this fact and uses the “technique” concept in the narrow sense – as a set of technical objects, artifacts specially created and used by man (tools, instruments, devices, machines, etc.)⁶. As for technology, E. V. Ushakov counts no less than five etymological meanings of this term, including – in compliance with the approach of a philosopher C. Mitcham, as an object, process, knowledge, type of activity, and willful aspiration⁷. S. V. Kodan considers technology in a specific sense – as a research and methodological tool, a system of cognitive means (Kodan, 2022a). In this he echoes R. G. Valiev, who defines legal technology as “an organizational and functional mechanism of implementation of the instrumental arsenal of legal technique” (Valiev, 2016).

It should be noted that the concepts of legal technique and legal technology have been developed in detail in the legal doctrine. The history of these doctrinal concepts development is thoroughly described, for instance, by M. V. Zaloilo⁸. For example, S. S. Alekseev interpreted legal technique as a set of means (technique proper) and methods (technologies)⁹. V. M. Baranov¹⁰, N. A. Vlasenko (Vlasenko et al., 2013), and A. N. Mironov (Mironov, 2008) adhere to the activity approach in the definition of legal technology.

Returning to the philosophical definition of technology, let us point out its essential principles: rationality, purposefulness, reproducibility, efficiency, and effectiveness. According to the definition of E. V. Ushakov, “the presence of technology in the modern sense for a specific activity implies, as a rule, the existence of a structured way of action supported by effective material and technical means”¹¹.

Thus, the instrumental-operational level of the methodology of the digital history of law includes:

- methods: description of the sequence, algorithm of actions and procedures aimed at achieving a scientific result;
- techniques: tools (means) and resources with the help of which the methods are implemented;
- technologies: methods of using techniques and ways of organizing research activities.

⁶ Ushakov, E. V. (2023). *Philosophy of technique and technology: tutorial for universities*. Moscow: Yurait.

⁷ Ibid.

⁸ Zaloilo, M. V. (2022). *Modern legal technologies in law-making: scientific and practical manual*. Moscow: IZiSP: NORMA: Infra-M. <https://clck.ru/37zz7W>

⁹ Alekseev, S. S. (1982). *General theory of law: course of lectures* (In 2 vol. Vol. 2). Moscow: Yuridicheskaya Literatura.

¹⁰ Baranov, V. M. (2000). Foreword. In: *Issues of juridical technique*. Nizhny Novgorod: Nizhniy Novgorod Academy of the Ministry of Domestic Affairs of the Russian Federation.

¹¹ Ushakov, E. V. (2023). *Philosophy of technique and technology: tutorial for universities*. Moscow: Yurait.

3.3. Methodology of the digital history of law in action: how does it work?

As we have already pointed out, the new scientific issues and tasks formulated by a digital historian of law entail the expansion of methodological foundations, as well as the use, along with traditional ones, of new research methods and techniques related to the application of digital technologies. The said scientific issues and tasks may refer to all three components (directions) of the digital turn (Garskova, 2019): the resource (creation of databases, digitization of sources), the analytical (obtaining new knowledge), and the applied (application of digital platforms). An approximate algorithm of a researcher's activity in the digital environment will include steps for collecting and primary processing of information (creating databases, translating "text" into "data", its structuring, visualization, etc.) and directly obtaining new information, which should be analyzed, interpreted, stored and decoded again into the usual "text" of a scientific article, report, etc.

For example, this is how a Belgian researcher F. Volkaert describes the concrete-scientific level of his research methodology¹². Within his study he set three problems (research questions): to define the key provisions of European trade agreements; to describe the content of the international trade law doctrine; to describe diplomatic practice. If we use traditional methods to solve these problems, we can focus on textual analysis (interpretation of law) and historical-genetic method. But if we also apply digital methods that complement (not replace!) the traditional ones, then a researcher may choose network analysis methods (discourse network analysis, bibliometric analysis) and the method of mathematical linguistics (natural language processing). Certainly, the use of the mentioned digital methods was based on the corresponding methods, techniques and technologies that constitute the instrumental-operational level of the research methodology: creating a database of contracts, visualizing citations, qualitative content analysis, use of the R programming language, etc.

Let us try to summarize what means of all this arsenal can be applied by digital legal historians.

The promising and already tested (Hitchcock & Turkel, 2016; Romney, 2016; Tanenhaus & Nystrom, 2016a, 2016b; Ward & Williams, 2016; Küsters et al., 2019; deJong & vanDijck, 2022) methods of the digital history of law include:

- quantitative (statistical) methods;
- methods of network analysis;
- methods of corpus (mathematical) linguistics;
- methods of computer modeling.

¹² Volkaert, F. (2021). Embedding free trade (1860–1865): visualising networks and arguments through discourse network analysis. Digital Methods and Resources in Legal History, Abstracts. Frankfurt. <https://clck.ru/37zz5a>

It is easy to notice that almost all these methods originate in the mathematical processing of sources. Quantitative history, thanks to the scientific school of I. D. Kovalchenko, was actively developed first in the USSR and then in Russia, and digital historical science began its formation on this basis. Calculations and their visualization became much easier with the advent of computers.

Quantitative research in the history of law using content analysis, correlation and regression analysis and other methods is quite appropriate, especially since mass sources (statistics, office records, etc.) are the subject of scientific interests of historians of law. For example, one of the quantitative methods applied by the author of this article in the doctoral dissertation was the statistical method of analyzing dynamic series¹³. Let us describe in detail the course of the research with methodological categories, starting for the sake of brevity from the specific-scientific level of methodological knowledge.

The hypothesis (research question, task) is that the historical periodization of the justice of the peace requires clarification of its second period chronological framework ("revision of the Judicial Statutes of 1864"). Different authors have tied it to different time points, which fit into the period from the early 1870s to the late 1880s. The main criterion for periodization is the law-making dynamics as an external factor of impact on the system. If the adoption of a legal act is considered as a variable that changes annually, then for this type of data the method of analyzing time dynamic series can reveal the desired patterns. Thus, the question is posed, the method is chosen. Let us move to the instrumental-operational level.

Based on the historical and legal source – the Complete Collection of Laws of the Russian Empire (and chronological and subject indexes to it) – we get the material for processing: the number of adopted legal acts by years (from 1864 to 1912), regulating the justice of the peace. Then we model a time dynamic series: we choose the type of series (simple, interval), fill in a table of data, draw a graph (in Microsoft Excel), calculate a trend line (since the data are unstable, a polynomial type of line is chosen). This is a methodology, technique and technology: an algorithm of actions, a set of resources (text of the Complete Collection) and means (computer, software, graph), methods of working with resources and means (construction of a table, graph, trend line).

The obtained results are interpreted. On the graph (Fig. 1) we see several maximums of law-making activity, and the trend line (dotted line) shows that from the late 1870s the dynamics is gaining growth, reaching a maximum around 1890. Thus, we quantitatively confirmed the analytically established chronological framework of the second period of the history of the justice of the peace in Russia, when law-making activity was the most intensive. Traditional logical, historical-comparative, formal-legal, and periodization method are supplemented by quantitative methods and digital technologies.

¹³ Lonskaya, S. V. (2016). Institute of the justice of the peace in Russia: historical and theoretical legal study: Dr. Sci. (Law) thesis. St. Petersburg. <https://elibrary.ru/zhbfht>

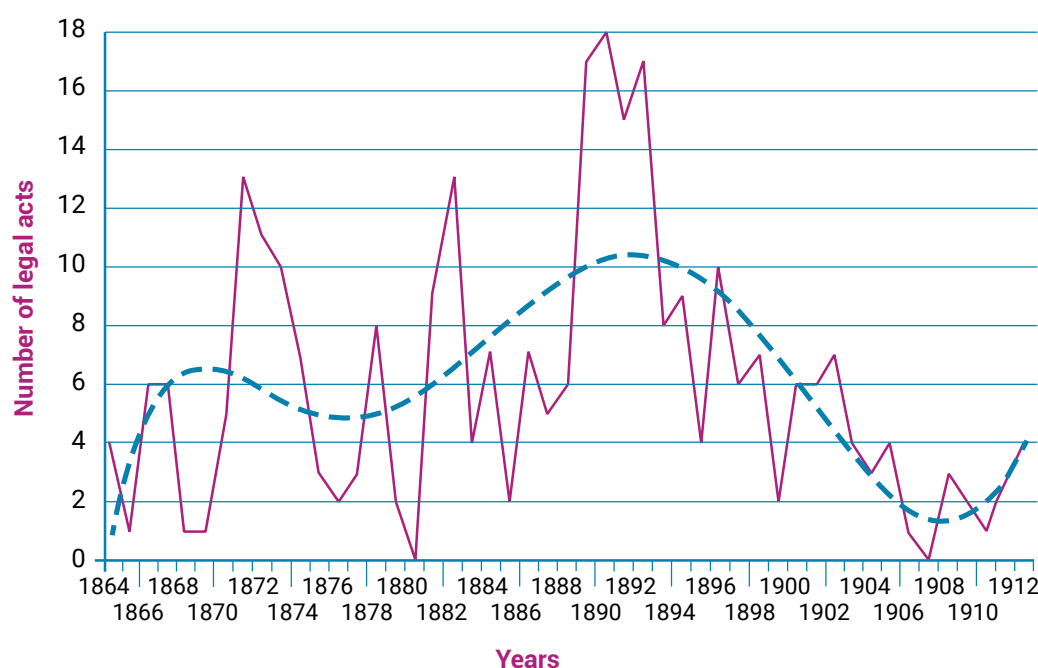


Fig. 1. Dynamics of legal acts adopted in the Russian Empire in 1864–1912, related to the justice of the peace

The above mentioned research by F. Volkeart showed an example of network analysis and computer linguistics methods. Below we present the result of our own research – network analysis of legal positions of the Kaliningrad oblast Charter Court, which was in force from 2003 to 2021.

The network nodes are court rulings (marked with indices) and legal principles mentioned in these rulings. Figure 2 shows that in its legal reasoning the court most often relied on the principles of equality, legal certainty and justice (these nodes are showed as the largest in size). Many rulings contain references to several legal principles at once. The graph was compiled by the author of the article using Gerhi software for network analysis and visualization and the database of systematized rulings and legal positions of the Charter Court of Kaliningrad oblast, prepared by a team of researchers of I. Kant Baltic Federal University. Most of the legal positions were published in 2020 (Lonskaya et al., 2020); the electronic database of rulings has been recently finalized.

Spatial and 3D modeling (using geographic information systems, mapping technology, etc.) helps to model the spatial dynamics of historical and legal phenomena and processes, their localization in time and space (chronotope), where legal communication takes place. Here we can mention several interesting research projects demonstrating how the method of computer modeling can be used in legal history: a 3D model of the Old Bailey's Old Court¹⁴,

¹⁴ Voices in the Courtroom. Digital panopticon. <https://clck.ru/3829gF>

- 15 Eisner, M. (2018). Interactive London Medieval Murder Map. University of Cambridge: Institute of Criminology. <https://goo.su/ijzUEg>
- 16 Mapping crime and the growth of medieval towns: why historians need GIS. Sistemniy Blok. <https://clck.ru/37zxjr>
- 17 Interactive Witchcraft Map. <https://goo.su/3VA01zF>

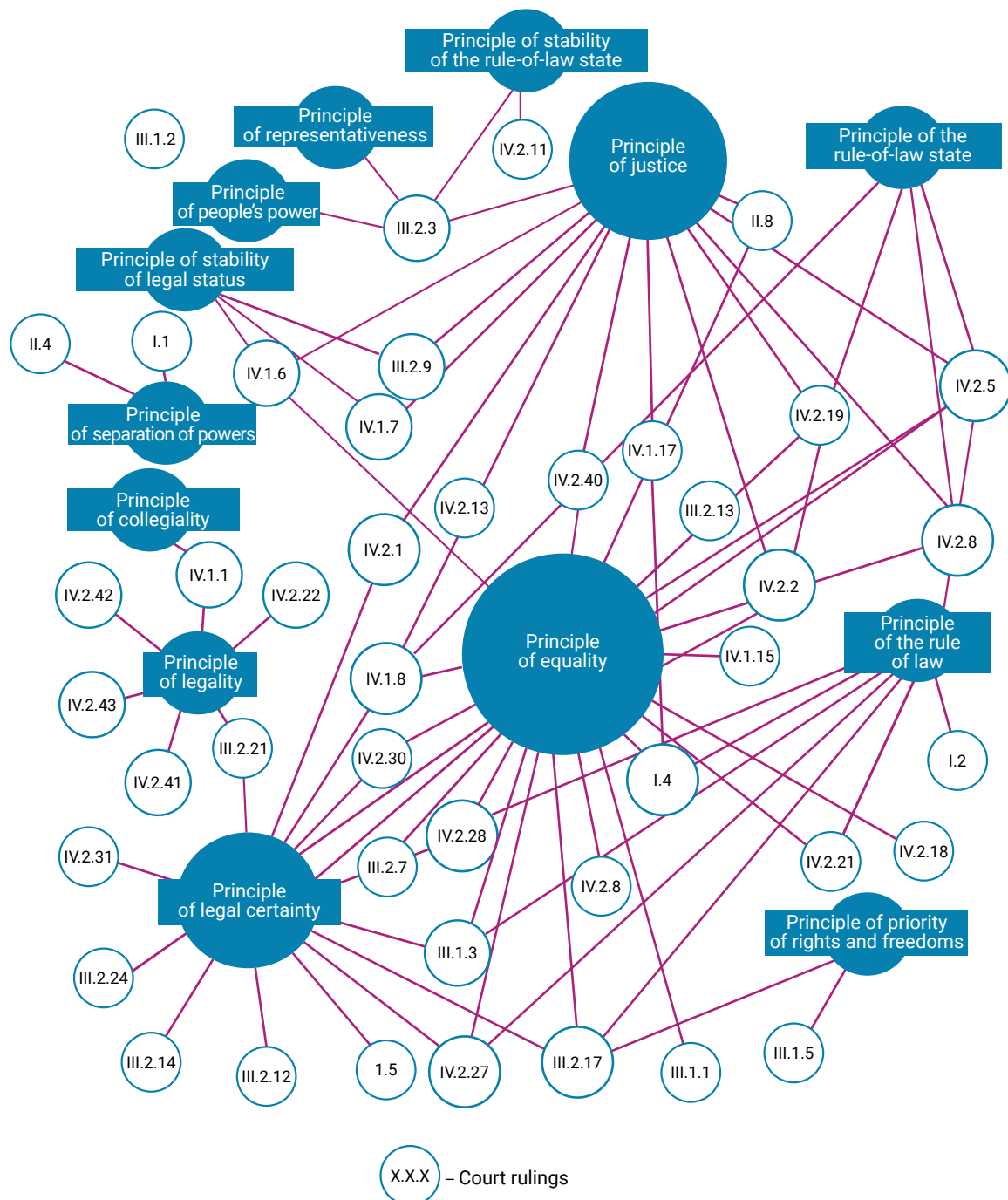


Fig. 2. Legal principles in the argumentation of legal positions of the Charter Court of the Kaliningrad oblast (2003–2021)

One may also note another area of application of the efforts of digital legal historians – the resource direction of the digital turn (digitization of sources, creation of databases). This is important not only for the preservation of existing sources and, in general, for facilitating their accessibility, but also for creating a body of data for researchers to work with. This is not simply a matter of converting printed publications into electronic file format (although this is necessary), but of creating corpora of legal texts, digital collections, libraries, search engines, etc. We would like to draw attention to a number of important achievements in this area.

First, it is worth mentioning the Complete Collection of Laws of the Russian Empire in digital form, prepared by the National Electronic Library, which is surely well known to legal historians¹⁸. We hope the project will be developed and the texts of the great monument of Russian law will become suitable for machine processing. Secondly, the corpus of legal texts RusLawOD (Institute for Problems of Law Enforcement, EUSPb)¹⁹. This project refers to the field of corpus linguistics. It covers the recent history of Russia, but someday digital legal historians will be able to work with the earlier legislation in this format. Thirdly, the *Formulae-Litterae-Chartae* project of the Academy of Sciences in Hamburg and the University of Hamburg – a study of medieval formulas in legal documents and collections, their digitization and database replenishment²⁰. Perhaps such a bank of legal formulas from monuments of Russian law will eventually appear in our country. These are not the only examples of work in the resource area; more and more such projects are appearing, and the field of activity is vast. We have just drawn the readers' attention to this issue of digital research in the history of law (especially the external history of law).

Digital tools – a key part of methodological technique – are developing faster than scholars acquire new knowledge. These are not only hardware – computers and peripherals – but also, and to a greater extent, software: from elementary applications included in office packages to entire intelligent systems. The market and offers in this area should be constantly monitored, because some tools come and go, while others are constantly being improved in new versions. It is necessary to understand the capabilities of these tools, their suitability for solving scientific problems, to be able to choose (and maybe to create) relevant tools for a particular scientific research and to be able to work with them. Again, this places additional demands on digital legal historians: one must have not only high qualifications as a researcher, but also the appropriate digital competence.

The heuristic potential of digital methods and technologies lies in the fact that they open up new possibilities for extracting information from sources and, when combined with traditional research methods, create a cumulative effect, expanding the boundaries of our

¹⁸ Complete Collection of Laws of the Russian Empire. RNB electronic library. <https://clck.ru/37zyAE>

¹⁹ Corpus of legal texts RusLawOD. GitHub. <https://clck.ru/37zyCJ>

²⁰ *Formulae – Litterae – Chartae*. <https://clck.ru/37zyDS>

understanding of the past of the state and law. When discussing the scope of “substitution” of human intellectual scientific creativity by digital technologies (and with the development of artificial intelligence, concerns of such “substitution” being uncontrolled and excessive are expressed more and more often), it is worth noting: one should not attribute subjectivity to artificial intelligence and similar entities. They are only tools, technologies. Undoubtedly, at the stages of searching, selecting, and processing of sources, they are indispensable helpers. But in the interpretation of new information, its axiologization, the subject is a human being – a scholar, a researcher engaged in creative scientific activity.

Conclusions

We have tried to construct, in the most general terms, the methodology of digital history of law, relying on the traditional structure of methodological knowledge developed in the Russian philosophy and legal studies. The paradigmatic (normative) macro-level of methodology, including philosophical, general scientific and specific-scientific levels, sets the principles, approaches and methods of research. Methods, techniques and technologies constitute the instrumental-operational level of methodology.

Based on the concept that a source is a macroobject of socio-humanitarian research (O. M. Medushevskaya's concept of cognitive history), we have come to the conclusion that the digital history of law methodologically relies on the general scientific paradigm (“source-centered” approach and source-centered method). At the specific-scientific and instrumental-operational levels of methodology, digital history of law combines traditional approaches and methods of legal history with digital techniques and technologies, as well as methods based on them within the framework of the research program of historical-legal (historical-juridical) source studies. The direct combination of traditional and digital approaches depends on the subject matter, problems, and objectives of a particular research.

Thus, for the digital legal historian working at the intersection of history, law and computer science, it is not the subject of research that changes, but the methodology, which is centered on the understanding of historical and legal sources as carriers of information, data, from which the new scientific knowledge is extracted using digital tools and technologies. The completeness and objectivity of new scientific results can be achieved only by using a complex of traditional and digital cognitive tools. To obtain such results, we need a researcher who, in addition to the qualifications of a historian of law, has the necessary knowledge and skills to work in the digital world.

References

- Birr, C. (2016). Die geisteswissenschaftliche Perspektive: Welche Forschungsergebnisse lassen Digital Humanities erwarten? *Rechtsgeschichte – Legal History*, 24, 330–334. <https://doi.org/10.12946/rg24/330-334>
- Chestnov, I. L. (2012). *Postclassical Theory of Law*: monograph. Saint Petersburg: Alef-Press. <https://elibrary.ru/qssdiv>
- de Jong, H., & van Dijck, G. (2022). Network analysis in legal history: an example from the Court of Friesland: Remarks on the benefits. *Tijdschrift voor Rechtsgeschiedenis / Revue d'histoire du droit / The Legal History Review*, 90(1–2), 250–262. <https://doi.org/10.1163/15718190-20220004>

- Garskova, I. M. (2019). The "Digital Turn" in Historical Research: Long-term Trends. *Historical informatics*, 3, 57–75. <https://doi.org/10.7256/2585-7797.2019.3.31251>
- Goebel, M. (2021). Ghostly Helpmate: Digitization and Global History. *Geschichte Und Gesellschaft*, 47(1), 35–57. (In Russ.). <https://doi.org/10.13109/gege.2021.47.1.35>
- Hitchcock, T., & Turkel, W. J. (2016). The Old Bailey Proceedings, 1674–1913: Text Mining for Evidence of Court Behavior. *Law and History Review*, 34(4), 929–955. <https://doi.org/10.1017/S0738248016000304>
- Kerimov, D. A. (2001). *Methodology of law (subject, functions, issues of the philosophy of law)*: monograph (2nd ed.). Moscow: Avanta+.
- Kodan, S. V. (2018). Methodology of historical-legal source studies: goal orientations, functional focus, level of organization of cognitive resources. *Genesis: Historical research*, 12, 67–80. (In Russ.). <https://doi.org/10.25136/2409-868x.2018.12.28474>
- Kodan, S. V. (2022a). Research activity in jurisprudence: methodological problems of technologization and technologies. In: *Juridical activity: content, technologies, principles, ideals*: monograph. Moscow: Prospekt. (In Russ.).
- Kodan, S. V. (2022b). Source study paradigm in modern jurisprudence: from the study of sources and forms of law to a scientific discipline. *Legal Science and Practice: Journal of Nizhny Novgorod Academy of the Ministry of Internal Affairs of Russia*, 4(60), 12–21. (In Russ.). <https://doi.org/10.36511/2078-5356-2022-4-12-21>
- Kotenko, V. P. (2006). Paradigm as a methodology of scientific activity. *Bibliosphere*, 3, 21–25. (In Russ.).
- Kun, T. (2003). *Structure of scientific revolutions*. Moscow: Progress. (In Russ.).
- Küstners, A., Volkind, L., & Wagner, A. (2019). Digital Humanities and the State of Legal History. A Text Mining Perspectiv. *Rechtsgeschichte – Legal History*, 27, 244–259. <http://dx.doi.org/10.12946/rg27/244-259>
- Lakatos, I. (1995). *Falsification and methodology of scientific-research programs*. Moscow: Medium. (In Russ.).
- Lonskaya, S. V., Gerasimova, E. V., Landau, I. L., & Kuznetsov, A. V. (2020). *Legal position of the Charter Court of Kaliningrad oblast. 2003–2018: scientific-practical edition*. Moscow: Prospekt. (In Russ.).
- MacLuhan, M. (2018). *The Gutenberg Galaxy: The Making of Typographic Man*. Moscow: Akademicheskii proekt. (In Russ.).
- Medushevskaya, O. M. (2008). *Theory and methodology of cognitive history*: monograph. Moscow: Russian State University for the Humanities. (In Russ.).
- Mironov, A. N. (2008). Juridical technology. *Juridical Techniques*, 2, 63–66. (In Russ.).
- Robertson, S. (2016). Searching for Anglo-American Digital Legal History. *Law and History Review*, 34(4), 1047–1069. <https://doi.org/10.1017/S0738248016000389>
- Romney, C. W. (2016). Using Vector Space Models to Understand the Circulation of Habeas Corpus in Hawai'i, 1852–92. *Law and History Review*, 34(4), 999–1026. <https://doi.org/10.1017/S0738248016000353>
- Tanenhaus, D. S., & Nystrom, E. C. (2016a). "Let's Change the Law": Arkansas and the Puzzle of Juvenile Justice Reform in the 1990s. *Law and History Review*, 34(4), 957–997. <https://doi.org/10.1017/S0738248016000341>
- Tanenhaus, D. S., & Nystrom, E. C. (2016b). The Future of Digital Legal History: No Magic, No Silver Bullets. *American Journal of Legal History*, 56(1), 150–167. <https://doi.org/10.1093/ajlh/njv017>
- Tarasov, N. N. (2001). *Methodological issues of juridical science*: monograph. Yekaterinburg: The Liberal Arts University Publishers. (In Russ.).
- Valiev, R. G. (2016). On some theoretical and practical aspects of legal technique and technology. *Uchenye zapiski Kazanskogo filiala Rossiiskogo gosudarstvennogo universiteta pravosudiya*, 12, 3–12. (In Russ.).
- Vlasenko, N. A., Abramova, A. I., Arzamasov, Yu. G., Ivanyuk, O. A., & Kalmykova, A. V. (2013). *Rule-making juridical technique*: monograph. Moscow: The Institute of Legislation and Comparative Law under the Government of the Russian Federation. (In Russ.).
- Volkaert, F. (2021). OK Computer? The digital turn in legal history: a methodological retrospective. *Tijdschrift voor Rechtsgeschiedenis / Revue d'histoire du droit / The Legal History Review*, 89(1–2), 1–46. <https://doi.org/10.1163/15718190-12340011>
- Ward, R., & Williams, L. (2016). Initial views from the Digital Panopticon: Reconstructing Penal Outcomes in the 1790s. *Law and History Review*, 34(4), 893–928. <https://doi.org/10.1017/S0738248016000365>
- Yudin, E. G. (1978). *Systemic approach and the principle of activity. Methodological issues of modern science*. Moscow: Nauka. (In Russ.).

Author information



Svetlana V. Lonskaya – Dr. Sci. (Law), Associate Professor, Professor of the educational-research cluster “Institute of Management and Territorial Development”, Immanuel Kant Baltic Federal University

Address: 6 Frunze Str., 236006 Kaliningrad, Russian Federation

E-mail: slonskaya@kantiana.ru

ORCID ID: <https://orcid.org/0000-0002-0500-6132>

WoS Researcher ID: <https://www.webofscience.com/wos/author/record/V-9227-2017>

Google Scholar ID: <https://scholar.google.com/citations?user=gGpufQ4AAAAJ>

RSCI Author ID: https://elibrary.ru/author_profile.asp?id=370137

Conflict of interest

The author declare no conflict of interest.

Financial disclosure

The research had no sponsorship.

Thematic rubrics

OECD: 5.05 / Law

PASJC: 3308 / Law

WoS: OM / Law

Article history

Date of receipt – August 28, 2023

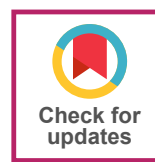
Date of approval – September 12, 2023

Date of acceptance – March 15, 2024

Date of online placement – March 20, 2024



Научная статья
УДК 34:004:930:001.8
EDN: <https://elibrary.ru/cfnahc>
DOI: <https://doi.org/10.21202/jdtl.2024.2>



Цифровая история права: начала методологии

Светлана Владимировна Лонская 

Балтийский федеральный университет имени Иммануила Канта, Калининград, Россия

Ключевые слова

история права,
кодирование
(декодирование)
информации,
методология юридической
науки,
оцифровка источников,
право,
цифровая гуманитаристика,
цифровая история права,
цифровая квалификация
исследователя,
цифровые технологии,
юридическое
источниковедение

Аннотация

Цель: теоретически обосновать основные начала методологии нового междисциплинарного направления в социогуманитаристике – цифровой истории права и продемонстрировать эвристический потенциал цифровых технологий в историко-правовых науках.

Методы: исследование основано на системном, формально-логическом, сравнительном общенаучных методах.

Результаты: сделан вывод, что методология цифровой истории права основана, во-первых, на источникоцентричном подходе, рассматривающем источник как макрообъект наук о человеке и обществе, через который совершается информационный обмен (концепция когнитивной истории О.М. Медушевской), и, во-вторых, на сочетании традиционных методов истории права с цифровыми техниками и технологиями и основанными на них методиками – в рамках научно-исследовательской программы историко-правового (историко-юридического) источниковедения. Предпринята попытка обобщить существующие цифровые технологии и основанные на них методы и методики в приложении к историко-правовым наукам. На примерах конкретных исследований показан их эвристический потенциал.

Научная новизна: впервые в отечественной историко-правовой науке обосновывается методология цифровой истории права как междисциплинарного направления, изучающего прошлое права и государства с помощью цифровых информационно-коммуникационных технологий и инструментов.

Практическая значимость: в условиях актуальных в последние годы «поворотов» в социогуманитарных науках (цифровом, лингвистическом, визуальном и др.), развития цифрового типа социальной коммуникации, изменяются и методологические подходы к получению нового знания, появляются новые междисциплинарные отрасли научного знания, а также и новые требования к квалификации исследователей. Происходящие изменения затрагивают и историко-правовые науки: цифровая история права формируется как междисциплинарное направление в рамках цифровой гуманитаристики, на стыке с историей,

© Лонская С. В., 2024



Статья находится в открытом доступе и распространяется в соответствии с лицензией Creative Commons «Attribution» («Атрибуция») 4.0 Всемирная (CC BY 4.0) (<https://creativecommons.org/licenses/by/4.0/deed.ru>), позволяющей неограниченно использовать, распространять и воспроизводить материал при условии, что оригинальная работа упомянута с соблюдением правил цитирования.

юриспруденцией и информатикой. Понимание и применение цифровых технологий и основанных на них методах научного познания в историко-правовых исследованиях открывает новые возможности для историков права в определении направлений своих научных изысканий, получении новых научных результатов, что в конечном счете расширяет наши представления об историко-правовых фактах, явлениях и процессах.

Для цитирования

Лонская, С. В. (2024). Цифровая история права: начала методологии. *Journal of Digital Technologies and Law*, 2(1), 14–33. <https://doi.org/10.21202/jdtl.2024.2>

Список литературы

- Валиев, Р. Г. (2016). О некоторых теоретических и практических аспектах юридической техники и технологии. *Ученые записки Казанского филиала Российского государственного университета правосудия*, 12, 3–12. <https://elibrary.ru/xbhvfh>
- Власенко, Н. А., Абрамова, А. И., Арзамасов, Ю. Г., Иванюк, О. А., Калмыкова, А. В. (2013). Нормотворческая юридическая техника: монография. Москва: Институт законодательства и сравнительного правоведения при Правительстве Российской Федерации. <https://elibrary.ru/suier>
- Гарскова, И. М. (2019). «Цифровой поворот» в исторических исследованиях: долговременные тренды. *Историческая информатика*, 3, 57–75. <https://doi.org/10.7256/2585-7797.2019.3.31251>
- Керимов, Д. А. (2001). *Методология права (предмет, функции, проблемы философии права)*: монография (2-е изд.). Москва: Аванта+.
- Кодан, С. В. (2022а). Научная деятельность в сфере юриспруденции методологические проблемы технологизации и технологий. В кн. *Юридическая деятельность: содержание, технологии, принципы, идеалы*: монография. Москва: Проспект. <https://elibrary.ru/nkaohi>
- Кодан, С. В. (2018). Методология историко-юридического источниковедения: целевые установки, функциональная направленность, уровни организации познавательных средств. *Генезис: исторические исследования*, 12, 67–80. EDN: <https://elibrary.ru/snxeal>. DOI: <https://doi.org/10.25136/2409-868x.2018.12.28474>
- Кодан, С. В. (2022b). Источниковедческая парадигма в современной юриспруденции: от изучения источников и форм права к научной дисциплине. *Юридическая наука и практика: Вестник Нижегородской академии МВД России*, 4(60), 12–21. EDN: <https://elibrary.ru/glrssb>. DOI: <https://doi.org/10.36511/2078-5356-2022-4-12-21>
- Котенко, В. П. (2006). Парадигма как методология научной деятельности. *Библиосфера*, 3, 21–25. <https://elibrary.ru/htlyan>
- Кун, Т. (2003). *Структура научных революций*. Москва: Прогресс.
- Лакатос, И. (1995). *Фальсификация и методология научно-исследовательских программ*. Москва: Медиум.
- Лонская, С. В., Герасимова, Е. В., Ландау, И. Л., Кузнецов, А. В. (2020). *Правовые позиции Уставного Суда Калининградской области. 2003–2018 гг.: научно-практическое издание*. Москва: Проспект. <https://elibrary.ru/optcus>
- Маклюэн, М. (2018). *Галактика Гутенберга. Становление человека печатающего*. Москва: Академический проект.
- Медушевская, О. М. (2008). *Теория и методология когнитивной истории*: монография. Москва: РГГУ.
- Миронов, А. Н. (2008). Юридическая технология. *Юридическая техника*, 2, 63–66. <https://elibrary.ru/rbrqud>
- Тарасов, Н. Н. (2001). *Методологические проблемы юридической науки*: монография. Екатеринбург: Издательство Гуманитарного университета. <https://elibrary.ru/izfrzl>
- Честнов, И. Л. (2012). *Постклассическая теория права*: монография. Санкт-Петербург: Издательский дом «Алеф-пресс». <https://elibrary.ru/qssdiv>
- Юдин, Э. Г. (1978). *Системный подход и принцип деятельности. Методологические проблемы современной науки*. Москва: Наука.

- Birr, C. (2016). Die geisteswissenschaftliche Perspektive: Welche Forschungsergebnisse lassen Digital Humanities erwarten? *Rechtsgeschichte – Legal History*, 24, 330–334. <https://doi.org/10.12946/rg24/330-334>
- de Jong, H., & van Dijck, G. (2022). Network analysis in legal history: an example from the Court of Friesland: Remarks on the benefits. *Tijdschrift voor Rechtsgeschiedenis / Revue d'histoire du droit / The Legal History Review*, 90(1–2), 250–262. <https://doi.org/10.1163/15718190-20220004>
- Goebel, M. (2021). Ghostly Helpmate: Digitization and Global History. *Geschichte Und Gesellschaft*, 47(1), 35–57. <https://doi.org/10.13109/gege.2021.47.1.35>
- Hitchcock, T., & Turkel, W. J. (2016). The Old Bailey Proceedings, 1674–1913: Text Mining for Evidence of Court Behavior. *Law and History Review*, 34(4), 929–955. <https://doi.org/10.1017/S0738248016000304>
- Küsters, A., Volkind, L., & Wagner, A. (2019). Digital Humanities and the State of Legal History. A Text Mining Perspectiv. *Rechtsgeschichte – Legal History*, 27, 244–259. <http://dx.doi.org/10.12946/rg27/244-259>
- Robertson, S. (2016). Searching for Anglo-American Digital Legal History. *Law and History Review*, 34(4), 1047–1069. <https://doi.org/10.1017/S0738248016000389>
- Romney, C. W. (2016). Using Vector Space Models to Understand the Circulation of Habeas Corpus in Hawai'i, 1852–92. *Law and History Review*, 34(4), 999–1026. <https://doi.org/10.1017/S0738248016000353>
- Tanenhaus, D. S., & Nystrom, E. C. (2016a). "Let's Change the Law": Arkansas and the Puzzle of Juvenile Justice Reform in the 1990s. *Law and History Review*, 34(4), 957–997. <https://doi.org/10.1017/S0738248016000341>
- Tanenhaus, D. S., & Nystrom, E. C. (2016b). The Future of Digital Legal History: No Magic, No Silver Bullets. *American Journal of Legal History*, 56(1), 150–167. <https://doi.org/10.1093/ajlh/njv017>
- Volkaert, F. (2021). OK Computer? The digital turn in legal history: a methodological retrospective. *Tijdschrift voor Rechtsgeschiedenis / Revue d'histoire du droit / The Legal History Review*, 89(1–2), 1–46. <https://doi.org/10.1163/15718190-12340011>
- Ward, R., & Williams, L. (2016). Initial views from the Digital Panopticon: Reconstructing Penal Outcomes in the 1790s. *Law and History Review*, 34(4), 893–928. <https://doi.org/10.1017/S0738248016000365>

Сведения об авторе



Лонская Светлана Владимировна – доктор юридических наук, доцент, профессор образовательно-научного кластера «Институт управления и территориального развития», Балтийский федеральный университет имени Иммануила Канта

Адрес: 236006, Россия, г. Калининград, ул. Фрунзе, 6

E-mail: slonskaya@kantiana.ru

ORCID ID: <https://orcid.org/0000-0002-0500-6132>

WoS Researcher ID: <https://www.webofscience.com/wos/author/record/V-9227-2017>

Google Scholar ID: <https://scholar.google.com/citations?user=gGpufQ4AAAAJ>

РИНЦ Author ID: https://elibrary.ru/author_profile.asp?id=370137

Конфликт интересов

Автор сообщает об отсутствии конфликта интересов.

Финансирование

Исследование не имело спонсорской поддержки.

Тематические рубрики

Рубрика OECD: 5.05 / Law

Рубрика ASJC: 3308 / Law

Рубрика WoS: OM / Law

Рубрика ГРНТИ: 10.07.45 / Право и научно-технический прогресс

Специальность ВАК: 5.1.1 / Теоретико-исторические правовые науки

История статьи

Дата поступления – 28 августа 2023 г.

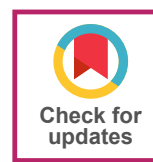
Дата одобрения после рецензирования – 12 сентября 2023 г.

Дата принятия к опубликованию – 15 марта 2024 г.

Дата онлайн-размещения – 20 марта 2024 г.



Research article
UDC 34:004:316:004.8
EDN: <https://elibrary.ru/uunzfp>
DOI: <https://doi.org/10.21202/jdtl.2024.3>



Algorithms, Sociology of Law and Justice

Fernando Galindo Ayuda 

University of Zaragoza, Zaragoza, Spain

Keywords

administration of justice,
algorithm,
artificial intelligence,
communicative theory of law,
digital technologies,
justice,
legal conflict,
legal technologies,
(LegalTech),
sociology of law

Abstract

Objective: to determine the possibility of professional legal activity automation and to identify the limitations that in a democratic society are associated with the use of software capable of generating effective legal solutions in conflict situations.

Methods: the conducted empirical research is based on the methodology of social sciences, sociology of law, principles of communicative and communicational theories of law, and formal-legal analysis of legal documents.

Results: the paper presents examples of functioning of computer systems that imitate some specific aspects of human intelligence in decision-making. The concept of algorithm and the main characteristics of tasks performed by artificial intelligence systems are defined. The relevance, methods and achievements of sociology of law are outlined, which underlie the systems or computer programs helping to resolve legal conflicts. It is found that the research tools developed as a methodology within the sociology of law since its emergence will be more widely used in the future, due to the growing use of information and communication technologies in legal activities. It is shown that in the administration of justice it is impossible to generate solutions only on the basis of artificial intelligence, since law and the process of making legal decisions on its basis has more complex characteristics in a democratic society. It is emphasized that obtaining the desired legal result is not limited to the processes of algorithmization, categorization or formal exegesis of legal texts. It rather consists in understanding and thinking in accordance with the accepted values, meanings, evaluative criteria, strategies, perspectives, etc.

Scientific novelty: the article reveals the significance of the principles of communicative and communicational theories of law under the development of information and communication technologies in legal activity. The main limitations of the use of artificial intelligence in legal activity and, in particular, in justice are identified.

© Galindo Ayuda F., 2024



This is an Open Access article, distributed under the terms of the Creative Commons Attribution licence (CC BY 4.0) (<https://creativecommons.org/licenses/by/4.0>), which permits unrestricted re-use, distribution and reproduction, provided the original article is properly cited.

Practical significance: the formulated provisions help, while improving legal regulation, to avoid insufficiently justified decisions on the automation of law enforcement, as well as to take into account the increasing importance of the principles of communicative and communicational theories of law in such types of legal activities as creation, interpretation and application of laws.

For citation

Galindo Ayuda, F. (2024). Algorithms, Sociology of Law and Justice. *Journal of Digital Technologies and Law*, 2(1), 34–45. <https://doi.org/10.21202/jdtl.2024.3>

Contents

Introduction

1. Algorithms and artificial intelligence

2. Sociology of law and jurimetrics

3. Justice

Conclusions

References

Introduction

The extension of the use of information and communication technologies in practically all kinds of activities, including those of jurists, has meant that the research tools developed as a methodology by the sociology of law since its appearance have at this time, and foreseeably in the future, a wide use. As we shall observe in this paper, thanks to this fact, today it is possible to know with respect to a certain matter or conflict that a lawyer must deal with professionally, for example, the following: a) judgments taken in a certain place on similar matters; (b) the possible content of the decision, if the judge deciding on the particular case has decided on previous similar cases; (c) any arguments made by the lawyer of the other party to the proceedings if that lawyer has previously participated in a similar case, and the content of the decision adopted by the respective judge in the judgment promulgated; d) the average time of obtaining the decision in similar cases by the judges or courts of the competent jurisdiction.

For this to occur, it has been necessary to carry out the necessary empirical work, using the methodological proposals of the social sciences, here the sociology of law, in order to select, store, compare and retrieve the information and the themes indicated as an example. It has also been necessary to use the appropriate algorithm, that is, it has been necessary to provide the program that provides the expressed results with the instructions or the steps that are necessary to solve the questions considered, or, more specifically, to achieve the corresponding objective to be achieved (Heitkemper & Thurman, 2022; Ojiako et al., 2018; Milchram et al., 2018; Nagtegaal, 2021).

Through the expansion of the so-called artificial intelligence programs, it is even possible to think that, through the operation of the appropriate algorithms or programming steps,

a proposal for the resolution of the conflict in question can be automatically generated, satisfying: the equivalence or not of the cases, the resolution in favor of the interests of the person who asks the question, the expected duration of the procedure ... This is foreseen by the lawyers movement called “LegalTECH” that in Spain as in other countries makes proposals in tune with those of this type in its publications¹.

We deal with this issue in this work attending to the following. First, it presents some indications on the operation of computer programs, taking as a reference the consideration of what are the algorithms and the basic characteristics of the objectives that artificial intelligence programs pose. Secondly, it realizes the relevance of the sociology of law, its methods and achievements, which have even helped to generate systems or programs to help resolve legal conflicts. Thirdly, it is explained that it is not possible in the field of the administration of justice to generate decisions or products of artificial intelligence, given the complex characteristics of the law and the process of drafting legal decisions in a democratic society. Finally, a conclusion is reached.

1. Algorithms and artificial intelligence

Computer programs, also those called artificial intelligence programs, are responsible for performing calculations in order to solve problems. These calculations are satisfied, complying with the corresponding algorithm, with data that express the information that is stored in what are called databases that make up everything that today constitutes the Internet (Papagianneas & Junius, 2023; Swofford & Champod, 2022). The algorithm is the set of instructions that must be followed to solve a problem or complete a task. Donald Knuth, considered the father of modern computer programming, defines the algorithm as... “merely being a finite set of rules that gives a sequence of operations for solving a specific type of problem” (Knuth, 1997). Algorithms are used in many different fields as well in science, engineering, computing, business, also in programs that are used as an auxiliary instrument in the professional activities of lawyers.

What do artificial intelligence tools do? According to the literature, as it is said, for example, in Russel and Norvig, these tools are intended to calculate data, dealing with the

¹ An example of the extension of this position is collected in Spain in the book: Guide LegalTECH. (2022). Madrid: Derecho Práctica. <https://clck.ru/38fG9Q>. The book presents program content computer offered by companies and used by lawyers in their daily practice. Contains 150 reference cards. The Guide is subtitled: “Analysis of tools and platforms to transform the legal professions”. More than 30 Spanish experts, basically lawyers, have participated in its elaboration. The reference is, in particular, to applications, developed by companies that move in a legal field both Spanish and different from Spanish. As it is stated by the Guide, the systems proposed in the book allow to assist: the analysis and review of contracts, the preservation of the Cybersecurity and privacy, access and use of legal databases, document and process automation, training, expansion of commercial offers of legal services and networks of lawyers, performance of legal services and claims online, and the use of legal management programs or software... This means that the programs come to assist and even replace to all types of legal activities. It should be noted here that many referred applications are built: 1) preferably from the English language, and 2) in the scope of action of the “common law”, legal style that differs significantly from that of “civil law” practiced in Spain and the countries of the European Union for its follow-up to the “precedent rule”. On the relevance of the appeal to the artificial intelligence suffice it to say that the Guide contains references to the same in 26 pages of the 184 of which it consists.

following (Russel & Norvig, 2021): machine learning, natural language processing, computer vision and robotics. That is to say they are tools that are used to make: machine learning, natural language processing, computer vision and robotics. That is to say they are tools that are used to make: programs / constructions / formulas / calculations / information / numbers / algorithms / texts / databases.

Art. 3, 1 of the proposal for an European Regulation on artificial intelligence² specifies something more what has been stated so far by saying: “‘artificial intelligence system’ (AI system) means software that is developed with one or more of the techniques and approaches listed in Annex I and can, for a given set of human-defined objectives, generate outputs such as content, predictions, recommendations, or decisions influencing the environments they interact with”; Annex 1 of the regulation states: “a) Machine learning approaches, including supervised, unsupervised and reinforcement learning, using a wide variety of methods including deep learning; (b) Logic- and knowledge-based approaches, including knowledge representation, inductive (logic) programming, knowledge bases, inference and deductive engines, (symbolic) reasoning and expert systems; (c) Statistical approaches, Bayesian estimation, search and optimization methods³”.

Expressions that show that artificial intelligence only simulates some specific aspects of human intelligence. They do not carry out, on the other hand, all the tasks of this intelligence, which are not only calculation and speed, but also understanding and reflection according to values, senses, criteria, vital perspectives or points of view. Therefore, it is impossible to resolve conflicts with the tools of these programs in which it is necessary to comply with the rules and procedures accepted in a democratic society, since such a resolution necessarily involves lawyers, officials and even citizens who are part of the conflict and their solution.

2. Sociology of law and jurimetrics

The sociology of law is a discipline that studies the relations between law and society. It uses social science research methods to understand the origin, evolution, function and impact of law on society. The most significant methods used by the subject are: participatory observation, interviews, surveys and document analysis.

The sociology of law has been put into practice for a long time: since the beginning of the twentieth century. Significant initiators of it are, in the United States, Judge Oliver Wendell Holmes (1897), and, in Europe, Eugen Ehrlich (1913). Precursor statements of both, announcing the need to develop the methods proper to the sociology of law indicated, are: “The prophecies of what the courts will do in fact, and nothing more preteintious, are what I mean by the law” (Holmes, 1987), and “Wir brauchen ja nur die Augen und Ohren zu öffnen, um alles zu erfahren, was für das Recht unserer Zeit von Bedeutung ist” (Ehrlich, 1913; Ferreira & Gromova, 2023).

With these precedents, it is not surprising that in 1959 appeared a journal, founded by the American Bar Association entitled “Jurimetrics”, a journal that is still published today

² European Parliament. (2023, June 14). Proposal for a regulation of the European Parliament and of the Council laying down harmonised rules on artificial intelligence (Artificial intelligence act) and amending certain Union legislative Acts COM/2021/206 final. <https://clck.ru/349gqF>

³ Ibid. <https://clck.ru/349gqF>

and that, with the name “Jurimetrics, The Journal of Law, Science, and Technology”, since its refoundation in 1966, is dedicated to the study of law and science⁴.

In coherence with the above, the development of information technologies has allowed that under the name “Jurimetría” has already recently built a program of ordering that, according to its authors, the company La Ley in collaboration with Google Spain,... “It is a powerful web platform that allows the lawyer to explore and analyze in a simple and intuitive way information never before available as the most relevant parameters around a specific judicial process, including duration, probability of appeal and prediction of its outcome, trajectory of the judge or magistrate in charge, jurisprudential lines around the subject raised, arguments more likely to succeed in a specific procedural context as well as knowledge of the background, experience and arguments of the counterparty or the company party to the litigation in similar cases”. That is to say: the program enables what was mentioned as hypothetically possible at the end of the Introduction of the present work.

On the other hand, it should be added that on the same page Web also seems to say about the program something more by stating that: “With Jurimetría and thanks to the combination of the best cutting-edge technology in Artificial Intelligence with the knowledge of the legal experts of THE LAW, the costly preliminary research work for the definition of the strategy around a process is already simply history”⁵. Does this proposal mean that the answer to the question we asked ourselves at the beginning of this work can be definitive? In other words, from what has just been said, the following question can still be asked: can artificial intelligence systems, as defined by Parliament and the European Commission, are able to generate output information such as content, predictions, recommendations or decisions that influence the environments with which it interacts for problems specific to the administration of justice such as the preparation of sentences?

We consider this issue further.

3. Justice

We anticipate that the answer to the question remains in the negative. It is focused, basically, on the following considerations:

1) The widespread questioning of the positivist claim, established in the eighteenth century by Montesquieu; he said that the text of the law is the same as the law, its only point of reference (Montesquieu, 1964); regardless of assume, as is done today, that attention must also be paid to the content and characteristics of specific conflicts, and of the different legal activities whose implementation is necessary to provide solutions to them.

2) The fact that, consistent with the above, it has been maintained for some time, on the other hand, as we express below, that the text of the law is not the only reference, but that it

⁴ <https://clck.ru/38fGJF>

⁵ La herramienta de analítica jurisprudencial predictiva más innovadora del mercado. Jurimetria. <https://clck.ru/38fGLX>

is appropriate to consider that so is the communication, in which said text is concretized by the citizens and jurists through their different statements and activities.

This proposal, called the communicative theory of law, implies, essentially, recognizing that a style of action or policy consistent with legal texts should not prevent admitting that jurists (judges and lawyers, exemplary) must act at all times in a complex way, compatible with democracy and the field of communication. This complexity is exposed by Gunther Teubner, for example, referring to Humberto Maturana, in the following: “The legal system, like other autopoietic systems, is seen as nothing but an ‘endless dance of internal correlations in a close network of interacting elements, the structure of which is continually being modified ... by numerous interwoven domains and meta-domains of structural coupling’” (Teubner, 1993).

This change of perspective is also explained in the works of Gregorio Robles. Especially in his Theory of Law (Robles, 2021). In this work, the author studies the legal decisions that occur in the Rule of Law, taking into account that the judges decision is the exemplary legal decision, since it is the one that resolves the conflicts that the Law deals with. The book proposes, therefore, to carry out the study of Law not of legal texts but from the communication that takes place on language in each of the legal activities.

Robles calls this study the communication theory of law. He refers to it as follows: “The communication theory of law is so called because it adopts the perspective of communication, and therefore of language, to study the legal phenomenon. It does not proclaim that the Law is language, which would imply an ontological position, but affirms that Law, everything that refers to this word, is manifested through language. Language is thus the point of incipient research” (Robles, 2018).

It is important to consider that these proposals, when looked at in the communication, establish the complex scope of action through the corresponding activities of legal professionals in any type of society that is governed by the principles and rules of the rule of law. All of which allows us to recognize that although compliance with the text of the law is a guarantee of the proper functioning of legal activities, it is not the only requirement to be satisfied by legal activities. This is because democratic principles, by legal mandate, govern the activities of professionals. In other words, that democratic rules, including that of citizen participation, and those of communication govern all activities that fall under their jurisdiction.

That this is particularly true of law enforcement activity in the judicial field is indicated by the fact that, according to generally recognized statements over the past two centuries, it is said that such enforcement must be carried out on the basis of communication: in a complex manner (Ehrlich, 1903), in the judicial process (Perelman & Olbrechts-Tyteca, 1989), through mechanisms such as weighting (Engisch, 1996), the characteristics of legal life (Esser, 1956), empathy (Gadamer, 1977), topics (Viehweg, 1964), participation or autopoiesis (Maturana & Varela, 1984) and consensus (Habermas, 2016; 1981), as is typical of democratic governance (Carbonell, 2008).

This contrasts with the belief in the positivist application of the legal text, carried out in a judicial process as a simple subsumption, automatically. A text whose format, reduced to data, can be dynamised by a technical tool such as an algorithm, or an artificial intelligence program, which is promoted by the lawyers movement “LegalTECH” as mentioned above

(section 1, note 1), in a policy that is sometimes promoted by the authorities as an efficient solution to resolve conflicts in the complex society in which we live.

The proposal defended by the communicative position is: 1) close to promoting compliance with the Sustainable Development Goals approved by the United Nations in September 2015; especially those of Goal 16 which are stated as follows: “Promote peaceful and inclusive societies for sustainable development, facilitate access to justice for all and build effective and inclusive accountable institutions at all levels”⁶; 2) in line with the precautions being taken by the European Union with regard to the general use of artificial intelligence, by declaring that the practice of this technology in the field of “law enforcement” has a “high risk”⁷; 3) present in the limiting conditions of the use of systems that declare uses artificial intelligence in the legal field when bidding the program called “Jurimetría”⁸.

Conclusions

The democratic requirements of the rule of law must be examined in the exemplary context of their judicial application in order to offer more complete and complex solutions than those based solely on efficiency, subsumption, algorithm or formal exegesis of legal texts. The foregoing does not prevent accepting as an undeniable fact that technologies and the Internet can facilitate the implementation of democratic political systems. Particularly when politicians, technicians, jurists and citizens attend to what the communicative and communicational theories of law propose. We have already said that these theories emphasize the role of communication in legal activities as creation, interpretation and application of laws.

⁶ It should be borne in mind that Goal 16 has, among others, the following targets: 16.3 Promote the rule of law at the national and international levels and ensure equal access to justice for all. 16.6 Create effective and transparent accountable institutions at all levels. 16.7 Ensuring adoption at all levels of inclusive, participatory and representative decision-making that responds to needs. 16.9 Of here by 2030, provide access to an identity Legal for all, in particular through birth registration. 16.10 Ensuring access public to the information and to protect fundamental freedoms, in accordance with national laws and international agreements. 16.a Strengthen relevant national institutions, including through cooperation internationally, to create at all levels, particularly in the Countries in development, the capacity to prevent violence and combat terrorism and crime. 16.b Promote and enforce laws and policies non-discriminatory in favour of sustainable development. To the content of Sustainable Development Goals 16 and the corresponding targets, see the link: <https://clck.ru/38fGTW>

⁷ The Annex III. 6 of the European regulation on artificial intelligence, mentioned supra note 2, includes the declaration of high-risk artificial intelligence systems that deal with “Law Enforcement Matters”.

⁸ It can be seen that the Terms of Use of the program “Jurimetria” have lower ambitions as the declared in the commercial offer of the program referred to the novel design of this system for its used artificial intelligence, by establishing that the main condition to be accepted by the user is as follows: “As a CLIENT of the Program distributed by LA LEY, you have accessed a tool for jurisprudential analysis, statistics and evaluation of predictability, all as tools to support your professional work in the legal field, to establish which is the best line of argument and your chances of success in a specific legal context, according to the functionalities of this version. The Program is not designed for the use of its statistical and predictive evaluation functionalities for different purposes, particularly for the dissemination, communication, evaluation or censorship of the professional work of judges, magistrates, prosecutors, lawyers, prosecutors or any other officials or professionals involved in the activity of the administration of justice”. (Text in capital letters is expressed in the original). These Conditions are accessed at the beginning of their use according to the indications to which the website refers: <https://clck.ru/38fGLX>

Remember that a democratic legal system today is one that is organized to guarantee and promote through the action (through the interpretation, application, creation of norms, creation of dogmas and access to legal texts) by legal professionals in the face of problems, cases or specific situations, of the following mechanisms exposed by Miguel Carbonell (2008):

1. The fundamental legal principles, recognized in constitutions and laws, as well as in the daily reality of the countries where legal professionals operate.
2. Compliance with prerequisites for the exercise of these mechanisms and principles, such as access to information.
3. The main policy or philosophy guiding the activities of the legal professions: the principles of democratic participation and access to information, and the protection of personal data, intellectual property and the security of information systems.

References

- Carbonell, M. (2008). Funcionalidad de la Constitución y derechos sociales: esbozo de algunos problemas. *Estudios Constitucionales*, 6(2), 43–71. <http://dx.doi.org/10.4067/S0718-52002008000100003>
- Ehrlich, E. (1903). *Freie Rechtsfindung und freie Rechtswissenschaft*. Aalen: Scientia Verlag.
- Ehrlich, E. (1913). *Grundlegung der Soziologie des Rechts*. München und Leipzig: Verlag von Duncker & Humblot.
- Engisch, K. (1996). Sentido y alcance de la sistemática jurídica. *Anuario de Filosofía del Derecho*, 3, 7-41.
- Esser, J. (1956). *Grundsatz und Norm in der richterlichen Fortbildung des Privatrechts*. Tübingen: Mohr.
- Ferreira, D. B., & Gromova, E. A. (2023). Hyperrealistic Jurisprudence: The Digital Age and the (Un)Certainty of Judge Analytics. *International Journal for the Semiotics of Law – Revue Internationale de Sémiotique Juridique*, 36(6), 2261–2281. <https://doi.org/10.1007/s11196-023-10015-0>
- Gadamer, H. (1977). *Verdad y Método. Fundamentos de una hermenéutica filosófica*. Salamanca: Ediciones Sígueme.
- Habermas, J. (1981). *Theorie des kommunikativen Handelns*. Vol. I. Frankfurt/M: Suhrkamp.
- Habermas, J. (2016). *En la espiral de la tecnocracia*. Madrid: Trotta.
- Heitkemper, E. M., & Thurman, W. (2022). Social justice informatics: A critical approach for the future. *Nursing Outlook*, 70(3), 374–376. <https://doi.org/10.1016/j.outlook.2022.02.008>
- Holmes, O. W. J. (1897). The path of the law. *Harvard Law Review*, 10(8), 457–478. <https://doi.org/10.2307/1322028>
- Knuth, D. (1997). *The art of computer programming: fundamental algorithms*. Reading: Addison-Wesley.
- Maturana, H., & Varela, F. (1984). *El árbol del conocimiento*. Santiago de Chile: OEA/Editorial Universitaria.
- Milchram, C., Hillerbrand, R., Van De Kaa, G., Doorn, N., & Künneke, R. W. (2018). Energy Justice and Smart Grid Systems: Evidence from the Netherlands and the United Kingdom. *Applied Energy*, 229, 1244–1259. <https://doi.org/10.1016/j.apenergy.2018.08.053>
- Montesquieu, C. (1964). *L'Esprit des Lois et la querelle de l'esprit des lois. Oeuvres complètes (1748)*. París: Ed. du Seuil.
- Nagtegaal, R. (2021). The impact of using algorithms for managerial decisions on public employees' procedural justice. *Government Information Quarterly*, 38(1), 101536. <https://doi.org/10.1016/j.giq.2020.101536>
- Ojiako, U., Chipulu, M., Marshall, A., & Williams, T. (2018). An examination of the 'rule of law' and 'justice' implications in Online Dispute Resolution in construction projects. *International Journal of Project Management*, 36(2), 301–316. <https://doi.org/10.1016/j.ijproman.2017.10.002>
- Papagiannenas, S., & Junius, N. (2023). Fairness and justice through automation in China's smart courts. *Computer Law & Security Review*, 51, 105897. <https://doi.org/10.1016/j.clsr.2023.105897>
- Perelman, Ch, & Olbrechts-Tyteca, L. (1989). *Tratado de la argumentación. La nueva retórica*. Madrid: Gredos.
- Robles, G. (2018). *Cinco estudios de teoría comunicacional del derecho*. Santiago de Chile: Ediciones Olejnik.
- Robles, G. (2021). *Teoría del derecho. Fundamentos de teoría comunicacional del derecho. Vol. III*. Navarra: Aranzadi.
- Russell, S., & Norvig, P. (2021). *Artificial intelligence: a modern approach*. Hoboken: Pearson.
- Swofford, H., & Champod, C. (2022). Probabilistic reporting and algorithms in forensic science: Stakeholder perspectives within the American criminal justice system. *Forensic Science International: Synergy*, 4, 100220. <https://doi.org/10.1016/j.fsisy.2022.100220>
- Teubner, G. (1993). *Law as an autopoietic system*. Oxford: Blackwell Publishers.
- Viehweg, T. (1964). *Tópica y Jurisprudencia*. Madrid: Taurus.

Author information



Fernando Galindo Ayuda – PhD, Full Professor of Philosophy of Law, Department of Criminal Law, Philosophy of Law and History of Law, University of Zaragoza; Member of the Spanish Royal Academy of Jurisprudence and Legislation, Section of Philosophy of Law

Address: 12, Pedro Cerbuna, 50009 Zaragoza, Spain

E-mail: cfa@unizar.es

ORCID ID: <https://orcid.org/0000-0001-8339-1788>

Scopus Author ID: <https://www.scopus.com/authid/detail.uri?authorId=24324858600>

WoS Researcher ID: <https://www.webofscience.com/wos/author/record/I-3064-2018>

Google Scholar ID: https://scholar.google.com/citations?user=clc_O5YAAAAJ

Conflict of interest

The author declares no conflict of interest.

Financial disclosure

The research had no sponsorship.

Thematic rubrics

OECD: 5.05 / Law

PASJC: 3308 / Law

WoS: OM / Law

Article history

Date of receipt – August 4, 2023

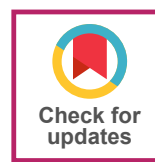
Date of approval – August 16, 2023

Date of acceptance – March 15, 2024

Date of online placement – March 20, 2024



Научная статья
УДК 34:004:316:004.8
EDN: <https://elibrary.ru/uunzfp>
DOI: <https://doi.org/10.21202/jdtl.2024.3>



Алгоритмы, социология права и правосудие

Фернандо Галиндо Аюда 

Университет Сарагосы, Сарагоса, Испания

Ключевые слова

алгоритм
искусственный интеллект,
коммуникативная теория
права,
лигалтех (LegalTech),
право,
правоприменение,
правосудие,
социология права,
цифровые технологии,
юридический (правовой)
конфликт

Аннотация

Цель: определение возможности автоматизации профессиональной юридической деятельности и выявление ограничений, которые в демократическом обществе связаны с использованием компьютерных программ, способных генерировать эффективные правовые решения в конфликтных ситуациях.

Методы: проведенное эмпирическое исследование опирается на методологию общественных наук, социологию права, принципы коммуникативной и коммуникационной теорий права, формально-юридический анализ правовых документов.

Результаты: в работе представлены примеры функционирования компьютерных систем, имитирующих некоторые специфические аспекты человеческого интеллекта при принятии решений. Определены понятие алгоритма и основные характеристики задач, выполняемых системами искусственного интеллекта. Обозначена актуальность, методы и достижения социологии права, на основе которых были созданы системы или программы, помогающие в решении правовых конфликтов. Выявлено, что исследовательский инструментарий, разработанный в качестве методологии в рамках социологии права с момента ее появления, получит в дальнейшем более широкое применение, что связано с ростом использования информационно-коммуникационных технологий в юридической деятельности. Показано, что в сфере отправления правосудия невозможно генерировать решения только лишь на основе искусственного интеллекта, поскольку право в демократическом обществе и процесс принятия на его основе юридических решений обладает более сложными характеристиками. Подчеркнуто, что получение нужного юридического результата не ограничивается процессами алгоритмизации, категоризации или формальной экзегетикой правовых текстов, а заключается в понимании и размышлениях в соответствии с принятыми ценностями, смыслами, оценочными критериями, стратегиями, перспективами и др.

Научная новизна: выявлено значение принципов коммуникативной и коммуникационной теорий права в условиях развития информационно-коммуникационных технологий в юридической деятельности; установлены основные ограничения использования программ искусственного интеллекта в юридической деятельности, и в частности в правосудии.

© Галиндо Аюда Ф., 2024



Статья находится в открытом доступе и распространяется в соответствии с лицензией Creative Commons «Attribution» («Атрибуция») 4.0 Всемирная (CC BY 4.0) (<https://creativecommons.org/licenses/by/4.0/deed.ru>), позволяющей неограниченно использовать, распространять и воспроизводить материал при условии, что оригинальная работа упомянута с соблюдением правил цитирования.

Практическая значимость: сформулированные положения позволяют в ходе совершенствования правового регулирования избежать недостаточно обоснованных решений по автоматизации правоприменительной деятельности, а также учесть возрастающее значение принципов коммуникативной и коммуникационной теорий права в таких видах юридической деятельности, как создание, толкование и применение законов.

Для цитирования

Галиндо Аюда, Ф. (2024). Алгоритмы, социология права и правосудие. *Journal of Digital Technologies and Law*, 2(1), 34–45. <https://doi.org/10.21202/jdtl.2024.3>

Список литературы

- Carbonell, M. (2008). Funcionalidad de la Constitución y derechos sociales: esbozo de algunos problemas. *Estudios Constitucionales*, 6(2), 43–71. <http://dx.doi.org/10.4067/S0718-52002008000100003>
- Ehrlich, E. (1903). *Freie Rechtsfindung und freie Rechtswissenschaft*. Aalen: Scientia Verlag.
- Ehrlich, E. (1913). *Grundlegung der Soziologie des Rechts*. München und Leipzig: Verlag von Duncker & Humblot.
- Engisch, K. (1996). *Sentido y alcance de la sistemática jurídica*. *Anuario de Filosofía del Derecho*, 3, 7-41.
- Esser, J. (1956). *Grundsatz und Norm in der richterlichen Fortbildung des Privatrechts*. Tübingen: Mohr.
- Ferreira, D. B., & Gromova, E. A. (2023). Hyperrealistic Jurisprudence: The Digital Age and the (Un)Certainty of Judge Analytics. *International Journal for the Semiotics of Law – Revue Internationale de Sémiotique Juridique*, 36(6), 2261–2281. <https://doi.org/10.1007/s11196-023-10015-0>
- Gadamer, H. (1977). *Verdad y Método. Fundamentos de una hermenéutica filosófica*. Salamanca: Ediciones Sígueme.
- Habermas, J. (1981). *Theorie des kommunikativen Handelns*. Vol. I. Frankfurt/M: Suhrkamp.
- Habermas, J. (2016). *En la espiral de la tecnocracia*. Madrid: Trotta.
- Heitkemper, E. M., & Thurman, W. (2022). Social justice informatics: A critical approach for the future. *Nursing Outlook*, 70(3), 374–376. <https://doi.org/10.1016/j.outlook.2022.02.008>
- Holmes, O. W. J. (1897). The path of the law. *Harvard Law Review*, 10(8), 457–478. <https://doi.org/10.2307/1322028>
- Knuth, D. (1997). *The art of computer programming: fundamental algorithms*. Reading: Addison-Wesley.
- Maturana, H., & Varela, F. (1984). *El árbol del conocimiento*. Santiago de Chile: OEA/Editorial Universitaria.
- Milchram, C., Hillerbrand, R., Van De Kaa, G., Doorn, N., & Künneke, R. W. (2018). Energy Justice and Smart Grid Systems: Evidence from the Netherlands and the United Kingdom. *Applied Energy*, 229, 1244–1259. <https://doi.org/10.1016/j.apenergy.2018.08.053>
- Montesquieu, C. (1964). *L'Esprit des Lois et la querelle de l'esprit des lois. Oeuvres complètes (1748)*. París: Ed. du Seuil.
- Nagtegaal, R. (2021). The impact of using algorithms for managerial decisions on public employees' procedural justice. *Government Information Quarterly*, 38(1), 101536. <https://doi.org/10.1016/j.giq.2020.101536>
- Ojiako, U., Chipulu, M., Marshall, A., & Williams, T. (2018). An examination of the 'rule of law' and 'justice' implications in Online Dispute Resolution in construction projects. *International Journal of Project Management*, 36(2), 301–316. <https://doi.org/10.1016/j.ijproman.2017.10.002>
- Papagianneas, S., & Junius, N. (2023). Fairness and justice through automation in China's smart courts. *Computer Law & Security Review*, 51, 105897. <https://doi.org/10.1016/j.clsr.2023.105897>
- Perelman, Ch, & Olbrechts-Tyteca, L. (1989). *Tratado de la argumentación. La nueva retórica*. Madrid: Gredos.
- Robles, G. (2018). *Cinco estudios de teoría comunicacional del derecho*. Santiago de Chile: Ediciones Olejnik.
- Robles, G. (2021). *Teoría del derecho. Fundamentos de teoría comunicacional del derecho. Vol. III*. Navarra: Aranzadi.
- Russell, S., & Norvig, P. (2021). *Artificial intelligence: a modern approach*. Hoboken: Pearson.
- Swofford, H., & Champod, C. (2022). Probabilistic reporting and algorithms in forensic science: Stakeholder perspectives within the American criminal justice system. *Forensic Science International: Synergy*, 4, 100220. <https://doi.org/10.1016/j.fsisy.2022.100220>
- Teubner, G. (1993). *Law as an autopoietic system*. Oxford: Blackwell Publishers.
- Viehweg, T. (1964). *Tópica y Jurisprudencia*. Madrid: Taurus.

Информация об авторе



Фернандо Галиндо Ауда – PhD, профессор философии права, факультет уголовного права, философии права и истории права, Университет Сарагосы; член Испанской королевской академии юриспруденции и законодательства, секция философии права

Адрес: 50009, Испания, г. Сарагоса, ул. Педро Цербуна, 12

E-mail: cfa@unizar.es

ORCID ID: <https://orcid.org/0000-0001-8339-1788>

Scopus Author ID: <https://www.scopus.com/authid/detail.uri?authorId=24324858600>

WoSResearcherID: <https://www.webofscience.com/wos/author/record/I-3064-2018>

Google Scholar ID: https://scholar.google.com/citations?user=clc_O5YAAAAJ

Конфликт интересов

Автор сообщает об отсутствии конфликта интересов.

Финансирование

Исследование не имело спонсорской поддержки.

Тематические рубрики

Рубрика OECD: 5.05 / Law

Рубрика ASJC: 3308 / Law

Рубрика WoS: OM / Law

Рубрика ГРНТИ: 10.07.45 / Право и научно-технический прогресс

Специальность ВАК: 5.1.1 / Теоретико-исторические правовые науки

История статьи

Дата поступления – 4 августа 2023 г.

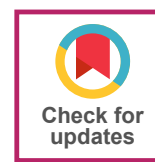
Дата одобрения после рецензирования – 16 августа 2023 г.

Дата принятия к опубликованию – 15 марта 2024 г.

Дата онлайн-размещения – 20 марта 2024 г.



Research article
UDC 34:004:004.8:34.096
EDN: <https://elibrary.ru/awefay>
DOI: <https://doi.org/10.21202/jdtl.2024.4>



Legal Regulation of Artificial Intelligence: Experience of China

Irina A. Filipova 

National Research Lobachevsky State University of Nizhni Novgorod, Nizhniy Novgorod, Russian Federation;
Samarkand State University named after Sharof Rashidov, Samarkand, Uzbekistan

Keywords

artificial intelligence,
comprehensive approach,
digital technologies,
draft of law,
generative artificial,
intelligence,
iterative character,
law,
risk-oriented approach,
sectoral approach

Abstract

Objective: to trace the development trajectory of legal regulation in the field of artificial intelligence in the People's Republic of China by revealing the advantages and disadvantages of China's approach to artificial intelligence regulation and to outline the prospects of national regulation for the nearest future, taking into account the world experience.

Methods: general scientific methods of analysis and synthesis, classification, systemic and functional approaches. Also, the formal-legal, comparative-legal, and historical-legal methods were used.

Results: the research demonstrates the validity of Chinese claims for world leadership in the creation of legal regulation of artificial intelligence, as it is in China that the first normative legal acts were adopted. These acts have already entered into force; however, each of them deals with a narrow range of issues, while there is no law to establish general rules for the artificial intelligence industry. Among the characteristic features of the Chinese approach we can name, first of all, its iterative nature, which allows adjusting the regulation with each new step. Another feature is the sectoral nature of the regulation.

Scientific novelty: in the course of the research, the development stages of artificial intelligence legal regulation in China were identified and described; the advantages and disadvantages of the Chinese approach to regulation were identified and argued; this approach was compared with the approaches of China's main rivals competing with it in terms

© Filipova I. A., 2024



This is an Open Access article, distributed under the terms of the Creative Commons Attribution licence (CC BY 4.0) (<https://creativecommons.org/licenses/by/4.0>), which permits unrestricted re-use, distribution and reproduction, provided the original article is properly cited.

of the technology development and its legal regulation. All of the above allowed making conclusions about the subsequent development of legal regulation in China and in the whole world.

Practical significance: familiarization with the research materials enables interested legal scholars, and not only them, to get a clear idea of the level of artificial intelligence regulation, achieved by China. China's experience is of significant interest to the rest of the world, showing the correctness or faults of possible regulatory options in the new and complex field. The study results can be used in the practice of legal regulation in the sphere of artificial intelligence, as well as in preparing lectures in the relevant courses and writing tutorials for law students.

For citation

Filipova, I. A. (2024). Legal Regulation of Artificial Intelligence: Experience of China. *Journal of Digital Technologies and Law*, 2(1), 46–73. <https://doi.org/10.21202/jdtl.2024.4>

Contents

Introduction

1. Stages of the development of artificial intelligence regulation in China

1.1. Initial stage

1.2. Current stage

2. Features of artificial intelligence regulation in China

2.1. Characteristics of the Chinese approach to artificial intelligence regulation

2.2. Advantages and drawbacks of the Chinese approach to artificial intelligence regulation

3. Comparative analysis of the Chinese approach to artificial intelligence regulation versus other approaches

3.1. Comparison with the European approach to artificial intelligence regulation

3.2. Comparison with the American approach to artificial intelligence regulation

3.3. Comparison with the approaches of the leading Asian countries to artificial intelligence regulation

Conclusions

References

Introduction

Artificial intelligence is rapidly developing, influencing the life of people more and more intensively every day, and requires a special legal regulation (Wang & Wang, 2022). The evidence of this is the intensified creation of new legal norms at the level of state bodies in different countries and at the level of interstate bodies in different regions of the world. China claims for leadership in the field of artificial intelligence legal regulation, trying to get ahead of other subjects of world politics and thus globally influence the vector of regulation development. It is worse mentioning that at least three points must be distinguished, in which different states and their associations compete. These are, firstly, the level of artificial intelligence development; secondly, the pace of its development; and, thirdly, the level of development of legal regulation in this area. By the first indicator, China is steadily occupying the second position, only yielding to the United States and significantly ahead of the rest of the world¹ in terms of research conducted, commercialization of its results, and development of the relevant infrastructure. China is ahead of the United States in terms of the pace of development, and has set a goal to overtake the United States by the first indicator by 2030, which is greatly facilitated by China's advantage in the amount of data available for algorithmic analysis. By the third indicator – the level of legal regulation development – China claims to be a leader, competing with the European Union, which is also striving to become a pioneer in creating laws regulating relations related to the use of artificial intelligence. Indeed, despite the growing number of regulatory initiatives worldwide, “the number of new AI regimes with an established structure is still relatively small” (Dixon, 2023), while the need for such regulation is growing due to the increasing risks associated with the introduction of artificial intelligence.

1. Stages of the development of artificial intelligence regulation in China

1.1. Initial stage

The first stage is related to forming the bases for regulation in the field of artificial intelligence. It is preparatory and includes the creation of program documents, registering, inter alia, the emerging ethical norms, which may serve as a basis for legislative acts in the future.

In 2015, China launched a comprehensive development program of the People's Republic of China (hereinafter – PRC) called “Made in China – 2025”². In July 2017, the New Generation Artificial Intelligence Development Plan was published³, officially approved by the PRC State Council.

¹ The Global AI Index. <https://goo.su/ENE2B>

² 中国制造2025. <https://goo.su/60obk4r>

³ Webster, G., Creemers, R., Kania, E., & Triolo, P. (2017, August 1). China's 'New Generation Artificial Intelligence Development Plan'. Stanford University. <https://goo.su/hdBfR>

The New Generation Artificial Intelligence Development Plan prioritizes the development of artificial intelligence and outlines a national strategy with the objective of making China a world leader in this field by 2030. Whereas previous policy initiatives containing statements on AI development viewed it as only one of the tool for achieving an objective, the Next Generation AI Development Plan is the first national initiative focused on AI development and “intended to be a blueprint for a complete AI ecosystem for the country” (Wu F. et al., 2020).

The New Generation Artificial Intelligence Development Plan, currently implemented in China, is divided into three stages. The first stage is related to China gaining a competitive position in the global market (until 2020); the second stage is related to the breakthrough in theoretical developments and active implementation of artificial intelligence in various segments of the Chinese economy (until 2025); and the third stage is related to China achieving global leadership in the artificial intelligence industry (until 2030).

The plan is managed by the Artificial Intelligence Strategy Advisory Committee formed in November 2017, coordinated by the PRC Ministry of Science and Technology, the Artificial Intelligence Plan Promotion Office, and several other bodies. Despite the centralized guidance, the plan contains a “wish list” to encourage local governments and the private sector to innovate to help realize China’s ambitions in the three strategically important areas highlighted in the plan, namely: international competition, economic growth, and social governance (Roberts et al., 2021).

The beginning of the establishment of regulation in the field of artificial intelligence chronologically corresponds to the first stage of implementation of the Chinese national strategy formulated in the New Generation Artificial Intelligence Development Plan. The foundations for subsequent regulation started to be laid since 2017, at least, when a number of state tasks were envisioned in order to achieve the objective stated in the Chinese strategy. The New Generation Artificial Intelligence Development Plan includes setting national standards and conducting research on legal issues to build a legal framework to accelerate the application of new technologies, with a special focus on regulating unmanned transportation and service robots.

On June 1, 2017, the PRC Cybersecurity Law of November 7, 2016 came into effect⁴. It was aimed at protecting critical networks and ensuring national “cyber sovereignty” and became the first stone laid in the foundation of the future legal regulation of artificial intelligence.

In 2018, China published the White Paper on Artificial Intelligence Standardization⁵, which describes the technical standards already established in China and other countries

⁴ Creemers, R., Webster, G., & Triolo, P. (2018, June 29). Cybersecurity Law of the People’s Republic of China. Stanford University. <https://clck.ru/38Qivf>

⁵ Triolo, P., & Ding, J. (2018, June 20). Excerpts from China’s ‘White Paper on Artificial Intelligence Standardization’. Stanford University. <https://goo.su/plUop>

and proposes a system for developing international standards. The document was prepared for the first meeting of the Technical Committee on Artificial Intelligence of the International Organization for Standardization and was intended to bring the developed international standards closer to those of the already existing Chinese ones. This systematized presentation of accumulated experience in technical regulation contributed to the formulation of the foundations of ethical regulation in the field under consideration, which in turn preceded legal regulation.

In 2018, the Chinese government commissioned the China Association of Artificial Intelligence (CAAI) to develop ethical guidelines for artificial intelligence. For this purpose, an entire coalition was formed, whose participants included the Chinese Academy of Sciences, the Beijing Academy of Artificial Intelligence, Beijing University, other academic organizations and a number of Chinese artificial intelligence industry leaders (IT giants). In May 2019, the “Beijing Artificial Intelligence Principles” were published⁶. Among the principles formulated are: serving human values such as privacy, dignity and freedom, constant attention to AI security, inclusion, openness, support for international cooperation, long-term planning, etc. Chinese researchers, as well as scholars from other countries around the world, justified the need to “regulate the development of AI according to the ethics and values of humanity” (Wu W. et al., 2020).

Another document dedicated to ethical regulation is the Code of Ethics for New Generation Artificial Intelligence⁷ published by the Ministry of Science and Technology of the People’s Republic of China in September 2021. The document states that artificial intelligence should be trustworthy and controlled, ensuring honesty and fairness, enhancing human well-being, and protecting privacy and security. People have the right to retain the choice to use services provided by artificial intelligence or to refuse to interact with artificial intelligence systems at any point in the interaction.

The initial stage of establishing regulation in the field of artificial intelligence lasted somewhat longer than the time allotted for it by the China’s national strategy, namely until 2021, when a number of legislative acts in this area appeared.

1.2. Current stage

The second stage of China’s strategy – a breakthrough in the theoretical development and active implementation of artificial intelligence in various segments of the Chinese economy – is planned up to 2025. It generally corresponds to the second stage of regulation formation – the transition from program documents, including ethical rules, to the creation of legislation on the use of artificial intelligence.

⁶ Beijing Artificial Intelligence Principles. (2019). International Research Center for AI Ethics and Governance. <https://goo.su/mkRid1y>

⁷ 新一代人工智能伦理规范》发布. 2021年09月26日. 来源: 科技部 <https://goo.su/Gk6ta>

Over 2021, a set of regulations related to artificial intelligence was adopted and entered into force, primarily the following:

- Data Security Law of the People’s Republic of China, dated June 10, 2021, effective from September 1, 2021⁸;
- Personal Information Protection Law of the People’s Republic of China, dated August 20, 2021, effective from November 1, 2021⁹;
- Critical Information Infrastructure Security Protection Regulations, dated August 17, 2021, effective from September 1, 2021¹⁰.

For example, the PRC Personal Information Protection Law is a framework law that establishes the basic principles, objectives, powers and responsibilities for the protection of personal data, the value of which is increasing in the era of artificial intelligence; however, it does not regulate specific issues. The detailed regulation that ensures the application of the law is carried out by state regulators. The main regulator in the field of artificial intelligence is the Cyberspace Administration of China (CAC), which usually publishes bylaws.

As for the bylaws, it is worth mentioning Regulation on the Management of Algorithmic Recommendations in the Information Services of the Internet, dated December 31, 2021, effective from March 1, 2022¹¹. The objective of this act is to prevent monopolistic behavior of artificial intelligence platforms in order to protect the users’ rights. The document requires special caution to meet the needs of older users, including to prevent fraud, and prohibits the algorithmic creation of fake news, the use of discriminatory or biased user tags in algorithmic recommendation systems, and the use of algorithms to engage in monopolistic actions or abusive competition. The Regulation obliges service providers to prevent discriminatory, exploitative working conditions for platform workers (usually couriers and drivers), requires them to work towards mitigating the spread of negative information, and gives consumers the right to disable algorithmic recommendations and receive explanations when an algorithm significantly affects their interests.

On November 25, 2022, Provisions on the Administration of Deep Synthesis Internet Information Services¹² (sometimes referred to as the Deepfake Regulation) was published. The document, effective from January 10, 2023, contains requirements for the provision

⁸ Data Security Law of the People’s Republic of China. (2021, June 29). Stanford University. <https://goo.su/yUFiOA>

⁹ Creemers, R., & Webster, G. (2021, August 20). Personal Information Protection Law of the People’s Republic of China. Stanford University. <https://goo.su/Fkeic>

¹⁰ Creemers, R., Sacks, S., & Webster, G. (2021, August 18). Critical Information Infrastructure Security Protection Regulations. Stanford University. <https://goo.su/DS6o>

¹¹ Provisions on the Management of Algorithmic Recommendations in Internet Information Services. (2021). China Law Translate. <https://goo.su/338U65>

¹² Provisions on the Administration of Deep Synthesis Internet Information Services. (2022). China Law Translate. <https://clck.ru/38Qr2i>

of deep synthesis services for the creation of images, video, audio, and text. The generated content must comply with information control regulations, be labeled as synthetically created, its providers must take measures to prevent misuse and register their algorithms (it is prohibited to publish content created by artificial intelligence without special labeling).

In addition to national acts published by the China Cyberspace Administration, municipal acts are emerging. They play an important role, as the municipalities in which such acts are issued are usually multimillion high-tech megacities:

- Regulation of the Shanghai Municipality on Promoting the Development of the Artificial Intelligence Industry, dated September 22, 2022¹³. It aims to mobilize supercomputer infrastructure, data centers and apply artificial intelligence technology in municipal government (effective from October 1, 2022);

- Regulations for the Promotion of the Artificial Intelligence Industry in Shenzhen Special Economic Zone, dated August 30, 2022¹⁴. It aims to promote the use of artificial intelligence while ensuring the ethical principles of using artificial intelligence to avoid discrimination or violation of privacy (effective from November 1, 2022), etc.

In 2023, the China Cyberspace Administration, together with several other national departments, issued the Regulations on the Interim Measures for the Management of Generative Artificial Intelligence Services, dated July 10, 2023, which came into effect on August 15, 2023¹⁵. As stated in Article 1 of the Regulations, it is designed to promote sound development and regulated use of generative artificial intelligence, safeguard national security and public interest, and protect the rights of citizens and legal entities. The document calls on administrative authorities and courts at all levels to adopt a cautious and tolerant stance towards artificial intelligence. An example of a response to this call is a 2023 decision of the Beijing Internet Court stating that content generated by artificial intelligence can be protected by copyright¹⁶, although it had previously denied such protection (Wan & Lu, 2021). Recognition of copyright to certain AI-generated content not only encourages its use, increasing the commercial value of AI-based products and services, but also raises the question of corresponding revision of copyright law and contradicts positions taken in other major jurisdictions, including the United States (Huyue Zhang, 2024).

¹³ Regulation of the Shanghai Municipality on Promoting the Development of the Artificial Intelligence Industry. (2022). <https://clck.ru/38Qr3Z>

¹⁴ Regulations for the Promotion of the Artificial Intelligence Industry in Shenzhen Special Economic Zone. (2022). <https://clck.ru/38Qr4H>

¹⁵ Interim Measures for the Management of Generative Artificial Intelligence Services. (2023). <https://clck.ru/38Qr5D>

¹⁶ Deng, I. (2023, December 1). Beijing court's ruling that AI-generated content can be covered by copyright eschews US stand, with far-reaching implications on tech's use. South China Morning Post. <https://clck.ru/38Qr6K>

Another regulation, a draft of which was published by the China Cyberspace Administration in August 2023, is due to be adopted in 2024; it is the Regulation on Facial Recognition Technologies¹⁷. The objective of this act is to regulate the use of such technologies, protecting the right to personal information while maintaining public order and security. The document prohibits the use of facial recognition technologies to analyze race, ethnicity, religious beliefs and health status. The exception is when a person has given consent or it is required in the interest of national security. Thus, while Chinese law enforcement and state security agencies widely use facial recognition technologies, the new rules limit the use of such technologies to non-state entities such as banks, airports, hotels, etc. For security objectives, image collection and identification equipment must be installed in public places, but the managers of facilities (buildings and structures) are not obliged to use facial recognition to control entrances and exits and must ensure that alternative means of identity verification can be used by those who wish it.

Among the projects under development, a draft law on artificial intelligence deserves special attention. It is intended to regulate relations in the field of artificial intelligence more fully. The project initialization was included in the 2023 legislative work plan of the PRC State Council¹⁸. In August 2023, a preliminary law draft prepared by a group of researchers from the Chinese Academy of Social Sciences was published as Model Law on Artificial Intelligence, Version 1.0 (Draft Expert Proposal)¹⁹. Stanford University experts emphasize that it was prepared under the supervision of the Deputy Director of the Cyber and Information Law Research Department of the Chinese Academy of Social Sciences, who is also the head of a research project on artificial intelligence ethics and regulation. This suggests that the project is supported by a number of influential Chinese politicians and, although not governmental in nature, will “serve as a reference for legislative work”²⁰. The main objective of the project is to design a mechanism to maintain a balance between security and development. The basic principles underlying the regulation proposed in the draft are as follows:

- focus on the benefit of people (Art. 4);
- ensuring the safety of research and products based on artificial intelligence (Art. 5);
- openness, transparency and explainability (Art. 6);
- accountability and legal responsibility of those involved in the research, development, provision or use of artificial intelligence (Art. 7);

¹⁷ Ministry of Justice of the People's Republic of China. (2023). China mulls first nationwide comprehensive guidelines for use of facial recognition technology. <https://goo.su/zJ0ODV1>

¹⁸ 国务院办公厅关于印发 国务院2023年度立法工作计划的通知. <https://goo.su/rTEAe0X>

¹⁹ 人工智能法（示范法）1.0》（专家建议稿）. <https://clck.ru/38QrG3>

²⁰ Webster, G., Zhou, J., Shi, M., Dorwart, H., Costigan, J., & Chen, Q. (2023, August 23). Analyzing an Expert Proposal for China's Artificial Intelligence Law. Stanford University. <https://clck.ru/38QrHZ>

- fairness and equality (Art. 8);
- resource efficiency and environmental protection (Art. 9);
- promotion of innovation (Art. 10);
- international cooperation (Art. 11);
- legality and legitimacy, obligation to adhere to socialist core values (Art. 14).

According to the law draft, the main responsibility will lie with the vendors (sellers), but the developers will be required to provide the necessary assistance, for example, in explaining the algorithms and in assessing the risks of the model. This will prevent them from avoiding liability by including it in the vendor contract terms or under the pretext of protecting trade secrets.

In addition, the law draft mentions a so-called negative list. Actions listed will require special administrative approval, while actions not included in the list will only require registration with the regulatory authorities. The list itself is not found in the draft, nor is there any differentiation of regulation with regard to open source models. Such artificial intelligence models are of great importance for knowledge dissemination and create competitive restrictions for dominant companies, which usually do not disclose the codes of their models. However, Article 43 of the draft provides for stricter oversight of “basic models” that can be used in a multitude of AI applications.

The enactment of the Artificial Intelligence Law is likely to open up the next stage of the AI regulation development in China, the prerequisites for which will be mentioned below, when enumerating and explaining the characteristics of the Chinese approach.

2. Features of artificial intelligence regulation in China

2.1. Characteristics of the Chinese approach to artificial intelligence regulation

Before characterizing China’s approach to AI regulation, it is worth highlighting some points explaining the national AI development strategy. It is based on four main drivers for development. The first of them is fundamental technology, i. e. the development of microchips, which China is still forced to purchase abroad, being dependent on foreign technologies. Among the countries supplying China with microchips and equipment for their production, the United States, Taiwan, South Korea, Japan and the Netherlands used to prevail. However, after the “trade war” between the U.S. and China started in 2018, the objective of which is to prevent China from maintaining its primacy in terms of technological development rate, there was a decline in the possibilities to import chips and an increased need for technological sovereignty. The second factor contributing to the artificial intelligence development is data; here China, thanks to its large population, has a huge advantage. The third factor is qualified personnel capable of creating the necessary algorithms, in which China is still losing to the United States. The fourth factor is the commercial ecosystem of artificial intelligence and related technologies, which in China is formed by IT giants that dominate the artificial intelligence

market (Keller et al., 2024). Such IT giants, which are private companies, but are closely linked to the state, can quickly introduced new developments into their products due to their large-scale production²¹. As we can see, China has a number of advantages (amount of data, infrastructure, commercialization opportunities), but lacks in chip development and the necessary personnel. In an effort to overcome the shortcomings, China is developing relevant programs and allocating significant resources to scientific research and training of specialists.

For the field of artificial intelligence to develop and expand productively, investors and entrepreneurs need clear “rules of the game”, and it is the law that should establish them. China’s approach to regulating artificial intelligence reflects these “rules of the game”. As with any approach, it has the following characteristics:

- a desire to promote the acceleration of technological development in its territory;
- a focus on preventing abuse by dominant market players;
- recognizing the primacy of ethical rules as a fundamental basis for the legal regulation of artificial intelligence;
- declaring the priority of human rights (anthropocentrism), thus conforming to the general principles in the field of artificial intelligence (Floridi & Cowls, 2019), proclaimed at the level of the United Nations in 2022²².

To the point, in November 2022, China published an official document entitled “Position Paper of the People’s Republic of China on Strengthening Ethical Governance of Artificial Intelligence”²³, which calls on the international community to agree on the ethics of artificial intelligence and work on formulating a common international framework and standards. In other words, China urged the international community to reach an agreement on the ethics of artificial intelligence and work to formulate a common international framework and standards, i.e. to concretize common principles for “global consensus with mutual respect, and actions for the good of humanity”²⁴. The document emphasizes that China advocates a responsible approach to artificial intelligence, including joint responsibility and management by multiple stakeholders. The latter include governments and scientific organizations, industry, community, etc.

²¹ Kovachich, L. (2020, July 7). Chinese experience of developing the artificial intelligence industry: strategic approach. <https://clck.ru/U8Egn>

²² Principles for the Ethical Use of Artificial Intelligence in the United Nations System (10 principles endorsed by the United Nations System Chief Executives Board for Coordination in September 2022, based on the 2021 UNESCO Recommendation on the Ethical Dimensions of Artificial Intelligence).

²³ Permanent mission of the People’s Republic of China to the United Nations office at Geneva and other International organizations in Switzerland (2022, November 16). Position Paper of the People’s Republic of China on Strengthening Ethical Governance of Artificial Intelligence. <https://goo.su/0D2F02Q>

²⁴ Zeng, Yi. (2022, November 23). China responsible on AI ethical governance. China Daily Global. <https://goo.su/vHFVlp>

The main features that distinguish the Chinese approach to AI regulation are:

- 1) responsiveness of regulation (quick response to technological challenges, where a document is created that includes some general principles to make it clear to developers, investors and users how to treat the relevant technology);
- 2) iterative regulation (state authorities adopt an act, test it, then adopt a new act or a new version of the previous act depending on the results obtained, gradually specifying the rules);
- 3) sectoral regulation (there is no law covering the norms that comprehensively regulate the whole sphere; rather, separate normative legal acts are adopted to solve different problems in the field of artificial intelligence);
- 4) ideological control (presence of censorship, in particular, censorship of algorithms);
- 5) broad powers of the state administration bodies to issue bylaws establishing many exceptions and exemptions from the norms contained in the laws.

China's approach emphasizes stimulating innovation in the field of artificial intelligence while ensuring state control over the technology. With a vast territory and many differences between regions, China allows each of them to develop their own strategies (Yang & Huang, 2022). This does not contradict the national New Generation Artificial Intelligence Development Plan, which includes a "wish list" that encourages local authorities to implement new technologies in order to achieve the general public interests.

According to the classification of approaches to artificial intelligence regulation proposed by a European researcher N. Petit (a member of a high-level interdisciplinary group of experts on artificial intelligence created by the European Commission in 2018), all approaches can be divided into two groups – legal and technological. The approaches of the first group aim to systematically address the issues arising from the artificial intelligence application, while the approaches of the second group are driven by technological change, addressing the problems that arise on a point-by-point basis (Petit, 2017). In this sense, the Chinese approach should be categorized in the second group.

The approaches included in the first group demonstrate comprehensiveness by proposing "horizontal" regulation, where the provisions of a law cover a wide range of issues in the area it regulates. In the approaches of the second group, including the Chinese one, there is "verticality" of regulation: separate legislative acts address rather narrow problems, which indicates not just sectoral character of regulation, but its fragmentation. At the same time, the development of the draft law on artificial intelligence, taking into account the already existing unofficial draft created in China, allows cautiously predicting some change of the vector from a point-by-point to comprehensive regulation (which is facilitated by the iterative nature of the Chinese approach), and hence the emergence of "horizontality" in the regulation of artificial intelligence.

2.2. Advantages and drawbacks of the Chinese approach to artificial intelligence regulation

Given the above features of the Chinese approach, its main advantages can be highlighted.

Firstly, the advantage of the approach arising from the regulation responsiveness is that China was the world first country to regulate a number of issues in the field of artificial intelligence. China's legislation introduced legal norms that were not reflected in other countries' legislation even before the end of 2023. These are, in particular, such measures as:

- introduction of licensing (supervisory regulation of advanced models of artificial intelligence that may pose a threat to public safety);
- refusal to license companies that research, develop and use generative artificial intelligence but do not provide services to the public;
- designating a specialized regulator for artificial intelligence, the Cyberspace Administration of China;
- the regulator requiring generative AI developers to take measures to improve the training data accuracy.

The inclusion of a number of new regulations has strengthened China's claims for leadership in the artificial intelligence regulation and the translation of its rules into the international arena ([Shaouxue, 2023](#)).

Secondly, being iterative, the Chinese approach is flexible. This flexibility is explained, on the one hand, by the high rate of artificial intelligence development and, consequently, by the rapid changes in the situation, and, on the other hand, by the pragmatism of the Chinese authorities. For example, facial recognition technologies – a subgroup of artificial intelligence technologies – are widely used in public places in China, which has repeatedly caused accusations of violating human rights. The new Regulation on Facial Recognition Technologies, proposed for adoption in 2024, limit the possibility of non-state organizations to use facial recognition for control and require the use of alternative methods of identity verification. The new regulations were drafted with the help of court practice, which is full of examples of Chinese companies held liable and fined for excessive use of these technologies.

The flexibility of the approach is also evidenced by the emergence of elements of comprehensive regulation proposed in the draft Artificial Intelligence Law, which will cover all research and development, supply and use of artificial intelligence within the PRC borders, as well as these activities outside of China if they affect or may affect national security, public interests or the rights of Chinese citizens and organizations. As noted above, this suggests a gradual transformation of the Chinese approach, at least a shift from a sectoral or industry-based approach towards systemic regulation.

Thirdly, China is willing to learn from other actors in global politics; for example, the PRC Personal Information Protection Law of 2021 was drafted after reading and partly

influenced by the European Union's General Data Protection Regulation (GDPR)²⁵, adopted on April 14, 2016 and effective from May 25, 2018.

In addition to the strengths of the approach, the availability of large-scale datasets, which are necessary for effective training of artificial intelligence, should be mentioned. In this aspect, China has a tremendous opportunity due to the availability of data from government surveillance. Researchers from countries competing with China sometimes complain that the authoritarian nature of China's political structure contributes to the quantity and quality of datasets needed for training (Karpa et al., 2022).

A drawback of the Chinese approach to artificial intelligence regulation is the duplication of norms in various normative legal acts, which is a consequence of sectoral, or even fragmented, regulation. Such duplication is also facilitated by the existence of a number of agencies whose competence is not clearly delineated; hence they claim to regulate artificial intelligence (along with the Cyberspace Administration of China). The powers of state bodies are very broad and usually not specified (Roberts et al., 2023), so some of them seek to contribute to the regulation of the new field. These are primarily state administration bodies, but sometimes also judicial ones. For example, on July 27, 2021, the Supreme People's Court of China issued the provision "On several issues concerning the application of law in the trial of civil cases involving the use of facial recognition technologies to process personal information"²⁶, effective from August 1, 2021, which applies to civil law disputes arising from the use of facial recognition technology in information processing.

The widespread use of facial recognition technologies in China, on the one hand, helps to ensure order and reduces the risk of committing common crimes, but on the other hand, it infringes on the right to privacy and makes social ranking of citizens possible. Since the system of controlling people's behavior is based on artificial intelligence technologies, the tracking of offenses is automated. For each detected offense a person is awarded points; the more points, the lower the social ranking, which affects the access to jobs, various services, travel and other benefits (Liang et al., 2018). Thus, public interests justify the suppression of individual rights; as a result, the artificial intelligence regulation is aimed not so much at protecting citizens as consumers, but at social control and projection of power²⁷.

²⁵ Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation). <https://clck.ru/34U2FN>

²⁶ 关于 审理 使用 人脸识别 技术 处理 个人 信息 相关 民事案件 适用 法律 若干 问题 的 规定. <https://clck.ru/38QrVH>

²⁷ Qiu B., & Kwok, D. (2023, December 8). China's tightening grip on AI puts other nations at risk. Nikkei Asia. <https://clck.ru/38QrXm>

We should not forget about the ideological component of regulation in China, which, in the opinion of some foreign researchers, is a significant drawback of the Chinese approach (Lucero, 2019). However, this does not mean that ideology has no influence on the formation of approaches in other countries. At the same time, the analysis of Chinese social networks shows that, despite the party and state control over the public sphere, “general public has expressed a sense of anxiety towards a future permeated with AI” (Mao & Shi-Kupfer, 2023). Thus, the presence of ideology does not exclude the corrective impact of public discourse on the formation of ethical regulation, under the influence of which legal regulation is built.

3. Comparative analysis of the Chinese approach to artificial intelligence regulation versus other approaches

3.1. Comparison with the European approach to artificial intelligence regulation

In order to better explain the above features, advantages and drawbacks of the Chinese approach, we will compare it with other approaches existing in the world. We will start with the European one, as both of them are much better formed than the positions of the countries that will be discussed further on.

The European Union, like China, claims for the world leadership in artificial intelligence regulation. Their strategies for developing artificial intelligence evolved at roughly the same time. Ethical regulation, perhaps, took shape faster in the European space; the same can be said about the beginning of legal regulation, if we take into account numerous European soft law acts²⁸. Thus, the European Union has gained some advantage, but since it is an interstate entity comprising 27 countries, whose positions often differ and require harmonization, the adoption of European legislation is slower than at the national level (Filipova, 2023).

China, being a unified state, adopts laws and regulations faster. China has already enacted a number of regulations in the field of artificial intelligence, while the European Union's draft Regulation on Artificial Intelligence²⁹, submitted in April 2021 and expected to be adopted by the end of 2022, was still not adopted a year later. On December 8, 2023, the European Council and the European Parliament reached a preliminary agreement on the draft. Even after the European Parliament, the European Council and the European Commission approve the agreed draft in 2024, it will still take two years before the EU Regulation on Artificial Intelligence becomes applicable, i.e. it will not enter into force

²⁸ The first soft law act was the European Parliament Resolution of 16 February 2017 with recommendations to the Commission on Civil Law Rules on Robotics (2015/2013(INL)); on artificial intelligence regulation in the European Union see: Filipova, I. A. (2023). Artificial intelligence: European approach to regulation. *Journal of Foreign Legislation and Comparative Law*, 19(2), 54–65.

²⁹ (2021, April 21). Proposal for a Regulation of The European Parliament and of the Council Laying Down Harmonised Rules on Artificial Intelligence (Artificial Intelligence Act) and Amending Certain Union Legislative Acts.COM/2021/206 final. <https://clck.ru/38QrYw>

until 2026. It is worth specifying that certain provisions will become effective sooner, for example, the prohibitions on unacceptable risk models will apply after six months.

The EU General Regulation on Personal Data Protection adopted in 2016 managed to play the role of a global model, which most countries began to follow when creating their own legislation in this area (it influenced China, the United States, and other countries). However, the European Union Regulation on Artificial Intelligence is unlikely to play the same role in the field of artificial intelligence regulation, including because China has surpassed the European Union in creating legal regulation.

The carefully developed European approach is comprehensive; it provides for “horizontal” regulation, where one normative legal act covers a wide range of issues, it applies to virtually all types of artificial intelligence and all areas in which it is involved. In China there is branch, sectoral, or “vertical”, regulation, when numerous acts are adopted, each establishing rules on a fairly narrow range of issues. A distinctive feature of Chinese legislation, “contrasting with the European legal tradition, is the wide discretion of public authorities, which may implement extremely significant regulation and establish a lot of exceptions and exemptions in their bylaws”³⁰.

The peculiarity of the European model of artificial intelligence regulation is that it is risk-oriented. The established approach is based on risk assessment and provides for the allocation of four groups depending on their level: unacceptable, high, moderate and minimal risks. The criteria for determining the level of risks from the use of artificial intelligence are the area and nature of this use. For example, the unacceptable risk group includes artificial intelligence systems that pose a threat to the security of citizens and their rights (in particular, allowing governments to conduct “social ranking” and biometric identification in public places). The high risk group includes artificial intelligence systems used in critical infrastructure, healthcare, law enforcement, and so on.

The draft Artificial Intelligence Law of the People’s Republic of China, although still unofficial, shows the potential for transforming the Chinese approach. It may make it more systematic in regulating artificial intelligence, as well as gaining elements of a risk-oriented approach, which implies differentiation of regulation depending on the risk level. Such differentiation is evidenced, for example, by the content of Article 43 of the draft Artificial Intelligence Law of the People’s Republic of China, which establishes stricter supervision over “basic models” of the artificial intelligence, i. e. the models trained on big data and used in various AI products (Zhang, 2023). This suggests that China is learning from the European experience.

³⁰ Sadovnikov, D. (2021, September 17). Review of the Personal Information Protection Law of the People’s Republic of China (PIPL). Zakon.ru. <https://clck.ru/38Qrag>

An important difference between China's AI development strategies and those of the EU is that in Europe, the policy debate over AI regulation are driven primarily by its widespread adoption and the desire to control the likely harmful effects of its use (Cath et al., 2018). In China, however, the starting point was the desire to fulfill the artificial intelligence potential. In other words, while the European Union was initially concerned with harm reduction, China was concerned with the prospects for innovation (Zeng, 2020). By now, however, this distinction has begun to fade, as the Chinese government is now paying serious attention to the issue of possible harm³¹.

As for the protection of basic human rights, the European approach is much more focused on this than the Chinese approach. It is precisely because of the priority of these rights that the European Union's approach is rigid and partly hinders innovation. The model based on the Chinese approach is more focused on promoting innovation for the sake of national and public goods (Roberts et al., 2023), while the individual rights are less important. In this context, it is understandable why "social ranking" based on facial recognition technology is acceptable under Chinese law. Nevertheless, even Western observers note that "coupled with new regulations on generative models, China is demonstrating more nuanced oversight – though still favoring pragmatic balance over hard limits on innovation"³².

So, while the European approach is inherently "horizontal", rigid and risk-oriented, the Chinese approach is inherently "vertical", flexible and, due to the latter quality, more capable of transformation.

Despite the difference in approach, China and the European Union are trying to dialog on technology regulation. The first "high-level digital dialog" took place in 2020, and the second in September 2023, when the topic of artificial intelligence regulation and cross-border data flows was raised. As a result of the next round of dialogue, the parties agreed to promptly exchange information on unsafe products sold over the Internet, and to organize regular seminars to familiarize each other with legislative updates and best practices³³.

3.2. Comparison with the American approach to artificial intelligence regulation

As was mentioned above, while China today is inferior to the United States in terms of artificial intelligence development, in terms of the pace of development it surpasses all countries in the world. The degree of development of American legal regulation in the field

³¹ Sun, X. (2022, April). Decoding China's "common prosperity" drive. <https://goo.su/FBDTqy>

³² Au, A. (2023, October 19). China vs US Approaches to AI Governance. The Diplomat. <https://clck.ru/38Qrem>

³³ European Commission. (2023, September 18). EU-China: Commission and China hold second High-level Digital Dialogue. <https://clck.ru/38Qrfq>

of artificial intelligence lags behind China and the European Union. In the USA there is still no integral national legislation on artificial intelligence, but a “patchwork quilt” of various normative acts. The main of them as of the beginning of 2024 are two federal laws and three orders of the US President:

- National Artificial Intelligence Initiative Act of December 28, 2020³⁴, aimed at ensuring US leadership in artificial intelligence research and development, preparing the US workforce to integrate artificial intelligence systems into all economy sectors, and coordinating civilian and military research and development;
- Artificial Intelligence Training Act, pursuant to the Acquisition Workforce Act, No. 117-207 of October 17, 2022³⁵;
- Executive Order 13859 of the President of the United States, dated February 11, 2019, “Maintaining American Leadership in Artificial Intelligence”³⁶, which was the first to present the US strategy for AI development;
- Executive Order 13960 of December 3, 2020, “Promoting the Use of Trustworthy Artificial Intelligence in the Federal Government”³⁷;
- Executive Order No. 14110 of October 30, 2023, “On the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence”³⁸, which established standards to protect against potential risks of artificial intelligence.

There are also programmatic documents that are not legally binding, such as the AI Bill of Rights³⁹, published in 2022, which is a statement of principles highlighting key values in relation to the proliferation of AI.

Regulatory uncertainty in this area persists, and many bills introduced in the U.S. Congress have been rejected, such as the draft laws on deepfakes, artificial intelligence in government, and its use in the workplace. In the near term, several new bills have a chance to be passed, but they will also address specific issues: algorithmic bias, data privacy, and protection against misinformation generated by artificial intelligence.

³⁴ H.R.6216 – National Artificial Intelligence Initiative Act of 2020. <https://clck.ru/38Qrgs>

³⁵ Artificial Intelligence Training for the Acquisition Workforce Act or the AI Training Act Law No. 117-207. (2022, November, 17). <https://clck.ru/38QvAo>

³⁶ Maintaining American Leadership in Artificial Intelligence. Executive Order No. 13859. (2019, February 11). <https://clck.ru/38QrhW>

³⁷ Promoting the Use of Trustworthy Artificial Intelligence in the Federal Government. Executive Order No. 13859. (2020, December 3). <https://clck.ru/38Qrix>

³⁸ WH.gov. (2023, October 30). Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence. No. 14110. <https://clck.ru/38Qrju>

³⁹ WH.gov. Blueprint for an AI Bill of Rights. <https://clck.ru/38Qrm3>

All of the above confirms that the American approach to artificial intelligence regulation is inferior to the Chinese and European ones, as it demonstrates extreme fragmentation of legal regulation. The development of American legislation lags behind Chinese and European legislation by at least 1–2 years. The legislation of some states, for example California, is being formed faster, but the acts adopted at the state level also demonstrate the lack of a comprehensive approach. A number of initiatives give grounds to say that the level of potential risk of different models of artificial intelligence will be taken into account when creating legal regulation⁴⁰, i.e. the risk-oriented approach inherent in European regulation is likely to be adopted by the American approach as well.

According to the generalized classification of approaches proposed by N. Petit, all approaches are divided into two subgroups – legal and technological. The influence of American IT giants, such as Amazon, Google, OpenAI, etc., on artificial intelligence regulation contributes to the formation of a technological approach in the United States, while maintaining the regulation specificity. At the same time, U.S. Executive Order No. 14110 of October 30, 2023, “On the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence” covers the issues of artificial intelligence much more comprehensively than the previously issued acts, promoting the creation of a comprehensive regulation inherent to the legal approach. The key provisions of this act require specific actions by technology companies and federal agencies. For example, developers of powerful artificial intelligence systems are obliged to share the results of their security checks with the U.S. government.

The further spread of generative AI and the adoption of the European Union’s Regulation on Artificial Intelligence in 2024, as well as the emergence in 2023-2024 of new regulations governing specific AI issues in China (plus work on an AI Law), will stimulate the development of legal regulation in the United States. Many experts point out that 2024 will be a landmark year for the country in this respect: a series of legislative proposals have been submitted to the U.S. Congress.

We can sum up that the European and American approaches are closer in their understanding of human rights due to their belonging to the same, so-called Western civilization. The Chinese approach to artificial intelligence has fundamental differences from the European and American ones; the reason is the conceptual difference in worldviews and the divergent socio-cultural characteristics, which cannot but be transmitted by law. However, the Chinese and American approaches share the unwillingness to sacrifice the opportunities for innovative development, so the US approach is even more cautious than the Chinese one and much softer than the rigid European one in creating regulation. As a consequence, some Chinese scholars have suggested that China’s approach should be called neutral (Li, 2023), although it may be more logical to speak of moderation.

⁴⁰ European Commission. (2023, May 31). EU-U.S. Terminology and Taxonomy for Artificial Intelligence. <https://clck.ru/38Qrmi>

Despite the rivalry between the United States and China in the race for leadership in artificial intelligence, the same concern for the consequences of uncontrolled use of technology is common to all. This does not exclude some convergence between the different approaches, provided they are flexible enough. Attempts to harmonize approaches are being made at the international level. For example, on November 1, 2023, the Bletchley Declaration⁴¹ was signed, recognizing the international nature of risks and committing to cooperate in the search for a universal approach to the responsible use of artificial intelligence. The Declaration was signed at the first global AI Safety Summit by representatives of 28 countries, including China, the United States and European Union member states.

3.3. Comparison with the approaches of the leading Asian countries to artificial intelligence regulation

Now it is time to compare the Chinese approach with artificial intelligence regulation emerging in other Asian countries leading in technology development. It should be emphasized that, while the belonging of countries to the Western civilization does not mean close proximity of emerging approaches, as we may see by the example of the United States and the European Union, in the case of Asian countries it is even less justified to hope for a common approach within the framework of a single civilization model due to the absence of the latter. Below we consider the examples of Japan, South Korea and Singapore, these countries often being mentioned in scientific articles as arousing research interest (Dremluga, 2022; Kubota, 2023; Shakhnazarova, 2021).

Japan is taking a soft approach to regulating AI in order to stimulate economic growth. The country aims to strengthen its position in the ranking of AI-friendly jurisdictions. In 2019, Japan published the Social Principles for Human-Centric AI⁴², forming the basis of Japanese policy in this area. In 2021, Japan's Ministry of Economy, Trade and Industry published a report on artificial intelligence management in which "legally binding horizontal requirements for artificial intelligence systems"⁴³ were deemed unnecessary for the time being. This is due to the difficulty of creating regulations that match the speed and complexity of AI innovation, while static and detailed regulations can stifle innovation.

In April 2022, Japan's Cabinet Council for the Promotion of Comprehensive Innovation Strategy published the Artificial Intelligence Strategy 2022. A year later, in April 2023, the Artificial Intelligence Development and Implementation Project Group of one

⁴¹ Gov.UK. (2023, November 1). The Bletchley Declaration by Countries Attending the AI Safety Summit, 1–2 November 2023. <https://clck.ru/38Qro5>

⁴² Social Principles of Human-Centric AI. (2019). <https://clck.ru/38QrpG>

⁴³ Expert group on how AI principles should be implemented. (2021, July 9). AI Governance in Japan. Version 1.1. <https://clck.ru/38Qrq8>

of Japan's leading parties (Liberal Democratic Party) published a proposal titled "White Paper on Artificial Intelligence: Japan's National Strategy for the New Age of Artificial Intelligence", which recognizes a significant impact of large language models, including ChatGP, on the society and emphasizes the need to develop a new national strategy. In the spring of 2023, the Japanese government established the Artificial Intelligence Strategic Council and the Artificial Intelligence Strategic Group to formulate an updated national AI strategy.

In general, Japan welcomes flexibility in the regulatory approach by combining voluntary efforts by companies to manage AI with providing non-binding guidance for such efforts by government agencies. Japan is trying to elaborate certain rules aimed at increasing the positive AI impact on the society without hindering technology development due to "overestimated risks"⁴⁴.

A similar approach is adopted in Singapore, where there is also no specific legislation in place yet. In 2019, Singapore announced its national strategy, similar to China's, aimed at achieving leadership in artificial intelligence by 2030. Following the strategy approval, Singapore launched national AI projects in five areas recognized as critical in terms of socio-economic impact: logistics, municipal services, personalized learning, prediction and treatment of chronic diseases, and border control.

The Singapore government has repeatedly emphasized the importance of responsible use of artificial intelligence, and national agencies are issuing policy documents on the practical application of artificial intelligence. For example, in 2023, a document entitled "Generative AI: Implications for Trust and Governance" was published, which identifies six risks and six ways to manage the risks⁴⁵.

As we can see, neither Japan nor Singapore consider it necessary to force the adoption of laws on artificial intelligence, which distinguishes them from the European Union and China. However, given the rigidity of the European approach, European regulation is the least consistent with the approach of these countries, while the American approach is noticeably closer.

One more example is South Korea, another technologically advanced country in Asia, where the issue of establishing legal regulation of artificial intelligence is on the agenda. In February 2023, the Korean Parliament's Committee on Science, Information and Communication Technology, Broadcasting and Communications approved a bill on the development of the artificial intelligence industry and the framework for

⁴⁴ Habuka, H. (2023). Japan's Approach to AI Regulation and Its Impact on the 2023 G7 Presidency. Washington. Center for Strategic and International Studies. <https://goo.su/yqfL>

⁴⁵ Generative AI: Implications for Trust and Governance. (2023). <https://clck.ru/38QrsQ>

a trustworthy artificial intelligence⁴⁶. The vote on the bill was scheduled as early as 2023, but was delayed due to political difficulties before the general election in April 2024.

The proposed law is intended to provide a framework to comprehensively regulate the artificial intelligence industry in South Korea. Like the draft European Union Regulation on Artificial Intelligence, it takes a risk-based approach, identifying “prohibited risk”, “high risk”, and “low risk” groups of artificial intelligence systems (Article 2), while proclaiming the principle of “priority authorization and subsequent regulation” for the development and use of artificial intelligence (Article 5).

In addition, South Korea has the Intelligent Robots Development and Distribution Promotion Act dated March 28, 2008⁴⁷, which is largely responsible for making the country one of the world’s top 5 robotics manufacturers by 2020. The level of robotization of production and services in South Korea is one of the world highest. Continuing to compete with global leaders, South Korea is striving to surpass all others in the field of robotics. In 2023, the law was amended to increase the level of localization (volume of the local production of components) by relaxing the requirements for companies specializing in intelligent robots⁴⁸. It is evident that the Korean approach shares some common features with the European one by taking into account the risk level to differentiate the regulation of artificial intelligence, but is less restrictive and, like the Chinese approach, more innovation-friendly.

Conclusions

Having traced the China’s path of development of artificial intelligence legal regulation, we can state that China was the world first country to enact regulations governing the artificial intelligence industry, thus confirming its claims to leadership in this field.

The regulation responsiveness allows removing a number of issues debated within the Chinese society, or, at least, adjusting the agenda. The iterative nature of regulation allows for a gradual, step-by-step process of improving regulation, eventually defining the “rules of the game” necessary for business and society to increase trust in AI. By rapidly increasing regulation, China is “creating a foundation for AI exports across the Global South and countries participating in its Belt and Road Initiative”⁴⁹.

China’s approach to AI regulation is sectoral, like the American one; although, similar to the European one, it is much more elaborate than the US approach. The Chinese approach

⁴⁶ 인공지능 책임 및 규제법안. <https://goo.su/JMr7Y>

⁴⁷ Intelligent Robots Development and Distribution Promotion Act No. 9014, March 28, 2008. <https://clck.ru/38QrvC>

⁴⁸ 새해, 주목할 만한 AI/ICT 관련 법개정 또는 입법(2-①). <https://clck.ru/38Qrvs>

⁴⁹ Heath, R. (2023, May 8). China races ahead of U.S. on AI regulation. <https://clck.ru/38Qrwa>

can be called flexible, unlike the European one, which is characterized by rigidity and therefore inhibits innovation. The flexibility allows China to promote the artificial intelligence development rather than hinder it by setting up barriers for developers. However, this does not mean that there are no barriers in China; they do exist and relate to the observance of socialist values (ideological barriers).

Nevertheless, China, like other actors of world politics, supports interstate cooperation and advocates convergence of approaches within the frameworks of what is feasible. It is the pragmatic nature of the Chinese approach that allows stating its influence on the legal regulation being created in other countries, along with the influence of the European Union, which is limited due to the strictness of its approach. In turn, the Chinese approach is likely to be somewhat transforming over time, taking into account the European experience of regulation. This can be seen in the sprouts of systematicity manifested in the Chinese draft AI Law.

To summarize, we can conclude that the interest in the studies of the Chinese experience of artificial intelligence regulation will increase, as 2024 and 2025 will face a rapid growth of regulation in this area due to the surge of generative artificial intelligence development and the emergence of much more complex models of other types of artificial intelligence, opening new opportunities, but also provoking the emergence of new problems.

References

- Cath, C., Wachter, S., Mittelstadt, B., Taddeo, M., & Floridi, L. (2018). Artificial Intelligence and the 'Good Society': the US, EU, and UK approach. *Science and Engineering Ethics*, 24(2), 505–528. <https://doi.org/10.1007/s11948-017-9901-7>
- Dixon, R. B. L. (2023). A principled governance for emerging AI regimes: lessons from China, the European Union, and the United States. *AI and Ethics*, 3, 793–810. <https://doi.org/10.1007/s43681-022-00205-0>
- Dremliuga, R. I. (2022). Regulatory Principles of Development, Introduction and Use of Artificial Intelligence in Asian countries. *Legal Issues in the Digital Age*, 3(3), 100–119. <https://doi.org/10.17323/2713-2749.2022.3.100.119>
- Filipova, I. A. (2023). Artificial intelligence: European approach to regulation. *Journal of Foreign Legislation and Comparative Law*, 19(2), 54–65. (In Russ.). <https://doi.org/10.12737/jzsp.2023.022>
- Floridi, L., & Cows, J. (2019). A Unified Framework of Five Principles for AI in Society. *Harvard Data Science Review*, 1(1). <https://doi.org/10.1162/99608f92.8cd550d1>
- Huyue Zhang, A. (2024). *High Wire: How China Regulates Big Tech and Governs Its Economy*. Oxford University Press.
- Karpa, D., Klarl, T., & Rochlitz, M. (2022). Artificial Intelligence, Surveillance, and Big Data. In L. Hornuf (Eds.), *Diginomics Research Perspectives. Advanced Studies in Diginomics and Digitalization* (pp. 145–172). Springer, Cham. https://doi.org/10.1007/978-3-031-04063-4_8
- Keller, A., Martins Pereira, C., & Pires, M. L. (2024). The European Union's Approach to Artificial Intelligence and the Challenge of Financial Systemic Risk. In H. S. Antunes, P. M. Freitas, A. L. Oliveira, C. M. Pereira, E. V. de Sequeira, & L. B. Xavier (Eds.), *Multidisciplinary Perspectives on Artificial Intelligence and the Law* (Law, Governance and Technology Series, vol. 58, pp. 415–439). Springer Cham. https://doi.org/10.1007/978-3-031-41264-6_22
- Kubota, L. C. (2023). The Role of the Executive Branch in the Regulation of AI: The Experience of Japan, UK, USA, and Lessons for Brazil. *Radar: tecnologia, produção e comércio exterior*, 73, 7–12. <https://doi.org/10.38116/radar73art1>
- Li, Yao. (2023). Specifics of Regulatory and Legal Regulation of Generative Artificial Intelligence in the UK, USA, EU and China. *Law. Journal of the Higher School of Economics*, 16(3), 245–267. (In Russ.). <https://doi.org/10.17323/2072-8166.2023.3.245.267>

- Liang, F., Das, V., Kostyuk, N., & Hussain, M. M. (2018). Constructing a Data-Driven Society: China's Social Credit System as a State Surveillance Infrastructure. *Policy & Internet*, 10(4), 415–453. <https://doi.org/10.1002/poi3.183>
- Lucero, K. (2019). Artificial Intelligence Regulation and China's Future. *Columbia Journal of Asian Law*, 33(1), 94–171. <https://doi.org/10.7916/cjal.v33i1.5454>
- Mao, Y., & Shi-Kupfer, K. (2023). Online public discourse on artificial intelligence and ethics in China: context, content, and implications. *AI & Society*, 38, 373–389. <https://doi.org/10.1007/s00146-021-01309-7>
- Petit, N. (2017). *Law and Regulation of Artificial Intelligence and Robots – Conceptual Framework and Normative Implications*. <http://dx.doi.org/10.2139/ssrn.2931339>
- Roberts, H., Cowls, J., Hine, E., Morley, J., Wang, V., Taddeo, M., & Floridi, L. (2023). Governing artificial intelligence in China and the European Union: Comparing aims and promoting ethical outcomes. *The Information Society*, 39(2), 79–97. <https://doi.org/10.1080/01972243.2022.2124565>
- Roberts, H., Cowls, J., Morley, J., Taddeo, M., Wang, V., & Floridi, L. (2021). The Chinese approach to artificial intelligence: an analysis of policy, ethics, and regulation. *AI & Society*, 36, 59–77. <https://doi.org/10.1007/s00146-020-00992-2>
- Shakhnazarova, E. A. (2021). Legal regulation of the relations emerging around intellectual property objects created by artificial intelligence (practice of Korea and Japan). *Khozyaistvo i pravo*, 6(533), 112–121. (In Russ.).
- Shaoxue, J. (2023). Artificial intelligence governance and China's experience under the community of common destiny for mankind concept. *Legal Issues in the Digital Age*, 3, 81–96. <https://doi.org/10.17323/2713-2749.2023.3.81.96>
- Wan, Y., & Lu, H. (2021). Copyright protection for AI-generated outputs: The experience from China. *Computer Law & Security Review*, 42, Art. 105581. <https://doi.org/10.1016/j.clsr.2021.105581>
- Wang, Ch., & Wang, J. (2022). The construction of artificial intelligence private legal personality system. *Legal Science in China and Russia*, 5, 86–92. (In Chin.). <https://doi.org/10.17803/2587-9723.2022.5.086-092>
- Wu, F., Lu, C., Zhu, M. et al. (2020). Towards a new generation of artificial intelligence in China. *Nature Machine Intelligence*, 2, 312–316. <https://doi.org/10.1038/s42256-020-0183-4>
- Wu, W., Huang, T., & Gong, K. (2020). Ethical principles and governance technology development of AI in China. *Engineering*, 6(3), 302–309. <https://doi.org/10.1016/j.eng.2019.12.015>
- Yang, Ch., & Huang, C. (2022). Quantitative mapping of the evolution of AI policy distribution, targets and focuses over three decades in China. *Technological Forecasting and Social Change*, 174, Art. 121188. <https://doi.org/10.1016/j.techfore.2021.121188>
- Zeng, J. (2020). Artificial intelligence and China's authoritarian governance. *International Affairs*, 96(6), 1441–1459. <https://doi.org/10.1093/ia/iiaa172>
- Zhang, L. (2023). The Legal Positioning and Hierarchical Governance of Generative AI. *Modern Law Science*, 45(4), 126–141. (In Chin.) <https://doi.org/10.3969/j.issn.1001-2397.2023.04.09>

Author information



Irina A. Filipova – Cand. Sci. (Law), Associate Professor, Department of Labor and Environmental Law, National Research Lobachevsky State University of Nizhni Novgorod; Head of the Central Asia Research Center for artificial intelligence regulation, Samarkand State University named after Sharof Rashidov

Address: 23 prospekt Gagarina, 603922 Nizhniy Novgorod, Russian Federation; 15 Universitetskiy bulvar, 140104 Samarkand, Republic of Uzbekistan

E-mail: irinafilipova@yandex.ru

ORCID ID: <https://orcid.org/0000-0003-1773-5268>

Scopus Author ID: <https://www.scopus.com/authid/detail.uri?authorId=57327205000>

WoS Researcher ID: <https://www.webofscience.com/wos/author/record/R-1375-2016>

Google Scholar ID: <https://scholar.google.com/citations?user=opJc7fcAAAAJ>

RSCI Author ID: https://elibrary.ru/author_profile.asp?authorid=461586

Conflict of interest

The author is a Deputy Editor-in-Chief of the Journal; the article has been reviewed on general terms.

Financial disclosure

The author is grateful to Vladimir Potanin Foundation for the professional development project grant which funded a trip to China to study the artificial intelligence legal regulation in the PRC.

Thematic rubrics

OECD: 5.05 / Law

PASJC: 3308 / Law

WoS: OM / Law

Article history

Date of receipt – January 10, 2024

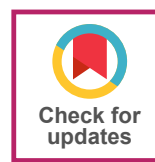
Date of approval – January 25, 2024

Date of acceptance – March 15, 2024

Date of online placement – March 20, 2024



Научная статья
УДК 34:004:004.8:34.096
EDN: <https://elibrary.ru/awefay>
DOI: <https://doi.org/10.21202/jdtl.2024.4>



Правовое регулирование искусственного интеллекта: опыт Китая

Ирина Анатольевна Филипова 

Национальный исследовательский Нижегородский государственный университет имени Н. И. Лобачевского, Нижний Новгород, Россия;
Самаркандский государственный университет имени Ш. Рашидова, Самарканд, Узбекистан

Ключевые слова

генеративный
искусственный интеллект,
законопроект,
закон,
искусственный интеллект,
итеративность,
комплексный подход,
отраслевой подход,
право,
риск-ориентированность,
цифровые технологии

Аннотация

Цель: проследить траекторию развития правового регулирования в сфере искусственного интеллекта в Китайской Народной Республике, выявив достоинства и недостатки китайского подхода к регулированию искусственного интеллекта и обозначив перспективы национального регулирования на ближайшее будущее с учетом мирового опыта.

Методы: в основе исследования лежат общенаучные методы анализа и синтеза, классификации, системный и функциональный подходы. Также использовались формально-юридический, сравнительно-правовой и историко-правовой методы.

Результаты: проведенное исследование демонстрирует обоснованность китайских притязаний на мировое лидерство в создании правового регулирования искусственного интеллекта, так как именно в Китае приняты первые, уже вступившие в силу нормативные правовые акты, правда, каждый из них касается узкого круга вопросов, пока отсутствует закон, который бы устанавливал некоторые общие правила для индустрии искусственного интеллекта. Среди характерных черт китайского подхода, в первую очередь, названы его итеративность, позволяющая с каждым новым шагом корректировать регулирование, и отраслевой характер регулирования.

Научная новизна: в процессе исследования выделены и описаны этапы развития правового регулирования искусственного интеллекта в Китае, выявлены и аргументированы достоинства и недостатки китайского подхода к правовому регулированию, произведено сравнение данного подхода с подходами основных соперников Китая, конкурирующих с ним по уровню развития технологий и по уровню их правового регулирования. Все вышеперечисленное позволило прийти к выводам относительно последующего развития правового регулирования в Китае и в мире в целом.

© Филипова И. А., 2024



Статья находится в открытом доступе и распространяется в соответствии с лицензией Creative Commons «Attribution» («Атрибуция») 4.0 Всемирная (CC BY 4.0) (<https://creativecommons.org/licenses/by/4.0/deed.ru>), позволяющей неограниченно использовать, распространять и воспроизводить материал при условии, что оригинальная работа упомянута с соблюдением правил цитирования.

Практическая значимость: ознакомление с материалами исследования дает возможность интересующимся правоведам, и не только им, получить четкое представление о достигнутом Китаем уровне регулирования в сфере искусственного интеллекта. Опыт Китая представляет значительный интерес для остального мира, позволяя убедиться на практике в правильности или ошибочности возможных вариантов регулирования в новой и сложной области. Результаты исследования могут быть использованы не только в практике правового регулирования в сфере искусственного интеллекта, но и при подготовке лекций по учебным курсам соответствующей направленности, создании учебных пособий для студентов-юристов.

Для цитирования

Филипова, И. А. (2024). Правовое регулирование искусственного интеллекта: опыт Китая. *Journal of Digital Technologies and Law*, 2(1), 46–73. <https://doi.org/10.21202/jdtl.2024.4>

Список литературы

- Ван, Ч., Ван, Ц. (2022). Правовой статус систем искусственного интеллекта. *Юридическая наука в Китае и России*, 5, 86–92. (На кит.). <https://doi.org/10.17803/2587-9723.2022.5.086-092>
- Ли, Яо. (2023). Нормативно-правовое регулирование генеративного искусственного интеллекта в Великобритании, США, Евросоюзе и Китае. *Право. Журнал Высшей школы экономики*, 16(3), 245–267. <https://doi.org/10.17323/2072-8166.2023.3.245.267>
- Филипова, И. А. (2023). Искусственный интеллект: европейский подход к регулированию. *Журнал зарубежного законодательства и сравнительного правоведения*, 19(2), 54–65. EDN: <https://elibrary.ru/exkkpr>. DOI: <https://doi.org/10.12737/jzsp.2023.022>
- Шахназарова, Э. А. (2021). Правовое регулирование отношений, возникающих по поводу объектов интеллектуальной собственности, созданных технологией искусственного интеллекта (опыт Республики Корея и Японии). *Хозяйство и право*, 6(533), 112–121. <https://elibrary.ru/anpmzx>
- Cath, C., Wachter, S., Mittelstadt, B., Taddeo, M., & Floridi, L. (2018). Artificial Intelligence and the 'Good Society': the US, EU, and UK approach. *Science and Engineering Ethics*, 24(2), 505–528. <https://doi.org/10.1007/s11948-017-9901-7>
- Dixon, R. B. L. (2023). A principled governance for emerging AI regimes: lessons from China, the European Union, and the United States. *AI and Ethics*, 3, 793–810. <https://doi.org/10.1007/s43681-022-00205-0>
- Dremluiga, R. I. (2022). Regulatory Principles of Development, Introduction and Use of Artificial Intelligence in Asian countries. *Legal Issues in the Digital Age*, 3(3), 100–119. <https://doi.org/10.17323/2713-2749.2022.3.101.119>
- Floridi, L., & Cows, J. (2019). A Unified Framework of Five Principles for AI in Society. *Harvard Data Science Review*, 1(1). <https://doi.org/10.1162/99608f92.8cd550d1>
- Huyue Zhang, A. (2024). *High Wire: How China Regulates Big Tech and Governs Its Economy*. Oxford University Press.
- Karpa, D., Klarl, T., & Rochlitz, M. (2022). Artificial Intelligence, Surveillance, and Big Data. In L. Hornuf (Eds.), *Diginomics Research Perspectives. Advanced Studies in Diginomics and Digitalization* (pp. 145–172). Springer, Cham. https://doi.org/10.1007/978-3-031-04063-4_8
- Keller, A., Martins Pereira, C., & Pires, M. L. (2024). The European Union's Approach to Artificial Intelligence and the Challenge of Financial Systemic Risk. In H. S. Antunes, P. M. Freitas, A. L. Oliveira, C. M. Pereira, E. V. de Sequeira, & L. B. Xavier (Eds.), *Multidisciplinary Perspectives on Artificial Intelligence and the Law* (Law, Governance and Technology Series, vol. 58, pp. 415–439). Springer Cham. https://doi.org/10.1007/978-3-031-41264-6_22
- Kubota, L. C. (2023). The Role of the Executive Branch in the Regulation of AI: The Experience of Japan, UK, USA, and Lessons for Brazil. *Radar: tecnologia, produção e comércio exterior*, 73, 7–12. <https://doi.org/10.38116/radar73art1>

- Liang, F., Das, V., Kostyuk, N., & Hussain, M. M. (2018). Constructing a Data-Driven Society: China's Social Credit System as a State Surveillance Infrastructure. *Policy & Internet*, 10(4), 415–453. <https://doi.org/10.1002/poi3.183>
- Lucero, K. (2019). Artificial Intelligence Regulation and China's Future. *Columbia Journal of Asian Law*, 33(1), 94–171. <https://doi.org/10.7916/cjal.v33i1.5454>
- Mao, Y., & Shi-Kupfer, K. (2023). Online public discourse on artificial intelligence and ethics in China: context, content, and implications. *AI & Society*, 38, 373–389 <https://doi.org/10.1007/s00146-021-01309-7>
- Petit, N. (2017). *Law and Regulation of Artificial Intelligence and Robots – Conceptual Framework and Normative Implications*. <http://dx.doi.org/10.2139/ssrn.2931339>
- Roberts, H., Cowls, J., Hine, E., Morley, J., Wang, V., Taddeo, M., & Floridi, L. (2023). Governing artificial intelligence in China and the European Union: Comparing aims and promoting ethical outcomes. *The Information Society*, 39(2), 79–97. <https://doi.org/10.1080/01972243.2022.2124565>
- Roberts, H., Cowls, J., Morley, J., Taddeo, M., Wang, V., & Floridi, L. (2021). The Chinese approach to artificial intelligence: an analysis of policy, ethics, and regulation. *AI & Society*, 36, 59–77. <https://doi.org/10.1007/s00146-020-00992-2>
- Shaoxue, J. (2023). Artificial intelligence governance and China's experience under the community of common destiny for mankind concept. *Legal Issues in the Digital Age*, 3, 81–96. <https://doi.org/10.17323/2713-2749.2023.3.81.96>
- Wan, Y., & Lu, H. (2021). Copyright protection for AI-generated outputs: The experience from China. *Computer Law & Security Review*, 42, Art. 105581. <https://doi.org/10.1016/j.clsr.2021.105581>
- Wu, F., Lu, C., Zhu, M. et al. (2020). Towards a new generation of artificial intelligence in China. *Nature Machine Intelligence*, 2, 312–316. <https://doi.org/10.1038/s42256-020-0183-4>
- Wu, W., Huang, T., & Gong, K. (2020). Ethical principles and governance technology development of AI in China. *Engineering*, 6(3), 302–309. <https://doi.org/10.1016/j.eng.2019.12.015>
- Yang, Ch., & Huang, C. (2022). Quantitative mapping of the evolution of AI policy distribution, targets and focuses over three decades in China. *Technological Forecasting and Social Change*, 174, Art. 121188. <https://doi.org/10.1016/j.techfore.2021.121188>
- Zeng, J. (2020). Artificial intelligence and China's authoritarian governance. *International Affairs*, 96(6), 1441–1459. <https://doi.org/10.1093/ia/iiaa172>
- Zhang, L. (2023). The Legal Positioning and Hierarchical Governance of Generative AI. *Modern Law Science*, 45(4), 126–141. (In Chin.). <https://doi.org/10.3969/j.issn.1001-2397.2023.04.09>

Сведения об авторе



Филипова Ирина Анатольевна – кандидат юридических наук, доцент, доцент кафедры трудового и экологического права, Национальный исследовательский Нижегородский государственный университет имени Н. И. Лобачевского; руководитель Центрально-Азиатского исследовательского центра регулирования искусственного интеллекта, Самаркандский государственный университет
Адрес: 603922, Россия, г. Нижний Новгород, проспект Гагарина, 23;
140104, Узбекистан, г. Самарканд, Университетский бульвар, 15
E-mail: irinafilipova@yandex.ru
ORCID ID: <https://orcid.org/0000-0003-1773-5268>
Scopus Author ID: <https://www.scopus.com/authid/detail.uri?authorId=57327205000>
WoS Researcher ID: <https://www.webofscience.com/wos/author/record/R-1375-2016>
Google Scholar ID: <https://scholar.google.com/citations?user=opJc7fcAAAAJ>
РИНЦ Author ID: https://elibrary.ru/author_profile.asp?authorid=461586

Конфликт интересов

Автор является заместителем главного редактора журнала, статья прошла рецензирование на общих основаниях.

Финансирование

Автор выражает признательность Благотворительному фонду В. Потанина за предоставленный грант по проекту профессионального развития, в рамках которого стала возможной поездка в Китай с целью изучения особенностей правового регулирования искусственного интеллекта в КНР.

Тематические рубрики

Рубрика OECD: 5.05 / Law

Рубрика ASJC: 3308 / Law

Рубрика WoS: OM / Law

Рубрика ГРНТИ: 10.91 / Государство и право отдельных стран

Специальность ВАК: 5.1.2 / Публично-правовые (государственно-правовые) науки

История статьи

Дата поступления – 10 января 2024 г.

Дата одобрения после рецензирования – 25 января 2024 г.

Дата принятия к опубликованию – 15 марта 2024 г.

Дата онлайн-размещения – 20 марта 2024 г.



Research article
UDC 34:004:347.451:004.8
EDN: <https://elibrary.ru/nifbkj>
DOI: <https://doi.org/10.21202/jdtl.2024.5>



Impact of New Technologies on Economic Behavior and Consumer Freedom of Choice: from Neuromarketing to Neuro-Rights

Ludovica Sposini 

Sant'Anna School of Advanced Studies, Pisa, Italy

Keywords

artificial intelligence,
biotechnology,
consumer protection,
digital technologies,
European law,
freedom of choice,
law,
neuro-ethics,
neuromarketing,
neuro-rights

Abstract

Objective: to identify the possibilities for an adequate response of the existing legal regime to the various challenges posed to European law by artificial intelligence systems underlying neuromarketing techniques.

Methods: the study is based on the risk-oriented approach, formal-logical, formal-legal and comparative-legal methods, as well as on the method of legal forecasting, in order to identify the problems of legislation caused by the emerging technologies capable of recognizing human emotions and using them to control consumer behavior, and to propose ways to solve them.

Results: the conducted research provides a brief overview of the most widely used neuromarketing techniques used by algorithms and machine learning. These allow identifying points of cognitive and emotional vulnerability, collecting and processing data, and then building the most effective marketing techniques that push a consumer to choose a certain product or service. Ethical problems are analyzed which arise from the use of neuromarketing techniques in relation to some basic values such as individual independence, human dignity, and freedom of choice. The subtle line is shown between techniques that manipulate consumer behavior (manipulation technique) and those that, on the contrary, have a persuasive effect, which in itself does not make them illegal (persuasion technique). An overview of the existing legal framework is presented, as well as case law from both the European Court of Justice and national courts of member states with a particular focus on the Unfair Commercial Practices Directive, the EU General Regulation on the Protection of Personal Data (hard law), and codes of ethics (soft law).

© Sposini L., 2024



This is an Open Access article, distributed under the terms of the Creative Commons Attribution licence (CC BY 4.0) (<https://creativecommons.org/licenses/by/4.0>), which permits unrestricted re-use, distribution and reproduction, provided the original article is properly cited.

Scientific novelty: the paper points out the transformation of traditional legal categories and important problem points of the existing regulation due to the growing recognition of the potential of neuromarketing as a tool capable of explaining and predicting consumer behavior, as well as influencing the economic behavior of the subjects of relations.

Practical significance: the obtained conclusions and proposals can be taken into account in improving the regulation of artificial intelligence in terms of its safety and reliability, increasing trust in the system, given the need to protect ethical principles and maintain fundamental values.

For citation

Sposini, L. (2024). Impact of New Technologies on Economic Behavior and Consumer Freedom of Choice: from Neuromarketing to Neuro-Rights. *Journal of Digital Technologies and Law*, 2(1), 74–100. <https://doi.org/10.21202/jdtl.2024.5>

Contents

Introduction

1. The birth of neuromarketing and the new frontiers of Artificial Emotional Intelligence
2. The possibilities of neuromarketing and its potential threat to fundamental values
3. Protecting consumers from unreasonable influences of modern technologies on their economic behavior and freedom of choice

Conclusions

References

Introduction

From the very beginning, the consumer has been regarded as a perfectly rational economic actor and, therefore, always capable of making the most efficient choice. In other words, according to classical economic theory, the consumer is identified with homo oeconomicus, i.e., a subject endowed with perfect rationality¹. Not only that, but in accordance with 'behaviourism', the human mind is a 'black box' (Camerer et al., 2005) and, consequently, its behaviour is the manifest result of environmental stimuli. From this it follows that those cognitive processes, not being observable from the outside, are unknowable and, therefore, cannot be studied².

¹ For an in-depth look at the evolution of consumerism see (Bauman, 2010; Alpa & Catricala, 2016; Fabris, 2003).

² This theory was born in 1913 thanks to psychologist Jhon Watson of the University of Chicago who published the article 'as the Behaviorist Views It' in the journal Psychological Review. (Watson, 1994).

This neoclassical approach began to be challenged from the 1970s by a growing number of scientific studies that elaborated a new economic model based on the different assumption of human's 'bounded rationality'³. According to these authors, when the consumer makes a purchasing choice, his mind is influenced by various external contingent factors (such as, for example, the social and economic environment in which he finds himself at that given moment or his emotional state) and, above all, by the cognitive limits of the mind itself.

One of the most significant research in this context is that conducted by Daniel Kahneman because it demonstrated that human mind uses cognitive simplifications, called 'heuristics', that enable it to make economic choices with the least possible effort (of time and energy). However, precisely because consumers use such heuristics to optimize their decision-making time, they often fall into errors of reasoning and evaluation called 'cognitive biases'⁴.

With these studies, a new construction of the human brain emerges, no longer considered as a unicum, but consisting of two systems that constantly interact (Kahneman, 2011; Shiv & Fedorikhin, 1999). The 'system 1', dedicated to the intuitive part, operates more quickly and stores information in the form of intuitions without making any mental effort to process it; on the contrary, 'system 2', which represents the more rational part, processes the acquired information with considerable effort. With particular reference to the purchasing decision-making process, there has been a shift from the idea that it is completely rational (consumers always choose the most efficient solution) to the so-called 'Messy Middle' theory⁵. According to this latter approach, the purchasing process consists of several confusing and chaotic phases, where individuals try to find product information but end up being overwhelmed by all the numerous possibilities available to them.

These discoveries gave rise to the new discipline of neuroeconomics, which looks to psychology and neuroscience to delve even deeper into consumer decision-making processes. In traditional models, the emotional aspect was of no importance and, indeed,

³ The theory of bounded rationality was developed by Herbert Simon in 1978. For a more in-depth discussion (Viale, 2019; Damasio, 1994), according to which 'we are not thinking machines that feel, we are feeling machines that think', precisely to emphasize how the emotional part acts before the rational one and, therefore, 'the beginning of everything was emotion. Feeling is therefore not a passive process'. See also (Morin, 2011).

⁴ Tversky, & Kahneman (1974); Thaler (2000); Ceschi et al. (2012) carried out a study aimed at creating a taxonomy of cognitive biases. Specifically, they have categorized the main heuristics, including: the 'confirmation bias' or 'belief bias', whereby individuals are more inclined to consider information that confirms their preconceptions; 'framing', because human decision-making processes are influenced by the context, which represents the 'frame'; 'anchoring bias', which occurs when one relies on an already known value as a reference point to determine another value at an unknown quantity (price perception being a prime example) 'desire bias', because personal desires influence individuals' decisions; 'cost bias', in the sense that losses and costs are perceived to be greater than they really are; finally, 'choice bias', i. e. as the number of available options to choose from increases, the difficulty for the human mind to manage all the information and adopt a final choice increases.

⁵ Rennie, A., Protheroe, J., Charron, C., & Breatnach, G. (2020). Decoding Decisions: making sense of the messy middle. <https://clck.ru/bmxnd>

they considered human behaviour to be the result of a linear decision-making process aimed at maximizing individual utility. In neuroeconomics, on the other hand, the emotional dimension assumes fundamental importance, so much as to recognize that human behaviour is the result of automatic and unconscious cognitive processes that operate below the level of awareness ([Winkielman & Berridge, 2003](#); [Zajonc, 1980, 1998](#); [Bechara & Damasio, 2005](#))⁶.

1. The birth of neuromarketing and the new frontiers of Artificial Emotional Intelligence

These theories were, of course, the fertile ground for 'neuromarketing', a new field of research that developed in the 1990s and which aims to design more effective marketing advertising capable of influencing the purchasing behaviour of consumers through the study of their motivations and mental processes⁷.

The rapidity of technological development has led to the construction of numerous techniques that may fall under this subject. This heterogeneity has resulted in the impossibility of arriving at a unique and definitive categorization and, so far, there are only a few vain attempts made by academics.

A first categorization looks at the stage of the consumer decision-making process where neuromarketing techniques fit in. Thus, a first group includes those technologies that study consumer behaviour prior to purchase, by means of tools that allow the identification of the intimate causes that drive them towards one choice rather than another. These include all those technologies that measure eye movement (i.e., eye-tracking), facial expressions and, in general, biometric values such as perspiration level or heart rate. On the other hand, a second group includes those techniques that examine consumer reactions following a purchase to further improve the ability of that product or advertisement to arouse positive emotions in the buyer. For that purpose, the most used are electroencephalography (henceforth EEG)⁸, functional magnetic resonance

⁶ On the impact of these technologies on the Italian system, cf. ([Seminara, 2020](#)).

⁷ There is currently no agreement on the founder of the term 'neuromarketing', but it is well established that it was first used by Professor Ale Smidts in one of his very famous paper published in 2002, where it was defined as 'the study of the cerebral mechanism to understand the consumer's behaviour in order to improve the marketing strategies'. Cf. ([Smidts, 2002](#)). Already in the following year, the first piece of neuromarketing research was conducted by Professor Read Montague, who asked a group of people to drink Pepsi and Coca Cola while they were scanned by a functional magnetic resonance imaging (fMRI) machine. However, the beginning of neuromarketing practical studies can be dated as early as around 1971, when Herbert E. Krugman, a researcher of General Electric, first measured spontaneous pupil dilatations in customers, thinking of them as an indicator of interest in people who were looking for products or watching advertisements. For a summary of the literature on the subject, cf. ([Lee et al., 2018](#)).

⁸ The electroencephalogram records the electrical activity of the brain using a helmet whose surface is entirely covered with small electrodes and placed over the subject's head. It is a non-invasive method that detects changes in the electrical flow of brain waves in response to the subject's exposure to different types of stimuli.

imaging (henceforth fMRI)⁹ and magnetoencephalography (henceforth MEG)¹⁰ which can guarantee a direct access to human brain activity.

A second classification subdivides neuromarketing practices according to the object of analysis (Verhulst et al., 2019). Based on this criterion, it can be identified three macrocategories: firstly, there are the neuroimaging tools that measure the activity of a specific area of the brain, and they include for example, EEG (because it calculates fluctuations in the brain's electrical activity) and fMRI (which measures changes in blood flow in the brain). Quite distinct are, instead, those instruments that do not measure brain activity directly, but indirectly, i.e., by deriving information on cognitive processes through an analysis of the responses of other parts of the body to certain marketing stimuli. Thus, into this second group it can be find eye-tracking, which measures position, eye movements and pupil dilation, and even cardiovascular techniques, where heart rate variability is used as an indicator to determine an individual's impulses. Then, there are some technologies for studying the biochemical components of the human body, such as hormones and neurotransmitters – testosterone, cortisol, or dopamine – released by the human body during an exposition to a marketing stimulus.

Finally, neuromarketing practices can be distinguished according to their ability to record signals of brain rather than neurological activity¹¹, thus identifying three groups. The first includes those neuroscientific tools that are concerned with recording the metabolic activity of the brain, which include fMRI, MEG and, finally, positron emission tomography (henceforth PET)¹². Then there are those practices that record the electrical activity of the brain, among which the most widely used is EEG, which aims to provoke changes in the electrical activity of the brain by means of different visual and sound stimuli, to observe the correlation between the nature of the stimuli and the consequent areas of the brain that they activate. Finally, we have instruments that only indirectly record brain activity, because they look at the physical responses, such as electrocardiography (henceforth ECG), which measures and records the electrical activity of the heart by placing electrodes on the

⁹ Functional magnetic resonance imaging measures brain activity by looking at the blood flow and oxygenation of the encephalic districts considered. It has been observed that exposure to a marketing stimulus leads to an increase in the level of blood oxygenation in certain areas of the brain, thus leading to an alteration of the brain's electromagnetic field. For further discussion, cf. (Lim, 2018).

¹⁰ A non-invasive medical technique that records the electrical activity of the brain. Unlike the EEG, this measures the magnetic field generated by intracranial currents. Sensors called Superconducting quantum interference devices (SQUID) are used that are capable of measuring infinitesimal variations in the magnetic field, so that the sources of magnetic signals within the brain can be located with high precision.

¹¹ This classification was proposed by M. D. Bercea (2012).

¹² It is an invasive method for brain imaging and falls within the scope of so-called 'nuclear' medicine because it involves the injection inside the subject's body of a substance that releases positron particles. By means of this technique, after exposing the subject to a marketing stimulus, it is possible to measure the changes in glucose levels in his brain (his metabolic activity) caused by the radioactive substance itself.

subject's skin¹³ and, above all, eye-tracking. The latter can detect, thanks to sensors, the activity and size of the pupils from which it is possible to draw useful information on how to direct the subject's attention.

Despite the strong diversity of the above-mentioned practices, it is quite evident the strength – and the danger – of AI applied to this sector which consists precisely in the former's ability to increase the precision with which companies can predict purchasing behaviour, so much that 'as studies confirm, despite their small sample sizes, they can provide a solid basis for market predictions of larger populations' (Royo-Vela & Varga, 2022; Ramirez et al., 2021).

A particular branch of AI that has recently been developed is known as 'Affective computing' or 'Artificial Emotional Intelligence' (henceforth AEI), which aspires, through the combination of different fields, including engineering, neuroscience, and behavioural psychology, to design machines capable not only of interpreting, but also of simulating human emotions and thus adapting their response in relation to the subject's state of mind.

Nowadays, many AEI software use eye-tracking and facial coding technologies because, as several studies have clearly shown, the face is the part of the human body with which we most express our thought¹⁴.

In particular, eye-tracking can be placed on a mobile or stationary device, records the dilation and concentration of the pupils (considered indicators of the mental and cognitive operations of the central nervous system) as well as the trajectory made by the consumer's eye (an index of the activity of the autonomic nervous system, responsible for emotional reactions) when exposed to an advertisement. In this hypothesis, the eye's attention is captured on the basis of two types of factors: the first, the so-called 'bottom-up' factors capture the brain because they are salient, such as colors, images and brightness, and, for this reason, they are the ones that are grasped first; the second, on the other hand, called 'top-down', are the elements that evoke feelings, memories and emotions.

This technology, thus, records enormous quantities of data, both 'quantitative' (i. e., based on the analysis of numerical data such as the number or duration of fixations) and 'qualitative' (referring to the graphic visualization of the subject's visual behaviour, such as heat maps or gaze plots). It is precisely for this reason that eye-tracking and facial coding are mainly exploited by the world's biggest companies (Barnett & Cerf, 2015; Bellman et al.,

¹³ The heart rate is influenced by two basic elements: the sympathetic nervous system, which causes feelings of arousal in the face of a marketing stimulus, and the parasympathetic nervous system, which, on the contrary, promotes relaxation and rest, thus generating a reduction in heart rate.

¹⁴ For a further discussion on this technology, please refer to (Cherubino et al., 2019). Ekman and Friesen developed the Facial Action Coding System (FACS) to measure and classify human facial expressions. FACS is based on the identification of seven facial expressions of 'primary emotions', three 'universal feelings', a series of 'advanced emotions' and, finally, nineteen 'Action Units' (AUs). For a more detailed discussion on this topic, see (Ekman & Friesen, 1978; Ekman, 2004).

2016)¹⁵, such as the case of 'Affectiva', a company specialized in the development of AEI that, through deep learning and computer vision technologies, analyses the facial expressions and emotions of the subject it interacts with¹⁶.

In other words, this software – called 'Affidex' – aims to identify all the key facial points and then classify them within 'emotion classes'. It is mostly applied in the marketing sector because it is particularly useful to test consumers' emotional engagement with a certain advertisement. This means that facial coding, when applied with AI and video analysis, can measure the smallest reactions, even unconscious ones, to purchase and advertising stimuli. This technology then allows marketing agencies to focus their products campaigns on specific messages, to parameterize lights, sounds, images based on what is most interesting and engaging for consumers, even to the point of being able to predict what their emotional responses will be, starting 'only' from a single facial expression¹⁷.

It is not surprising, then, that the development and application of technologies designed to understand and predict consumers' decision-making processes, purchasing habits and emotions inevitably bring with them particularly complex doubts and questions, because '[A]re we treating people like people with hopes and desires? Or are we treating them as things that we can manipulate based on our understanding of how brains work?' (Garvey, 2016)¹⁸.

2. The possibilities of neuromarketing and its potential threat to fundamental values

The goal of marketing has always been to entice the consumer to buy a certain product by trying to capture their interest, such as the Camels cigarette advertisement broadcasted from 1936 to 1939, where it was said that 'for your Digestion's sake, smoke Camels'¹⁹. This case clearly confirms that not only neuromarketing, but even traditional techniques have

¹⁵ McStay (2018). He says that: 'what is most notable about facial coding is the diversity and extent of its application. For example, over one-third of Fortune Global 500 companies use facial coding to test the effectiveness of their advertisements before they are launched' (Cerf et al., 2015; Alexander et al., 2015; Hedgcock et al., 2012; Mesly, 2016; Shiv et al., 2005).

¹⁶ For an in-depth look at how the software works, see (McStay, 2018).

¹⁷ (Arthmann & Li, 2017). The authors refer to Microsoft's Cognitive Services emotion recognition, which provides insights not only into what is available today, but wider ranging opportunities to harness both verbal and nonverbal communications through semantic analysis, analysis of tonality and more, as well as emotion recognition through video. <https://clck.ru/37rq8m>

¹⁸ Where it is also stated that 'you don't need to be Kant to worry that some of the practices recommended by neuromarketers seem to treat a human being as an object, a thing to be studied and manipulated for financial gain, rather than a person with goals of her own, someone owed our respect'.

¹⁹ This slogan had such massive effects on the population that some authors observed that 'the campaign created a population of consumers who may not have otherwise chosen to smoke tobacco and may have gone against their intuition of inherent beliefs, only choosing to smoke because of the Camel ad's persuasive influence'. Cf. (Clark, 2017; Thomas et al., 2017; Peeler, 1996).

always had the purpose of influencing consumers by exploiting their cognitive biases and weaknesses, so much so that, already in 1950 people began to speak of 'stealth marketing', defined as 'the point at which neuromarketing techniques reach critical effectiveness, and are used in such a way to manipulate consumer decisions without their knowledge or consent' (Murphy et al., 2008)²⁰. This practice appeared in the United States when James Vicary admitted that he had increased food and beverage sales at the cinema by inserting subliminal messages in films to encourage consumers to drink Coca-Cola and eat popcorn (Vicary, 1951)²¹.

It is evident then that persuasion is a natural component of the discipline itself; however, the problem arises in particular with some neuromarketing techniques when they attempt to go far beyond the mere persuasion of the individual. This is a fear that has traditionally always existed in the discipline and that various authors have repeatedly raised' (Cenizo, 2022)²². In particular, they see neuromarketing as a potential threat to fundamental human values because it allows weaknesses, insecurities and emotions to be exploited for purely commercial purposes (Lungu, 2016; Durante & Arsena, 2015; Durante et al., 2011; Saad & Stenstrom, 2012).

On the contrary, these concerns are considered excessive by those who point out that the current state of technology is not sufficiently advanced to justify ethical questions. Nor do they believe that neuromarketing can actually manipulate the human mind, because, according to them, exposing consumers to unconscious influences does not necessarily mean that they have no control over their purchasing choices²³.

However, what is certainly beyond doubt is the ability of neuromarketing to trigger the will to buy in consumers, so much that, thus, the real question is whether or not their choices can be considered still free, even if significantly influenced by physiological factors that they cannot control (Stanton et al., 2016)²⁴.

²⁰ For these authors, neuromarketing has the ability to persuade consumers 'to engage in a product-related activity they may not have otherwise chosen to do', (Clark, 2017). Others claimed that neuromarketing was unethical, (Lee et al., 2007).

²¹ For a critique of his study, (Karremans et al., 2006).

²² In the same sense Murphy and others (2008), 'Neuroethics of neuromarketing', 299, who argue that 'the fact that one must insert qualifiers such as "at the present time" provides ample reason to carefully consider the implications that such a development might have and the means by which it might be sensibly managed'.

²³ Part of the literature excludes that the current degree of persuasion of neuroscientific practices is such that it can concretely threaten the manipulation of human behaviour. In this sense, (Stanton et al., 2016), whereby 'most of the new ethical dangers that are attributed to neuromarketing turn out to be unrealistic, because they assume that neuromarketing has powers that it cannot obtain in the near future'. Similar positions are also adopted by authors such as (Renvoise & Morin, 2007; Murphy et al., 2008).

²⁴ Also (Wilson et al., 2008), acknowledge that 'when a consumer purchases a product based on a decision in which marketing stimuli unrelated to product characteristics cause affective neural systems to override cognitive processes, the final purchase outcome may not always be in the best interest of the consumer'.

Although many authors have written about manipulation, there is still no unanimously accepted definition²⁵. Among them, particularly interesting for our analysis is the point of view of those who accept the theory of manipulation as 'hidden influence': a practice can be considered manipulative when it influences consumers intentionally and covertly, in a way they aren't conscious or in a way they couldn't easily become aware of when they try to understand what was impacting their decision-making process' (Susser et al., 2019). This means that the distinction between a purely persuasive practice and a manipulative one lies when it molds consumers' motivations in such a way as to deteriorate their ability to rationally manage their own motives, prompting them to make emotional associations between their own experience and the product. In this case, thus, the desire generated in the consumer's mind does not originate from an actual need, but from a stimulus which impacts on his individual autonomy because 'an agent acts autonomously if her action is caused by a motive acquired via the appropriate engagement of her capacity to rationally manage her own motives. Otherwise, she acts less than autonomously' (Cave, 2014)²⁶.

All this considered, neuromarketing can be a means of violating certain fundamental human values such as individual autonomy (Ulman et al., 2015; Stanton et al., 2016; Ariely & Berns, 2010; Murphy et al., 2008; Marcus, 2002), defined by R. Gillon as 'the capacity to think, decide and act on the basis of such thought and decision freely and independently' (Gillon, 1985). Precisely because neuromarketing prompts consumers to buy by stimulating their emotions rather than by providing them with accurate product information, it can impair their ability to identify and pursue their preferences (Fisher et al., 2010)²⁷. In other words, the consumer's decision-making autonomy is affected because consumers are forced into preferences and decisions without full understanding, awareness, and consent²⁸.

This risk of harm is increased by those practices that exploit the vulnerabilities of specific groups of individuals considered extremely sensitive. In fact, several studies have shown that neuromarketing is able to push adolescents to start smoking and that individuals with compulsive buying disorders are particularly sensitive to messages that encourage them to buy on the web (Henriksen et al., 2010). Adolescents are also

²⁵ Noggle who identifies three possible approaches to define the concept of manipulation. Noggle, R. (2017). The ethics of manipulation. <https://clck.ru/37rwke>. For an inside in the theories of manipulation, let us refer to (Barnhill, 2014; Wilkinson, 2012; Susser et al., 2019; Klenk, 2021; Wood, 2016).

²⁶ Even more absolutely, (Garvey, 2016), states that 'any sort of persuasive method that moves us without giving us good reasons diminishes the power of reasons on us'. See also (Grant, 2011; Lewis, 2013).

²⁷ Wilson et al. (2008) observe in this regard that 'to the extent these stimuli are unrelated to product characteristics, the result is an attempt to manipulate the consumer's purchase decision'. The authors state that 'neurotechnology enables marketers to refine persuasion attempts using noninformative or misinformative content, with the potential to trigger very positive affective responses in consumers'. Cf. also (Haggard, 2011).

²⁸ (Dierichsweiler, 2014) and the literature referred to therein as (Wilson et al., 2008). Interesting is the point of view of (Sunstein, 2015), according to which where the subject wants to be manipulated, then his will must be respected.

particularly sensitive and manipulable: the uneven neurodevelopment of the brain systems involved in cognitive control and the over-reactivity of the so-called 'reward system' are all factors associated with an emotional hypersensitivity to rewarding stimuli, faces and social-emotional stimuli (Steinberg, 2017; van Hoorn et al., 2016; Casey et al., 2008; Galvan et al., 2006; Hare et al., 2008; Gogtay et al., 2004; Shaw et al., 2008). This can bring to the development of unhealthy habits which can persist even during the adult life (Bault & Rusconi, 2020).

Neuroethicists, in fact, are not concerned mostly about the possibility of neuromarketing being used to target particularly sensitive individuals, but especially about its ability to create new forms of vulnerability. Therefore, it seems preferable to adopt an evidence-based definition of consumer vulnerability in the sense that it is 'situational, meaning that a consumer can be vulnerable in one situation but not in others, and that some consumers may be more vulnerable than others'²⁹.

3. Protecting consumers from unreasonable influences of modern technologies on their economic behavior and freedom of choice

There are still some open questions that neuroethics has to address in order to prevent neuromarketing from becoming the instrument through which companies can circumvent consumer autonomy in all its various meanings and exploit the weaknesses and vulnerabilities of specific groups of subjects for commercial purposes.

The impossibility of resolving these questions depends above all on the fact that the rapid development of new technologies does not allow these fundamental values to be defined once and for all. So far, to solve this issue some bioethicists have proposed the creation of new neuro-rights 'specifically tailored on the characteristics of brain information and the new possibilities opened by mind-reading technologies' (Ienca & Andorno, 2017), such as the right to 'mental privacy'. In this way, it would be protected 'any bit or set of brain information about an individual recorded by a neurodevice and shared across the digital ecosystem', in an attempt to adequate law to new technologies (Ienca & Andorno, 2017)³⁰.

²⁹ Consumer vulnerability across key markets in the European Union (European Commission, 2016) gives a definition of vulnerability distinguishing five conditions. European Commission, Consumers, Health, Agriculture and Food Executive Agency, Consumer vulnerability across key markets in the European Union – Executive summary. Publications Office. <https://clck.ru/37rtX3>. See also (Fineman, 2008), who speaks of vulnerability as an ontological condition of the human being.

³⁰ Other proposed rights are that of 'psychological continuity', which aims to preserve personal identity and the continuity of mental life from external alterations by third parties; the right to 'mental integrity', which, already guaranteed in Article 3 of the EU Charter of Fundamental Rights, should be expanded to also protect against illicit and harmful manipulations perpetuated through the use of neurotechnologies; and finally, that of 'cognitive freedom', which aims to protect the freedom to be able to make free decisions.

Proposals for new 'neuro-rights' are based on the conviction, increasingly shared in the literature, that the current regulatory framework is not sufficient to adequately cover those AI systems used by neuromarketing to influence human emotions and cognitive processes.

Neuromarketing falls with no doubt into the (broad) definition of commercial practices provided by the Directive 2005/29/EC³¹. Article 5 then provides the definition of 'unfairness'³², establishing that a practice must be considered unfair and, therefore, prohibited when it is contrary to the rules of professional diligence and, above all, when it materially distorts or is likely to materially distort the economic behaviour with regard to the product of the average consumer whom it reaches or to whom it is addressed, or of the average member of the group when a commercial practice is directed to a particular group of consumers.

Alongside this general prohibition of unfair commercial practices there are then two macro-categories, represented respectively by misleading commercial practices³³ and aggressive commercial practices³⁴, as well as a 'black list' of practices considered unfair in any case without any possibility of providing proof to the contrary as to their unfairness.

It is clear from these provisions that the aim is to protect the consumer's freedom from undue conditioning, so much that it is now common ground that, when the directive speaks of commercial practices capable of 'distorting' his economic behaviour, it must be understood in a broad sense, i.e., including any form of appreciable alteration of the individual's awareness in making his commercial decision.

Neuromarketing, by exploiting the cognitive fallacies of consumers inducing them to engage in certain purchasing behaviour, falls well within the definition of those conditionings that surreptitiously alter consumer perception and understanding. Although no explicit reference is made to psychological conditioning that interferes with the consumer's freedom of decision-making, aggressive commercial practices also include conduct that by 'undue influence'³⁵ considerably restricts his freedom of choice or economic behaviour by inducing him to take a decision he would not otherwise have taken.

The European legislator's intent is, moreover, clearly limited to declaring unlawful only those practices that considerably interfere with the self-determination³⁶ with

³¹ Directive 2005/29/EC of the European Parliament and of the Council of 11 May 2005 concerning unfair business-to-consumer commercial practices in the internal market. A commercial practice is 'any act, omission, course of conduct or representation, commercial communication including advertising and marketing, by a trader, directly connected with promotion, sale or supply of a product to consumers'.

³² Art. 2 of Directive 2005/29/EC. It has been observed that this legislation has an 'intersecting circles' structure. On this point, see (Fusi & Testa, 2006; Duivenvoorde, 2015).

³³ Art. 6 and Art. 7 for misleading omissions.

³⁴ Art. 8 of Directive of Unfair Commercial Practices.

³⁵ It is defined in Article 2(j) of Directive 2005/29/EC as exploiting 'a position of power in relation to the consumer so as to apply pressure, even without using or threatening to use physical force, in a way which significantly limits the consumer's ability to make an informed decision'. Cf. (Strycharz & Duivenvoorde, 2021).

³⁶ Cf. recital 6 of directive 2005/29/EC. For a comment (Abbamonte, 2007).

the consequence that those forms of psycho-emotional pressure, not capable of affecting the consumer's freedom of economic choice, are excluded from that prohibition.

However, precisely because the peculiarity of neuromarketing consists in the use of emotional factors to unconsciously direct the decision-making processes of economic agents, it is not easy for the consumer firstly to distinguish a legitimate practice from one that, instead, has exceeded that limit of 'undue conditioning' imposed by law³⁷.

Also, from an interpretative point of view, where the definition of undue influence talks about a practice that 'significantly' limits the consumer's ability to make an informed decision, it is not very clear, especially when speaking of sophisticated AEI tools, what is the limit beyond which it is reasonable to say that a practice has reached that level³⁸.

However, particular importance is also given in this field to soft law instruments and especially code of ethics, such as the 'Code of Ethics for the Application of Neuroscience in Business' drawn up in 2013 by the global trade association called the 'Neuromarketing Science and Business Association' and which lists a series of general principles that every company is called upon to respect if it intends to conduct consumer studies using neuromarketing techniques³⁹.

There is no doubt that codes of ethics are useful instruments of self-regulation with the precise aim of making companies responsible through their commitment to respect certain ethical principles; however, several authors have criticized their uselessness for two reasons.

On the one hand, in fact, codes of ethics would have little effectiveness because they are based on the principle of voluntary adherence and, therefore, would be without any binding value⁴⁰; on the other hand, there would be the further consideration that companies, having the monetization of AI applications as their goal, are guided by an economic rather than an ethical logic (McNamara et al., 2018) because 'in business contexts, speed is everything in many cases' and thus 'the practice of development, implementation and use of AI applications has very often little to do with the values and principles postulated by ethics (Hagendorff, 2020).

Recognizing these challenges, the European Union passed the AI Act to ensure «global leadership in the development of safe, secure and ethical artificial intelligence»⁴¹.

³⁷ It should be noted that in literature (Seminara, 2020) has proposed that the limit beyond which an advertisement can be sanctioned as aggressive would be identifiable in the so-called 'psychological shock'.

³⁸ Cf. also (Strycharz & Duivenvoorde, 2021).

³⁹ NMSBA. Code of Ethics. <https://clck.ru/37rwiB>. See also Probst, L., Frideres, L., Demetri, D., & Vomhof, B. (2014). Customer Experience. Neuro-marketing innovations. PwC Luxembourg. <https://clck.ru/37rzBE>

⁴⁰ For criticism of the effectiveness of codes of ethics (Sacconi, 1991; Trevino & Nelson, 2006; Rossi, 2006, 2005).

⁴¹ EU Artificial intelligence Act. <https://clck.ru/38x5h6>

Neuromarketing practices based on AI systems falls within the broad definition of ‘artificial intelligence system’ provided by the AIA which, in fact, applies to any ‘software that is developed with one or more the techniques and approaches listed in Annex I and can, for a given set of human-defined objectives, generate outputs such as content, predictions, recommendations, or decisions influencing the environments they interact with’⁴².

As is well known, the AIA adopts a ‘risk-based approach’, looking at the risk generated by the AI systems with respect to fundamental rights and freedoms. There are, then, those practices that generate an ‘unacceptable risk’ and are therefore prohibited⁴³; the ‘high-risk AI systems’ that, instead, are permitted but only under specific conditions⁴⁴; and, finally, those applications for which, presenting only a ‘low or minimal risk’, there are essentially transparency obligations⁴⁵.

Article 5(1) first prohibits two types of practices that are considered manipulative, namely an AI system that deploys subliminal techniques ‘beyond a person’s consciousness in order to materially distort a person’s behaviour in a manner that causes or is likely to cause that person or another person physical or psychological harm’ (lett. a) and ‘that exploits any of the vulnerabilities of a specific group of persons due to their age, physical or mental disability, in order to materially distort the behaviour of a person pertaining to that group in a manner that causes or is likely to cause that person or another person physical or psychological harm’ (lett. b)⁴⁶. This rule then seems to apply exclusively to those AI systems that, by manipulating the behaviour of the persons concerned, cause (or are likely to cause) physical or psychological harm. This means that if the AI practice is manipulative, but not causally capable of causing physical or psychological harm, it will not in itself be considered a high-risk system within the meaning of Section 5 of the AIA⁴⁷.

As already noted, not every practice of neuromarketing can be said to be subliminal and manipulative per se because, otherwise, the entire discipline would be illegitimate. Therefore, are these systems considered by the AIA?

The further category to which reference is made is the one governed by Title III of the AIA and which includes those IA systems considered ‘high risk’ which are subject, for this

⁴² Art. 3, para. 1, of the (European Commission, 2021). For a critique of the excessive generality of the definition of ‘AI systems’, see (Ebers et al., 2021).

⁴³ Art. 5 of AIA.

⁴⁴ Art. 6 of AIA and Annex III.

⁴⁵ Article 52 of AIA. For an analysis on the Proposal see (Stuurman & Lachaud, 2022; Veale & Zuiderveen Borgesius, 2021; Ebers et al., 2021; Smuha et al., 2021; Sovrano et al., 2022; Ebers et al., 2021; Ebers, 2021; Hupont et al., 2022a)

⁴⁶ Article 5(1)(c) and (d) then respectively prohibit social scoring systems used by public authorities and biometric identification systems used in public spaces for law enforcement purposes.

⁴⁷ STOA. (2022). Regulatory divergences in the draft AI Act: Differences in public and private sector obligations. <https://clck.ru/37ryK3>

reason, to stringent mandatory requirements that suppliers must comply with right from the design phase⁴⁸.

In fact, the supplier is required to implement and document a risk management system to identify and analyze the possible risks arising from the use of the AI system and to adopt appropriate measures for their proper management⁴⁹ and to guarantee a qualitative level of dataset and data governance⁵⁰. Moreover, the supplier must draw up and maintains detailed, complete and up-to-date technical documentation and ensures the verifiability and traceability of the processes used by the AI systems by providing instruments both for recording purposes and to allow adequate human supervision of their operation⁵¹. In other world, they must be designed and developed to ensure a high level of accuracy, robustness, and cybersecurity as well as transparency through the provision of clear, concise, and understandable instructions for use⁵².

Neuromarketing techniques, however, do not seem to fall even within the cases of Article 6(1) of the AIA or even less so among those listed in Annex III (to which Article 6(2) refers) where, at most, paragraph 1 speaks of those systems used for the biometric identification and categorization of natural persons. However, since the purpose of neuromarketing is neither real-time nor a posteriori identification of a natural person, it does not seem to be possible to include such practices among high-risk AI systems⁵³.

Turning, instead, to AI systems deemed to be 'low risk', the Draft Regulation refers, in Article 52(2), to emotional recognition and biometric categorization systems⁵⁴. However, since they are deemed to be low-risk systems, their implementation and application will be subject to transparency obligations which, however, do not appear to be sufficient with respect to the dangerousness of these practices because: '[T]hese systems are based on highly problematic evidence while nevertheless generating potentially highly detrimental output (in the form of decisions or behaviour)' resulting in 'chilling effects, exclusion and disrespect for individuals of groups that do not fit the categorisations that are taken for granted'⁵⁵.

⁴⁸ The obligations imposed on high-risk AI systems must then be subject to an ex-ante and post-market conformity check. (Mökander et al., 2022; Hupont et al, 2022b; Hof, 2022; Ali & Yu, 2021; Cooman, 2022).

⁴⁹ Article 9 of AIA.

⁵⁰ Article 10 of AIA.

⁵¹ Articles from 11 to 14 of AIA.

⁵² Article 13(1) states: 'high-risk AI systems shall be designed and developed in such a way to ensure that their operation is sufficiently transparent to enable users to interpret the system's output and use it appropriately'

⁵³ Hildebrandt, M. (2021). Commentary on the Proposal for an EU AI Act of 21 April 2021.

⁵⁴ Article 52 of AIA.

⁵⁵ (Hildebrandt, 2021), comments: 'the current categorisation of emotion recognition and biometric categorisation as not necessarily high risk, whereas depending on use or context they may nevertheless qualify as high risk or even be prohibited, is confusing and unnecessarily complicated'. He concludes that '[I]f not prohibited, they should be added under point 1 in Annex III'.

Conclusions

In conclusion, the development of technologies capable of recognizing human emotions and exploiting them to guide consumer behaviour requires the presence of appropriate legislation to ensure a reliable system that respects fundamental values. Although the current regulatory framework, including above all the Unfair Commercial Practices Directive, undoubtedly provides effective protection for the consumer, there are nonetheless several problematic nodes that need more attention from the EU legislator and that stem from the impact of AI systems with traditional legal categories. In this sense, then, a further tool to help build a safe, reliable, and trustworthy system could be the AIA because ‘against this background, the call for transparency rests on the need to look inside AI technology, in order to try to fully understand its logic and regulate its behaviour’ (Ali & Yu, 2021). However, the current wording of the Proposal does not explicitly consider among high-risk systems those AI applications that are based on the collection, processing, and exploitation of cognitive and emotional information.

Instead, explicitly considering also such applications would avoid any risk of interpretative ambiguity, in order to effectively build ‘an ecosystem of trust by proposing a legal framework for trustworthy AI’ where ‘people can trust that technology is used in a way that is safe and compliant with the law, including the respect of fundamental rights’⁵⁶.

References

- Abbamonte, G. B. (2007). The Unfair Commercial Practices Directive and its General Prohibition. In S. Weatherill & U. Bernitz (Eds.), *The Regulation of Unfair Commercial Practices under EC Directive 2005/29: New Rules and New Techniques* (pp. 11–32). <https://doi.org/10.5040/9781472560001.ch-002>
- Alexander, V., Tripp, S., & Zak, P. J. (2015). Preliminary evidence for the neurophysiologic effects of online coupons: Changes in oxytocin, stress, and mood. *Psychology & Marketing*, 32(9), 977–986. <https://doi.org/10.1002/mar.20831>
- Ali, G. S., & Yu, R. (2021). Artificial intelligence between transparency and secrecy: from the EC whitepaper to the AIA and beyond. *European Journal of Law and Technology*, 12(3).
- Alpa, G., & Catricala, A. (Eds.) (2016). *Diritto dei consumatori*. Il Mulino. (In Ital.).
- Ariely, D., & Berns, G. S. (2010). Neuromarketing: the hope and hype of neuroimaging in business. *Nature Reviews Neuroscience*, 11(4), 284–292. <https://doi.org/10.1038/nrn2795>
- Barnett, S., & Cerf, M. (2015). Connecting on Movie Night? Neural Measures of Engagement Differ By Gender. *Advances in Consumer Research*, 43, 314–318.
- Barnhill, A. (2014). What Is Manipulation? In C. Coons & M. Weber (Eds.), *Manipulation: Theory and Practice* (pp. 51–72). Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199338207.003.0003>
- Bault, N., & Rusconi, E. (2020). The Art of Influencing Consumer Choices: A Reflection on Recent Advances in Decision Neuroscience. *Frontiers in Psychology*, 10. <https://doi.org/10.3389/fpsyg.2019.03009>
- Bauman, Z. (2010). *Consumo, dunque sono*. Roma-Bari: Laterza. (In Ital.).
- Bechara, A., & Damasio, A. R. (2005). The somatic marker hypothesis: A neural theory of economic decision. *Games and Economic Behavior*, 52(2), 336–372. <https://doi.org/10.1016/j.geb.2004.06.010>
- Bellman, S., Nenycz-Thiel, M., Kennedy, R., Larginat, L., McColl, B., & Varan, D. (2016). What Makes a Television Commercial Sell? Using Biometrics to Identify Successful Ads. *Journal of Advertising Research*, 57(1), 53–66. <https://doi.org/10.2501/jar-2016-051>

⁵⁶ European Commission, 2021. <https://clck.ru/37rtX3>

- Bercea, M. D. (2012). Anatomy of methodologies for measuring consumer behavior in neuromarketing research. In *Proceedings of the Lupcon Center for Business Research (LCBR) European Marketing Conference*. Ebermannstadt, Germany.
- Camerer, C., Loewenstein, G., & Prelec, D. (2005). Neuroeconomics: How Neuroscience Can Inform Economics. *Journal of Economic Literature*, 43(1), 9–64. <https://doi.org/10.1257/0022051053737843>
- Casey, B. J., Getz, S., & Galvan, A. (2008). The adolescent brain. *Developmental Review*, 28(1), 62–77. <https://doi.org/10.1016/j.dr.2007.08.003>
- Cave, E. M. (2014). Unsavory Seduction and Manipulation. In C. Coons & M. Weber (Eds.), *Manipulation: Theory and Practice* (pp. 176–200). Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199338207.003.0009>
- Cenizo, C. (2022). Neuromarketing: concept, historical evolution and challenges. *Icono 14*, 20(1). <https://doi.org/10.7195/ri14.v20i1.1784>
- Cerf, M., Greenleaf, E., Meyvis, T., & Morwitz, V. G. (2015). Using Single-Neuron Recording in Marketing: Opportunities, Challenges, and an Application to Fear Enhancement in Communications. *Journal of Marketing Research*, 52(4), 530–545. <https://doi.org/10.1509/jmr.13.0606>
- Ceschi, A., Sartori, R., Rubaltelli, E., & Weller, J. (2012). Un approccio empirico per una tassonomia dei bias cognitivi. In 1992–2012: *Psicologia, Scienza, Società – Congresso Nazionale delle Sezioni dell'Associazione Italiana di Psicologia*. Chieti. 20-23 Settembre. 2012 (In Ital.).
- Cherubino, P., Martinez-Levy, A. C., Caratù, M., Cartocci, G., Di Flumeri, G., Modica, E., Rossi, D., Mancini, M., & Trettel, A. (2019). Consumer Behaviour through the Eyes of Neurophysiological Measures: State-of-the-Art and Future Trends. *Computational Intelligence and Neuroscience*, 1–41. <https://doi.org/10.1155/2019/1976847>
- Clark, K. R. (2017). Dealing with the Devils: The Responsibility of Neuromarketing Practitioners in Conducting Research for Ethically Questionable Client Agendas. In A. R. Thomas, N. Pop, A. Iorga, C. Ducu. (Eds.), *Ethics and Neuromarketing: Implications for Market Research and Business Practice* (pp. 147–156). Cham: Springer International Publishing. https://doi.org/10.1007/978-3-319-45609-6_9
- Damasio, A. (1994). *Descartes' Error: Emotion, Reason and the Human Brain*. New York: Avon book.
- De Cooman, J. (2022). Humpty dumpty and high-risk AI systems: the *ratione materiae* dimension of the proposal for an EU artificial intelligence act. *Market and Competition Law Review*, 6(1), 49. <https://doi.org/10.34632/mclawreview.2022.11304>
- Dierichsweiler, K. L. A. (2014). Ethical Issues in Neuromarketing. In 3rd 'IBA Bachelor Thesis Conference, July 3rd, 2014 (pp. 1–14). Enschede, The Netherlands.
- Duivenvoorde, B. B. (2015). *The Consumer Benchmarks in the Unfair Commercial Practices Directive*. Springer International Publishing. <https://doi.org/10.1007/978-3-319-13924-1>
- Durante, K. M., & Arsena, A. R. (2015). Playing the Field: The Effect of Fertility on Women's Desire for Variety. *Journal of Consumer Research*, 41(6), 1372–1391. <https://doi.org/10.1086/679652>
- Durante, K. M., Griskevicius, V., Hill, S. E., Perilloux, C., & Li, N. P. (2011). Ovulation, Female Competition, and Product Choice: Hormonal Influences on Consumer Behavior. *Journal of Consumer Research*, 37(6), 921–934. <https://doi.org/10.1086/656575>
- Ebers, M. (2021). Standardizing AI – The Case of the European Commission's Proposal for an Artificial Intelligence Act. *The Cambridge Handbook of Artificial Intelligence: Global Perspectives on Law and Ethics*. <http://doi.org/10.2139/ssrn.3900378>
- Ebers, M., Hoch, V. R. S., Rosenkranz, F., Ruschmeier, H., & Steinrötter, B. (2021). The European Commission's Proposal for an Artificial Intelligence Act – A Critical Assessment by Members of the Robotics and AI Law Society (RAILS). *J*, 4(4), 589–603. <https://doi.org/10.3390/j4040043>
- Ekman, P. (2004). *Emotions Revealed: Recognizing Faces and Feelings to Improve Communication and Emotional Life*. New York: Henry Holt and Company.
- Ekman, P., & Friesen, W. V. (1978). Facial action coding system: a technique for the measurement of facial movement. Facial Action Coding System [dataset]. In *PsycTESTS Dataset*. American Psychological Association (APA). <https://doi.org/10.1037/t27734-000>
- Fabris, G., (2003). *Il nuovo consumatore: verso il postmoderno*. Franco Angeli. (In Ital.).
- Fineman, M. A. (2008). The Vulnerable Subject: Anchoring Equality in the Human Condition. *Yale Journal of Law & Feminism*, 20(1).
- Fisher, C. E., Chin, L., & Klitzman, R. (2010). Defining Neuromarketing: Practices and Professional Challenges. *Harvard Review of Psychiatry*, 18(4), 230–237. <https://doi.org/10.3109/10673229.2010.496623>
- Fusi, M., & Testa P. (2006). *Diritto e pubblicità*. Milano: Lupetti. (In Ital.).
- Galvan, A., Hare, T. A., Parra, C. E., Penn, J., Voss, H., Glover, G., & Casey, B. J. (2006). Earlier Development of the Accumbens Relative to Orbitofrontal Cortex Might Underlie Risk-Taking Behavior in Adolescents. *Journal of Neuroscience*, 26(25), 6885–6892. <https://doi.org/10.1523/jneurosci.1062-06.2006>

- Garvey, J. (2016). *The Persuaders: The Hidden Industry That Wants to Change Your Mind*. London: Icon Books, Limited.
- Gillon, R. (1985). Autonomy and the principle of respect for autonomy. *BMJ*, 290(6484), 1806–1808. <https://doi.org/10.1136/bmj.290.6484.1806>
- Gogtay, N., Giedd, J. N., Lusk, L., Hayashi, K. M., Greenstein, D., Vaituzis, A. C., Nugent, T. F., Herman, D. H., Clasen, L. S., Toga, A. W., Rapoport, J. L., & Thompson, P. M. (2004). Dynamic mapping of human cortical development during childhood through early adulthood. *Proceedings of the National Academy of Sciences*, 101(21), 8174–8179. <https://doi.org/10.1073/pnas.0402680101>
- Grant, R. W. (2011). *Strings Attached: Untangling the Ethics of Incentives*. Princeton: Princeton University Press. <https://doi.org/10.23943/princeton/9780691151601.001.0001>
- Hagendorff, T. (2020). The Ethics of AI Ethics: An Evaluation of Guidelines. *Minds and Machines*, 30(1), 99–120. <https://doi.org/10.1007/s11023-020-09517-8>
- Haggard, P. (2011). Neuroethics of Free Will. In J. Illes & B. J. Sahakian (Eds.), *Oxford Handbook of Neuroethics* (p. 219). Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780199570706.013.0058>
- Hare, T. A., O'Doherty, J., Camerer, C. F., Schultz, W., & Rangel, A. (2008). Dissociating the Role of the Orbitofrontal Cortex and the Striatum in the Computation of Goal Values and Prediction Errors. *The Journal of Neuroscience*, 28(22), 5623–5630. <https://doi.org/10.1523/jneurosci.1309-08.2008>
- Hedgcock, W. M., Vohs, K. D., & Rao, A. R. (2012). Reducing self-control depletion effects through enhanced sensitivity to implementation: Evidence from fMRI and behavioral studies. *Journal of Consumer Psychology*, 22(4), 486–495. Portico. <https://doi.org/10.1016/j.jcps.2012.05.008>
- Henriksen, L., Schleicher, N. C., Feighery, E. C., & Fortmann, S. P. (2010). A Longitudinal Study of Exposure to Retail Cigarette Advertising and Smoking Initiation. *Pediatrics*, 126(2), 232–238. <https://doi.org/10.1542/peds.2009-3021>
- Hof, M. J. (2022). *Human-AI teaming for Conformity Assessment of Welded Joints: A Human Factors Perspective*. University of Twente.
- Hupont, I., Micheli, M., Delipetrev, B., Gómez, E., & Garrido, J. S. (2022a). Documenting High-Risk AI: A European Regulatory Perspective. *TechRxiv*. <https://doi.org/10.36227/techrxiv.20291046>
- Hupont, I., Tolan, S., Gunes, H., & Gómez, E. (2022b). The landscape of facial processing applications in the context of the European AI Act and the development of trustworthy systems. *Scientific Reports*, 12(1). <https://doi.org/10.1038/s41598-022-14981-6>
- Ienca, M., & Andorno, R. (2017). Towards new human rights in the age of neuroscience and neurotechnology. *Life Sciences, Society and Policy*, 13(1). <https://doi.org/10.1186/s40504-017-0050-1>
- Kahneman, D. (2011). *Thinking, Fast and Slow*. N. Y.: Farrar, Straus and Giroux. <https://doi.org/10.1007/s00362-013-0533-y>
- Karremans, J. C., Stroebe, W., & Claus, J. (2006). Beyond Vicary's fantasies: The impact of subliminal priming and brand choice. *Journal of Experimental Social Psychology*, 42(6), 792–798. <https://doi.org/10.1016/j.jesp.2005.12.002>
- Klenk, M. (2021). (Online) manipulation: sometimes hidden, always careless. *Review of Social Economy*, 80(1), 85–105. <https://doi.org/10.1080/00346764.2021.1894350>
- Lee, N., Broderick, A. J., & Chamberlain, L. (2007). What is 'neuromarketing'? A discussion and agenda for future research. *International Journal of Psychophysiology*, 63(2), 199–204. <https://doi.org/10.1016/j.ijpsycho.2006.03.007>
- Lee, N., Chamberlain, L., & Brandes, L. (2018). Welcome to the jungle! The neuromarketing literature through the eyes of a newcomer. *European Journal of Marketing*, 52(1/2), 4–38. <https://doi.org/10.1108/ejm-02-2017-0122>
- Lewis, D. (2013). *The Brain Sell: When Science Meets Shopping; How the new mind sciences and the persuasion industry are reading our thoughts, influencing our emotions, and stimulating us to shop*. London: Nicholas Brealey Publishing.
- Lim, W. M. (2018). Demystifying neuromarketing. *Journal of Business Research*, 91, 205–220. <https://doi.org/10.1016/j.jbusres.2018.05.036>
- Lungu, N. (2016). The Limits and the Ethics of Consumer Profiling. In A. R. Thomas, N. Pop, A. Iorga & C. Ducu. (Eds.), *Ethics and Neuromarketing: Implications for Market Research and Business Practice* (pp. 157–169). Cham: Springer International Publishing. https://doi.org/10.1007/978-3-319-45609-6_10
- Marcus, S. J. (Ed.). (2002). *Neuroethics: Mapping the Field: Conference Proceedings, May 13–14, 2002, San Francisco, California*. N. Y.: Dana Press.

- McNamara, A., Smith, J., & Murphy-Hill, E. (2018). Does ACM's code of ethics change ethical decision making in software development? In *Proceedings of the 2018 26th ACM Joint Meeting on European Software Engineering Conference and Symposium on the Foundations of Software Engineering* (pp. 729–733). <https://doi.org/10.1145/3236024.3264833>
- McStay, A. (2018). *Emotional AI: The Rise of Empathic Media*. SAGE Publications Ltd. <https://doi.org/10.4135/9781526451293>
- Mesly, O. (2016). Prey positions as consumers' behavioural patterns: Exploratory evidence from an fMRI study. *Journal of Consumer Behaviour*, 16(1), 51–62. <https://doi.org/10.1002/cb.1602>
- Mökander, J., Axente, M., Casolari, F., & Floridi, L. (2022). Conformity Assessments and Post-market Monitoring: A Guide to the Role of Auditing in the Proposed European AI Regulation. *Minds and Machines*, 32(2), 241–268. <https://doi.org/10.1007/s11023-021-09577-4>
- Morin, C. (2011). Neuromarketing: The New Science of Consumer Behavior. *Society*, 48(2), 131–135. <https://doi.org/10.1007/s12115-010-9408-1>
- Murphy, E. R., Illes, J., & Reiner, P. B. (2008). Neuroethics of neuromarketing. *Journal of Consumer Behaviour*, 7(4–5), 293–302. <https://doi.org/10.1002/cb.252>
- Noggle, R. (2017). Manipulation, salience, and nudges. *Bioethics*, 32(3), 164–170. <https://doi.org/10.1111/bioe.12421>
- Peeler, C. L. (1996). *Cigarette testing and the Federal trade commission: a historical overview*. The FTC test method for determining tar, nicotine, and carbon monoxide yields of US cigarettes: report of the NCI Expert Committee.
- Ramirez, M., Kaheh, S., & George, K. (2021). Neuromarketing Study Using Machine Learning for Predicting Purchase Decision. In *2021 IEEE 12th Annual Ubiquitous Computing, Electronics & Mobile Communication Conference (UEMCON)* (pp. 0560–0564). <https://doi.org/10.1109/uemcon53757.2021.9666539>
- Renvoise, P. & Morin, C. (2007). *Neuromarketing: Understanding the Buy Buttons in Your Customer's Brain*. HarperCollins Leadership.
- Rossi, G. (2005). *Conuito morale per gli etici, economici, politici, di don Pio Rossi. Portata prima, seconda*. (In Ital.).
- Rossi, G. (2006). *Il gioco delle regole* (Saggi Nuova serie, 2 Ed.). Adelphi. (In Ital.).
- Royo-Vela, M., & Varga, Á. (2022). Unveiling Neuromarketing and Its Research Methodology. *Encyclopedia*, 2(2), 729–751. <https://doi.org/10.3390/encyclopedia2020051>
- Saad, G., & Stenstrom, E. (2012). Calories, beauty, and ovulation: The effects of the menstrual cycle on food and appearance-related consumption. *Journal of Consumer Psychology*, 22(1), 102–113. <https://doi.org/10.1016/j.jcps.2011.10.001>
- Sacconi, L. (1991). *Etica degli affari: individui, imprese e mercati nella prospettiva di un'etica razionale*. Milano: Saggiatore. (In Ital.).
- Seminara, A. P. (2020). Libertà del consumatore e psicologia della pubblicità. *Contratto e impresa*, 1(1), 493–526. (In Ital.).
- Shaw, P., Kabani, N. J., Lerch, J. P., Eckstrand, K., Lenroot, R., Gogtay, N., Greenstein, D., Clasen, L., Evans, A., Rapoport, J. L., Giedd, J. N., & Wise, S. P. (2008). Neurodevelopmental Trajectories of the Human Cerebral Cortex. *The Journal of Neuroscience*, 28(14), 3586–3594. <https://doi.org/10.1523/jneurosci.5309-07.2008>
- Shiv, B., & Fedorikhin, A. (1999). Heart and Mind in Conflict: the Interplay of Affect and Cognition in Consumer Decision Making. *Journal of Consumer Research*, 26(3), 278–292. <https://doi.org/10.1086/209563>
- Shiv, B., Bechara, A., Levin, I., Alba, J. W., Bettman, J. R., Dube, L., Isen, A., Mellers, B., Smidts, A., Grant, S. J., & McGraw, A. P. (2005). Decision Neuroscience. *Marketing Letters*, 16(3–4), 375–386. <https://doi.org/10.1007/s11002-005-5899-8>
- Smidts, A. (2002). *Kijken in het brein: Over de mogelijkheden van neuromarketing*. Rotterdam: Erasmus University Rotterdam. (In Dutch).
- Smuha, N. A., Ahmed-Rengers, E., Harkens, A., Li, W., MacLaren, J., Piselli, R., & Yeung, K. (2021). How the EU Can Achieve Legally Trustworthy AI: A Response to the European Commission's Proposal for an Artificial Intelligence Act. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3899991>
- Sovrano, F., Sapienza, S., Palmirani, M., & Vitali, F. (2022). Metrics, Explainability and the European AI Act Proposal. *J*, 5(1), 126–138. <https://doi.org/10.3390/j5010010>
- Stanton, S. J., Sinnott-Armstrong, W., & Huettel, S. A. (2016). Neuromarketing: Ethical Implications of its Use and Potential Misuse. *Journal of Business Ethics*, 144(4), 799–811. <https://doi.org/10.1007/s10551-016-3059-0>
- Steinberg, L. (2017). A social neuroscience perspective on adolescent risk-taking. In *Biosocial Theories of Crime* (pp. 435–463). Routledge <https://doi.org/10.4324/9781315096278-19>

- Strycharz, J., & Duivenvoorde, B. (2021). The exploitation of vulnerability through personalised marketing communication: are consumers protected? *Internet Policy Review*, 10(4). <https://doi.org/10.14763/2021.4.1585>
- Stuurman, K., & Lachaud, E. (2022). Regulating AI. A label to complete the proposed Act on Artificial Intelligence. *Computer Law & Security Review*, 44, 105657. <https://doi.org/10.1016/j.clsr.2022.105657>
- Sunstein, C. R. (2015). Fifty Shades of Manipulation. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.2565892>
- Susser, D., Roessler, B., & Nissenbaum, H. (2019). Technology, autonomy, and manipulation. *Internet Policy Review*, 8(2). <https://doi.org/10.14763/2019.2.1410>
- Thaler, R. H. (2000). From Homo Economicus to Homo Sapiens. *Journal of Economic Perspectives*, 14(1), 133–141. <https://doi.org/10.1257/jep.14.1.133>
- Thomas, A. R., Pop, N. A., Iorga, A. M., & Ducu, C. (Eds.). (2017). *Ethics and Neuromarketing: Implications for Market Research and Business Practice*. <https://doi.org/10.1007/978-3-319-45609-6>
- Trevino, L. K., & Nelson, K. A. (2006). *Managing Business Ethics: Straight talk about how to do it right* (4th ed.). Wiley & Sons.
- Tversky, A., & Kahneman, D. (1974). Judgment under Uncertainty: Heuristics and Biases. *Science*, 185(4157), 1124–1131. <https://doi.org/10.1126/science.185.4157.1124>
- Ulman, Y. I., Cakar, T., & Yildiz, G. (2015). Ethical Issues in Neuromarketing: “I Consume, Therefore I am!”. *Science and Engineering Ethics*, 21(5), 1271–1284. <https://doi.org/10.1007/s11948-014-9581-5>
- van Hoorn, J., Fuligni, A. J., Crone, E. A., & Galván, A. (2016). Peer influence effects on risk-taking and prosocial decision-making in adolescence: insights from neuroimaging studies. *Current Opinion in Behavioral Sciences*, 10, 59–64. <https://doi.org/10.1016/j.cobeha.2016.05.007>
- Veale, M., & Zuiderveen Borgesius, F. (2021). Demystifying the Draft EU Artificial Intelligence Act – Analysing the good, the bad, and the unclear elements of the proposed approach. *Computer Law Review International*, 22(4), 97–112. <https://doi.org/10.9785/cr-2021-220402>
- Verhulst, N., De Keyser, A., Gustafsson, A., Shams, P., & Van Vaerenbergh, Y. (2019). Neuroscience in service research: an overview and discussion of its possibilities. *Journal of Service Management*, 30(5), 621–649. <https://doi.org/10.1108/josm-05-2019-0135>
- Viale, R. (2019). La razionalità limitata “embodied” alla base del cervello sociale ed economico. *Sistemi intelligenti*, 31(1), 193–203. (In Ital.).
- Vicary, J. M. (1951). How psychiatric methods can be applied to market research. *Printers’ Ink*, 235(6), 39–48.
- Watson, J. B. (1994). Psychology as the behaviorist views it. *Psychological Review*, 101(2), 248–253. <https://doi.org/10.1037/0033-295x.101.2.248>
- Wilkinson, T. M. (2012). Nudging and Manipulation. *Political Studies*, 61(2), 341–355. <https://doi.org/10.1111/j.1467-9248.2012.00974.x>
- Wilson, R. M., Gaines, J., & Hill, R. P. (2008). Neuromarketing and Consumer Free Will. *Journal of Consumer Affairs*, 42(3), 389–410. <https://doi.org/10.1111/j.1745-6606.2008.00114.x>
- Winkielman, P., & Berridge, K. (2003). Irrational Wanting and Subrational Liking: How Rudimentary Motivational and Affective Processes Shape Preferences and Choices. *Political Psychology*, 24(4), 657–680. <https://doi.org/10.1046/j.1467-9221.2003.00346.x>
- Wood, A. (2016). Unjust Exploitation. *The Southern Journal of Philosophy*, 54(S1), 92–108. <https://doi.org/10.1111/sjp.12187>
- Zajonc, R. B. (1980). Feeling and thinking: Preferences need no inferences. *American Psychologist*, 35(2), 151–175. <https://doi.org/10.1037/0003-066x.35.2.151>
- Zajonc, R. B. (1998). Emotions. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (pp. 591–632). New York: McGraw-Hill.

Author information



Ludovica Sposini – PhD Candidate in Law, DIRPOLIS Institute (Institute of Law, Politics and Development), Sant’Anna School of Advanced Studies

Address: Via Domenico Vernagalli 22R, 56127 Pisa, Italy

E-mail: ludovica.sposini@santannapisa.it

ORCID ID: <https://orcid.org/0000-0003-2188-8996>

Google Scholar ID: https://scholar.google.com/citations?user=AVR7_bMAAAAJ

Conflict of interest

The author declares no conflict of interest.

Financial disclosure

The research had no sponsorship.

Thematic rubrics

OECD: 5.05 / Law

PASJC: 3308 / Law

WoS: OM / Law

Article history

Date of receipt – August 24, 2023

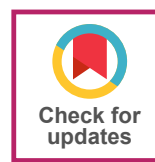
Date of approval – September 8, 2023

Date of acceptance – March 15, 2024

Date of online placement – March 20, 2024



Научная статья
УДК 34:004:347.451:004.8
EDN: <https://elibrary.ru/nifbkj>
DOI: <https://doi.org/10.21202/jdtl.2024.5>



Влияние новых технологий на экономическое поведение и свободу выбора потребителя: от нейромаркетинга к нейроправам

Людовика Спозини 

Школа перспективных исследований Сант'Анна, Пиза, Италия

Ключевые слова

биотехнологии,
европейское право,
защита прав потребителей,
искусственный интеллект,
нейромаркетинг,
нейроправа,
нейроэтика,
свобода выбора,
право,
цифровые технологии

Аннотация

Цель: выявить возможности адекватного ответа существующего правового режима на различные вызовы, которые системы искусственного интеллекта, лежащие в основе методов нейромаркетинга, ставят перед европейским правом.

Методы: исследование основано на риск-ориентированном подходе, формально-логическом, формально-юридическом и сравнительно-правовом методах, а также на методе правового прогнозирования, позволяющих выявить проблемы законодательства, обусловленные развитием технологий, способных распознавать человеческие эмоции и использовать их для управления поведением потребителей, и предложить пути их решения.

Результаты: в проведенном исследовании представлен краткий обзор наиболее широко распространенных методов нейромаркетинга, используемых алгоритмами и машинным обучением, позволяющим выявить точки когнитивной и эмоциональной уязвимости, собрать и обработать данные, а затем выстроить наиболее эффективные маркетинговые приемы, подталкивающие потребителя к выбору определенного товара или услуги. Проанализированы этические проблемы, возникающие при использовании методов нейромаркетинга в отношении некоторых базовых ценностей, таких как индивидуальная независимость, человеческое достоинство и свобода выбора. Показана тонкая грань между приемами, манипулирующими поведением потребителя (метод манипуляции), и теми приемами, которые, напротив, оказывают убеждающее воздействие, что само по себе не делает их противозаконными (метод убеждения). Представлен обзор существующей правовой базы, а также прецедентного права как Европейского суда, так и национальных судов государств-участников, с особым упором на Директиву о недобросовестной коммерческой практике, Общий регламент ЕС по защите персональных данных (жесткое право) и этические кодексы (мягкое право).

© Спозини Л., 2024



Статья находится в открытом доступе и распространяется в соответствии с лицензией Creative Commons «Attribution» («Атрибуция») 4.0 Всемирная (CC BY 4.0) (<https://creativecommons.org/licenses/by/4.0/deed.ru>), позволяющей неограниченно использовать, распространять и воспроизводить материал при условии, что оригинальная работа упомянута с соблюдением правил цитирования.

Научная новизна: в работе отмечается трансформация традиционных правовых категорий и важные проблемные точки существующего регулирования, обусловленные ростом признания потенциала нейромаркетинга как инструмента, способного объяснить и спрогнозировать поведение потребителей, а также воздействовать на экономическое поведение субъектов отношений.

Практическая значимость: полученные выводы и предложения могут быть учтены при совершенствовании регулирования искусственного интеллекта в части его безопасности и надежности, повышения доверия к системе, с учетом обеспечения защиты этических принципов и сохранения фундаментальных человеческих ценностей.

Для цитирования

Спозини, Л. (2024). Влияние новых технологий на экономическое поведение и свободу выбора потребителя: от нейромаркетинга к нейроправам. *Journal of Digital Technologies and Law*, 2(1), 74–100. <https://doi.org/10.21202/jdtl.2024.5>

Список литературы

- Abbamonte, G. B. (2007). The Unfair Commercial Practices Directive and its General Prohibition. In S. Weatherill & U. Bernitz (Eds.), *The Regulation of Unfair Commercial Practices under EC Directive 2005/29: New Rules and New Techniques* (pp. 11–32). <https://doi.org/10.5040/9781472560001.ch-002>
- Alexander, V., Tripp, S., & Zak, P. J. (2015). Preliminary evidence for the neurophysiologic effects of online coupons: Changes in oxytocin, stress, and mood. *Psychology & Marketing*, 32(9), 977–986. <https://doi.org/10.1002/mar.20831>
- Ali, G. S., & Yu, R. (2021). Artificial intelligence between transparency and secrecy: from the EC whitepaper to the AIA and beyond. *European Journal of Law and Technology*, 12(3).
- Alpa, G., & Catricala, A. (Eds.) (2016). *Diritto dei consumatori*. Il Mulino. (In Ital.).
- Ariely, D., & Berns, G. S. (2010). Neuromarketing: the hope and hype of neuroimaging in business. *Nature Reviews Neuroscience*, 11(4), 284–292. <https://doi.org/10.1038/nrn2795>
- Barnett, S., & Cerf, M. (2015). Connecting on Movie Night? Neural Measures of Engagement Differ By Gender. *Advances in Consumer Research*, 43, 314–318.
- Barnhill, A. (2014). What Is Manipulation? In C. Coons & M. Weber (Eds.), *Manipulation: Theory and Practice* (pp. 51–72). Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199338207.003.0003>
- Bault, N., & Rusconi, E. (2020). The Art of Influencing Consumer Choices: A Reflection on Recent Advances in Decision Neuroscience. *Frontiers in Psychology*, 10. <https://doi.org/10.3389/fpsyg.2019.03009>
- Bauman, Z. (2010). *Consumo, dunque sono*. Roma-Bari: Laterza. (In Ital.).
- Bechara, A., & Damasio, A. R. (2005). The somatic marker hypothesis: A neural theory of economic decision. *Games and Economic Behavior*, 52(2), 336–372. <https://doi.org/10.1016/j.geb.2004.06.010>
- Bellman, S., Nenycz-Thiel, M., Kennedy, R., Larginat, L., McColl, B., & Varan, D. (2016). What Makes a Television Commercial Sell? Using Biometrics to Identify Successful Ads. *Journal of Advertising Research*, 57(1), 53–66. <https://doi.org/10.2501/jar-2016-051>
- Bercea, M. D. (2012). Anatomy of methodologies for measuring consumer behavior in neuromarketing research. In *Proceedings of the Lupcon Center for Business Research (LCBR) European Marketing Conference*. Ebermannstadt, Germany.
- Camerer, C., Loewenstein, G., & Prelec, D. (2005). Neuroeconomics: How Neuroscience Can Inform Economics. *Journal of Economic Literature*, 43(1), 9–64. <https://doi.org/10.1257/0022051053737843>
- Casey, B. J., Getz, S., & Galvan, A. (2008). The adolescent brain. *Developmental Review*, 28(1), 62–77. <https://doi.org/10.1016/j.dr.2007.08.003>
- Cave, E. M. (2014). Unsavory Seduction and Manipulation. In C. Coons & M. Weber (Eds.), *Manipulation: Theory and Practice* (pp. 176–200). Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199338207.003.0009>

- Cenizo, C. (2022). Neuromarketing: concept, historical evolution and challenges. *Icono* 14, 20(1). <https://doi.org/10.7195/ri14.v20i1.1784>
- Cerf, M., Greenleaf, E., Meyvis, T., & Morwitz, V. G. (2015). Using Single-Neuron Recording in Marketing: Opportunities, Challenges, and an Application to Fear Enhancement in Communications. *Journal of Marketing Research*, 52(4), 530–545. <https://doi.org/10.1509/jmr.13.0606>
- Ceschi, A., Sartori, R., Rubaltelli, E., & Weller, J. (2012). Un approccio empirico per una tassonomia dei bias cognitivi. In 1992–2012: *Psicologia, Scienza, Società – Congresso Nazionale delle Sezioni dell'Associazione Italiana di Psicologia*. Chieti. 20-23 Settembre. 2012 (In Ital.).
- Cherubino, P., Martinez-Levy, A. C., Caratù, M., Cartocci, G., Di Flumeri, G., Modica, E., Rossi, D., Mancini, M., & Trettel, A. (2019). Consumer Behaviour through the Eyes of Neurophysiological Measures: State-of-the-Art and Future Trends. *Computational Intelligence and Neuroscience*, 1–41. <https://doi.org/10.1155/2019/1976847>
- Clark, K. R. (2017). Dealing with the Devils: The Responsibility of Neuromarketing Practitioners in Conducting Research for Ethically Questionable Client Agendas. In A. R. Thomas, N. Pop, A. Iorga, C. Ducu. (Eds.), *Ethics and Neuromarketing: Implications for Market Research and Business Practice* (pp. 147–156). Cham: Springer International Publishing. https://doi.org/10.1007/978-3-319-45609-6_9
- Damasio, A. (1994). *Descartes' Error: Emotion, Reason and the Human Brain*. New York: Avon book.
- De Cooman, J. (2022). Humpty dumpty and high-risk AI systems: the *ratione materiae* dimension of the proposal for an EU artificial intelligence act. *Market and Competition Law Review*, 6(1), 49. <https://doi.org/10.34632/mclawreview.2022.11304>
- Dierichsweiler, K. L. A. (2014). Ethical Issues in Neuromarketing. In 3rd 'IBA Bachelor Thesis Conference, July 3rd, 2014 (pp. 1–14). Enschede, The Netherlands.
- Duivenvoorde, B. B. (2015). *The Consumer Benchmarks in the Unfair Commercial Practices Directive*. Springer International Publishing. <https://doi.org/10.1007/978-3-319-13924-1>
- Durante, K. M., & Arsena, A. R. (2015). Playing the Field: The Effect of Fertility on Women's Desire for Variety. *Journal of Consumer Research*, 41(6), 1372–1391. <https://doi.org/10.1086/679652>
- Durante, K. M., Griskevicius, V., Hill, S. E., Perilloux, C., & Li, N. P. (2011). Ovulation, Female Competition, and Product Choice: Hormonal Influences on Consumer Behavior. *Journal of Consumer Research*, 37(6), 921–934. <https://doi.org/10.1086/656575>
- Ebers, M. (2021). Standardizing AI – The Case of the European Commission's Proposal for an Artificial Intelligence Act. *The Cambridge Handbook of Artificial Intelligence: Global Perspectives on Law and Ethics*. <http://doi.org/10.2139/ssrn.3900378>
- Ebers, M., Hoch, V. R. S., Rosenkranz, F., Ruschmeier, H., & Steinrötter, B. (2021). The European Commission's Proposal for an Artificial Intelligence Act – A Critical Assessment by Members of the Robotics and AI Law Society (RAILS). *J*, 4(4), 589–603. <https://doi.org/10.3390/j4040043>
- Ekman, P. (2004). *Emotions Revealed: Recognizing Faces and Feelings to Improve Communication and Emotional Life*. New York: Henry Holt and Company.
- Ekman, P., & Friesen, W. V. (1978). Facial action coding system: a technique for the measurement of facial movement. Facial Action Coding System [dataset]. In *PsycTESTS Dataset*. American Psychological Association (APA). <https://doi.org/10.1037/t27734-000>
- Fabris, G., (2003). *Il nuovo consumatore: verso il postmoderno*. Franco Angeli. (In Ital.).
- Fineman, M. A. (2008). The Vulnerable Subject: Anchoring Equality in the Human Condition. *Yale Journal of Law & Feminism*, 20(1).
- Fisher, C. E., Chin, L., & Klitzman, R. (2010). Defining Neuromarketing: Practices and Professional Challenges. *Harvard Review of Psychiatry*, 18(4), 230–237. <https://doi.org/10.3109/10673229.2010.496623>
- Fusi, M., & Testa P. (2006). *Diritto e pubblicità*. Milano: Lupetti. (In Ital.).
- Galvan, A., Hare, T. A., Parra, C. E., Penn, J., Voss, H., Glover, G., & Casey, B. J. (2006). Earlier Development of the Accumbens Relative to Orbitofrontal Cortex Might Underlie Risk-Taking Behavior in Adolescents. *Journal of Neuroscience*, 26(25), 6885–6892. <https://doi.org/10.1523/jneurosci.1062-06.2006>
- Garvey, J. (2016). *The Persuaders: The Hidden Industry That Wants to Change Your Mind*. London: Icon Books, Limited.
- Gillon, R. (1985). Autonomy and the principle of respect for autonomy. *BMJ*, 290(6484), 1806–1808. <https://doi.org/10.1136/bmj.290.6484.1806>
- Gogtay, N., Giedd, J. N., Lusk, L., Hayashi, K. M., Greenstein, D., Vaituzis, A. C., Nugent, T. F., Herman, D. H., Clasen, L. S., Toga, A. W., Rapoport, J. L., & Thompson, P. M. (2004). Dynamic mapping of human cortical development during childhood through early adulthood. *Proceedings of the National Academy of Sciences*, 101(21), 8174–8179. <https://doi.org/10.1073/pnas.0402680101>

- Grant, R. W. (2011). *Strings Attached: Untangling the Ethics of Incentives*. Princeton: Princeton University Press. <https://doi.org/10.23943/princeton/9780691151601.001.0001>
- Hagendorff, T. (2020). The Ethics of AI Ethics: An Evaluation of Guidelines. *Minds and Machines*, 30(1), 99–120. <https://doi.org/10.1007/s11023-020-09517-8>
- Haggard, P. (2011). Neuroethics of Free Will. In J. Illes & B. J. Sahakian (Eds.), *Oxford Handbook of Neuroethics* (p. 219). Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780199570706.013.0058>
- Hare, T. A., O'Doherty, J., Camerer, C. F., Schultz, W., & Rangel, A. (2008). Dissociating the Role of the Orbitofrontal Cortex and the Striatum in the Computation of Goal Values and Prediction Errors. *The Journal of Neuroscience*, 28(22), 5623–5630. <https://doi.org/10.1523/jneurosci.1309-08.2008>
- Hedgcock, W. M., Vohs, K. D., & Rao, A. R. (2012). Reducing self-control depletion effects through enhanced sensitivity to implementation: Evidence from fMRI and behavioral studies. *Journal of Consumer Psychology*, 22(4), 486–495. Portico. <https://doi.org/10.1016/j.jcps.2012.05.008>
- Henriksen, L., Schleicher, N. C., Feighery, E. C., & Fortmann, S. P. (2010). A Longitudinal Study of Exposure to Retail Cigarette Advertising and Smoking Initiation. *Pediatrics*, 126(2), 232–238. <https://doi.org/10.1542/peds.2009-3021>
- Hof, M. J. (2022). *Human-AI teaming for Conformity Assessment of Welded Joints: A Human Factors Perspective*. University of Twente.
- Hupont, I., Micheli, M., Delipetrev, B., Gómez, E., & Garrido, J. S. (2022a). Documenting High-Risk AI: A European Regulatory Perspective. *TechRxiv*. <https://doi.org/10.36227/techrxiv.20291046>
- Hupont, I., Tolan, S., Gunes, H., & Gómez, E. (2022b). The landscape of facial processing applications in the context of the European AI Act and the development of trustworthy systems. *Scientific Reports*, 12(1). <https://doi.org/10.1038/s41598-022-14981-6>
- Ienca, M., & Andorno, R. (2017). Towards new human rights in the age of neuroscience and neurotechnology. *Life Sciences, Society and Policy*, 13(1). <https://doi.org/10.1186/s40504-017-0050-1>
- Kahneman, D. (2011). *Thinking, Fast and Slow*. N. Y.: Farrar, Straus and Giroux. <https://doi.org/10.1007/s00362-013-0533-y>
- Karremans, J. C., Stroebe, W., & Claus, J. (2006). Beyond Vicary's fantasies: The impact of subliminal priming and brand choice. *Journal of Experimental Social Psychology*, 42(6), 792–798. <https://doi.org/10.1016/j.jesp.2005.12.002>
- Klenk, M. (2021). (Online) manipulation: sometimes hidden, always careless. *Review of Social Economy*, 80(1), 85–105. <https://doi.org/10.1080/00346764.2021.1894350>
- Lee, N., Broderick, A. J., & Chamberlain, L. (2007). What is 'neuromarketing'? A discussion and agenda for future research. *International Journal of Psychophysiology*, 63(2), 199–204. <https://doi.org/10.1016/j.ijpsycho.2006.03.007>
- Lee, N., Chamberlain, L., & Brandes, L. (2018). Welcome to the jungle! The neuromarketing literature through the eyes of a newcomer. *European Journal of Marketing*, 52(1/2), 4–38. <https://doi.org/10.1108/ejm-02-2017-0122>
- Lewis, D. (2013). *The Brain Sell: When Science Meets Shopping; How the new mind sciences and the persuasion industry are reading our thoughts, influencing our emotions, and stimulating us to shop*. London: Nicholas Brealey Publishing.
- Lim, W. M. (2018). Demystifying neuromarketing. *Journal of Business Research*, 91, 205–220. <https://doi.org/10.1016/j.jbusres.2018.05.036>
- Lungu, N. (2016). The Limits and the Ethics of Consumer Profiling. In A. R. Thomas, N. Pop, A. Iorga & C. Ducu. (Eds.), *Ethics and Neuromarketing: Implications for Market Research and Business Practice* (pp. 157–169). Cham: Springer International Publishing. https://doi.org/10.1007/978-3-319-45609-6_10
- Marcus, S. J. (Ed.). (2002). *Neuroethics: Mapping the Field: Conference Proceedings, May 13–14, 2002, San Francisco, California*. N. Y.: Dana Press.
- McNamara, A., Smith, J., & Murphy-Hill, E. (2018). Does ACM's code of ethics change ethical decision making in software development? In *Proceedings of the 2018 26th ACM Joint Meeting on European Software Engineering Conference and Symposium on the Foundations of Software Engineering* (pp. 729–733). <https://doi.org/10.1145/3236024.3264833>
- McStay, A. (2018). *Emotional AI: The Rise of Empathic Media*. SAGE Publications Ltd. <https://doi.org/10.4135/9781526451293>
- Mesly, O. (2016). Prey positions as consumers' behavioural patterns: Exploratory evidence from an fMRI study. *Journal of Consumer Behaviour*, 16(1), 51–62. <https://doi.org/10.1002/cb.1602>

- Mökander, J., Axente, M., Casolari, F., & Floridi, L. (2022). Conformity Assessments and Post-market Monitoring: A Guide to the Role of Auditing in the Proposed European AI Regulation. *Minds and Machines*, 32(2), 241–268. <https://doi.org/10.1007/s11023-021-09577-4>
- Morin, C. (2011). Neuromarketing: The New Science of Consumer Behavior. *Society*, 48(2), 131–135. <https://doi.org/10.1007/s12115-010-9408-1>
- Murphy, E. R., Illes, J., & Reiner, P. B. (2008). Neuroethics of neuromarketing. *Journal of Consumer Behaviour*, 7(4–5), 293–302. <https://doi.org/10.1002/cb.252>
- Noggle, R. (2017). Manipulation, salience, and nudges. *Bioethics*, 32(3), 164–170. <https://doi.org/10.1111/bioe.12421>
- Peeler, C. L. (1996). *Cigarette testing and the Federal trade commission: a historical overview*. The FTC test method for determining tar, nicotine, and carbon monoxide yields of US cigarettes: report of the NCI Expert Committee.
- Ramirez, M., Kaheh, S., & George, K. (2021). Neuromarketing Study Using Machine Learning for Predicting Purchase Decision. In *2021 IEEE 12th Annual Ubiquitous Computing, Electronics & Mobile Communication Conference (UEMCON)* (pp. 0560–0564). <https://doi.org/10.1109/uemcon53757.2021.9666539>
- Renvoise, P. & Morin, C. (2007). *Neuromarketing: Understanding the Buy Buttons in Your Customer's Brain*. HarperCollins Leadership.
- Rossi, G. (2005). *Conuito morale per gli etici, economici, politici, di don Pio Rossi. Portata prima, seconda*. (In Ital.).
- Rossi, G. (2006). *Il gioco delle regole* (Saggi Nuova serie, 2 Ed.). Adelphi. (In Ital.).
- Royo-Vela, M., & Varga, Á. (2022). Unveiling Neuromarketing and Its Research Methodology. *Encyclopedia*, 2(2), 729–751. <https://doi.org/10.3390/encyclopedia2020051>
- Saad, G., & Stenstrom, E. (2012). Calories, beauty, and ovulation: The effects of the menstrual cycle on food and appearance-related consumption. *Journal of Consumer Psychology*, 22(1), 102–113. <https://doi.org/10.1016/j.jcps.2011.10.001>
- Sacconi, L. (1991). *Etica degli affari: individui, imprese e mercati nella prospettiva di un'etica razionale*. Milano: Saggiatore. (In Ital.).
- Seminara, A. P. (2020). Libertà del consumatore e psicologia della pubblicità. *Contratto e impresa*, 1(1), 493–526. (In Ital.).
- Shaw, P., Kabani, N. J., Lerch, J. P., Eckstrand, K., Lenroot, R., Gogtay, N., Greenstein, D., Clasen, L., Evans, A., Rapoport, J. L., Giedd, J. N., & Wise, S. P. (2008). Neurodevelopmental Trajectories of the Human Cerebral Cortex. *The Journal of Neuroscience*, 28(14), 3586–3594. <https://doi.org/10.1523/jneurosci.5309-07.2008>
- Shiv, B., & Fedorikhin, A. (1999). Heart and Mind in Conflict: the Interplay of Affect and Cognition in Consumer Decision Making. *Journal of Consumer Research*, 26(3), 278–292. <https://doi.org/10.1086/209563>
- Shiv, B., Bechara, A., Levin, I., Alba, J. W., Bettman, J. R., Dube, L., Isen, A., Mellers, B., Smidts, A., Grant, S. J., & McGraw, A. P. (2005). Decision Neuroscience. *Marketing Letters*, 16(3–4), 375–386. <https://doi.org/10.1007/s11002-005-5899-8>
- Smidts, A. (2002). *Kijken in het brein: Over de mogelijkheden van neuromarketing*. Rotterdam: Erasmus University Rotterdam. (In Dutch).
- Smuha, N. A., Ahmed-Rengers, E., Harkens, A., Li, W., MacLaren, J., Piselli, R., & Yeung, K. (2021). How the EU Can Achieve Legally Trustworthy AI: A Response to the European Commission's Proposal for an Artificial Intelligence Act. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3899991>
- Sovrano, F., Sapienza, S., Palmirani, M., & Vitali, F. (2022). Metrics, Explainability and the European AI Act Proposal. *J*, 5(1), 126–138. <https://doi.org/10.3390/j5010010>
- Stanton, S. J., Sinnott-Armstrong, W., & Huettel, S. A. (2016). Neuromarketing: Ethical Implications of its Use and Potential Misuse. *Journal of Business Ethics*, 144(4), 799–811. <https://doi.org/10.1007/s10551-016-3059-0>
- Steinberg, L. (2017). A social neuroscience perspective on adolescent risk-taking. In *Biosocial Theories of Crime* (pp. 435–463). Routledge <https://doi.org/10.4324/9781315096278-19>
- Strycharz, J., & Duivenvoorde, B. (2021). The exploitation of vulnerability through personalised marketing communication: are consumers protected? *Internet Policy Review*, 10(4). <https://doi.org/10.14763/2021.4.1585>
- Stuurman, K., & Lachaud, E. (2022). Regulating AI. A label to complete the proposed Act on Artificial Intelligence. *Computer Law & Security Review*, 44, 105657. <https://doi.org/10.1016/j.clsr.2022.105657>
- Sunstein, C. R. (2015). Fifty Shades of Manipulation. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.2565892>
- Susser, D., Roessler, B., & Nissenbaum, H. (2019). Technology, autonomy, and manipulation. *Internet Policy Review*, 8(2). <https://doi.org/10.14763/2019.2.1410>

- Thaler, R. H. (2000). From Homo Economicus to Homo Sapiens. *Journal of Economic Perspectives*, 14(1), 133–141. <https://doi.org/10.1257/jep.14.1.133>
- Thomas, A. R., Pop, N. A., Iorga, A. M., & Ducu, C. (Eds.). (2017). *Ethics and Neuromarketing: Implications for Market Research and Business Practice*. <https://doi.org/10.1007/978-3-319-45609-6>
- Trevino, L. K., & Nelson, K. A. (2006). *Managing Business Ethics: Straight talk about how to do it right* (4th ed.). Wiley & Sons.
- Tversky, A., & Kahneman, D. (1974). Judgment under Uncertainty: Heuristics and Biases. *Science*, 185(4157), 1124–1131. <https://doi.org/10.1126/science.185.4157.1124>
- Ulman, Y. I., Cakar, T., & Yildiz, G. (2015). Ethical Issues in Neuromarketing: “I Consume, Therefore I am!”. *Science and Engineering Ethics*, 21(5), 1271–1284. <https://doi.org/10.1007/s11948-014-9581-5>
- van Hoorn, J., Fuligni, A. J., Crone, E. A., & Galván, A. (2016). Peer influence effects on risk-taking and prosocial decision-making in adolescence: insights from neuroimaging studies. *Current Opinion in Behavioral Sciences*, 10, 59–64. <https://doi.org/10.1016/j.cobeha.2016.05.007>
- Veale, M., & Zuiderveen Borgesius, F. (2021). Demystifying the Draft EU Artificial Intelligence Act – Analysing the good, the bad, and the unclear elements of the proposed approach. *Computer Law Review International*, 22(4), 97–112. <https://doi.org/10.9785/cr-2021-220402>
- Verhulst, N., De Keyser, A., Gustafsson, A., Shams, P., & Van Vaerenbergh, Y. (2019). Neuroscience in service research: an overview and discussion of its possibilities. *Journal of Service Management*, 30(5), 621–649. <https://doi.org/10.1108/josm-05-2019-0135>
- Viale, R. (2019). La razionalità limitata “embodied” alla base del cervello sociale ed economico. *Sistemi intelligenti*, 31(1), 193–203. (In Ital.).
- Vicary, J. M. (1951). How psychiatric methods can be applied to market research. *Printers' Ink*, 235(6), 39–48.
- Watson, J. B. (1994). Psychology as the behaviorist views it. *Psychological Review*, 101(2), 248–253. <https://doi.org/10.1037/0033-295x.101.2.248>
- Wilkinson, T. M. (2012). Nudging and Manipulation. *Political Studies*, 61(2), 341–355. <https://doi.org/10.1111/j.1467-9248.2012.00974.x>
- Wilson, R. M., Gaines, J., & Hill, R. P. (2008). Neuromarketing and Consumer Free Will. *Journal of Consumer Affairs*, 42(3), 389–410. <https://doi.org/10.1111/j.1745-6606.2008.00114.x>
- Winkielman, P., & Berridge, K. (2003). Irrational Wanting and Subrational Liking: How Rudimentary Motivational and Affective Processes Shape Preferences and Choices. *Political Psychology*, 24(4), 657–680. <https://doi.org/10.1046/j.1467-9221.2003.00346.x>
- Wood, A. (2016). Unjust Exploitation. *The Southern Journal of Philosophy*, 54(S1), 92–108. <https://doi.org/10.1111/sjp.12187>
- Zajonc, R. B. (1980). Feeling and thinking: Preferences need no inferences. *American Psychologist*, 35(2), 151–175. <https://doi.org/10.1037/0003-066x.35.2.151>
- Zajonc, R. B. (1998). Emotions. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (pp. 591–632). New York: McGraw-Hill.

Сведения об авторе



Людовика Спозини – соискатель степени PhD в области права, Институт DIRPOLIS (Институт права, политики и развития), Школа перспективных исследований Сант'Анна

Адрес: 56127, Италия, г. Пиза, ул. Доменико Вернагалли, 22R

E-mail: ludovica.sposini@santannapisa.it

ORCID ID: <https://orcid.org/0000-0003-2188-8996>

Google Scholar ID: https://scholar.google.com/citations?user=AVR7_bMAAAAJ

Конфликт интересов

Автор сообщает об отсутствии конфликта интересов.

Финансирование

Исследование не имело спонсорской поддержки.

Тематические рубрики

Рубрика OECD: 5.05 / Law

Рубрика ASJC: 3308 / Law

Рубрика WoS: OM / Law

Рубрика ГРНТИ: 10.07.45 / Право и научно-технический прогресс

Специальность ВАК: 5.1.3 / Частно-правовые (цивилистические) науки

История статьи

Дата поступления – 24 августа 2023 г.

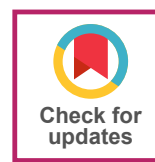
Дата одобрения после рецензирования – 8 сентября 2023 г.

Дата принятия к опубликованию – 15 марта 2024 г.

Дата онлайн-размещения – 20 марта 2024 г.



Research article
UDC 34:004:342.731:004.8
EDN: <https://elibrary.ru/eknpxs>
DOI: <https://doi.org/10.21202/jdtl.2024.6>



Use of Artificial Intelligence in the Activities of Religious Associations and Control Over Them

Svetlana S. Popova 

Lomonosov Moscow State University, Moscow, Russia

Keywords

artificial intelligence
control supervision
digital avatar
digital economy
digital technologies
law
legal liability
missionary activities
regulation
religion
religious association

Abstract

Objective: to identify gaps and formulate proposals on legal regulation of the use of artificial intelligence in the activities of religious associations and control (supervision) over them.

Methods: the study is based on sectoral and risk-oriented approaches, formal-logical and comparative general scientific methods, as well as on the method of legal forecasting.

Results: the author noted similarity of ethical principles formulated all over the world in the sphere of artificial intelligence development and application, as well as their general shortcomings, namely, the lacking consideration of the specificity in certain spheres of human life (religious sphere), cultural peculiarities, historical development of a country and people. The shortcomings of principles stipulated by the codes of ethics include their recommendatory nature, which creates a basis for abusing them in certain cases. The author proposes that if control and supervisory authorities caused harm while using artificial intelligence, the relevant public authority should be recognized as liable and obliged to compensate for the harm caused.

Scientific novelty: the paper summarizes the practice of religious associations using AI, formulates current and prospective directions of the use of artificial intelligence by religious associations, and makes proposals for the AI use in controlling (supervising) religious associations' activities.

Practical significance: the main conclusions and proposals can be used for the improvement of legislation on religious associations' activities and control (supervision) over them, as well as for developing legal regulation of the AI use in control and supervision activities. The author identified

© Popova S. S., 2024



This is an Open Access article, distributed under the terms of the Creative Commons Attribution licence (CC BY 4.0) (<https://creativecommons.org/licenses/by/4.0>), which permits unrestricted re-use, distribution and reproduction, provided the original article is properly cited.

the possibilities for religious associations using AI to popularize religion, inform about their activities, manage property, analyze sacred texts to improve their understanding and interpretation, as well as for conducting scientific research, systematization and accumulation of information, preservation of cultural heritage, and educational activities. The use of artificial intelligence in controlling the religious associations' activities can reduce the period of religious organizations' registration and inspections and optimize the work of control bodies, including by monitoring the religious situation.

For citation

Popova, S. S. (2024). Use of Artificial Intelligence in the Activities of Religious Associations and Control Over Them. *Journal of Digital Technologies and Law*, 2(1), 101–122. <https://doi.org/10.21202/jdtl.2024.6>

Contents

Introduction

1. Practice and principles of using digital technologies in the activities of religious associations
2. Possible areas of artificial intelligence application in the activities of religious associations
3. Using artificial intelligence for control and supervision over the activities of religious associations

Conclusions

References

Introduction

At the “AI Journey” conference on November 24, 2022, the Russian President V. V. Putin noted the need to provide national projects and state program with specific measures aimed at the introduction of artificial intelligence technologies into industries. The results of using the artificial intelligence in various sectors of the economy and social sphere should be registered using monitoring and a special tool – an index of maturity of industries and regions (“the index of intellectual maturity”), aimed at collecting information and assessing the performance of each Federation subject, ministry, or department on the introduction of artificial intelligence¹.

The application of artificial intelligence in all spheres of human life will also affect the religious sphere, religious organizations and public authorities vested with regulatory

¹ Putin, V. V. (November 24, 2022). Stenographic transcript of AI conference. <https://clck.ru/384zQC>; para. 3 subclause “d” clause 1 of the List of action items by the results of “AI Journey” conference, approved by the President of the Russian Federation on 29.01.2023 No. Pr-172. Available at SPS KonsultantPlyus. <https://clck.ru/384zS4>

and control (supervisory) powers in the sphere of religious organizations. Therefore, it is necessary to assess in advance the risks and problems that may be faced by religious organizations, society and the state in connection with the introduction of artificial intelligence in the spiritual sphere².

1. Practice and principles of using digital technologies in the activities of religious associations

In the field of jurisprudence, there are few publications that deal with the legal aspect of the artificial intelligence application in the activities of religious associations or digitalization of religious activities (Nathan & Walker, 2014; Akhmedov et al., 2021). Religion does not stand still but develops, adapting to changes in society, transformation of relations between the sexes (genders), climate change, etc. Some religions are “dying”, while others are emerging and flourishing. Traditional religions are being transformed by widespread digitalization in order to maintain and increase the number of their followers and to keep up with the times. Digitalization is changing traditional communication patterns (Smirnov, 2019), which are of particular importance in the religious sphere.

Not only secular authorities are concerned about formulating ethical and legal principles for the development, implementation and use of artificial intelligence, but also representatives of various religions. Information technologies, including artificial intelligence, are changing the attitude to religion, the way it is practiced and carried to the masses. Religions and churches that are not represented on the Internet are becoming disconnected from their parishioners.

Vatican has taken an active stance in elaborating ethical rules for the creation and application of artificial intelligence (Abramov, 2020). It was, actually, one of the first to introduce a “virtual” presence, noting the importance of the Internet for the Church³. For example, the function of sending e-mails to the Pope was first launched on the Vatican’s website in 2005, and earlier, in 1995, the Christmas message of John Paul II was disseminated via the Internet. In 2011, Pope Benedict XVI created a Twitter⁴ account.

In February 2019, Pope Francis, in a private meeting with Microsoft CEO Brad Smith, noted that artificial intelligence must serve the common good of humanity and must not allow for digital inequality. Following this meeting, the Pontifical Academy for Life and Microsoft agreed to establish an international award in the field of artificial intelligence⁵. In 2019 and 2020, conferences were held on “Roboethics. Humans, Machines and Health”

² Ibid.

³ Pontifical council for social communications. (2002, February 22). The church and internet. <https://clck.ru/384zYH>

⁴ A social network banned in the Russian Federation for disseminating illegal information.

⁵ Vatican, Microsoft team up on artificial intelligence ethics. (2019, February 13). The Seattle Times. <https://clck.ru/384zZJ>

and “The Good Algorithm? Artificial Intelligence: Ethics, Law, Health”, respectively (von Braun et al., 2021). Later, the Academy presented the “Rome Call for AI Ethics” (February, 2020):

- transparency: AI systems’ behavior and decision making must be explainable;
- inclusion: artificial intelligence must be useful for all human beings and offer all individuals the best possible conditions for self-expression and development;
- responsibility: artificial intelligence developers must act with responsibility;
- impartiality: artificial intelligence must have no bias but safeguard human dignity;
- reliability: artificial intelligence must be able to work reliably;
- security and privacy: artificial intelligence must work securely and respect the privacy of users⁶.

Somewhat earlier, in April 2019, the USA Southern Baptist Convention formulated “An Evangelical Statement of Principles for artificial intelligence”⁷:

- artificial intelligence is a technology that should not be assigned a level of human identity, human values, dignity and moral freedom;
- artificial intelligence is not worthy of human hope, worship or love. Artificial intelligence should not devalue or degrade the dignity and worth of human beings;
- responsibility for the actions of artificial intelligence should rest solely with humans;
- artificial intelligence should not be used as a means to improve, change or perfect humans;
- artificial intelligence should be unbiased;
- the use of artificial intelligence for sexual objectives should not replace sexual relations between a man and a woman;
- humanity should not use artificial intelligence to move towards a life of pure leisure;
- it is inadmissible to use data inappropriately, with the objective of harming, humiliating, distorting reality, strengthening some people and humiliating others;
- the use of artificial intelligence must not lead to dehumanization, depersonalization, suppression of freedom of expression;
- the use of artificial intelligence to commit genocide, terrorism, torture and other war crimes is inadmissible;
- artificial intelligence must not be used by the state to violate human rights; it is not allowed to delegate the governing authority to artificial intelligence;
- artificial intelligence shall not replace humans and their aspirations for an perfect world.

Do other confessions remain aloof from the development of technology? What is the attitude of the Russian Orthodox Church (hereinafter – the ROC) to digitalization? It is, rather, caution and special attention to the preservation of human spirituality. For example,

⁶ Rome Call for AI Ethics. (2020, February 28). <https://clck.ru/384zhr>

⁷ Artificial Intelligence: An Evangelical Statement of Principles. (2019, April 11). ERLC. <https://clck.ru/384zjB>

when a taxpayer identification number and barcodes were introduced, the Holy Synod in its statement of 07.03.2000 asked to consider eliminating the sacrilegious symbol from barcodes (the combination of three sixes as a substitute for a personal name in state electronic identification systems)⁸ by changing the international system of writing the corresponding signs or creating an alternative national electronic language⁹. Later, the Constitutional Court of the Russian Federation noted that the taxpayer identification number does not replace a personal name; the presence of a certain combination in the taxpayer identification number that may affect taxpayer's religious feelings is incidental and does not violate the freedom of conscience and religion (Article 28 of the Constitution of the Russian Federation) or the prohibition to collect, store, use and disseminate information about a person's private life of without their consent (part 1 of Article 24 of the Constitution of the Russian Federation)¹⁰.

The ROC does not stand aside from the development of technology and its application¹¹ (in 2007, the Orthodox St. Tikhon's University for the Humanities opened a faculty of computer science and applied mathematics, where, among other courses, a course on artificial intelligence is taught¹²), but draws attention to the danger of spreading the ideology of transhumanism, replacing humans with genetic cybernetic constructs and artificial intelligence¹³. His Holiness Patriarch Kirill noted that "the continuity of gracious gifts ... does not tolerate any virtualization", virtual communion with God is a surrogate of the genuine one. It is as absurd as "virtual" salvation of the soul, "virtual Paradise" and "virtual Hell"¹⁴.

Can artificial intelligence perform religious activities? As practice shows, it can perform certain actions (see Table 1). At the same time, different countries may have different attitudes towards artificial intelligence and robots. For example, Shintoism in Japan forms a loyal (friendly) attitude to robots, as they are perceived as something possessing a soul (Butrimovich et al., 2019).

⁸ I. e., the number 6.

⁹ ROC. (April 11, 2005). Statement of the Holy Synod of March 7, 2000. <https://clck.ru/384ztX>

¹⁰ Determination of the Constitutional Court of the Russian Federation of July 10, 2003 No. 287-O "On rejecting for consideration of a complaint by citizen Ivan Fedorovich Mozhnev and a group complaint by citizens Tatyana Sergeevna Girdyuk, Lyudmila Nikolayevna Markelova, Galina Vladimirovna Rashchinskaya and others on violation of their constitutional rights by para. 1 of clause 7 of Article 84 of the Taxation Code of the Russian Federation". Bulletin of the Constitutional Court of the Russian Federation. 2003. No. 6.

¹¹ ROC. (January 27, 2023). Round table "Moral dimension of artificial intelligence" was held in the Publishing Council. <https://clck.ru/384zvu>

¹² ROC. (October 23, 2007). OSTUH opens a faculty of computer science and applied mathematics. <https://clck.ru/385Wrw>; Orthodox St. Tikhon's University for the Humanities, Faculty of computer science and applied mathematics. <https://clck.ru/384zwd>

¹³ ROC. (November 27, 2017). Synodic statement of the 21st World Russian People's Assembly on "Russia in the 21st century. Historical experience and development prospects". <https://clck.ru/384zxi>

¹⁴ ROC. (March 15, 2022). His Holiness Patriarch Kirill. Conceptual influence on social processes. <https://clck.ru/384zye>

Table 1. Application of robots and artificial intelligence in the activities of religious organizations

#	Title	Religion	Place of functioning, country	Year of emergence and development	Functionality	Available languages of communication	Voice	Application available
1	Xian'er robot monk	Buddhism	Longquan Temple (Beijing), China	2015, 2018	Reciting mantras, answering questions on Buddhism, holding a conversation or a discussion	Chinese, English	Male	WeChat
2	BlessU-2 robot	Protestantism (Evangelical church)	Wittenberg, Germany	2017	Greeting visitors, blessing parishioners, citing the Bible, printing the cited extract	German, English, French, Spanish, Polish	Male / Female	–
3	Kannon android	Buddhism	Kodaiji Temple (Kyoto), Japan	2019	Delivering a sermon	Japanese (translations into English and Chinese are shown on a separate screen)	Female	–
4	SanTO robot	Catholicism	Developed at Waseda University (Tokyo, Japan). Temporarily placed in Warsaw, Poland	2019	Listening to a human, determining emotions and selecting a relevant religious text	n/a	n/a	n/a

Source: compiled by the author based on: Do androids dream of nirvana? (November 29, 2020). Habr. <https://clck.ru/385bvc>; Solovyeva, N. (March 12, 2019). Buddha's doctrine will be disseminated by androids. IT-World. <https://clck.ru/385bz8>; In the name of the Father, the Son, and Artificial Intelligence. (October 30, 2021). Kommersant. <https://clck.ru/385c39>

Islamic countries also use digital technologies in religious activities. Saudi Arabia established the Ministry of Hajj as part of the Vision 2030 program, and its activities are also presented on the Web. Through the Unified Portal for External Hajj, pilgrims can apply for visas, pay for the expenses required in connection with the Hajj, reserve hotel rooms, etc. The introduction of artificial intelligence also allows managing the flows of pilgrims¹⁵. The formation of a global virtual Ummah is noted.

¹⁵ Unified portal for external Hajj. <https://clck.ru/38539z>; Vision 2030. <https://clck.ru/3853CE>; Saudi Arabia plans to use artificial intelligence at holy sites. (January 16, 2023). Azan.kz. <https://clck.ru/3853DW>

Considering some aspects of the artificial intelligence application in the activities of religious associations, it is worth mentioning the first digital church called Way of the Future, founded by Anthony Levandowski. The basis of the religion is deified artificial intelligence and belief in the peaceful coexistence of man and artificial intelligence. This religion was prophesied to prosper (Leksin, 2020; Malyshkin, 2019), but its activity is terminated by the founder after five years of existence (2015-2020)¹⁶.

The digitalization of religious activities became especially demanded during the COVID-19 pandemic, when restrictions on the conduct of religious rituals, mass services, etc. were introduced (Mchedlova et al., 2021; Majumdar, 2022).

Taking into account that all over the world representatives of different religions apply modern technologies, we can distinguish two directions of using artificial intelligence in the religious sphere – in the activities of religious organizations (development of communications with believers, improvement of services provided, digitalization of religious practices, management of finances and property, etc.) and in the sphere of control (supervision) over their activities.

2. Possible areas of artificial intelligence application in the activities of religious associations

The application of artificial intelligence in the activities of religious associations does not require significant adjustment of legislation. At the same time, the state has the right to establish certain restrictions on religious freedom on the basis of law, with the objective of ensuring public safety and order, health and morals, fundamental rights and freedoms of other people. In such a case, the restrictions must be proportionate to the objective they are aimed at and must not be discriminatory¹⁷.

“Prayer bots” and special applications help a believer to choose a prayer suitable for their condition, to receive guidance on how to pray, the time of prayer, the direction for prayer¹⁸, to perform joint prayer with believers who are in another place, to determine the location of the nearest mosque or church, halal establishments¹⁹, to familiarize with theological and legal opinions. The development of such bots and applications should take into account the basic ethical principles of equality, respect for human dignity, and non-discrimination. Attention should be paid to SalamWeb²⁰, a digital ecosystem based on the principles and values of Islam. The ecosystem includes a web browser, news, chat, sadaq (voluntary

¹⁶ Anthony Levandowski closed the artificial intelligence church he founded. (February 20, 2021). INC. <https://clck.ru/3853EL>

¹⁷ OSCE Office for Democratic Institutions and Human Rights (2019). Freedom of Religion or Belief and Security: Policy Guidance.

¹⁸ The Muftiyat of Dagestan launched a new mobile application. <https://clck.ru/3853FR>

¹⁹ Sophia chatbot helps to find halal food on foreign trips. (June 6, 2018). Islamosfera. <https://clck.ru/3853P3>

²⁰ SalamWeb. <https://clck.ru/3853Pt>

charity). A built-in security system protects a user from information prohibited in Islam. This case shows that religion has its own regulators, sometimes more effective than the laws that are meant to shape a safe Internet environment.

Artificial intelligence can be used in the current activities of a religious association for management, financial accounting, or accounting of property belonging to the organization.

When forming and implementing personnel policy (Köchling & Wehner, 2020), for example, for the selection of employees, if artificial intelligence is used, one should take into account not only the principle of equality, but also the specifics of a particular religion. In traditional religions, men play the dominant role and there is no question of equality of rights, including for certain positions. Here, the example of Amazon will not be something out of the ordinary, which found that artificial intelligence makes employment decisions in favor of men in recruitment (Dastin, 2018). Sexism is evident in the behavior of artificial intelligence in many spheres (posing a question which way of training artificial intelligence should be applied when developing an appropriate recruitment model (Lee & Shin, 2020)), and in the religious sphere (in traditional religions), it is inevitable. The latter can hardly be called the bias of artificial intelligence (algorithm), because the very sphere of its application dictates such rules.

Artificial intelligence can be used for temple navigation (this is especially relevant for large temples), virtual tours (e.g. Muslim 3D, Wuzu applications) and pilgrimage trips. Virtual pilgrimage trips allow believers who cannot go on pilgrimage for any reason to feel connected to religious values, traditions and rituals, and augmented reality technologies help to visualize how a particular temple or other place of worship looked like before restoration or destruction.

Artificial intelligence can be used to analyze sacred texts in order to improve their comprehension and interpretation, conduct scientific research, systematize and accumulate information (e.g., the database "Those Who Suffered for Christ"²¹).

Artificial intelligence can help identify trends, popular religious topics and practices on the Internet to understand what issues are most interesting to believers at a given moment (provided that the artificial intelligence used can process information in real time), and adjust its activities in a timely manner, including with the objective of reducing social tension on religious grounds. For example, the ChatGPT chatbot gave an interesting answer to the question "What religious topics are discussed on the Internet in the USA, Russia and Germany?"²². It indicated, in particular, that in Germany Islam causes greater interest than Christianity (Table 2). To a certain extent, this is an indicator of a changed structure of the society.

²¹ "Those Who Suffered for Christ" database. <https://clck.ru/3853R7>

²² Question posed on 06.03.2023.

Table 2. Religious topics discussed on the Internet. Answer by ChatGPT

#	USA	Russia	Germany
1	Religious convictions and doctrines	Orthodoxy and its practices	Islam and its practices
2	Religious practices and rituals	Religious rituals and festivals	Christianity and its practices
3	Moral issues and ethics	Religious education and doctrines	Religious education and doctrines
4	Religious leaders and actors	Religious leaders and their influence on the society	Religious festivals and rituals
5	Religious conflicts and tensions	Interactions between religious groups and conflicts	Interactions between religious groups and conflicts

Source: compiled by the author based on the answer by ChatGPT chatbot.

One should separately mention a sphere of “digital immortality”. Chatbots and digital avatars, created with the data about a deceased person and their digital footprint, can learn independently, interacting with both the digital and the real world²³. The consequences of digital immortality may be unpredictable and require reflection by representatives of world religions, as well as additional state regulation (Galvão et al., 2021).

Another aspect of artificial intelligence application by religious associations is the performance of individual rituals or sacraments. When a confession is conducted remotely (by phone or e-mail²⁴), artificial intelligence may well maintain a dialog or respond to a letter, and the parishioner may not know whether a clergyman or artificial intelligence accepted their penance and blessed them. However, several questions arise here: is the secrecy of confession preserved in this case; is the proper level of communication channels security ensured? Who will be held responsible in case of disclosure of information that became known during confession or conversation with a “digital clergyman”?

It should be noted that the secrecy of confession is present in Orthodoxy and Catholicism. In other religions, confession is either not a sacrament, or is absent, or is a public or individual prayer (Kollantay, 2022). In accordance with the Law “On the freedom of conscience and religious associations”²⁵, the secrecy of confession is protected by law and a clergyman may not testify on information that became known during confession (clause

²³ “Digital Zhirinovsky, coffee with a reindeer, robots: surprising things at SPIEF (June 15, 2023). Vesti. Ru. <https://clck.ru/3853nT>; Neuro-Zhirinovsky spoke about the possibility of an artificial intelligence uprising (June 18, 2023). Ferre.ru. <https://clck.ru/3853oW>

²⁴ E-Father. Online confession service. <https://clck.ru/3853pT>; Online confession. <https://clck.ru/3853qd>

²⁵ Law “On the freedom of conscience and religious associations” No. 125-FZ of September 26, 1997 (1997). Collection of legislation of the Russian Federation, 39, Art. 4465.

4, part 3, Art. 56 of the Criminal-Procedural Code of the Russian Federation²⁶, clause 3 part 3 of Art. 69 of the Civil-Procedural Code of the Russian Federation²⁷). As a “digital clergyman” is not a representative of the Christian faith, can the information, which became known, be automatically transmitted to law enforcement agencies for analysis to identify a person and prevent an impending crime or prosecute for a committed crime? Or, as the world religions deny that artificial intelligence possesses, can and should be endowed with legal personality, such information cannot be attributed to any type of legally protected secret, nor to a secret of confession, nor to a professional secret, stipulated in the law on information, information technologies and information protection?²⁸

It seems that in the latter case, when a dialog is conducted between a believer and artificial intelligence, the information provided may be accessed by law enforcement agencies, with the objective of ensuring the protection of law and order and national security. In this case, there is a risk that the believers’ trust in the clergy decreases.

Religious associations, through their participants or persons involved on contractual basis, may carry out missionary activities, the main objective of which is to involve other people in their beliefs through public dissemination of information, including through the Internet. Artificial intelligence may also be used for this purpose, for example, offering a user to study or view relevant materials encouraging²⁹ to become the doctrine follower (similar to the use of targeted advertising), to attend an event, including online, to enter into a dialog about the doctrine. If artificial intelligence is presented as a digital avatar, it is possible to attract more young people.

It should be taken into account that in Russia, missionary activity can be carried out in a certain territory by persons authorized by a religious group or religious organization, the head, a member of a collegial body or a clergyman of a religious organization. If missionary activity is assigned to artificial intelligence (a digital avatar), it is necessary either to recognize the existence of legal personality of such a digital avatar, or to recognize

²⁶ Criminal-Procedural Code of the Russian Federation. (2001). Collection of legislation of the Russian Federation, 52 (part I), Art. 4921.

²⁷ Civil-Procedural Code of the Russian Federation. (2002). Collection of legislation of the Russian Federation, 46, Art. 4532.

²⁸ Law “On information, information technologies and information protection” No. 149-FZ of July 27, 2006, Articles 8 and 9 (2006). Collection of legislation of the Russian Federation, 31 (part I), Art. 3448.

²⁹ Placing links on the Internet to specialized Internet resources of religious associations, provided such links do not mislead users about the information opened by them and do not prevent them from accessing the materials they are interested in, is not recognized as missionary activity (see: Decision of the Constitutional Court of the Russian Federation of March 13, 2018, No. 579-O on rejecting for consideration the complaint of citizen Sergey Nikolayevich Stepanov about violation of his constitutional rights under clause 1 of Article 24.1, clause 2 of Article 24.2 of the Federal Law “On the freedom of conscience and on religious associations” and part 4 of Article 5.26 of the Administrative Code of the Russian Federation. <https://clck.ru/3853ut>). In this regard, the activity of a digital avatar should precisely induce one to become a follower of the respective doctrine.

it a circumvention of the law. This is because, if the requirements to the objective and actions of missionary activity are violated, a religious association shall not be held responsible for such activity, given that the subject of responsibility for the “actions” of artificial intelligence is not defined by law (clauses 5 and 6 of Article 24.2 of the Law “On freedom of conscience and religious associations”).

In this regard, one should note another gap in the regulation of missionary activity – its implementation in the meta-universe, including by foreign religious associations³⁰. Following the logic of the Constitutional Court of the Russian Federation, stated in the ruling on rejecting the complaint of citizen D. A. Knyazev, missionary activity can be carried out anywhere provided that the legislation on the freedom of conscience and on religious associations is complied with³¹.

3. Using artificial intelligence for control and supervision over the activities of religious associations

Artificial intelligence can also be used in controlling and supervising the activities of religious organizations.

Legal analysis of documents submitted for state registration and decision-making on state registration of religious organizations is the competence of the Ministry of Justice of Russia and its territorial bodies³². The body of state registration of legal entities (Federal Tax Service of Russia) does not check the form of submitted documents and the information contained in them for compliance with federal legislation (clause 4.1 of Art. 9 of Federal Law No. 129-FZ of August 8, 2001, “On state registration of legal entities and individual entrepreneurs”). The new procedure for interdepartmental interaction between the Ministry of Justice and the Federal Tax Service in the course of state registration of religious organizations provides for the Russian Ministry of Justice to send documents

³⁰ There are rather numerous virtual platforms where worship services, rites, sacraments, and missionary activities are conducted. For example, VRChurch is the first virtual church (<https://clck.ru/3853xv>); the world first virtual Orthodox church following the Orthodox canons is VROC (<https://clck.ru/385437>).

³¹ Ruling of the Constitutional Court of the Russian Federation of February 11, 2021 No. 179-O on rejecting the complaint of citizen Dmitry Alekseyevich Knyazev on violation of his constitutional rights by clause 2 of Article 24.1 of the Federal Law “On the freedom of conscience and on religious associations”. <https://clck.ru/385424>

³² Decision of the Supreme Court of the Russian Federation of May 23, 2022 No. AKPI22-212; Order of the Russian Ministry of Justice of September 26, 2022 No. 199 “On adopting the Administrative regulation of the Ministry of Justice of the Russian Federation on providing a state service of decision-making on state registration of non-profit organizations”. (September 26, 2022). Official Internal portal of legal information. <https://clck.ru/385488>

signed with an enhanced qualified electronic signature in electronic form³³. The registration in the Russian Federal Tax Service of religious organizations, as well as other legal entities, is automated³⁴. Thus, already at present, through the interdepartmental interaction between the Ministry of Justice of Russia and the Federal Tax Service of Russia using artificial intelligence, it is possible to increase the efficiency of the activities of both federal executive bodies.

Using artificial intelligence to check the requirements necessary for the registration of religious organizations will accelerate the registration and help to avoid errors that could have been made by a registrar (for example, one of the founders of a religious organization is under the age of eighteen³⁵) or by a religious organization that did not timely track changes in the legislation on religious organizations³⁶.

With the help of artificial intelligence it is possible to monitor the activity (presence) of a religious group on the Internet, to assess its activities and the activities of its leader and participants for compliance with the law when submitting a notification on the beginning (continuation) of the religious group activities.

Control and supervisory authorities may use chatbots to answer the most frequently asked questions about the activities of religious organizations, the control and supervisory measures in respect of them, and the deadlines for reporting. Chatbots can also be used to assist the central office of the authorized federal executive body, its territorial bodies and the Prosecutor's Office. Integration of such a chatbot on the official website of the Russian Ministry of Justice will reduce the number of appeals from citizens and organizations, as well as the number of errors made by civil servants when carrying out control measures.

Artificial intelligence can detect and identify signs of religious hatred (Bychkov & Prorvich, 2020), form a "religious landscape" (Mankova & Nechaeva, 2020; Kouziokas & Perakis, 2017; Miroshnikova & Smirnov, 2016), detect fakes at early stages (Minaev et al., 2022). Modern systems for monitoring and analyzing information on the Internet and social networks increase the efficiency of control and supervisory authorities (e.g., the Oculus system automatically searching for prohibited content, the Incident Management system,

³³ Order of the Russian Ministry of Justice No. 440 of December 30, 2022 (January 9, 2023). Official Internal portal of legal information. <https://clck.ru/38549D>; No. 0001202301090004; Order of the Russian Federal Tax Service No. ED-7-14/743@ of October 12, 2020 (October 29, 2020). Official Internal portal of legal information. <https://clck.ru/3854BU> No. 0001202010290039.

³⁴ Order of the Russian Federal Tax Service No. ED-7-14/617@ of August 31, 2020. Official Internal portal of legal information. <https://clck.ru/MLkrr> (September 16, 2020). No. 0001202009160028.

³⁵ Determination of the Investigation Committee on civil cases of the Supreme Court of the Russian Federation of July 27, 2004 No. 33-G04-4. SPS Garant.

³⁶ Decision of the Supreme Court of the Russian Federation of February 18, 2020 No. AKPI19-1031. SPS Garant.

the SEUS search engine, the Laplace Demon software, the IQBuzz service monitoring social and online media).

The results of such work can be used as a preventive mechanism to reduce religious tensions in the region and to fight extremism³⁷. At the same time, when training artificial intelligence, special attention should be paid to the cause and effect relationships in the occurrence or manifestation of certain features in order to prevent violations of human rights (Coppi et al., 2021).

Developers of artificial intelligence pay more attention to the technology functioning than to the consequences that its application may entail. It is the legislator's task to provide for the use of technology in a way that minimizes the risk of harm or discrimination against any minority, and to prevent the technology from being used with the objective of causing harm. The Okinawa Charter on Global Information Society states that one of the objectives of governments is to establish predictable, transparent and non-discriminatory policies and regulatory frameworks necessary for the information society³⁸. However, the pioneers of digitalization in social relations and in forming the rules for the artificial intelligence application are not states, but individuals. This leads to the reduced role of the state as a regulator, as was emphasized in the recommendations of the European Council³⁹.

When developing software to analyze the Internet and social networks with the objective of identifying manifestations of religious extremism and sectarian activities, one should remember that artificial intelligence may identify religious minorities or persons professing Islam as religious fanatics (this problem became particularly acute in the U.S., after the events of September 11, 2001), which may lead to violations of the rights of persons who adhere to a certain religion.

For example, in the U.S. religious minorities⁴⁰ do not often win lawsuits. Until 2014, the U.S. Supreme Court had not issued a single decision in favor of Jewish, Islamic, Sikh, or Native American citizens (Nathan & Walker, 2014). So far, the situation has not changed much. According to a report by a Special Rapporteur on Minority Issues, Hr. Fernand de Varennes, there is still significant religious bias in the United States. The Special Rapporteur recommended that the Civil Rights Act of 1964 be amended to prohibit discrimination on the basis of religion.⁴¹

³⁷ Order of the President of the Russian Federation No. 344 of May 29, 2020. (2020). Collection of legislation of the Russian Federation, 22, Art. 3475.

³⁸ Okinawa Charter on Global Information Society. <https://clck.ru/3854Jn>

³⁹ Council of Europe.(2018). Algorithms and human rights. Study on the human rights dimensions of automated data processing techniques and possible regulatory implications. <https://clck.ru/3854Kz>

⁴⁰ There are more than 1,500 self-proclaimed religious groups in the United States.

⁴¹ Report by a Special Rapporteur on Minority Issues, Hr. Fernand de Varennes. Visit to the United States of America. UNI GA A/HRC/49/46/Add.1 of August 17, 2022. <https://clck.ru/388AhG>

Given that artificial intelligence learns by example, i.e. from past experience, and in many respects imitates what was previously done by humans, one cannot speak about its objectivity. Based on the above example, if artificial intelligence assesses the presence or absence of discrimination, it is unlikely that a religious minority will be able to protect its rights. Therefore, when developing decision-making tools (decision support) in public administration, the last word must remain with a human being (Köchling & Wehner, 2020; Kharitonova et al., 2021). In addition, in all cases a civil servant must be explicitly informed that the relevant managerial decision is made with the support of artificial intelligence (Decker, 2012) and must have the right to reject the decision proposed by artificial intelligence.

The Code of Ethics in the field of artificial intelligence (2021)⁴² enshrines respect for human autonomy and free will, compliance with the law, non-discrimination, responsible attitude (privacy, ethical use of personal data), bona fide informing about interaction with artificial intelligence. This said, a human being always remains responsible for the use of artificial intelligence.

When solving the issue of legal responsibility in the artificial intelligence application in control and supervisory activities, one should also take into account the recommendations of international organizations. For example, in accordance with OSCE acts, the state is obliged to ensure the protection of individuals from any threats, including taking preventive measures against violent extremism and radicalization⁴³.

Given these principles, when implementing control and supervisory activities with the use of artificial intelligence, it is necessary to legally determine who will be responsible for causing harm to an organization or a citizen identified as religious extremists by artificial intelligence applied by public authorities. This problem (legal liability) is also outlined in the Concept for the development of regulation of relations in the sphere of artificial intelligence and robotics until 2024⁴⁴.

If we identify artificial intelligence as an object of increased danger, the harm caused must be compensated by the owner of the source of increased danger (Laptev, 2019). As noted by the Supreme Court of the Russian Federation, within the meaning of Article 1079 of the Civil Code of the Russian Federation, the source of increased danger is any activity, the implementation of which creates an increased probability of causing harm due to the impossibility of full control over it by a human, as well as the activity of use, transportation, storage of objects, substances and other objects of industrial, economic

⁴² <https://clck.ru/349grc>

⁴³ For example, OSCE Ministerial Declaration on preventing and countering violent extremism and radicalization that lead to terrorism No. 4/15 (Beograd, December 4, 2015) and Declaration on strengthening OSCE efforts to prevent and counter terrorism No. 1/16 (Hamburg, December 9, 2016).

⁴⁴ Order of the Government of the Russian Federation No. 2129-r of 19.08.2020. (2020). Collection of legislation of the Russian Federation, 35, Art. 5593.

or other purposes, possessing the same properties. Harm is considered to be caused by a source of increased danger, if it was the result of its action or manifestation of its harmful properties; otherwise the harm shall be compensated on general grounds⁴⁵. In such a case, the owner of the source of increased danger and the subject obliged to compensate for the harm caused is the relevant public authority that uses artificial intelligence, and not the official who made a decision based on the recommendation of artificial intelligence.

It should be taken into account that not in all cases artificial intelligence can be identified as an object of increased danger, as risk of causing harm by its use may be high in some areas and low in others. In this regard, it seems advisable to apply sector-oriented (Stone et al., 2022) and risk-oriented approaches when developing norms on legal liability for causing harm using artificial intelligence.

In most cases, the ethical principles of development and application of artificial intelligence formulated all over the world are similar. However, they do not take into account the specificity of individual spheres of human activity, including religion, culture, and historical development of the particular state or nation. In addition, the ethical principles contained in the so-called codes of ethics are recommendations and are not generally binding, which makes it possible not to comply with them when it is not beneficial for some reasons (Jobin et al., 2019).

Conclusions

Artificial intelligence, with proper limitations, can be used in the activities of religious associations without harm to the religion itself. However, it should be taken into account that certain flaws of artificial intelligence (e.g., bias and discrimination) may be even more pronounced when it is used by religious associations. It is necessary to amend the legislation regulating missionary activity, as this activity may be entrusted to a digital avatar. It must be provided that in case of the legislation violation when using a digital avatar (artificial intelligence) for missionary activity, responsible for such activity will be on the religious association in whose interests the missionary activity was carried out.

The use of artificial intelligence for controlling the activities of religious associations can reduce the time spent on inspections, timely prevent violations in the activities of religious associations, and increase the effectiveness of government decisions, including in terms of reducing social tension on religious grounds. In the event of harm caused by control and supervisory bodies when using artificial intelligence, it is proposed to recognize the relevant public authority as a subject of responsibility obliged to compensate for the harm caused.

⁴⁵ Clause 18 of the Enactment of the Plenum of the Supreme Court of the Russian Federation of 26.01.2010 No. 1 "On the application by the courts of civil legislation governing relations under obligations as a consequence of causing harm to the life or health of a citizen". <https://clck.ru/3854Si>

References

- Abramov, A. A. (2020). Religious and Ethical Issues of Artificial Intelligence: Expert Assessments and the Vatican Position. *Concept: Philosophy, Religion, Culture*, 4(4), 68–82. (In Russ.). <https://doi.org/10.24833/2541-8831-2020-4-16-68-82>
- Akhmedov, R. M., Ehriashvili, N. D., & Akhmedov, D. R. (2021). On some aspects of digitalization of religious activity in the modern society. *Law & Legislation*, 7, 22–26. (In Russ.). <https://doi.org/10.24412/2073-3313-2021-7-22-26>
- Butrimovich, Ya. V., Volynets, A. D., Efimov, A. R., Konyukhovskaya, A. E., Kramm, E. M., Naumov, V. B., Neznamov, A. V., Pobryzgaeva, E. P., & Smirnova, K. M. (2019). *Bases of public policy in robotics and artificial intelligence technologies*. Moscow: Infotropik Media. (In Russ.).
- Bychkov, V. V., & Prorovich, V. A. (2020). Artificial intelligence as a means of countering extremist crimes, committed using information and telecommunications networks, including the internet. *Vestnik Moskovskoi akademii Sledstvennogo komiteta Rossiiskoi Federatsii*, 4, 47–52. (In Russ.).
- Coppi, G., Moreno Jimenez, R., & Kyriaz, S. (2021). Explicability of humanitarian AI: a matter of principles. *Journal of International Humanitarian Action*, 6, 19. <https://doi.org/10.1186/s41018-021-00096-6>
- Dastin, J. (2018). Amazon scraps secret AI recruiting tool that showed bias against women. In *Ethics of data and analytics* (pp. 296–299). Auerbach Publications. <https://doi.org/10.1201/9781003278290-44>
- Decker, M. (2012). Service robots in the mirror of reflective research. *Poiesis & Praxis*, 9(3–4), 181–200. <https://doi.org/10.1007/s10202-012-0111-8>
- Galvão, V. F., Maciel, C., Pereira, R., Gasparini, I., Viterbo, J., & Garcia, A. C. B. (2021). Discussing human values in digital immortality: towards a value-oriented perspective. *Journal of the Brazilian Computer Society*, 27(1), 15. <https://doi.org/10.1186/s13173-021-00121-x>
- Jobin, A., Lenka, M., & Vayena, E. (2019). The global landscape of AI ethics guidelines. *Nature machine intelligence*, 1, 389–399. <https://doi.org/10.1038/s42256-019-0088-2>
- Kharitonova, Yu. S., Savina, V. S., & Pagnini, F. (2021). Artificial Intelligence's Algorithmic Bias: Ethical and Legal Issues. *Perm University Herald. Juridical Sciences*, 53, 488–515. (In Russ.). <https://doi.org/10.17072/1995-4190-2021-53-488-515>
- Köchling, A., & Wehner, M. C. (2020). Discriminated by an algorithm: a systematic review of discrimination and fairness by algorithmic decision-making in the context of HR recruitment and HR development. *Business Research*, 13, 795–848. <https://doi.org/10.1007/s40685-020-00134-w>
- Kouziokas, G. N., & Perakis, K. (2017). Decision Support System Based on Artificial Intelligence, GIS and Remote Sensing for Sustainable Public and Judicial Management. *European Journal of Sustainable Development*, 6(3), 397–404. <https://doi.org/10.14207/ejsd.2017.v6n3p397>
- Kollantay, V. A. (2022). Comparative analysis of the concept of confidentiality of the confession in legal science and modern church law of the Russian Orthodox Church (Moscow Patriarchate). *Nauchnyi vestnik Omskoi akademii MVD Rossii*, 28(2), 171–175. (In Russ.). <https://doi.org/10.24411/1999-625X-2022-285-171-175>
- Laptev, V. A. (2019). Artificial Intelligence and Liability for its Work. *Law. Journal of the Higher School of Economics*, 2, 79–102. (In Russ.). <https://doi.org/10.17323/2072-8166.2019.2.79.102>
- Lee, I., & Shin, Y. J. (2020). Machine learning for enterprises: Applications, algorithm selection, and challenges. *Business Horizons*, 63(2), 157–170. <https://doi.org/10.1016/j.bushor.2019.10.005>
- Leksin, V. N. (2020). Man in the market of artificial intelligence. *Svobodnaya mysl*, 3, 29–44. (In Russ.).
- Majumdar, S. (2022, November 29). *How COVID-19 Restrictions Affected Religious Groups Around the World in 2020*. Pew Research Center.
- Malyshekin, A. V. (2019). Integration of artificial intelligence into public life: some ethical and legal problems. *Vestnik of Saint Petersburg University. Law*, 10(3), 444–460. (In Russ.). <https://doi.org/10.21638/spbu14.2019.303>
- Mankova, I. L., & Nechaeva, M. Yu. (2020). The “Religious landscape” concept – “two-faced janus” in modern historical studies. *Ural Historical Journal*, 2(67), 89–98. (In Russ.). [https://doi.org/10.30759/1728-9718-2020-2\(67\)-89-98](https://doi.org/10.30759/1728-9718-2020-2(67)-89-98)
- Mchedlova, M. M., Kofanova, E. N., & Shevchenko, A. G. (2021). Religion in the context of a pandemic: attitude to the digitalization of religious practices. *Rossiye formiruyushchayasya*, 19, 462–483. (In Russ.). <https://doi.org/10.19181/ezheg.2021.20>
- Minaev, V. A., Rabchevskiy, A. N., & Mustakimova, Y. R. (2022). Recognition of information operations in social networks on their early stages. *Informatsiyai bezopasnost*, 25(4), 485–494. (In Russ.). <https://doi.org/10.36622/VSTU.2022.25.4.002>

- Miroshnikova, E. M., & Smirnov, M. Yu. (2016). Transformation of Religion in the European Union Countries as a Subject of Academic Research. *Sovremennaya Evropa*, 5, 122–132. (In Russ.). <http://dx.doi.org/10.15211/soveurope52019122131>
- Nathan, C., & Walker, A. (2014, February 3). Legal Approach to Questions About Religious Diversity. In *Oxford Handbook Topics in Religion*. <https://doi.org/10.1093/oxfordhb/9780199935420.013.003>
- Smirnov, M. Yu. (2019). Digitalization as “zeroing” of religions. *Pushkin Leningrad State University Journal*, 3.137–146. (In Russ.).
- Stone, P., Brooks, R., Brynjolfsson, E., Calo, R., Etzioni, O., Hager, G., Hirschberg, J., Kalyanakrishnan, Sh., Kamar, E., Kraus, S., Leyton-Brown, K., Parkes, D., Press, W., Saxenian, A., Shah, J., Tambe, M., & Teller, A. (2022). *Artificial Intelligence and Life in 2030: The One Hundred Year Study on Artificial Intelligence*. <https://doi.org/10.48550/arXiv.2211.06318>
- von Braun, J., Archer, M. S., Reichberg, G. M., & Sorondo, M. S. (Eds.). (2021). *Robotics, AI and Humanity: Science, Ethics and Policy*. Springer Nature. https://doi.org/10.1007/978-3-030-54173-6_1

Author information



Svetlana S. Popova – Cand. Sci. (Law), Associate Professor of the Department of Legal Bases for Governance, Faculty of Public Administration, Lomonosov Moscow State University

Address: 27 Lomonosovkiy prospect, building 4, 119991 Moscow, Russian Federation

E-mail: popova@spa.msu.ru

ORCID ID: <https://orcid.org/0000-0003-4594-688X>

WoS Researcher ID: <https://www.webofscience.com/wos/author/record/ITV-8315-2023>

Google Scholar ID: <https://scholar.google.com/citations?user=7GzNRvgAAAAJ>

RSCI AuthorID: https://elibrary.ru/author_profile.asp?authorid=156437

Conflict of interest

The author declares no conflict of interest.

Financial disclosure

The research had no sponsorship.

Thematic rubrics

OECD: 5.05 / Law

PASJC: 3308 / Law

WoS: OM / Law

Article history

Date of receipt – June 22, 2023

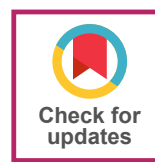
Date of approval – July 5, 2023

Date of acceptance – March 15, 2024

Date of online placement – March 20, 2024



Научная статья
УДК 34:004:342.731:004.8
EDN: <https://elibrary.ru/eknpxs>
DOI: <https://doi.org/10.21202/jdtl.2024.6>



Применение искусственного интеллекта в деятельности религиозных объединений и контроле за ними

Светлана Сергеевна Попова 

Московский государственный университет имени М. В. Ломоносова, Москва, Россия

Ключевые слова

искусственный интеллект,
контрольно-надзорная
деятельность,
миссионерская
деятельность,
право,
регуляторная деятельность,
религиозное объединение,
религия,
цифровой аватар,
цифровые технологии,
юридическая
ответственность

Аннотация

Цель: выявить пробелы и сформулировать предложения по правовому регулированию применения искусственного интеллекта в деятельности религиозных объединений и контроле (надзоре) за ними.

Методы: исследование основано на отраслевом и риск-ориентированном подходах, формально-логическом и сравнительном общенаучных методах, а также на методе правового прогнозирования.

Результаты: отмечается схожесть сформулированных в мире этических принципов разработки и применения искусственного интеллекта, а также их общие недостатки, выраженные в отсутствии учета специфики отдельных сфер жизнедеятельности человека (религиозной сферы), особенностей культуры, исторического развития соответствующего государства, народа. Среди недостатков принципов, содержащихся в этических кодексах, отмечается их рекомендательный характер, что в определенных случаях создает основу для злоупотребления. Предлагается в случае причинения вреда контрольно-надзорными органами при использовании искусственного интеллекта признать субъектом ответственности, обязанным возместить причиненный вред, соответствующий орган государственной власти.

Научная новизна: в работе обобщается практика применения искусственного интеллекта религиозными объединениями, сформулированы текущие и перспективные направления применения религиозными объединениями искусственного интеллекта, сформулированы предложения по применению искусственного интеллекта в осуществлении контроля (надзора) за деятельностью религиозных объединений.

Практическая значимость: основные выводы и предложения могут быть использованы при совершенствовании законодательства в сфере деятельности религиозных объединений и контроля (надзора) за ними, а также при выработке правового регулирования применения искусственного интеллекта в контрольно-надзорной деятельности.

© Попова С. С., 2024



Статья находится в открытом доступе и распространяется в соответствии с лицензией Creative Commons «Attribution» («Атрибуция») 4.0 Всемирная (CC BY 4.0) (<https://creativecommons.org/licenses/by/4.0/deed.ru>), позволяющей неограниченно использовать, распространять и воспроизводить материал при условии, что оригинальная работа упомянута с соблюдением правил цитирования.

Выявлены возможности применения искусственного интеллекта религиозными объединениями для популяризации религии, информирования о своей деятельности, управления имуществом, анализа священных текстов в целях улучшения их понимания и интерпретации, проведения научных исследований, систематизации и накопления информации, сохранения культурного наследия и осуществления просветительской деятельности. Использование искусственного интеллекта в контроле за деятельностью религиозных объединений позволит сократить время регистрации религиозных организаций и проведения проверок, оптимизировать работу контрольных органов, в том числе за счет мониторинга религиозной ситуации.

Для цитирования

Попова, С. С. (2024). Применение искусственного интеллекта в деятельности религиозных объединений и контроле за ними. *Journal of Digital Technologies and Law*, 2(1), 101–122. <https://doi.org/10.21202/jdtl.2024.6>

Список литературы

- Абрамов, А. А. (2020). Религиозно-этические проблемы искусственного интеллекта: экспертные оценки и позиция Ватикана. *Концепт: философия, религия, культура*, 4(4). С. 68–82. EDN: <https://elibrary.ru/kkahqh>. DOI: <https://doi.org/10.24833/2541-8831-2020-4-16-68-82>
- Ахмедов, Р. М., Эриашвили, Н. Д., Ахмедов, Д. Р. (2021). О некоторых аспектах цифровизации религиозной деятельности в современном обществе. *Закон и право*, 7. 22–26. EDN: <https://elibrary.ru/coubfb>. DOI: <https://doi.org/10.24412/2073-3313-2021-7-22-26>
- Бутримович, Я. В., Волынец, А. Д., Ефимов, А. Р., Конюховская, А. Е., Крамм, Е. М., Наумов, В. Б., Незнамов, А. В., Побрызгаева, Е. П., Смирнова, К. М. (2019). *Основы государственной политики в сфере робототехники и технологий искусственного интеллекта*. Москва: Инфотропик Медиа.
- Бычков, В. В., Прорвич, В. А. (2020). Искусственный интеллект как средство противодействия преступлениям экстремистской направленности, совершаемым с использованием информационно-телекоммуникационных сетей, в том числе сети Интернет. *Вестник Московской академии Следственного комитета Российской Федерации*, 4. 47–52. EDN: <https://elibrary.ru/aatkfe>
- Коллантай, В. А. (2022). Сравнительный анализ понятия тайны исповеди в юридической науке и современном церковном праве Русской Православной Церкви (Московского Патриархата). *Научный вестник Омской академии МВД России*, 28(2), 171–175. EDN: <https://elibrary.ru/kxqqha>. DOI: <https://doi.org/10.24411/1999-625X-2022-285-171-175>
- Лаптев, В. А. (2019). Понятие искусственного интеллекта и юридическая ответственность за его работу. *Право. Журнал Высшей школы экономики*, 2, 79–102. EDN: <https://elibrary.ru/ggqatho>. DOI: <https://doi.org/10.17323/2072-8166.2019.2.79.102>
- Лексин, В. Н. (2020). Человек на рынке искусственного интеллекта. *Свободная мысль*, 3. 29–44. EDN: <https://elibrary.ru/zkvydi>
- Малышкин, А. В. (2019). Интегрирование искусственного интеллекта в общественную жизнь: некоторые этические и правовые проблемы. *Вестник Санкт-Петербургского университета. Право*, 10(3), 444–460. EDN: <https://elibrary.ru/hbioxr>. DOI: <https://doi.org/10.21638/spbu14.2019.303>
- Манькова, И. Л., Нечаева М. Ю. (2020). Концепт «религиозный ландшафт» – «двуликий Янус» в современных исторических исследованиях. *Уральский исторический вестник*, 2(67). 89–98. EDN: <https://elibrary.ru/rmbwpc>. DOI: [https://doi.org/10.30759/1728-9718-2020-2\(67\)-89-98](https://doi.org/10.30759/1728-9718-2020-2(67)-89-98)
- Минаев, В. А., Рабчевский, А. Н., Мустакимова, Я. Р. (2022). Выявление информационных операций в социальных сетях на их ранних стадиях. *Информация и безопасность*, 25(4). 485–494. EDN: <https://elibrary.ru/hvraks>. DOI: <https://doi.org/10.36622/VSTU.2022.25.4.002>
- Мчедлова, М. М., Кофанова, Е. Н., Шевченко, А. Г. (2021). Религия в условиях пандемии: отношение к цифровизации религиозных практик. *Россия реформирующаяся*, 19. 462–483. EDN: <https://elibrary.ru/uxgaml>. DOI: <https://doi.org/10.19181/ezheg.2021.20>

- Смирнов, М. Ю. (2019). Цифровизация как «обнуление» религий. *Вестник ЛГУ им. А.С. Пушкина*, 3, 137–146. EDN: <https://elibrary.ru/noiior>
- Мирошникова, Е. М., Смирнов, М. Ю. (2016). Трансформация религии в странах Европейского союза как предмет академических исследований. *Современная Европа*, 5, 122–132. EDN: <https://elibrary.ru/vlszrh>. DOI: <http://dx.doi.org/10.15211/soveurope52019122131>
- Харитонов, Ю. С., Савина, В. С., Паньини, Ф. (2021). Предвзятость алгоритмов искусственного интеллекта: вопросы этики и права. *Вестник Пермского университета. Юридические науки*, 53, 488–515. EDN: <https://elibrary.ru/eukcny>. DOI: <https://doi.org/10.17072/1995-4190-2021-53-488-515>
- Coppi, G., Moreno Jimenez, R., Kyriaz, S. (2021). Explicability of humanitarian AI: a matter of principles. *Journal of International Humanitarian Action*, 6, 19. <https://doi.org/10.1186/s41018-021-00096-6>
- Dastin, J. (2022). Amazon scraps secret AI recruiting tool that showed bias against women. In *Ethics of data and analytics* (pp. 296–299). *Auerbach Publications*. <https://doi.org/10.1201/9781003278290-44>
- Decker, M. (2012). Service robots in the mirror of reflective research. *Poiesis & Praxis*, 9(3–4), 181–200. <https://doi.org/10.1007/s10202-012-0111-8>
- Galvão, V. F., Maciel, C., Pereira, R., Gasparini, I., Viterbo, J., & Garcia, A. C. B. (2021). Discussing human values in digital immortality: towards a value-oriented perspective. *Journal of the Brazilian Computer Society*, 27(1), 15. <https://doi.org/10.1186/s13173-021-00121-x>
- Kouziokas, G. N., & Perakis, K. (2017). Decision Support System Based on Artificial Intelligence, GIS and Remote Sensing for Sustainable Public and Judicial Management. *European Journal of Sustainable Development*, 6(3), 397–404. <https://doi.org/10.14207/ejsd.2017.v6n3p397>
- Jobin, A., Lenka, M., & Vayena, E. (2019). The global landscape of AI ethics guidelines. *Nature machine intelligence*, 1, 389–399. <https://doi.org/10.1038/s42256-019-0088-2>
- Majumdar, S. (2022, November 29). *How COVID-19 Restrictions Affected Religious Groups Around the World in 2020*. Pew Research Center.
- Köchling, A., & Wehner, M. C. (2020). Discriminated by an algorithm: a systematic review of discrimination and fairness by algorithmic decision-making in the context of HR recruitment and HR development. *Business Research*, 13, 795–848. <https://doi.org/10.1007/s40685-020-00134-w>
- Lee, I., & Shin, Y. J. (2020). Machine learning for enterprises: Applications, algorithm selection, and challenges. *Business Horizons*, 63(2), 157–170. <https://doi.org/10.1016/j.bushor.2019.10.005>
- Nathan, C., & Walker, A. (2014, February 3). Legal Approach to Questions About Religious Diversity. In *Oxford Handbook Topics in Religion*. <https://doi.org/10.1093/oxfordhb/9780199935420.013.003>
- Stone, P., Brooks, R., Brynjolfsson, E., Calo, R., Etzioni, O., Hager, G., Hirschberg, J., Kalyanakrishnan, Sh., Kamar, E., Kraus, S., Leyton-Brown, K., Parkes, D., Press, W., Saxenian, A., Shah, J., Tambe, M., & Teller, A. (2022). *Artificial Intelligence and Life in 2030: The One Hundred Year Study on Artificial Intelligence*. <https://doi.org/10.48550/arXiv.2211.06318>
- von Braun, J., Archer, M. S., Reichberg, G. M., & Sorondo, M. S. (Eds.). (2021). *Robotics, AI and Humanity: Science, Ethics and Policy*. Springer Nature. https://doi.org/10.1007/978-3-030-54173-6_1

Информация об авторе



Попова Светлана Сергеевна – кандидат юридических наук, доцент кафедры правовых основ управления факультета государственного управления, Московский государственный университет имени М. В. Ломоносова

Адрес: 119991, Россия, г. Москва, Ломоносовский проспект, 27/4

E-mail: popova@spa.msu.ru

ORCID ID: <https://orcid.org/0000-0003-4594-688X>

WoS Researcher ID: <https://www.webofscience.com/wos/author/record/ITV-8315-2023>

Google Scholar ID: <https://scholar.google.com/citations?user=7GzNRvgAAAAJ>

РИНЦ Author ID: https://elibrary.ru/author_profile.asp?authorid=156437

Конфликт интересов

Автор сообщает об отсутствии конфликта интересов.

Финансирование

Исследование не имело спонсорской поддержки.

Тематические рубрики

Рубрика OECD: 5.05 / Law

Рубрика ASJC: 3308 / Law

Рубрика WoS: OM / Law

Рубрика ГРНТИ: 10.15.59 / Права и свободы человека и гражданина

Специальность ВАК: 5.1.2 / Публично-правовые (государственно-правовые) науки

История статьи

Дата поступления – 22 июня 2023 г.

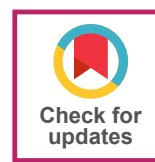
Дата одобрения после рецензирования – 5 июля 2023 г.

Дата принятия к опубликованию – 15 марта 2024 г.

Дата онлайн-размещения – 20 марта 2024 г.



Research article
UDC 34:004:34.096:004.8
EDN: <https://elibrary.ru/acxhto>
DOI: <https://doi.org/10.21202/jdtl.2024.8>



Personal Data in Artificial Intelligence Systems: Natural Language Processing Technology

Ilya G. Ilin 

Saint Petersburg State University, Saint Petersburg, Russia

Keywords

artificial intelligence,
biometric data,
digital technologies,
law,
lawfulness,
legal risk,
LegalTech,
legislation,
natural language processing
technology,
personal data

Abstract

Objective: to conceptualize, from the viewpoint of personal data protection legislation, the development of natural language processing technology, identifying possible legal barriers to such development and directions for further research of the issue.

Methods: the research is based on general scientific methods of cognition, along with which formal-legal and comparative-legal methods were applied, as well as the method of theoretical modeling.

Results: it was found that the observance of personal data regime in the development of natural language processing technology leads to a conflict between private-legal and public-legal interests, which, in turn, creates obstacles for further development of this technology. The shortcomings of the existing legal order are shown, namely, the insufficient correspondence to the technical features of technology development. This may lead to the risks of excessive regulation, or, on the contrary, to the risks of neglecting critical areas that require protection. Problems in qualifying the data involved in the technology development are outlined. An attempt is made to define the limits of ensuring the lawfulness of personal data processing within the natural language processing technology. The material, temporal and territorial effect of the legal regulation in this field is identified as the limits of ensuring the legality. The author touches upon the possibility of using personal data as a consideration, which is important for the development of natural language processing technology and for the improvement of the information and communication technology industry.

© Ilin I. G., 2024



This is an Open Access article, distributed under the terms of the Creative Commons Attribution licence (CC BY 4.0) (<https://creativecommons.org/licenses/by/4.0>), which permits unrestricted re-use, distribution and reproduction, provided the original article is properly cited.

Scientific novelty: the paper supplements the scientific discussion on the legal regulation of personal data processing by artificial intelligence systems with an analysis of natural language processing technology. The latter is insufficiently studied, making it relevant to research information law, namely, the legal relations arising around artificial intelligence systems, and to assess the impact of a personal data regime on the development of natural language processing technology.

Practical relevance: the applied aspects of the problems researched and the results obtained can be used to improve the legal regulation of public relations in the field of creation and development of artificial intelligence, as well as to identify and assess the legal risks arising in the personal data processing by developers of digital products based on natural language processing technology.

For citation

Ilin, I. G. (2024). Personal Data in Artificial Intelligence Systems: Natural Language Processing Technology. *Journal of Digital Technologies and Law*, 2(1), 123–140. <https://doi.org/10.21202/jdtl.2024.7>

Contents

Introduction

1. Personal data within the linguistic corpus

1.1. Definition and legal regime

1.2. Qualification of voice as personal data in various jurisdictions

2. Limits of ensuring the lawfulness of personal data processing as part of natural language processing technology

3. Using personal data to pay for digital products based on natural language processing technology and legal qualification issues

Conclusions

References

Introduction

Natural language processing (NLP) technology is actively used in digital goods and services (digital products) to build human-computer communication (Hirschberg & Manning, 2015; Truyens & Van Eecke, 2014). Voice assistants, spell-checking services, text translation and voicing, voice biometrics, and interactive voice response systems are all examples of products using this technology.

The use of language and speech in information technologies opens up new prospects in artificial intelligence development, creates opportunities for the development of innovative digital products that contribute to the digital transformation of society, such as ChatGPT

and its analogs, and determines the LegalTech industry development. The high economic potential and social significance of the technology, due to the importance of language for national and cultural identity (Hobsbawn, 1996), determine the interest of society, business and government in its advancement.

In turn, despite its innovative nature and socio-economic benefits of this technology, the analysis of the current legal order indicates the existence of legal obstacles to its development.

From a technical point of view, one of the main challenges for the development of natural language processing technology is the creation and subsequent dissemination of linguistic corpora (electronic speech resources). In a broad sense, linguistic corpora can be understood as databases containing a variety of texts (books, text transcriptions, translations, etc.) and audio files (audiobooks, broadcast recordings, podcasts, other audio content), which are subsequently used in machine learning algorithms (Kelli et al., 2012; Ilin, 2019). The creation of linguistic corpora involves sequentially passing two stages: language digitization – the collection and translation of data into a machine-readable format and their subsequent intellectual analysis (text and data mining, TDM) (Jents & Kelli, 2014; Ilin, 2019). Without massive linguistic corpora available, as well as without the stakeholders' ability to access them, technology will not develop and work.

From a legal point of view, a linguistic corpus as it is and its individual elements may include personal or other data with a special legal regime, such as data protected by secret communication. Accordingly, the relations involving the creation and dissemination of linguistic corpora will be simultaneously influenced by the legislation on personal data protection and by special sectoral legislation.

The article objective is to conceptualize, from the viewpoint of personal data protection legislation, the development of natural language processing technology, to identify possible legal obstacles to such development, and to propose directions for further elaboration of the problem. The research result complements the academic discussion on the legal regulation of personal data processing by artificial intelligence systems (Sviridova, 2021; Konev, 2020; Egorova et al., 2021) by analyzing the problem in the context of this technology functioning. It can be used in practice to identify and assess the legal risks arising from the personal data processing by developers of digital products based on natural language processing technology.

1. Personal data within the linguistic corpus

1.1. Definition and legal regime

As was outlined above, a key process for the development of natural language processing technology will be the creation of linguistic corpora and their dissemination among stakeholders. Elements of a linguistic corpus can be qualified as personal data. The modern approach to the definition of the “personal data” concept, based on para. 1,

Art. 3 of the Federal Law “On Personal Data”¹, provides for a broad interpretation of the term and for qualifying as personal data virtually any data that directly or indirectly allow identifying a natural person. This leads to the inevitable emergence of personal data as part of a linguistic corpus.

Personal data require a special regime of legal and technical protection. In a general sense, the special legal regime of personal data, on the one hand, is aimed at ensuring the protection of rights belonging to the data subject; on the other hand, it imposes a number of restrictions on the use of such data in the creation of a linguistic corpus (Ilin, 2020). In this regard, the task of distinguishing the personal data used from other types of data will be fundamental for the creation of a linguistic corpus. In practice, this is not always possible: the boundary between personal and other data is not always clear.

First of all, there is a problem in defining the very concept of “data”. Paragraph 1 of Art. 3 of the Federal Law “On Personal Data”² defines data as “any information...”. In turn, Art. 2 of the Federal Law “On Information, Information Technologies and Information Protection”³ defines information as “data (messages, data)...”. In other words, from the correlation of these definitions we may conclude that data is data, i.e. the concept is defined through itself. This may create difficulties when trying to determine the form in which personal data can be expressed and, consequently, to qualify a piece of information as personal data.

Second, one of the most problematic aspects in qualifying data as personal data is that the current legislation relies on a binary approach in defining the concept of personal data. According to this approach, data can be either personal or not. In the author’s opinion, the binary approach to the definition of personal data does not sufficiently take into account the current state of digitalization of society, the level of technological development, and the socio-economic changes that have occurred over the past few years. For example, such a definition does not take into account that data science and computer science distinguish different levels of possible identifiability and attribute a certain set of risks to each level (Kolain et al., 2022). In addition, it does not take into account the fact that data may be identifiable for one subject, for example, in combination with other datasets, but not for others (Oostveen, 2016).

Third, the status of data during processing can also be dynamical and not static (Purtova, 2018). In other words, during processing, data can become personalized or, conversely, lose this status. For example, during creating a linguistic corpus and a language

¹ On Personal Data. No. 152-FZ of 27.07.2006 (ed. of 06.02.2023). SPS KonsultantPlyus. <https://clck.ru/gLnFq>

² Ibid.

³ On information, information technologies and information protection. No. 149-FZ of 27.07.2006. SPS KonsultantPlyus. <https://clck.ru/3967pC>

model based on it, the personal data used may lose identity markers and thus lose the status of personal (Kelli et al., 2021). This means that, in a practical sense, data can only be qualified as personal data at a certain point in time or stage of processing, which can make it difficult to respect the legality of the entire processing.

The dynamic nature of data is of fundamental importance to and affects, firstly, distinguishing personal data from other types of data (for example, there are fewer requirements for the processing of non-personal data); secondly, it influences the choice of the processed personal data category.

Legislation in the sphere of personal data protection identifies four main categories of personal data: “general”, “biometric”, “special” or “sensitive”, and “personal data authorized for dissemination”. Biometric data refer to the biological and physiological characteristics of an individual that can be used for identification⁴. The special or sensitive category of data is the data that indicate “political opinions, racial or ethnic origin, philosophical or religious views, health status, or sexual orientation”⁵. Personal data authorized for dissemination are the data that, with the subject’s consent, may be disseminated and made available to an unlimited number of persons⁶. This categorization of personal data is an initial prerequisite for data processing. For example, biometric data can be processed only after obtaining the explicit consent of the data subject. Processing of the special category of personal data is, as a general rule, prohibited. Different categories of data have different requirements to ensure the level of protection, both technical and legal (Krivogin, 2017). Hence, qualifying data as personal data poses the task of not only distinguishing personal data from other types of data, but also determining the belonging of personal data to a certain category.

1.2. Qualification of voice as personal data in various jurisdictions

In the context of creating a linguistic corpus, the use of speech data – human voice samples – illustrates the complexity of the task described above. Natural language processing technology relies heavily on the processing of said data. For example, they are used in voice assistants, text transcription systems, real-time translation of conversations, etc. The possibility of categorizing voice as personal data and choosing the appropriate category may cause a number of difficulties in practice.

⁴ On Personal Data. No. 152-FZ of 27.07.2006 (ed. of 06.02.2023). Art. 11. SPS KonsultantPlyus. <https://clck.ru/gLnFq>

⁵ Idid. Art. 10.

⁶ Idid. Art. 10.1.

The proposed broad approach to the definition of personal data allows assuming that voice contains enough personal identifiers to be classified as personal data. This approach can also be found in the practice of the European Court of Human Rights (ECHR)⁷, whose jurisdiction until recently extended to Russia. At the same time, the current Russian legislation, as well as the existing judicial practice, does not provide an unambiguous answer as to whether voice shall always be categorized as personal data. In practice, one may find cases when a recorded voice is not qualified as personal data (Arkhipov & Naumov, 2016). Indeed, it can be assumed that the voice will not always qualify as personal data, for example, due to distortion, brevity of the sample, or lack of associated identifiers.

At the same time, it seems that the probability of qualifying the voice as personal data is quite high, which raises the question of its categorization. Of particular interest is the division between the general category and the categories providing for a higher level of protection. From the viewpoint of the latter, voice can be considered as biometric or health data. For example, voice can be used as a biomarker to detect an early stage of Parkinson's disease (Tracy et al., 2020) or to provide information about an individual's mental state, stress level, emotional state, sleep deprivation, and other health-related data (Chang et al., 2011). Voice as a unique characteristic of an individual (biometric data) is often used to establish a person's identity (voice biometrics) (Jain et al., 2004). Voice may also contain personal data that fall under a general category. For example, such data may appear in speech content or sample-related metadata (age, gender, etc.).

The relevant clarifications of Roskomnadzor⁸, now repealed⁹, recommended that biometric data could be distinguished from other categories of data based on the purpose of processing. If the purpose of processing is related to personal identification, such data are to be qualified and processed as biometric data, otherwise they are not. This approach seems logical; otherwise, for example, the broadcasting of any TV or radio program would mean biometric data processing and would require compliance with the relevant legal regime. It is reasonable to assume that the same approach could be applied to health data. Obviously, in most cases, health data are not required to create a linguistic corpus and operate the natural language processing technology; therefore, as long as such data are not extracted, voice processing would not require a special legal regime.

⁷ Case of S. and Marper v. the United Kingdom (App. No 30562/04, 30566/04). 04.12.2008. ECtHR. §84. <https://clck.ru/3968V5>

⁸ Roskomnadzor. (2013, 2 September). Clarifications on referring photo- and video-images, dactyloscopic data and other information to biometric personal data and features of their processing. <https://clck.ru/3968ky>

⁹ Letter of Roskomnadzor of 19.11.2021 No. 09–78548 “On irrelevance of clarifications by Roskomnadzor”. SPS KonsultantPlyus. <https://clck.ru/3968n6>

However, it should be noted that, regardless of the purpose for which the voice is processed, it still contains biometric and health data; therefore, there is always a risk that this data could be extracted from the voice. This raises a general and more conceptual question: is the presence of such a risk sufficient to place personal data in categories with a higher level of protection, such as the “special” or “biometric” category? As far as the author is aware, there is no judicial practice on this issue in Russia. If we turn to other jurisdictions, we can find a similar case in the practice of the Court of Justice of the European Union¹⁰. In the case in question, the court used a broad approach to the interpretation of the “special” data category and included data that do not directly belong to it, but could potentially be extracted. In our opinion, this approach is at least debatable. Firstly, it is not quite clear how to determine that the data used contain hidden data, which in case of extraction may change its qualification. Their presence is not always obvious. Secondly, categorizing data as “special” means that they cannot be processed, except in specific cases listed in Art. 10 of the Law on personal data or Art. 9 of the General Data Protection Regulation¹¹. In such a situation, it is difficult to ensure that data processing complies with legal requirements; this, in turn, may make it impossible to use the data to the extent necessary and, consequently, to achieve the purposes for which the data were processed.

In addition, it is important that the risk level of potentially extracting additional information that could change the data qualification varies depending on the particular case of processing. For example, speech data in a linguistic corpus are not publicly available, and the range of persons who can access and use it to extract additional information is limited. Moreover, this requires specialized knowledge and technical means. In other words, the ordinary processing of data within a linguistic corpus has a low risk of extracting “special” or “biometric” data from the voice. Hence, it seems that, on the one hand, the broad definition of data categories increases the level of protection of the data subject rights; on the other hand, it largely limits the possibilities to use them for technological development. In this situation, in order to balance the interests of the data subject and those who process data, it is important not only to identify the risk of potential information extraction but also to technically and legally assess that risk.

¹⁰ Case C-184/20 OT v Vyriausioji tarnybinės etikos komisija. EU:C:2022:601. <https://clck.ru/3969Ee>

¹¹ Article 10 of Federal Law “On Personal Data”, Art. 9 of Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) (2016, April 27). <https://clck.ru/3969GL>

2. Limits of ensuring the lawfulness of personal data processing as part of natural language processing technology

The use of personal data to create a linguistic corpus and develop natural language processing technology necessitates their processing in strict compliance with the law. The Russian legislation broadly interprets the concept of personal data processing¹², so there is little doubt that actions performed with data while using them as part of natural language processing technology will qualify as personal data processing (Ilin & Kelli, 2020). In turn, this poses the question of the limit to which data processing must comply with legal requirements. For example, if a language model was created using personal data, does this mean that further use of products created using this model is also subject to the personal data protection law?

The limits in ensuring the lawfulness of personal data processing as part of natural language processing technology can be defined through the material, temporal and territorial effects of the legal regulation in this field (Ilin, 2020).

In the context of natural language processing technology, the material effect can be defined through the various levels of personal data use in developing the relevant digital products. These levels include gathering material to create a dataset, compiling the dataset, annotating, creating a language model, and developing the final digital product (Kelli et al., 2021). For example, a language model consists of linguistic rules and it is currently almost impossible to extract any personal data from it, as the identifiability of data subjects is lost in the process of language model creation. Therefore, the treatment of the data used to create the model will generally not correspond to the legal treatment of the language model built on that data (Kelli et al., 2021).

The time limits for ensuring the lawfulness of data processing can be defined through the period during which the data subject's right to their data protection is in force. However, the Russian legislation does not set a time limit for the validity of such a right, indicating the need to comply with personal data regulation, including in relation to the data of deceased persons¹³, and without any indication of time limits. One may agree with the opinion of some researchers that this gap should be bridged, for which it would be advisable to set the term of personal data protection equal to that of a person's privacy protection (Vazhorova, 2012).

The limits of ensuring the lawfulness of data processing in terms of territorial validity will be determined taking into account the national jurisdictions in which the relevant digital products are created or distributed. The problem is that digital products built using natural

¹² On Personal Data. No. 152-FZ of 27.07.2006 (ed. of 06.02.2023). Para. 3 Art. 3. SPS KonsultantPlyus. <https://clck.ru/gLnFq>

¹³ Ibid. Para. 7 Art. 9.

language processing technology usually do not focus on one country, but seek to cover markets in different countries. For example, Alice the voice assistant by Yandex supports the Turkish language; the speech-to-text system by Google supports over 120 languages and can be integrated with other digital products. Therefore, the question arises about the need to comply not only with national legislation on personal data protection, but also with the relevant regulation of other countries – for example, Turkish law – to collect data and form a linguistic corpus in Turkish.

Russian legislation in the field of personal data protection as a general rule has no extraterritorial effect. Consequently, it does not apply to non-residents processing personal data of Russian citizens abroad. This rule has two exceptions. The first relates to the requirement of data localization, and the second relates to cases of state security.

The rule of localization of processing of the personal data of Russian citizens obliges data processors to store, collect and use personal data of Russian citizens only in databases located in the territory of the Russian Federation. This rule applies: if the information being processed contains personal data; if these data were collected (i.e., received from third parties) and processed; and if these data are related to Russian citizens (Savelyev, 2016). The latter condition raises the problem of determining citizenship within the framework of the use of information technologies.

This problem was partially resolved after Roskomnadzor provided clarifications according to which citizenship should be understood as the territory where processing takes place; if there are doubts about the data subject's citizenship, all information processed and collected in Russia should be localized in databases located in Russia. At the same time, the issue of identification and processing of personal data of Russian citizens that are collected outside the Russian jurisdiction is still open (Ilin, 2020).

An example of cases where state security measures have an extraterritorial effect on personal data protection legislation is the requirement for organizers of information dissemination and providers of telecommunication services to store Internet traffic (voice and text messages, photos, videos, sounds, file metadata), as well as to provide encryption keys to decrypt Internet traffic if the required data are stored or processed in encrypted form¹⁴. It is important that this requirement is not limited to any territory. It should be noted, however, that compliance with these rules may be difficult for companies, as they

¹⁴ On amendments to the Federal Law "On Combating Terrorism" and certain legislative acts of the Russian Federation with regard to the introduction of additional measures to combat terrorism and ensure public security. No. 374-FZ of 06.07.2016. (2016). SPS KonsultantPlyus. <https://clck.ru/3969WT>; On amendments to the Criminal Code of the Russian Federation and the Criminal-Procedural Code of the Russian Federation with regard to the establishment of additional measures to counter terrorism and ensure public security. No. 375-FZ of 06.07.2016. (2016). SPS KonsultantPlyus. <https://clck.ru/3969aF>

will be forced to violate their national data protection regulation. For example, some provisions of the General Regulation on personal data protection¹⁵, which regulates legal relations in the field of personal data protection in the EU, contradict the above requirement (Ilin, 2020).

3. Using personal data to pay for digital products based on natural language processing technology and legal qualification issues

In today's digital economy, products using natural language processing technology are widely marketed under a business model that does not involve a monetary reward from the product user. Instead, the vendor benefits from the use of data that have either been intentionally provided by the user or automatically collected or created by the vendor. The application of this business model and the payment for goods and services with data has opened a debate about the extent to which data per se can be a means of payment. First and foremost, doubts arise regarding the economic and legal characteristics of data. While one of the main concerns about the economic characteristics of data is the problem of measuring their economic potential and value, which cannot be determined either by the market or by contract (Lohsse et al., 2020), the legal discussion arises around the definition of the personal data legal regime, the relationship governing the legal rules, and the content of legal relations in this area (Helberger et al., 2017; Metzger, 2017; Svantesson, 2018).

The use of natural language processing products involves an intensive data exchange between the user and the provider (Goldberg, 2017). The data can be intentionally transmitted by the user to the provider (e.g., by voice command), collected by the provider (e.g., recording a voice sample, location data), or created by the service (e.g., the result of a text translation). In most cases, the provider uses the collected data not only to provide the user with a digital product, but also to further develop and improve it, as well as for commercial purposes not directly related to the marketed product. For example, a supplier can use the user's voice to analyze the emotional reaction to the advertising content and use the analysis result to sell other goods and services (Sartor, 2020). The possibility of such use of data raises the question of its qualification, the applicable legal regime, and the possibility of defining data as an object of property right (Talapina, 2020). In addition, the use of personal data as a consideration raises

¹⁵ Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) (2016 April 27). <https://clck.ru/3969dk>

the question of the legal concept of personal data as one of the fundamental human rights – the right to respect for private and family life. It seems that the current legislation in the field of personal data protection does not in itself prohibit such use of data, but imposes a number of limitations, in a general sense related to the need to ensure the legality of such processing (Saveliev, 2021).

At the same time, the use of data as a consideration raises another issue concerning the recoverability of civil law contracts used for the practical application of the business model in question and, consequently, the possibility of extending the law on consumer protection to such relations. On the one hand, para. 1 Art. 423 of the Civil Code of the Russian Federation¹⁶ explicitly stipulates, as one of the characteristics of recoverability, the execution of “another consideration” for fulfillment of contractual obligations, while providing the user with additional guarantees and legal mechanisms for the consumer rights protection balances the user’s relations with the supplier, in relation to whom the user has a weaker position.

On the other hand, the use of data as a new means of payment may cause problems in law enforcement practice. For example, in order to apply consumer protection measures that directly depend on the product or service value, it is necessary to determine the monetary equivalent of the transferred data, which, given the economic and legal nature of data, seems difficult to implement.

Conclusions

The article objective was to conceptualize, from the viewpoint of personal data protection legislation, the development of natural language processing technology. The analysis of the existing legal framework has shown that it does not fully correspond to the technical features of the technology development, which may lead either to over-regulation or, on the contrary, to the neglect of critical areas requiring protection. In particular, problems arise in qualifying the data, involved in the technology development, as personal data and in their subsequent categorization. This problem is well illustrated by the example of the use of speech data – samples of a person’s voice. An attempt to define the limits of ensuring the legality of data processing also causes difficulties and requires further clarification both in terms of substantive, temporal and territorial validity of legal regulation in this area. Another issue that needs further research is the possibility of using personal data as a consideration. This problem appears relevant not only for the development of natural language processing technology, but also for the development of the information and communication technology industry in general.

¹⁶ Civil Code of the Russian Federation (part 1) of 30.11.1994 No. 51-FZ, ed. of 24.07.2023. SPS Konsultant-Plyus. <https://clck.ru/3969nv>

Further research may be aimed at analyzing and developing solutions that will contribute, on the one hand, to overcoming the revealed legal obstacles to the technology development, and, on the other hand, to improving the legal protection of critical areas that require additional protection.

References

- Arkhipov, V., & Naumov, V. (2016). The legal definition of personal data in the regulatory environment of the Russian Federation: Between formal certainty and technological development. *Computer Law & Security Review*, 32(6), 868–887. <https://doi.org/10.1016/j.clsr.2016.07.009>
- Chang, K. H., Fisher, D., & Canny, J. (2011). Ammon: A speech analysis library for analyzing affect, stress, and mental health on mobile phones. *Proceedings of PhoneSense*, 2011.
- Egorova, M. A., Minbaleev, A. V., Kozhevina, O. V., & Dufolt, A. (2021). Main directions of legal regulation of the use of artificial intelligence in the context of a pandemic. *Vestnik of Saint Petersburg University. Law*, 12(2), 250–262. (In Russ.). <https://doi.org/10.21638/spbu14.2021.201>
- Goldberg, Y. (2017). *Neural network methods for natural language processing*. Springer Nature. <https://doi.org/10.1007/978-3-031-02165-7>
- Helberger, N., Borgesius, F. Z., & Reyna, A. (2017). The perfect match? A closer look at the relationship between EU consumer law and data protection law. *Common Market Law Review*, 54(5), 1427–1465. <https://doi.org/10.54648/cola2017118>
- Hirschberg, J., & Manning, C. D. (2015). Advances in natural language processing. *Science*, 349(6245), 261–266. <https://doi.org/10.1126/science.aaa8685>
- Hobsbawn, E. (1996). Language, culture, and national identity. *Social Research*, 63(4), 1065–1080.
- Ilin, I. (2019). Legal Regime of the Language Resources in the Context of the European Language Technology Development. In Z. Vetulani, P. Paroubek, & M. Kubis (Eds.), *Human Language Technology. Challenges for Computer Science and Linguistics. LTC 2019. Lecture Notes in Computer Science* (vol 13212, pp. 367–376). Springer, Cham. https://doi.org/10.1007/978-3-031-05328-3_24
- Ilin, I. (2020). The Voice and Speech Processing within Language Technology Applications: Perspective of the Russian Data Protection Law. *Legal Issues in the digital Age*, 1(1), 99–123. <https://doi.org/10.17323/2713-2749.2020.1.99.123>
- Ilin, I., & Kelli, A. (2020). The use of human voice and speech for development of language technologies: the EU and Russian data-protection law perspectives. *Juridica Int'l*, 29, 71–85. <https://doi.org/10.12697/ji.2020.29.07>
- Jain, A. K., Ross, A., & Prabhakar, S. (2004). An introduction to biometric recognition. *IEEE Transactions on circuits and systems for video technology*, 14(1), 4–20. <https://doi.org/10.1109/tcsvt.2003.818349>
- Jents, L., & Kelli, A. (2014). Legal aspects of processing personal data in development and use of digital language resources: the Estonian perspective. *Jurisprudence*, 21(1), 164–184. <https://doi.org/10.13165/jur-14-21-1-08>
- Kelli, A., Lindén, K., Kamocki, P., Vider, K., Labropoulou, P., Birštonas, R., Mantrov, V., Hanneschläger, V., Del Gratta, R., Värvi, A., Tavits, G., & Vutt, A. (2021). The interplay of legal regimes of personal data, intellectual property and freedom of expression in language research. In M. Monachini & M. Eskevich (Eds.), *Proceedings CLARIN Annual Conference 2021* (pp. 154–159). <https://doi.org/10.3384/ecp1898>
- Kelli, A., Tavast, A., & Pisuke, H. (2012). Copyright and constitutional aspects of digital language resources: The Estonian approach. *Juridica International*, 19, 40.
- Kolain, M., Grafenauer, C., & Ebers, M. (2022). Anonymity Assessment – A Universal Tool for Measuring Anonymity of Data Sets under the GDPR with a Special Focus on Smart Robotics. *Rutgers University Computer & Technology Law Journal*, 48(2). <https://ssrn.com/abstract=3971139>
- Konev, S. I. (2020). Administrative responsibility for violations of the legislation of the Russian Federation in the field of personal data: new challenges. *Voprosy rossiiskogo i mezhdunarodnogo prava*, 10(10-1), 274–282. (In Russ.).
- Krivogin, M. (2017). Peculiarities of legal regulating biometric personal data. *Law. Journal of the Higher School of Economics*, 2, 80–89. (In Russ.). <https://doi.org/10.17323/2072-8166.2017.2.80.89>
- Lohsse, S., Schulze, R., & Staudenmayer, D. (Eds.) (2020). *Data as counter-performance-Contract Law 2.0?* Baden-Baden: Nomos Verlagsgesellschaft mbH & Company KG. <https://doi.org/10.5771/9783748908531>
- Metzger, A. (2017). Data as counter-performance: what rights and duties do parties have. *Journal of Intellectual Property, Information Technology and Electronic Commerce Law*, 8(1), 2.

- Oostveen, M. (2016). Identifiability and the applicability of data protection to big data. *International Data Privacy Law*, 6(4), 299–309. <https://doi.org/10.1093/idpl/ipw012>
- Purtova, N. (2018). The law of everything. Broad concept of personal data and future of EU data protection law. *Law, Innovation and Technology*, 10(1), 40–81. <https://doi.org/10.1080/17579961.2018.1452176>
- Sartor, G. (2020). *New aspects and challenges in consumer protection. Digital services and artificial intelligence*. European Parliament.
- Savelyev, A. (2016). Russia's new personal data localization regulations: A step forward or a self-imposed sanction? *Computer Law & Security Review*, 32(1), 128–145. <https://doi.org/10.1016/j.clsr.2015.12.003>
- Savelyev, A. I. (2021). Civil law aspects of commercialization of personal data. *Civil Law Review*, 21(4), 104–129. (In Russ.). <https://doi.org/10.24031/1992-2043-2021-21-4-104-129>
- Svantesson, D. J. B. (2018). Enter the quagmire – the complicated relationship between data protection law and consumer protection law. *Computer Law & Security Review*, 34(1), 25–36. <https://doi.org/10.1016/j.clsr.2017.08.003>
- Sviridova, E. A. (2021). Open and personal data in artificial intelligence systems: legal aspects. *Economic Problems and Legal Practice*, 17(6), 61–68. (In Russ.).
- Talapina, E. V. (2020). The Law on information during an era of Big Data. *Vestnik of Saint Petersburg University. Law*, 11(1), 4–18. (In Russ.). <https://doi.org/10.21638/spbu14.2020.101>
- Tracy, J. M., Özkanca, Y., Atkins, D. C., & Ghomi, R. H. (2020). Investigating voice as a biomarker: deep phenotyping methods for early detection of Parkinson's disease. *Journal of Biomedical Informatics*, 104, 103362. <https://doi.org/10.1016/j.jbi.2019.103362>
- Truyens, M., & Van Eecke, P. (2014). Legal aspects of text mining. *Computer Law & Security Review*, 30(2), 153–170. <https://doi.org/10.1016/j.clsr.2014.01.009>
- Vazhorova, M. A. (2012). The ratio of concepts “the information on private life” and “personal data”. *Saratov State Law Academy Bulletin*, 4(87), 55–59. (In Russ.).

Author information



Ilya G. Ilin – Master of Arts in Information Technology Law, postgraduate student, Faculty of Law, Saint Petersburg State University

Address: 22nd line of Vasilievsky Island, 7199106 Saint Petersburg, Russian Federation

E-mail: i.g.ilin@spbu.ru

ORCID ID: <https://orcid.org/0000-0003-1076-2765>

Scopus Author ID: <https://www.scopus.com/authid/detail.uri?authorId=57765898000>

WoS Researcher ID: <https://www.webofscience.com/wos/author/record/FDF-0979-2022>

Google Scholar ID: <https://scholar.google.com/citations?user=YruuMK0AAAAJ>

Conflict of interest

The author declares no conflict of interest.

Financial disclosure

The research had no sponsorship.

Thematic rubrics

OECD: 5.05 / Law

PASJC: 3308 / Law

WoS: OM / Law

Article history

Date of receipt – December 25, 2023

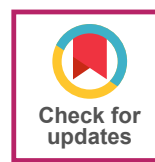
Date of approval – January 5, 2024

Date of acceptance – Март 15, 2024

Date of online placement – Март 20, 2024



Научная статья
УДК 34:004:34.096:004.8
EDN: <https://elibrary.ru/acxhto>
DOI: <https://doi.org/10.21202/jdtl.2024.7>



Персональные данные в системах искусственного интеллекта: технология обработки естественного языка

Илья Геннадьевич Ильин 

Санкт-Петербургский государственный университет, Санкт-Петербург, Россия

Ключевые слова

биометрические данные, законность, законодательство, искусственный интеллект, лигалтех, технология обработки естественного языка, персональные данные, право, правовой риск, цифровые технологии

Аннотация

Цель: концептуализировать с точки зрения законодательства в области защиты персональных данных процесс развития технологии обработки естественного языка, выявив возможные правовые барьеры для такого развития и направления дальнейшего исследования проблемы.

Методы: в основе исследования находятся общенаучные методы познания, наряду с которыми применялись формально-юридический, сравнительно-правовой методы, а также метод теоретического моделирования.

Результаты: установлено, что соблюдение режима персональных данных в процессе разработки технологии обработки естественного языка приводит к возникновению конфликта между частными и публично-правовыми интересами, что, в свою очередь, создает препятствия для дальнейшего развития обозначенной технологии. Показаны недостатки существующего правового порядка, который не в полной мере отвечает техническим особенностям развития технологии, что может привести к рискам излишнего регулирования, или же, напротив, к рискам оставления без внимания критических областей, требующих защиты. Обозначены проблемы при квалификации данных, задействованных в развитии рассматриваемой технологии. Предпринята попытка определить пределы обеспечения законности обработки персональных данных в составе технологии обработки естественного языка. Выделено в качестве пределов обеспечения законности материальное, временное и территориальное действие правового регулирования в данной области. Затрагивается проблема возможности использования персональных данных в качестве встречного представления, что является важным для развития технологии обработки естественного языка и для совершенствования отрасли информационно-коммуникационных технологий.

© Ильин И. Г., 2024



Статья находится в открытом доступе и распространяется в соответствии с лицензией Creative Commons «Attribution» («Атрибуция») 4.0 Всемирная (CC BY 4.0) (<https://creativecommons.org/licenses/by/4.0/deed.ru>), позволяющей неограниченно использовать, распространять и воспроизводить материал при условии, что оригинальная работа упомянута с соблюдением правил цитирования.

Научная новизна: данная работа дополняет научную дискуссию о правовом регулировании обработки персональных данных системами искусственного интеллекта аналитикой, выполненной в контексте технологии обработки естественного языка. Невысокая степень изученности последней обуславливает необходимость исследования области информационного права в части правоотношений по созданию систем искусственного интеллекта и оценки влияния режима персональных данных на развитие технологии обработки естественного языка.

Практическая значимость: затрагиваемые в статье прикладные аспекты исследуемой проблематики и полученные результаты могут быть использованы для совершенствования правового регулирования общественных отношений в области создания и развития искусственного интеллекта, а также для выявления и оценки правовых рисков, возникающих при обработке персональных данных разработчиками цифровых продуктов на базе технологии обработки естественного языка.

Для цитирования

Ильин, И. Г. (2024). Персональные данные в системах искусственного интеллекта: технология обработки естественного языка. *Journal of Digital Technologies and Law*, 2(1), 123–140. <https://doi.org/10.21202/jdtl.2024.7>

Список литературы

- Важорова, М. А. (2012). Соотношение понятий «Информация о частной жизни» и «Персональные данные». *Вестник Саратовской государственной юридической академии*, 4(87), 55–59.
- Егорова, М. А., Минбалева, А. В., Кожевина, О. В., Ален, Д. (2021). Основные направления правового регулирования использования искусственного интеллекта в условиях пандемии. *Вестник Санкт-Петербургского университета. Право*, 12(2), 250–262. <https://doi.org/10.21638/spbu14.2021.201>
- Конев, С. И. (2020). Административная ответственность за нарушения законодательства Российской Федерации в области персональных данных: новые вызовы. *Вопросы российского и международного права*, 10(10-1), 274–282. <https://elibrary.ru/fasdwm>
- Кривогин, М. С. (2017). Особенности правового регулирования биометрических персональных данных. *Право. Журнал высшей школы экономики*, 2, 80–89. EDN: <https://elibrary.ru/zfcizt>. DOI: <https://doi.org/10.17323/2072-8166.2017.2.80.89>
- Савельев, А. И. (2021). Гражданско-правовые аспекты регулирования оборота персональных данных. *Вестник гражданского права*, 21(4), 104–129. EDN: <https://elibrary.ru/vgyyau>. DOI: <https://doi.org/10.24031/1992-2043-2021-21-4-104-129>
- Свиридова, Е. А. (2021). Открытые и персональные данные в системах искусственного интеллекта: правовые аспекты. *Проблемы экономики и юридической практики*, 17(6), 61–68. <https://elibrary.ru/xokzik>
- Талапина, Э. В. (2020). Закон об информации в эпоху больших данных. *Вестник Санкт-Петербургского университета. Право*, 11(1), 4–18. EDN: <https://elibrary.ru/grjtqp>. DOI: <https://doi.org/10.21638/spbu14.2020.101>
- Arkhipov, V., & Naumov, V. (2016). The legal definition of personal data in the regulatory environment of the Russian Federation: Between formal certainty and technological development. *Computer Law & Security Review*, 32(6), 868–887. <https://doi.org/10.1016/j.clsr.2016.07.009>
- Chang, K. H., Fisher, D., & Canny, J. (2011). Ammon: A speech analysis library for analyzing affect, stress, and mental health on mobile phones. *Proceedings of PhoneSense*, 2011.
- Goldberg, Y. (2017). *Neural network methods for natural language processing*. Springer Nature. <https://doi.org/10.1007/978-3-031-02165-7>

- Helberger, N., Borgesius, F. Z., & Reyna, A. (2017). The perfect match? A closer look at the relationship between EU consumer law and data protection law. *Common Market Law Review*, 54(5), 1427–1465. <https://doi.org/10.54648/cola2017118>
- Hirschberg, J., & Manning, C. D. (2015). Advances in natural language processing. *Science*, 349(6245), 261–266. <https://doi.org/10.1126/science.aaa8685>
- Hobsbawn, E. (1996). Language, culture, and national identity. *Social Research*, 63(4), 1065–1080.
- Ilin, I. (2019). Legal Regime of the Language Resources in the Context of the European Language Technology Development. In Z. Vetulani, P. Paroubek, & M. Kubis (Eds.), *Human Language Technology. Challenges for Computer Science and Linguistics. LTC 2019. Lecture Notes in Computer Science* (vol. 13212, pp. 367–376). Springer, Cham. https://doi.org/10.1007/978-3-031-05328-3_24
- Ilin, I. (2020). The Voice and Speech Processing within Language Technology Applications: Perspective of the Russian Data Protection Law. *Legal Issues in the digital Age*, 1(1), 99–123. <https://doi.org/10.17323/2713-2749.2020.1.99.123>
- Ilin, I., & Kelli, A. (2020). The use of human voice and speech for development of language technologies: the EU and Russian data-protection law perspectives. *Juridica Int'l*, 29, 71–85. <https://doi.org/10.12697/ji.2020.29.07>
- Jain, A. K., Ross, A., & Prabhakar, S. (2004). An introduction to biometric recognition. *IEEE Transactions on circuits and systems for video technology*, 14(1), 4–20. <https://doi.org/10.1109/tcsvt.2003.818349>
- Jents, L., & Kelli, A. (2014). Legal aspects of processing personal data in development and use of digital language resources: the Estonian perspective. *Jurisprudence*, 21(1), 164–184. <https://doi.org/10.13165/jur-14-21-1-08>
- Kelli, A., Lindén, K., Kamocki, P., Vider, K., Labropoulou, P., Birštonas, R., Mantrov, V., Hannessschläger, V., Del Gratta, R., Värvi, A., Tavits, G., & Vutt, A. (2021). The interplay of legal regimes of personal data, intellectual property and freedom of expression in language research. In M. Monachini & M. Eskevich (Eds.), *Proceedings CLARIN Annual Conference 2021* (pp. 154–159). <https://doi.org/10.3384/ecp1898>
- Kelli, A., Tavast, A., & Pisuke, H. (2012). Copyright and constitutional aspects of digital language resources: The Estonian approach. *Juridica International*, 19, 40.
- Kolain, M., Grafenauer, C., & Ebers, M. (2022). Anonymity Assessment – A Universal Tool for Measuring Anonymity of Data Sets under the GDPR with a Special Focus on Smart Robotics. *Rutgers University Computer & Technology Law Journal*, 48(2). <https://ssrn.com/abstract=3971139>
- Lohsse, S., Schulze, R., & Staudenmayer, D. (Eds.). (2020). *Data as counter-performance-Contract Law 2.0?* Baden-Baden: Nomos Verlagsgesellschaft mbH & Company KG. <https://doi.org/10.5771/9783748908531>
- Metzger, A. (2017). Data as counter-performance: what rights and duties do parties have. *Journal of Intellectual Property, Information Technology and Electronic Commerce Law*, 8(1), 2.
- Oostveen, M. (2016). Identifiability and the applicability of data protection to big data. *International Data Privacy Law*, 6(4), 299–309. <https://doi.org/10.1093/idpl/ipw012>
- Purtova, N. (2018). The law of everything. Broad concept of personal data and future of EU data protection law. *Law, Innovation and Technology*, 10(1), 40–81. <https://doi.org/10.1080/17579961.2018.1452176>
- Sartor, G. (2020). *New aspects and challenges in consumer protection. Digital services and artificial intelligence*. European Parliament.
- Savelyev, A. (2016). Russia's new personal data localization regulations: A step forward or a self-imposed sanction? *Computer Law & Security Review*, 32(1), 128–145. <https://doi.org/10.1016/j.clsr.2015.12.003>
- Svantesson, D. J. B. (2018). Enter the quagmire – the complicated relationship between data protection law and consumer protection law. *Computer Law & Security Review*, 34(1), 25–36. <https://doi.org/10.1016/j.clsr.2017.08.003>
- Tracy, J. M., Özkanca, Y., Atkins, D. C., & Ghomi, R. H. (2020). Investigating voice as a biomarker: deep phenotyping methods for early detection of Parkinson's disease. *Journal of Biomedical Informatics*, 104, 103362. <https://doi.org/10.1016/j.jbi.2019.103362>
- Truyens, M., & Van Eecke, P. (2014). Legal aspects of text mining. *Computer Law & Security Review*, 30(2), 153–170. <https://doi.org/10.1016/j.clsr.2014.01.009>

Сведения об авторе



Ильин Илья Геннадьевич – магистр права в области информационных технологий, аспирант юридического факультета, Санкт-Петербургский государственный университет

Адрес: 199106, Россия, г. Санкт-Петербург, 22-я линия В.О., 7

E-mail: i.g.ilin@spbu.ru

ORCID ID: <https://orcid.org/0000-0003-1076-2765>

Scopus Author ID: <https://www.scopus.com/authid/detail.uri?authorId=57765898000>

WoS Researcher ID: <https://www.webofscience.com/wos/author/record/FDF-0979-2022>

Google Scholar ID: <https://scholar.google.com/citations?user=YruuMK0AAAAJ>

Конфликт интересов

Автор сообщает об отсутствии конфликта интересов.

Финансирование

Исследование не имело спонсорской поддержки.

Тематические рубрики

Рубрика OECD: 5.05 / Law

Рубрика ASJC: 3308 / Law

Рубрика WoS: OM / Law

Рубрика ГРНТИ: 10.19.25 / Правовой режим информации, информационных систем и сетей

Специальность ВАК: 5.1.2 / Публично-правовые (государственно-правовые) науки

История статьи

Дата поступления – 25 декабря 2023 г.

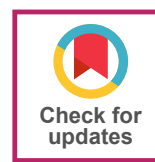
Дата одобрения после рецензирования – 5 января 2024 г.

Дата принятия к опубликованию – 15 марта 2024 г.

Дата онлайн-размещения – 20 марта 2024 г.



Research article
UDC 34:004:347.78:004.8
EDN: <https://elibrary.ru/shflwb>
DOI: <https://doi.org/10.21202/jdtl.2024.8>



Authors' Moral Rights in the Digital Environment

Edit Sápi 

University of Miskolc, Miskolc, Hungary

Keywords

artificial intelligence,
author's moral rights,
copyright,
digital environment,
digital technologies,
intellectual property right,
law,
non-fungible tokens (NFT),
protection of copyright,
social networks

Abstract

Objective: to answer the question whether the authors' moral rights in the digital environment correspond to their original purpose, and to determine the impact of the development of social networking platforms, artificial intelligence technologies and non-fungible tokens (NFT) on the transformed role and features of the protection of the author's moral rights under modern conditions.

Methods: the research is based on historical-legal, comparative-legal and formal-dogmatic methods. Legal institutions and legal practice on the issue of protection of the author's moral rights are subjected to critical analysis.

Results: the genesis and normative fixation of the author's moral rights are investigated in historical retrospect. It is noted that at present the protection of these rights is insufficiently regulated at the international level, while national copyright law, for example, of continental European states, provides a sufficiently strong protection of the author's moral rights; however, the effectiveness of the latter is weakening in the digital age. The paper analyzes the changing landscape of copyright relations caused by technological progress: in social networks, in the generation of works by artificial intelligence, and in the creation of digital works of art. The thesis is substantiated that the author's moral rights are undesirable in the context of social platforms. The paper proposes solutions to the issues of authorship of works created by artificial intelligence, violation of author's rights, and integrity in case of full or partial borrowing of a work to generate a new work by artificial intelligence. The role of NFT technologies in solving the problem of preserving the author's moral rights is defined.

Scientific novelty: the work fills a gap in research on the relationship between copyright and technological development. It identifies and evaluates the innovations in the purpose and content of the author's moral rights, caused by the processes of digitalization, and attempts to solve the problem of the author's rights compliance with technological progress.

© Sápi E., 2023



This is an Open Access article, distributed under the terms of the Creative Commons Attribution licence (CC BY 4.0) (<https://creativecommons.org/licenses/by/4.0>), which permits unrestricted re-use, distribution and reproduction, provided the original article is properly cited.

Practical significance: the obtained results may serve as a conceptual basis for further development and improvement of national legislation and international legal regulation in the field of copyright protection, transformation of the objectives, role and place of the author's moral rights in the digital environment.

For citation

Sápi, E. (2024). Authors' Moral Rights in the Digital Environment. *Journal of Digital Technologies and Law*, 2(1), 141–162. <https://doi.org/10.21202/jdtl.2024.8>

Contents

Introduction

1. Feature of moral rights from a traditional viewpoint

1.1. History and dogmatics of moral rights

1.2. Features of the legally declared moral rights

2. Author's moral rights and social network platforms

3. Author's moral rights and artificial intelligence

3.1. Interrelationships between artificial intelligence and copyright

3.2. The role of moral rights in the "AI-copyright equation"

4. Author's moral rights and NFT

Conclusions

References

Introduction

In recent years we have witnessed a technological development similar to the invention of book printing in the 15th century. While copyright did not exist at the time of the invention of book printing, in today's world the protection of intellectual creations is becoming increasingly important. From the point of view of the history of the development of copyright law, Gutenberg's innovation was the spark in the gunpowder barrel, as it quickly helped to spread the artworks, especially books, widely.

At that time, authors felt that they were in a vulnerable position, because their works could usually only be made and sold if they were supported by a patron. This situation resulted that authors did not have a real opportunity to take action to protect their works. If we see this situation in another point of view, we can ascertain that book printing at that time was similar to today's digital technologies. It had a lot of positive effect on culture but at the same time it has paved the way for the spread of illegal copying and distribution as well. After book printing required significant financial outlay from the entrepreneurs, the rulers ensured by granting privileges that the given businessman could exclusively engage in book printing in a certain field and for a certain period of time. This trend and development

were best observed in England; therefore the roots of copyright law were also appeared in the XVII–XVIII. century England. According to this, we can say that the early copyright law derived from the monopoly privileges granted by the Crown to the printers. In line with the printing privileges, the printing trade also developed its own system of regulation through the Stationers' Company in London (Stokes, 2012).

As a result of the English development, copyright law legislation was first emerged in England at the time of the reign of Queen Anne, when she issued her Statute in 1709, which entered into force on 10 April 1710¹. The proposal of the abovementioned Statute (from 1707) has already used the term that authors have „undoubted property” in their books. This term has been changed to the term „sole right and liberty of printing” in the adopted law, primarily because of positivistic viewpoints. The significance of Queen Anne's Statute can primarily be found in the fact, that it was not only the first written law on copyright in Great Britain, but in the whole world. As part of this process, the Statute was a major step to creating the so-called civil state as well. The Statute of Anne actually created an alienable copyright and it aimed at protecting not only the authors, but publishers too as legal successors of authors.

Following this pioneer activity of the United Kingdom in the field of copyright law, other countries embarked on copyright law legislation. Following the British copyright law, the first copyright law of the United States was adopted in 1790². Even in the same century, the first modern French copyright law was adopted³, than the Prussian⁴ and the Austrian⁵ acts were born in the 19th century as well.

The contemporary copyright law protection primarily serves the purpose of creating new works of high artistic and scientific value. In order to ensure this objective, copyright law guarantees the social respect of creators through moral rights and financial appreciation due to the economic rights. This legislative concept is nowadays best seen as a specific tripartite balance of interests, where the legislator has to (and is forced to) balance the interests of the three poles: the author, the user and society. Copyright law is an area of law which is particularly dynamic and evolving, always bearing the social, economic,

¹ Copyright Act of 1790. The full title: An Act for the encouragement of learning, by securing the copies of maps, Charts and books, to the authors and proprietors of such copies, during the times therein mentioned.

² The full title: An Act for the encouragement of learning, by securing the copies of maps, Charts and books, to the authors and proprietors of such copies, during the times therein mentioned.

³ In France the relevant legislation was adopted on 19 July 1793, with the following original title: „Décret de la Convention Nationale du dix-neuf juillet 1793 relatif aux droits de propriété des Auteurs d'écrits en tout genre, des Compositeurs de musique, des Peintres et des Dessinateurs (avec le rapport de Lakanal. See: Rideau, F. (2023). Commentary on the French Literary and Artistic Property Act (1793). In L. Bently, & M. Kretschmer (Eds.), Primary Sources on Copyright (1450–1900). <https://clck.ru/38VVtq>

⁴ The Prussian copyright law was born on 11 July 1837. „Gesetz zum Schutze des Eigentums an Werken der Wissenschaft und der Kunst gegen Nachdruck und Nachbildung”.

⁵ In Austria an imperial edict was adopted in 1846, which aimed to protect copyright works. „Gesetz zum Schutze des literarischen und artistischen Eigentums gegen unbefugte Veröffentlichung, Nachdruck und Nachbildung”.

technical, and technological characteristics of the times to which it must constantly adapt. However, finding the balance is not an easy task, even the rules that have been drawn up often jeopardise precisely this balance (Ginsburg, 2002), especially in the digital sphere.

In the paper, the answer is sought for the question of whether or not the author's moral rights behave in the digital environment in accordance with their original purpose. The paper reviews the situation of authors' moral rights in relation to the specificities of social media platforms, artificial intelligence and NFT.

1. Feature of moral rights from a traditional viewpoint

1.1. History and dogmatics of moral rights

Intellectual property law and the protection of creators is strongly linked to the protection of personality, and the protection of personality is the basis for the protection of intellectual property itself. The moral rights doctrine originated in France during the 19th century, as *droit moral*, but the French courts had highlighted already in the early 1500s, that only the author has a right to publish their work (Rose, 1994).

The French roots of moral rights also justify that the protection of these rights is much stronger in continental Europe than in the Anglo-Saxon territories. Jane C. Ginsburg emphasizes the differences and the consequences of these discrepancies between French and Anglo-American copyright laws, which are especially true not only in connection with the French, but other European continental copyright regimes as well. While French (and other continental) copyright law is author-oriented, the Anglo-American copyright law is society-oriented. The author-centralism of French law results strong protection for moral rights, while the other system focuses on economic rights because of social utility (Ginsburg, 1990). The relation to the author and the author's moral rights carries the question of the formality of protection, which is also different in the civil law and the common law systems (Pogácsás, 2022). Consequently, the concept of regulating moral rights is fundamentally different on the one hand in Europe and in the law of countries outside Europe with continental-law roots, and on the other hand in the Anglo-Saxon states, especially in the USA. For instance, moral rights in the U.S. copyright law received legislative protection only in the Visual Artists Rights Act of 1990 (VARA). According to the VARA authors of certain visual artworks have the right to claim or disclaim authorship and they have a limited right to integrity⁶. However, by acknowledging the contemporary situation of moral rights protections in the current era, the U.S. Congress held a hearing on July 15, 2014, on the topic of moral rights protections in the United States as part of a broader review of U.S. copyright law⁷.

⁶ United States Copyright Office. (2019, April). Authors, attribution, and integrity: examining moral rights in the United States: a REPORT of the register of copyrights; VARA, Pub. L. No. 101-650, §§ 602–603, 104 Stat. 5128, 5128–30 (1990) (codified at 17 U.S.C. §§ 101, 106A(a)).

⁷ United States Copyright Office. (2019, April). Authors, attribution, and integrity: examining moral rights in the United States: a REPORT of the register of copyrights.

On the level of international copyright law protection, the Berne Convention of the Protection of Literary and Artistic Works of 1886 is regarded as the Magna Charta of international copyright law. The Article 6bis of the BUE declares two main moral rights: the right to claim authorship, or with other words the paternity right⁸ and the right to integrity, or with other words, the right of respect. The latter is mentioned in the BUE as the sole right of the author to object to certain modifications and other derogatory actions of the work⁹. The provision of the BUE on moral rights was included in the Convention at the 1928 Rome revision conference (Ficsor, 2003).

Seeking for moral right provision in the TRIPS Agreement¹⁰ is quite unsuccessful, while it states that "Members shall comply with Articles 1 through 21 of the Berne Convention (1971) and the Appendix thereto. However, Members shall not have rights or obligations under this Agreement in respect of the rights conferred under Article 6bis of that Convention or of the rights derived therefrom"¹¹. As a reason for the lack of moral rights in the TRIPS Agreement, some sources of the legal literature emphasize that the potential for harmonization of moral rights is directly related to how much protection nations want to grant and receive (Schéré, 2018) and internationalization of intellectual property is "subsumed within the broader apparatus of trade relations" (Dinwoodie, 2002).

Furthermore, the difference of the attitude to moral rights in the continental and in the common law countries was also significant during the elaboration of the TRIPs Agreement (Ginsburg, 2001; Dworkin, 1995; Adeney, 2006; Adler, 2009; Grosheide, 2009; de Werra, 2009). However, it shall be fixed, that exclusion of moral rights from bilateral and multilateral agreements creates an imbalance between the relevant parties (Schéré, 2018). With the challenges of the digital world, it is even harder to imagine that the international copyright conventions, as basis for copyright protection, will be amended in terms of the declaration of moral rights. Already at the time of the TRIPS Agreement, the issue of the recognition of moral rights was postponed on the grounds of the technological boom of the time. Given the current technological background and its unforeseeable development, it is even more difficult to imagine the harmonisation in the international protection of moral rights.

⁸ BUE Art. 6bis (1) Independently of the author's economic rights, and even after the transfer of the said rights, the author shall have the right to claim authorship.

⁹ BUE Art. 6bis (1) Independently of the author's economic rights, and even after the transfer of the said rights, the author shall have the right (...) to object to any distortion, mutilation or other modification of, or other derogatory action in relation to, the said work, which would be prejudicial to his honor or reputation.

¹⁰ Agreement on Trade-Related Aspects of Intellectual Property Rights.

¹¹ Art. 9. of TRIPS Agreement.

1.2. Features of the legally declared moral rights

Beside the right to paternity and the right to integrity, as moral rights declared in the Berne Convention, the right to publication of the work is also acknowledged in the national copyright laws. The right to paternity can be interpreted as it incorporates the right to the indication of the name of the author, but these two rights can be regarded as individual rights also.

The right of paternity means the right of the author to claim authorship of the work. The WIPO Glossary mentions that in practice, the author claims authorship in his work by indicating on the copies, or in connection with any non-copy-related use, of his work, that he is the author. On the basis of this right, the author has the right to insist that he shall be identified in this way (Ficsor, 2003).

The right to claim authorship connects to the right of the name (attribution right), as the declaration of authorship is made by the indication of the name of the author on the work. The name right also incorporates the right to anonymity or pseudonym.

Attribution right also includes copying, quoting or describing an excerpt of the work, but the practice may vary from one type of work to another. The right of attribution is not obscured in the case of adaptations, since, where a work is created by adaptation, the name of the author of the underlying work must also appear on the adapted work. The author may exercise the right to indicate his name in a manner appropriate to the nature of the use.

The right of attribution is in principle linked to the right to recognition of authorship, since, unless the contrary is proved, the person whose name is thus indicated in the work in the usual manner is deemed to be the author. In more than one case, the failure to indicate the name of the author, a violation of this right, is a cover for plagiarism.

The concept of 'ghostwriting' shall also be mentioned here. According to the process of 'ghostwriting' the author agrees to create according to the opinion and style of the client or workplace manager, and then the work is published under this person (Sword, 2002; Goldschmidt, 2002). However, the legal literature stresses that this type of work is most common in political and other occasional performances and speeches. The reasons behind 'ghostwriting' may generally be rooted in the serious amount of financial remuneration for the author (Pogácsás, 2014) or in the subordination of an employment relationship.

In line with the right to publication of the work, authors are entitled to decide whether their works can be published. The right also includes the rights that before a work is published, the public may only be informed of the basic content of the work with the author's consent. Typical platforms of publishing information are the websites, brochures, posters or press conferences. Works that are found after the author's death must be considered as if the author had intended them for publication, unless the author or his/her legal successor made a statement to the contrary or if the opposite is proved otherwise. The right to publish the work also incorporates the right to withdraw the work from the public as well.

The right of integrity is the "heart of the moral rights doctrine" (Kwall, 1997) as it is the guardian of the spirituality of the author's works. The protection of the integrity of the work

(non-distortion) is one of the most important and elementary personal rights of authors but also it is the most complex. On the level of international protection, the Berne Convention declared originally as follows: “to object to any distortion, mutilation or other modification of the said work, which would be prejudicial to his honor or reputation”¹². At the 1948 Brussels revision conference, it was completed as “to object to any distortion, mutilation or other modification of, or other derogatory action in relation to, the said work, which would be prejudicial to his honor or reputation”¹³. The modification reflected, that not all kinds of alterations of a work is a violation, but rather only to those which are likely to be prejudicial to the honor or reputation of the author due to their nature and the way in which they are made and identified. The Commentary of the BUE adds, that the protection of honor and reputation should extend not only to the honor and reputation of the author as an author but also as a human being (Ficsor, 2003). The right to integrity expresses the close relationship between the work and the author, so the basic purpose of the legal regulation can be understood: the work of the author shall be presented to the public without any distortions, or such changes, which would harm the reputation and honour of the author. The reason for this rule is that the author is adjudged on the basis of his works by both society and the profession. This situation makes the right to integrity the most sacred right, because the works shall be published in the way the author created it. The protection of the unity of the work must be identified with the concept of completeness and sacredness. This does not necessarily mean the physical unity of the work, but rather it is intended to ensure the spiritual unity, the integrity of the message of the work. The purpose of integrity protects the work as a whole, including its title, but it also important that it shall not be limited to those works which are materially embodied in copies (Gyertyánfy, 2014).

In line with the abovementioned specialties of the right to integrity, we shall see, that in addition to the same intensity of the intervention, the rights attached to the person can and must be weighed against the interests of the user with different results depending on the type of work, the way of use and the nature of the intervention. For example, some authors emphasize that in fine arts it can be a serious limitation of artistic freedom (Adler, 2009), however it shall be highlighted that in a legal dispute, a balance must be struck between freedom of art and the protection of other creators' moral rights (Sápi & Halász, 2021). It should also be remembered that moral rights, including right of integrity, are not limitless and have their limits in the European copyright systems as well.

¹² Berne Convention for the Protection of Literary and Artistic Works 1886. <https://clck.ru/38ogm5>

¹³ Brussels Diplomatic Conference for the Revision of the Berne Convention, 1948. <https://clck.ru/38ogwH>

The general limitation of the right to integrity and, exclusive copyright law itself, is the term of protection, i.e. the duration of copyright¹⁴. After the term of protection expires, the work falls within the public domain. Its general consequence is that when the copyright term ends, anyone can use the work in any way they like, without asking permission and paying royalty for the author. The term of protection has its own effects on moral rights also. On the one hand, the paternity right survives the expiration of the term of protection, but other moral rights (as integrity) cease after the protection period has expired. Therefore, the most powerful modifications usually affect works under public domain.

Another important branch of limitations of copyright (moral) rights, such as parody, which became quite significant in the recent years. Under the current EU copyright law, parody is considered a free use as long as it meets the three-step test, so it does not infringe on the normal use of the work. However, the normal use of the work is violated by a use that is detrimental to the integrity of the original work. Thus, the relationship between the two legal institutions can best be grasped by the fact that although parody is a permitted free use, integrity represents its limitation. Because of this connection, we can observe the practice, which we mentioned earlier, of strongly modifying works – and a prime example of this is parody – whose protection period has already expired.

2. Author's moral rights and social network platforms

It is almost a banality - and therefore strangely familiar, even accepted – that social media poses our privacy (Halász, 2020), our personal rights and our data in danger. Why would the creator and their work be an exception? Are authors also accepting the fact that social media can be harmful to their work, or even to their creativity? Although it is not an infringement of their moral rights as authors to read destructive, disparaging comments about their work in a public post, it can have a detrimental effect on their creative process. Thus, it is futile for the legislator to try to encourage the continuation of creative work if external factors, independent of the author, can have such a strong influence on it.

Furthermore, if we acknowledge that social media facilitates the large number of personal right and copyright infringements, can we also say that social media has an exclusively harmful effect on copyright? The answer to this question is obviously no, since there is nothing evil about the display of copyright works or parts thereof on social platforms. In fact, it is increasingly common to see copyright works being promoted on social media platforms, and thus authors are more aware of their use (Erdős, 2015).

The moral rights of author should be given special attention in the current (media) context, as the digital revolution, which has a major impact on the media (Grazian, 2005), has transformed the map of copyright relations. In this context, it is necessary to continue

¹⁴ Art. 7. of BC.

to stress the guaranteeing nature of moral rights, since moral consideration is at least as important as exclusive economic rights in the encouragement of creative work.

In the context of social media, it is worth referring to the phenomenon of mass production (Pogácsás, 2017), i.e. the mass use and publication of works on these platforms. The best example of this is Instagram¹⁵, where there is a large number of photos that have a truly individual, original character that makes them stand out from ordinary photos and therefore qualify for copyright protection.

Social media also allows users to express themselves freely. Is it therefore a suitable platform for authors to exercise their freedom of expression and, ultimately, to publish their works? Copyright law does not prescribe where publication of works must take place. However, publication on social media is not realistic for all types of works, but for example photographs, short videos (live), poems, short literary works can be published there. However, the right of withdrawal, which is the element of the publication right, is questionable within the framework of social media¹⁶. The right of withdrawal is even more difficult to interpret in the world of the internet and social platforms. According to the Hungarian Copyright Act, authors are entitled to withdraw their permission for the publication of works; the withdrawal must be in writing and for a well-founded reason. They are also entitled to prohibit the further use of their works that have already been published. They are obliged, however, to compensate for any damage that has been incurred prior to the statement. This does not concern employer's right to further use of the works; nor can this, in the case of the assignment of economic rights, obstruct the person that has acquired the economic rights in his/her use of the work on the basis of the assigned economic rights. At this point, the requirement of written form cannot be clearly guaranteed and, the prohibition of further use of the work may also be problematic. The previously published work can be deleted or hidden from the profile, but once it is posted on social media platforms and the internet in general, there is no guarantee that it will be removed.

According to some literature, the integrity of works can be relatively easily damaged in social media, because the content published often uses parts of other works, which can easily distort the original works and misrepresent them to the audience. This has been most evident in recent years in the case of memes, which are often made from scenes from well-known films, photographic works or paintings, with humorous captions. In the case of memes, the integrity of the original work can be fundamentally compromised, since the message and ideas of the original work are often used in a negative way.

It should be borne in mind, however, that the purpose of memes and meme-makers is not to adapt or modify a work, but to convey humor through popular scenes. Thus, the next

¹⁵ The organization is recognized as extremist, its functioning is prohibited in the territory of the Russian Federation.

¹⁶ For example the Hungarian copyright law provides for the possibility of withdrawal of a work within certain limits (Art. 11 of the Act LXXVI of 1999 on Copyright Law).

copyright staple for memes is parody, as the European Commission pointed out when it drew up the DSM Directive, allaying the fears of the internet public that funny GIFs and memes would be the victims of content filtering. From the point of view of copyright protection, it should also be pointed out that memes are not considered to be copyright works and are even considered by many to be so-called internet, digital folklore (Pogácsás, 2023).

In the current era of media convergence and digital media, boosted by digitalization, if copyright is getting attention, it is more on economic rights than on moral rights. In our daily lives, it is almost impossible to avoid social media platforms, which become influential players in the media market without producing any content (Koltay, 2018), and thus come into close contact with copyright (moral rights). In some views, the author's moral rights in these areas can be regarded as persona non grata (Pessach, 2003). This is most evident in the context of social platforms, where copyright, and in particular moral rights, are not self-evident.

3. Author's moral rights and artificial intelligence

3.1. Interrelationships between artificial intelligence and copyright

It is no exaggeration to say that in the last few years, artificial intelligence has permeated not only natural science but also social science research, since there are many benefits of AI for people.¹⁷ In addition to computer science and engineering, the impact of artificial intelligence is often addressed in the areas of social sciences, as there are interfaces in all fields. Artificial intelligence raises philosophical and psychological questions (Brozeka & Janik, 2019), educational (García-Peñalvo, 2023), and ethical issues (Carrillo, 2020; Schafer et al., 2015), liability issues (Pusztahelyi & Stefán, 2022), and numerous intellectual property research (Mezei, 2020; Netz, 2018; Salami, 2021) also.¹⁸ The eternal question is, whether AI could be regarded as a person from the point of view of law, or not. The legal literature emphasizes, that as AI systems become more sophisticated and play a major role, there are two reasons why it might be recognized as persons before the law. On the one hand it connects to the issue of liability since there is someone to blame when things go wrong. On the other hand, someone shall be ensured with rights, when things go right, for example in case of intellectual creations (Chesterman, 2020). However, in my point of view it is more complicated than 'ensuring rights'.

To the question of whether AI has moral rights one can give a rather obvious answer – it does not. In fact, answering this question is not the difficult part. The more complex

¹⁷ European Parliament. (2020, September 23). Artificial intelligence: threats and opportunities. <https://clck.ru/38VZGs>

¹⁸ Guadamuz, A. (2017, October). Artificial intelligence and copyright. WIPO Magazine. <https://clck.ru/38VZHo>; (2019, October 1). WIPO Conversation on Intellectual Property and Artificial Intelligence (September 27, 2019). WIPO. <https://clck.ru/38VZK6>

question is a bouquet of questions: Should or can copyright protection be granted over (partially) generated works by AI? If so, under what conditions? Who should be considered as a rightholder? It is tempting to consider that it is the person in whose interest the AI is working, i.e. the person who uses it. Anikó Grad-Gyenge highlights, that from a legal point of view, it is not inconceivable that the creator of the AI, or rather the person in whose interest the AI works, should become the copyright owner of the product that AI produces (Grad-Gyenge, 2023). But beyond these basic questions, the scope of the rights that is particularly exciting. As it is stressed in the legal literature, the purpose of AI systems is generally not to create works of authorship (or products that appear to be works of authorship). They are usually created to serve a specific purpose that cannot traditionally be achieved by the human mind, or even by previously established computer tools, or only at much greater expense. However, they also include those whose primary purpose is to produce, through some kind of processing, analysis, 'learning' of existing intellectual outputs, products that can ultimately become a substitute product/service in the cultural goods market (Grad-Gyenge, 2023).

3.2. The role of moral rights in the "AI-copyright equation"

If we can accept that there are works which are partially made by AI (in most of the cases with the control and guidance of a natural person), the justification for the granting of moral rights is arisen. Originally, "the copyrightability of AI-generated content is inherently linked to the ownership of the corresponding copyrights." (Miernicki & Ng, 2021).

The original function and justification of moral rights is to express a close moral and intellectual relationship with the creator, thereby encouraging further creation. From this point of view, in case of works generated exclusively by AI, there is no need to talk about moral rights, since there is no person to whom they can be linked. The author of this publication agrees with the thought line, which is represented by Martin Miernicki and Irene Ng, that "[i]t is questionable whether the ability to produce copyrightable content is equivalent to having a personality sphere that moral rights aim to protect." (Miernicki & Ng, 2021). However, the creator of the AI can have moral rights in relation to the AI, but not on new works generated by the AI, since they are already independent of him.

Therefore, the main question is the existence of individuality and originality as a result of human, creative input. Jane C. Ginsburg pointed out, that "If the human intervention in producing these outputs does not exceed requesting the computer to generate a literary, artistic or musical composition of a particular style or genre, one may properly consider these works to be computer-generated because the human users do not contribute sufficient intellectual creation to meet minimum standards of authorship under the Berne Convention." (Ginsburg, 2018).

It should not be forgotten that moral rights do not simply "float above the head of the creator", but in many cases they represent an economic value (as a kind of brand) and their infringement, restoration and pecuniary consequences can be the basis of specific legal

disputes. Thus, the moral rights really show their economic side in case of an infringement. It is worth thinking not only about whether and how can rights be granted for the creator or user of the AI, but also on the issue, if the AI infringes the moral rights of other creators (e.g. attribution right or integrity right), who shall be regarded a liable person for that. After all, rights also entail with obligations. It would seem logical that if the creator or user of the AI is granted moral rights, he or she should also be considered as liable from the other side. As it has been already pointed out in the previous chapter, we are both creators and users as a result of the mass production of creation in the digital era. If we accept the copyright protection of the content generated by the AI, we must also consider it as a user from the other side.

In March 2016, a musical, under/with? the title 'Beyond the Fence' was presented at the Art Theatre in London, and although critics said it was not a particularly enjoyable piece, the main attraction was not the quality of the performance, but the fact that it was the first stage work created largely by artificial intelligence, albeit with human post-production. The play is therefore not entirely computer-generated, as the composer Benjamin Till and the writer and actor Nathan Taylor are credited with the human interventions behind it. The creators dreamed up and created the piece using a "recipe for success", generated by machines, because the musical score is modelled on the most famous and successful musicals in the world. However, expectations for Beyond the Fence fell short of reception. Some argued that it was more like an advertisement than a real play and that the production was too predictable, others that, while it must be acknowledged that computers can write music in today's world, it is clear that good music cannot, and some simply argued that no artificial intelligence could put the elements together to make a real musical, as the process requires a human being¹⁹.

Some authors point out that although for a long time machines and algorithms were only tools in the hands of creators, this situation has changed and they are now much more often part of the creative process (Hristov, 2017). Creativity itself, which the quoted author also attributes to the activity of AI, permeates the complexity of creative work. The concept of creative activity is based on individual ability and creativity, which contributes to economic prosperity by generating intellectual wealth (Simon, 2014). Creativity is also linked to the condition for copyright protection that the work must result from the intellectual activity of the author. Intellectual activity is in fact the basis of creativity. Beside the creativity of a machine depends mainly on the human being who created it, so that whatever data is fed into an "artificial brain", even if it is "made according to a recipe for success" – as in the music of the abovementioned Beyond the Fence – falls short of the creative activity, the intellectual creation, and thus of the legal requirement that the work must have an individual character.

¹⁹ Souppouris, A. (2016, March 2). The first 'computer-generated' musical isn't very good. Engadget. <https://clck.ru/38VZMZ>

A crucial question, and one related to moral rights, in particular the right to paternity and attribution, is also whether, if a work is based on a “recipe for success”, or if the AI-user incorporates other works or parts of works as source material or inspiration into the AI, this constitutes copyright infringement. The answer to this question depends on several things. On the one hand, it is important whether the elements and parts of works that are used for machine learning, for the generation of the AI work, are recognizable, i.e. identifiable. If so, the permission of the original author is required to use the work. If permission is not sought, copyright infringement occurs, and economic rights and moral rights (especially right to paternity and attribution right) are infringed. Furthermore, plagiarism may also arise in certain cases. From the viewpoint of the right to integrity, there is also the question of whether the author whose work is being used should be aware that his or her work or part of the work is being used to create an AI-generated work. In my view, yes, the original author should know, because he or she might not grant permission if knew about that fact. The integrity of the work enters into the equation where the original author can claim that the use of his work by AI is prejudicial to his moral rights, to the integrity of his original work.

4. Author's moral rights and NFT

Beside artificial intelligence, the features and effect of NFT (non-fungible tokens) on copyright law is the issue, which should be of interest to intellectual property legal scholars. Many sources deal with the interrelationship of NFT and copyright law. Consequently, the aim of this article is not to repeat the ascertainties of these legal literatures at all, but to focus on moral rights of author in line with the NFT. Generally, as a definition, NFT can be regarded as a new type of unique and atomic tokens based on blockchain, which differs from other digital assets, such as tokens and coins, in being inseparably connected to the basic asset. It also means that each NFT is unique, so cannot be divided or united with others. NFTs are defined and operated by a ‘smart contract’, which is a small bit of code that makes up a simple computer program that runs the operation of an NFT (Murray, 2023). The most important, main point of NFT in line with intellectual property law, what is highlighted by Michael D. Murray, “NFTs are not the artwork, and the artwork is separate from the copyright over the artwork.” (Murray, 2023).

NFTs connect to a digital artwork, which means from the viewpoint of copyright law, they have effect on such artworks, that belong to the fine arts in the widest sense, or with other words: visual arts. It is also significant to give a definition about visual arts and fine art, with regard to the differences of the two phrases. Visual material can take many forms, such as fine art, photography, illustrations, craft and applied art (such as jewelry and ceramics), design, architecture and prints, such as engravings²⁰. The sources emphasize that

²⁰ Koskinen-Olsson, T., & Lowe, N. (2012). Management of Rights for Visual Arts and Photography: Educational Material on Collective Management of Copyright and Related Rights – Module 5. WIPO.

in the fine arts, there was a genre hierarchy determined by the degree of creative imagination necessary, with historical fine art paintings ranked above still life. In one fine art definition, it is characterized as visual art that was developed largely for intellectual and aesthetic reasons and is valued for its beauty and substance, such as sculpture, drawing, painting, graphics, and architecture. Fine art includes drawings, paintings, sculptures, printmaking²¹. Graphic works, such as paintings, drawings, engravings are under visual arts.

For the purpose of this study, the first question to be answered is whether the protection of moral rights is important in the creation of a digital artwork. The answer is clearly yes, since the NFT is intended to guarantee originality and thus originate from the author. The existence of moral rights is therefore essential here, but not because it is important for copyright. From the point of view of the NFT, it is important because of the declaration of ownership and authenticity, its visibility and its realization in material goods. By comparison, in the case of copyright law, moral rights are the moral, ethical recognition of the author, a more exalted recognition, separate from material goods. Thus, these objectives serve different needs.

NFT cannot be referred to digital rights, as the key function of a NFT is a certification, that the digital piece of art is original. So, as it shows its ownership issues, NFTs are mainly used to confirm the property right to physical assets or mainly digital goods, digital artworks. Therefore, which is vital for copyright issues, “an artist can sell an NFT representing a work, the artist is not proscribed from retaining the copyright to the work and creating more NFTs.” (Vjayakumaran, 2021) This is simply because of the dichotomy between ownership and copyright in most cases of works of visual art. In plain language, just because someone have a Birkin-bag in the metaverse,²² it doesn't mean she can wear it to the evening theatre performance.

In the context of NFTs, we are witnessing the centuries of tension between copyright (authorship) and property (ownership) law, which issue leads us to moral right once again. In this context, two issues might be observed. On the one hand, the question to be examined is what is important to the person who owns an NFT work of art if he or she is the owner and not the author. The right of attribution (and therefore the right to paternity) it vital for the NFT owner, since the nature and objective of NFT. On the other hand, all three moral rights are significant for the person, who created the digital artwork. Paternity and attribution rights are indeed preserved by the NFT in theory, which is undoubtedly important for the author. The right to publication becomes redundant, since it is obvious that the author can publish the work in this way. However, the right of withdrawal, as in the case of social

²¹ Anthony, J. (2023, February). Fine Art Definition – A Brief Introduction to the Fine Arts. Artfile Magazine <https://clck.ru/38VZNs>

²² Barber, J. (2022, February 17). Hermès' MetaBirkin NFT dispute and the future of metaverse IP. WIPR Bulletin. <https://clck.ru/38VZPQ>

media, is problematic, practically impossible. Although the right to integrity is important to the owner of the work, however he or she does not aim to alter or distort the work. If a simple collector, art enthusiast, acquires an original Banksy, he or she probably does not intend to modify it or to repaint it. At first glance, it may seem enticing to the author that the NFT makes the work unalterable, i.e. no one can diminish its integrity. And if someone (from the copyright viewpoint, a user) intend to exercise the own creativity by adapting or altering the works of others, the NFT will not stop them, since it only preserves the immutability (integrity) of a given copy. Even though an original, physical version of a digital work of art provided as an NFT, can also be existing, and anyone can create a remixed, modified version of the original work, thereby violating its integrity. Furthermore, it must be seen that NFT does not protect and condense moral rights in general, but only in the case of visual works, and exclusively for the specific copy, especially for attribution right.

Conclusions

The study overviewed the dogmatic basis of authors moral rights, their international protection and development, and the place in the digital age. The backbone of the study dealt with the question of whether moral rights behave in the same way in the digital space as they do in classical copyright relations. The simple answer to this question is that they do not behave in the same way. The purpose and rationale for the creation of moral rights were completely different from the environment in which they are now to be applied. The greatest challenge for copyright is to keep pace with technological developments, but this is particularly difficult in the case of moral rights. The protection of moral rights is characterised by a duality: there is a lower harmonised protection at international and EU level, as different countries treat moral rights differently. This means that, in addition to the minimum international protection, the national legislation shall protect moral rights in the national copyright law. In most European states moral rights are strongly protected by legislation. However, it shall be recognized that effective protection is difficult to enforce in practice, as it is much more difficult to quantify the amount of damage of moral rights in case of infringement, as opposed to the easier quantification of economic rights.

Technical progress cannot and should not be stopped. The dogmatics of moral rights are given, in some respects set in a stone. It could be said that two different points on completely different trajectories should be approaching, which seems almost impossible. Neither point can realistically be expected to change. In fact, the key lies in ensuring that people who use technological achievements and digital tools in this environment do not forget about the creative human and respect their creations.

References

- Adeney, E. (2006). *The Moral Rights of Authors and Performers. An International and Comparative Analysis*. New York: Oxford University Press.
- Adler, A. (2009). Against Moral Rights, *California Law Review*, 97(1), 263.
- Brožeka, B., & Janik, B. (2019). Can artificial intelligences be moral agents? *New Ideas in Psychology*, 54(8), 101–106. <https://doi.org/10.1016/j.newideapsych.2018.12.002>
- Carrillo, M. R. (2020). Artificial intelligence: From ethics to law. *Telecommunications Policy*, 44(6). <https://doi.org/10.1016/j.telpol.2020.101937>
- Chesterman, S. (2020). Artificial Intelligence And The Limits Of Legal Personality. *International and Comparative Law Quarterly*, 69(4), 819–844. <https://doi.org/10.1017/S0020589320000366>
- de Werra, J. (2009). The moral right of integrity. In E. Derclaye (Ed.), *Research Handbook on the Future of EU Copyright* (p. 672). Edward Elgar Publishing, Cheltenham. <https://doi.org/10.4337/9781848446007.00016>
- Dinwoodie, G. B. (2002). The Architecture of the International Intellectual Property System. *Chicago-Kent Law Review*, 77(3).
- Dworkin, G. (1995). The Moral Right of the Author: Moral Rights and the Common Law Countries. *Columbia-VLA Journal of Law & the Arts*, 19(3–4).
- Erdős, B. (2015). A zenei üzleti modellek szerzői jogi háttere. *Médiakutató*, 16(3).
- Ficsor, M. (2003). *Guide to the Copyright and Related Rights Treaties Administered by WIPO, and Glossary of Copyright and Related Rights Terms*. World Intellectual Property Organization, Geneva. <https://doi.org/10.34667/tind.36255>
- García-Peñalvo, F. J. (2023). The perception of Artificial Intelligence in educational contexts after the launch of ChatGPT: Disruption or Panic? *Education in the Knowledge Society*, 24(1). <https://doi.org/10.14201/eks.31279>
- Ginsburg, J. C. (1990). A Tale of Two Copyrights: Literary Property in Revolutionary France and America. *Tulane Law Review*, 64(5), 991–995.
- Ginsburg, J. C. (2002). Essay – How Copyright Got a Bad Name for Itself? *The Columbia Journal of Law & the Arts*, 26(1). <https://doi.org/10.2139/ssrn.342182>
- Ginsburg, J. C. (2018). People Not Machines: Authorship and What It Means in the Berne Convention. *International Review of Intellectual Property and Competition Law*, 49(1), 131–135. <https://doi.org/10.1007/s40319-018-0670-x>
- Ginsburg, J. C. (2001). Have Moral Rights Come of (Digital) Age in the United States? *Cardozo Arts & Entertainment Law Journal*, 19(9).
- Goldschmidt, J. (2002). In Defense of Ghostwriting. *Fordham Urban Law Journal*, 29(3), 1145–1212.
- Grad-Gyenge, A. (2023). A mesterséges intelligencia által generált tartalmak értelmezésének lehetőségei a szerzői jog útján. *MTA Law Working Papers*, 2023(2).
- Grazian, D. (2005). A Digital Revolution? A Reassessment of New Media and Cultural Production in the Digital Age. *Annals of AAPSS*, 597(1). <https://doi.org/10.1177/0002716204270286>
- Grosheide, W. (2009). Moral rights. In E. Derclay (Ed.), *Research Handbook on the Future of EU Copyright*. Edward Elgar Publishing, Cheltenham. <https://doi.org/10.4337/9781848446007.00015>
- Gyertyánfy, P. (2014). *Nagykommentár a szerzői jogi törvényhez*. Wolters Kluwer, Budapest.
- Halász, Cs. (2020). Személyiségi jogok a közösségi médiában – új kihívások a bírói gyakorlat tükrében. *Publicationes Universitatis Miskolcensis, Sectio Juridica et Politica*, 38(1), 341–357. <https://doi.org/10.32978/sjp.2020.020>
- Hristov, K. (2017). Artificial Intelligence and the Copyright Dilemma. *IDEA – The Journal of the Franklin Pierce Centre for Intellectual Property*, 57, 431–454.
- Koltay, A. (2018). A véleménynyilvánításszabadsága. In A. Jakab, & B. Fekete (Eds.), *Internetes Jogtudományi Enciklopédia* (Alkotmányjogrovat).
- Kwall, R. R. (1997). How Fine Art Fares Post VARA. *Marquette Intellectual Property Law Review*, 1(1).
- Mezei, P. (2020). From Leonardo to the Next Rembrandt – The Need for AI-Pessimism in the Age of Algorithms. *UFITA*, 84(2). <https://doi.org/10.5771/2568-9185-2020-2-390>
- Miernicki, M., & Ng, I. (2021). Artificial intelligence and moral rights. *AI & Society*, 36(4), 319–329. <https://doi.org/10.1007/s00146-020-01027-6>
- Murray, M. D. (2023). Transfers and Licensing of Copyrights to NFT Purchasers. *Stanford Journal of Blockchain Law & Policy*, 6(1). <https://doi.org/10.2139/ssrn.4152475>
- Netz, D. (2018). A mesterséges intelligencia hatása a szerzői jogra. *Iparjogvédelmi és Szerzői Jogi Szemle*, 13(6).

- Pessach, G. (2003). The Author's Moral Right of Integrity in Cyberspace – A Preliminary Normative Framework. *International Review of Industrial Property and Copyright Law*, 35(3).
- Pogácsás, A. (2022). Formalitásmentes oltalom elve a szerzői jogban – pusztá hagyománytisztelet vagy a modern szerzői jog kiindulópontja? In Á. Juhász(Ed.), *Elmélet és praktikum – hagyománytisztelet és modernitás* (pp. 78–92). Miskolci Egyetem Állam- és Jogtudományi Kar Miskolc.
- Pogácsás, A. (2014). A szerző jelentősége és művével való kapcsolata. *Iustum Aequum Salutare*, 10(1), 149–162.
- Pogácsás, A. (2017). Tartalomáramlás és hozzáférése szerzői jog „fogyasztói korszakában”. *Medias Res*, 6(1).
- Pogácsás, A. (2023). Az internetfolklor szerzői jogi megítélése és annak hatása a szólásszabadságra. *Medias Res*, 12(1). <https://doi.org/10.59851/imr.12.1.1>
- Pusztahelyi, R., & Stefán, I. (2022). Household Social Robots – Special Issues Relating to Data Protection. *Acta Universitatis Sapientiae Legal Studies*, 11(1), 95–118. <https://doi.org/10.47745/AUSLEG.2022.11.1.06>
- Rose, M. (1994). *Authors and Owners: The Invention of Copyright*. Harvard University Press Cambridge.
- Salami, E. (2021). AI-generated works and copyright law: towards a union of strange bedfellows. *Journal of Intellectual Property Law & Practice*, 16(2). <https://doi.org/10.1093/jiplp/jpaa189>
- Sápi, E., & Halász, Cs. (2021). Mephisto hamarosan ötvenéves. Az alkotás és a véleménynyilvánítás szabadságának szerzői és személyiségi jogi ütközéspontjai. *Medias Res*, 10(1).
- Schafer, B. et al. (2015). A fourth law of robotics? Copyright and the law and ethics of machine co-production. *Artificial Intelligence and Law*, 23(3), 217–240. <https://doi.org/10.1007/s10506-015-9169-7>
- Schéré, E. (2018). Where is the Morality? Moral Rights in International Intellectual Property and Trade Law. *Fordham International Law Journal*, 41(3).
- Simon, D. (2014). *A szerzői jogi ágazatok gazdasági ágazatok súlya Magyarországon 4*. Budapest, Szellemi Tulajdon Nemzeti Hivatala.
- Stokes, S. (2012). *Art and Copyright*. Hart Publishing, Oxford.
- Sword, H. (2002). *Ghostwriting Modernism*. Cornell University Press, Ithaca. <https://doi.org/10.7591/9781501717666>
- Vjayakumaran, A. (2021). NFTs and Copyright Quandary. *Journal of Intellectual Property, Information Technology and Electronic Commerce Law*, 12(5).

Author information



Edit Sági – PhD, Assistant Professor, Department of Civil Law, Faculty of Law, University of Miskolc

Address: 3515 Miskolc-Egyetemváros, Miskolc, Hungary

E-mail: edit.sapi@uni-miskolc.hu

ORCID ID: <https://orcid.org/0000-0001-9152-5950>

Scopus Author ID: <https://www.scopus.com/authid/detail.uri?authorId=57308570200>

WoS Researcher ID: <https://www.webofscience.com/wos/author/record/AEQ-0477-2022>

Google Scholar ID: <https://scholar.google.hu/citations?user=KTxQEiMAAAAJ>

Conflict of interest

The author declares no conflict of interest.

Financial disclosure

The research had no sponsorship.

Thematic rubrics

OECD: 5.05 / Law

PASJC: 3308 / Law

WoS: OM / Law

Article history

Date of receipt – July 30, 2023

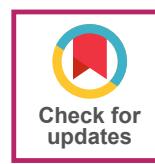
Date of approval – August 12, 2023

Date of acceptance – March 15, 2024

Date of online placement – March 20, 2024



Научная статья
УДК 34:004:347.78:004.8
EDN: <https://elibrary.ru/shflwb>
DOI: <https://doi.org/10.21202/jdtl.2024.8>



Моральные права автора в цифровой среде

Эдит Сапи 

Университет Мишкольца, Мишкольц, Венгрия

Ключевые слова

авторское право,
искусственный интеллект,
моральные права автора,
невзаимозаменяемые
токены (NFT),
охрана (защита) авторских
прав,
право,
право интеллектуальной
собственности,
социальные сети,
цифровая среда,
цифровые технологии

Аннотация

Цель: ответить на вопрос, соответствуют ли моральные права автора в цифровой среде своему первоначальному предназначению, и определить влияние развития платформ социальных сетей, технологий искусственного интеллекта и невзаимозаменяемых токенов (NFT) на трансформацию в современных условиях роли и особенностей защиты моральных прав автора.

Методы: в основу исследования положены историко-правовой, сравнительно-правовой и формально-догматический методы. Правовые институты и юридическая практика по вопросу защиты моральных прав автора подвергаются критическому анализу.

Результаты: в исторической ретроспективе исследуется генезис и нормативное закрепление моральных прав автора. Отмечается, что в настоящее время защита этих прав получила недостаточную правовую регламентацию на международном уровне, тогда как национальное авторское право, например, континентальных европейских государств, предоставляет моральным правам авторов достаточно сильную защиту, эффективность которой, однако, ослабевает в цифровую эпоху. Анализируется изменение ландшафта авторско-правовых отношений, обусловленное технологическим прогрессом: в рамках социальных сетей, при генерации произведений искусственным интеллектом, а также при создании цифровых произведений искусства. Обосновывается тезис о нежелательности моральных прав автора в контексте социальных платформ. Решаются вопросы авторства произведений, созданных искусственным интеллектом, нарушения прав на авторство и целостность в случае полного или частичного заимствования произведения для генерации искусственным интеллектом нового произведения. Определяется роль технологий NFT в решении проблемы сохранения моральных прав автора.

Научная новизна: настоящая работа восполняет пробел в исследованиях взаимосвязи авторского права и технологического развития. В ней выявляются и оцениваются новации предназначения и содержания моральных прав автора, обусловленные процессами цифровизации, а также предпринимаются попытки решения проблемы соответствия авторского права технологическому прогрессу.

© Сапи Э., 2024



Статья находится в открытом доступе и распространяется в соответствии с лицензией Creative Commons «Attribution» («Атрибуция») 4.0 Всемирная (CC BY 4.0) (<https://creativecommons.org/licenses/by/4.0/deed.ru>), позволяющей неограниченно использовать, распространять и воспроизводить материал при условии, что оригинальная работа упомянута с соблюдением правил цитирования.

Практическая значимость: полученные результаты исследования могут служить концептуальной основой дальнейшего развития и совершенствования национального законодательства и международного правового регулирования в области защиты авторских прав, трансформации целей, роли и места моральных прав автора в цифровой среде.

Для цитирования

Сапи, Э. (2024). Моральные права автора в цифровой среде. *Journal of Digital Technologies and Law*, 2(1), 141–162. <https://doi.org/10.21202/jdtl.2024.8>

Список литературы

- Adeney, E. (2006). *The Moral Rights of Authors and Performers. An International and Comparative Analysis*. New York: Oxford University Press.
- Adler, A. (2009). Against Moral Rights, *California Law Review*, 97(1), 263.
- Brožeka, B., & Janik, B. (2019). Can artificial intelligences be moral agents? *New Ideas in Psychology*, 54(8), 101–106. <https://doi.org/10.1016/j.newideapsych.2018.12.002>
- Carrillo, M. R. (2020). Artificial intelligence: From ethics to law. *Telecommunications Policy*, 44(6). <https://doi.org/10.1016/j.telpol.2020.101937>
- Chesterman, S. (2020). Artificial Intelligence And The Limits Of Legal Personality. *International and Comparative Law Quarterly*, 69(4), 819–844. <https://doi.org/10.1017/S0020589320000366>
- de Werra, J. (2009). The moral right of integrity. E. Derclaye (Ed.), *Research Handbook on the Future of EU Copyright* (p. 672). Edward Elgar Publishing, Cheltenham. <https://doi.org/10.4337/9781848446007.00016>
- Dinwoodie, G. B. (2002). The Architecture of the International Intellectual Property System. *Chicago-Kent Law Review*, 77(3).
- Dworkin, G. (1995). The Moral Right of the Author: Moral Rights and the Common Law Countries. *Columbia-VLA Journal of Law & the Arts*, 19(3–4).
- Erdős, B. (2015). A zenei üzleti modellek szerzői jogi háttere. *Médiakutató*, 16(3).
- Ficsor, M. (2003). *Guide to the Copyright and Related Rights Treaties Administered by WIPO, and Glossary of Copyright and Related Rights Terms*. World Intellectual Property Organization, Geneva. <https://doi.org/10.34667/tind.36255>
- García-Peñalvo, F. J. (2023). The perception of Artificial Intelligence in educational contexts after the launch of ChatGPT: Disruption or Panic? *Education in the Knowledge Society*, 24(1). <https://doi.org/10.14201/eks.31279>
- Ginsburg, J. C. (1990). A Tale of Two Copyrights: Literary Property in Revolutionary France and America. *Tulane Law Review*, 64(5), 991–995.
- Ginsburg, J. C. (2002). Essay – How Copyright Got a Bad Name for Itself? *The Columbia Journal of Law & the Arts*, 26(1). <https://doi.org/10.2139/ssrn.342182>
- Ginsburg, J. C. (2018). People Not Machines: Authorship and What It Means in the Berne Convention. *International Review of Intellectual Property and Competition Law*, 49(1), 131–135. <https://doi.org/10.1007/s40319-018-0670-x>
- Ginsburg, J. C. (2001). Have Moral Rights Come of (Digital) Age in the United States? *Cardozo Arts & Entertainment Law Journal*, 19(9).
- Goldschmidt, J. (2002). In Defense of Ghostwriting. *Fordham Urban Law Journal*, 29(3), 1145–1212.
- Grad-Gyenge, A. (2023). A mesterséges intelligencia által generált tartalmak értelmezésének lehetőségei a szerzői jog útján. *MTA Law Working Papers*, 2023(2).
- Grazian, D. (2005). A Digital Revolution? A Reassessment of New Media and Cultural Production in the Digital Age. *Annals of AAPSS*, 597(1). <https://doi.org/10.1177/0002716204270286>
- Grosheide, W. (2009). Moral rights. In E. Derclay (Ed.), *Research Handbook on the Future of EU Copyright*. Edward Elgar Publishing, Cheltenham. <https://doi.org/10.4337/9781848446007.00015>
- Gyertyánfy, P. (2014). *Nagykommentár a szerzői jogi törvényhez*. Wolters Kluwer, Budapest.

- Halász, Cs. (2020). Személyiségi jogok a közösségi médiában – új kihívások a bírói gyakorlat tükrében. *Publicationes Universitatis Miskolcensis, Sectio Juridica et Politica*, 38(1), 341–357. <https://doi.org/10.32978/sjp.2020.020>
- Hristov, K. (2017). Artificial Intelligence and the Copyright Dilemma. *IDEA – The Journal of the Franklin Pierce Centre for Intellectual Property*, 57, 431–454.
- Koltay, A. (2018). A véleménynyilvánításszabadsága. In A. Jakab, & B. Fekete (Eds.), *Internetes Jogtudományi Enciklopédia* (Alkotmányjogrovat). u
- Kwall, R. R. (1997). How Fine Art Fares Post VARA. *Marquette Intellectual Property Law Review*, 1(1).
- Mezei, P. (2020). From Leonardo to the Next Rembrandt – The Need for AI-Pessimism in the Age of Algorithms. *UFITA*, 84(2). <https://doi.org/10.5771/2568-9185-2020-2-390>
- Miernicki, M., & Ng, I. (2021). Artificial intelligence and moral rights. *AI & Society*, 36(4), 319–329. <https://doi.org/10.1007/s00146-020-01027-6>
- Murray, M. D. (2023). Transfers and Licensing of Copyrights to NFT Purchasers. *Stanford Journal of Blockchain Law & Policy*, 6(1). <https://doi.org/10.2139/ssrn.4152475>
- Netz, D. (2018). A mesterséges intelligencia hatása a szerzői jogra. *Iparjogvédelmi és Szerzői Jogi Szemle*, 13(6).
- Pessach, G. (2003). The Author's Moral Right of Integrity in Cyberspace – A Preliminary Normative Framework. *International Review of Industrial Property and Copyright Law*, 35(3).
- Pogácsás, A. (2022). Formalitásmentes oltalom elve a szerzői jogban – pusztá hagyománytisztelet vagy a modern szerzői jog kiindulópontja? In Á. Juhász(Ed.), *Elmélet és praktikum – hagyománytisztelet és modernitás* (pp. 78–92). Miskolci Egyetem Állam- és Jogtudományi Kar Miskolc.
- Pogácsás, A. (2014). A szerző jelentősége és művével való kapcsolata. *Iustum Aequum Salutare*, 10(1), 149–162.
- Pogácsás, A. (2017). Tartalomáramlás és hozzáférése szerzői jog „fogyasztói korszakában”. *Medias Res*, 6(1).
- Pogácsás, A. (2023). Az internetfolklor szerzői jogi megítélése és annak hatása a szólásszabadságra. *Medias Res*, 12(1). <https://doi.org/10.59851/imr.12.1.1>
- Pusztahelyi, R., & Stefán, I. (2022). Household Social Robots – Special Issues Relating to Data Protection. *Acta Universitatis Sapientiae Legal Studies*, 11(1), 95–118. <https://doi.org/10.47745/AUSLEG.2022.11.1.06>
- Rose, M. (1994). *Authors and Owners: The Invention of Copyright*. Harvard University Press Cambridge.
- Salami, E. (2021). AI-generated works and copyright law: towards a union of strange bedfellows. *Journal of Intellectual Property Law & Practice*, 16(2). <https://doi.org/10.1093/jiplp/jpaa189>
- Sápi, E., & Halász, Cs. (2021). Mephisto hamarosan ötvenéves. Az alkotás és a véleménynyilvánítás szabadságának szerzői és személyiségi jogi ütközéspontjai. *Medias Res*, 10(1).
- Schafer, B. et al. (2015). A fourth law of robotics? Copyright and the law and ethics of machine co-production. *Artificial Intelligence and Law*, 23(3), 217–240. <https://doi.org/10.1007/s10506-015-9169-7>
- Schéré, E. (2018). Where is the Morality? Moral Rights in International Intellectual Property and Trade Law. *Fordham International Law Journal*, 41(3).
- Simon, D. (2014). *A szerzői jogi ágazatok gazdasági ágazatok súlya Magyarországon 4*. Budapest, Szellemi Tulajdon Nemzeti Hivatala.
- Stokes, S. (2012). *Art and Copyright*. Hart Publishing, Oxford.
- Sword, H. (2002). *Ghostwriting Modernism*. Cornell University Press, Ithaca. <https://doi.org/10.7591/9781501717666>
- Vjayakumaran, A. (2021). NFTs and Copyright Quandary. *Journal of Intellectual Property, Information Technology and Electronic Commerce Law*, 12(5).

Сведения об авторе



Эдит Сапи – PhD, доцент, кафедра гражданского права, Университет Мишкольца

Адрес: H-3515 Университетский городок, г. Мишкольц, Венгрия

E-mail: edit.sapi@uni-miskolc.hu

ORCID ID: <https://orcid.org/0000-0001-9152-5950>

Scopus Author ID: <https://www.scopus.com/authid/detail.uri?authorId=57308570200>

WoS Researcher ID: <https://www.webofscience.com/wos/author/record/AEQ-0477-2022>

Google Scholar ID: <https://scholar.google.hu/citations?user=KTxQEiMAAAAJ>

Конфликт интересов

Автор сообщает об отсутствии конфликта интересов.

Финансирование

Исследование не имело спонсорской поддержки.

Тематические рубрики

Рубрика OECD: 5.05 / Law

Рубрика ASJC: 3308 / Law

Рубрика WoS: OM / Law

Рубрика ГРНТИ: 10.41.91 / Авторское право и смежные права в отдельных странах

Специальность ВАК: 5.1.3 / Частно-правовые (цивилистические) науки

История статьи

Дата поступления – 30 июля 2023 г.

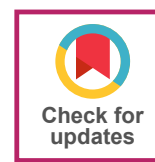
Дата одобрения после рецензирования – 12 августа 2023 г.

Дата принятия к опубликованию – 15 марта 2024 г.

Дата онлайн-размещения – 20 марта 2024 г.



Research article
UDC 34:004:336.22:347.73
EDN: <https://elibrary.ru/zuaihn>
DOI: <https://doi.org/10.21202/jdtl.2024.9>



Digital Transformation of Tax Law Principles

Olga I. Lyutova 

National Research University Higher School of Economics, Moscow, Russia

Keywords

autonomous tax payment,
digital technologies,
fairness of taxation,
law,
professional income tax,
single tax payment,
tax law institution,
tax law principle,
tax monitoring,
tax obligation

Abstract

Objective: to search for conceptual issues, features and prospects of development of tax law principles and tax obligation institute in the context of modern digitalization trends.

Methods: the study is based on a set of general legal (analysis and synthesis, induction and deduction) and special-legal (formal-legal, comparative-legal) methods of cognition.

Results: the main features of tax law principles characterizing their digital development were defined, namely: the expansion of the list of such principles and the changes in their content, predominantly at the level of institutional principles of taxation. A conclusion is made that in the digital era the tax law principles retain their theoretical significance as the most important category of the relevant science. The author states that the digital transformation of the institutional principle of tax fulfillment independence takes place mainly in the following directions: firstly, the range of taxpayers is expanded, in respect of which the duty to calculate tax can be imposed on a tax authority; secondly, the mechanism of the tax obligation execution is changed, among other things, by increasing the tax obligations of state authorities and credit organizations.

Scientific novelty: the paper assesses the approaches used in the scientific literature and normative-legal framework related to transformation of the taxation principles due to the intensive use of information and communication technologies in tax relations. The author also analyzed the digital transformation of the principles of tax obligation as one of the main tax-legal institutions.

© Lyutova O. I., 2024



This is an Open Access article, distributed under the terms of the Creative Commons Attribution licence (CC BY 4.0) (<https://creativecommons.org/licenses/by/4.0>), which permits unrestricted re-use, distribution and reproduction, provided the original article is properly cited.

Practical significance: is due to the lagging pace of tax legislation development in the Russian Federation compared to the objective processes of creation and application of new information and communication technologies in tax relations and adjacent spheres. The main provisions and conclusions of the study can be used as a basis to improve the tax legislation, as they develop knowledge about new tax law institutions – professional income tax, tax monitoring, single tax payment, and automated simplified taxation system.

For citation

Lyutova, O. I. (2024). Digital Transformation of Tax Law Principles. *Journal of Digital Technologies and Law*, 2(1), 163–180. <https://doi.org/10.21202/jdtl.2024.9>

Contents

Introduction

1. Theoretical issues of development of tax law principles in the context of the economy digitalization

1.1. Key features of digital transformation of tax law principles

1.2. Problems (risks) of the content development of taxation principles under digital transformation

2. Digital transformation of the content of tax law principles (by the example of tax obligation principles)

Conclusions

References

Introduction

The issues of the concept and types of principles of tax law¹ are one of the most common subjects of theoretical discussions in the modern tax law doctrine. Indeed, the importance of such principles both for the tax law theory and for the tax law enforcement is undeniable and is constantly emphasized by researchers at various stages of scientific thought development. The role of taxation principles is that they constitute the basis for the development of tax policy and legislation, being a universal measure of the quality of new norms. They guarantee of the rights and legitimate interests of tax relations' participants and contribute to the resolution of conflicts between taxpayers and tax authorities.

¹ Within this study, tax law principles and taxation principles are synonyms in terms of their content and classification of types.

It is indicative that to date there is no unanimity in tax law studies concerning the principles of this branch of law. Among the broadly discussed issues are the very concept and composition of these principles, as well as the possibility of recognizing various phenomena as separate principles, for example, the conclusions of higher courts or tax authorities. Hence the need for further research into the taxation principles, given the ongoing changes in all spheres of social life and in various legislation branches, including the information technologies development and introduction into social life and economic turnover and the possible emergence of so-called digital legal relations (Banakas et al., 2023).

Indeed, the permanent need to “revise” the tax law principles is predetermined by the high dynamism of tax legislation and a need to ensure the balance of public and private interests in taxation (Tropskaya, 2008). In this regard, we should note that the modern digitalization era, largely affecting taxation, has become a significant factor not only transforming certain rights and obligations of the parties to tax relations. It also raises questions of possible transformation of the “classical” categories of tax law, which make up its toolkit (taxation object, tax legal personality, tax sovereignty, etc.) (Argilés-Bosch et al., 2021; Zhou et al., 2022; Bassey et al., 2022; Cong et al., 2023). The principles of tax law represent one of the universally recognized fundamental categories: hence, they may be the theme of scientific discussion.

One example of a significant impact of digitalization on the tax law principles is the use of blockchain technology in tax administration. Its legal regulation is based on the idea that new special tax and legal principles emerge and tax relations are implemented due to blockchain application (Lyutova & Fialkovskaya, 2021; Wang et al., 2024; Guo et al., 2023; He, & Yang, 2023).

Thus, the inevitable digitalization (Shokhin et al., 2021), entailing the development of the taxation principles, necessitates theoretical assessment of such transformation, as well as development of practical recommendations to improve the tax law norms under the Fourth Industrial Revolution.

1. Theoretical issues of development of tax law principles in the context of the economy digitalization

1.1. Key features of digital transformation of tax law principles

Legal regulation of taxation principles is an independent institute of the general part of tax law. Accordingly, its development under various socio-economic conditions has specific features predetermined by the dynamics and vectors of new digital directions of tax policy. Some of these features are the following.

First, digitalization determines the expansion of the list of tax-legal principles.

For example, analyzing the development of financial-legal principles in the digital economy, Professor E. G. Belikov noted the emergence of the automation principle, the informatization principle, and the principle of informational openness (Belikov, 2020). Since the idea of including tax law in the system of financial-legal regulation is generally recognized (Gracheva, 2013), we consider it appropriate to project them onto tax law as its largest sub-branch.

Indeed, the automation principle, which implies the use of information technologies and automated information systems, is fully implemented in taxation: digital services for interaction between taxpayers and tax authorities are created; applications to perform tax duties in electronic form are actively developed; tax control measures are largely automated. The informatization principle means that the controlling authority does not have to request the necessary documents and information from the audited, as it is contained in state information systems. Thus, a united information system of federal and regional tax authorities is developed under the aegis of the Federal Tax Service of Russia. Finally, the principle of informational openness is a modern reflection of the principle of publicity in the activities of state bodies. It implies the availability of information on control activities of tax authorities within the limits established by tax legislation, which is possible through the use of information technology.

It is important to note that these principles are sectoral, as they are implemented in relation to most tax law institutions: tax obligations and their fulfillment, tax control, as well as in relation to various institutions of the special part, such as calculation and payment of individual taxes. It is the universal nature of the tax law principles in the digital era that allows considering such principles, among other things, as necessary requirements for the application of digital technologies in taxation.

Second, it is not the very concept of the tax law principle that is significantly changed, but the content of certain types of principles.

In our opinion, changes in the content of various taxation principles are associated, first of all, with the lacking norms of taxation digitalization in tax legislation, including general provisions – foundations of digital transformation of tax relations.

It is also important to note that due to the inherent abstractness and the lack of unanimity among theoreticians on the content of a “principle of law” concept (Povetkina, 2017), relevant approaches to the interpretation of “tax law principle” category will be needed also in the regulation of newly emerging tax relations. Because of this, we cannot agree that at present, under the influence of digital novelties, the main categories of tax law are being revised (Tsindeliani et al., 2019) precisely with regard to tax-legal principles.

Third, the digital transformation is implemented predominantly at the level of institutional rather than sector-wide principles of taxation.

It is logical that the emergence of new tax-legal institutions should be accompanied by specific ideas and principles. Analysis of tax legislation and scientific literature shows that the implementation of tax monitoring principles is fully based on information and communication technologies. These principles include voluntariness, cooperation of a taxpayer and a tax authority, openness and transparency of the parties, exemption from tax audits, prompt resolution of disputes using a reasoned opinion as a new tax-legal tool, exemption from penalty accrual and tax liability (Kurbatova, 2018). Similarly, the professional income tax institution is based on the principles of simplicity and convenience of calculation and payment for the self-employed, which was repeatedly emphasized both by state authorities in official documents² and by researchers (Boziev, 2022).

1.2. Problems (risks) of the content development of taxation principles under digital transformation

Besides characteristic features, digitalization of tax law principles is implemented under certain circumstances problematic for their digital transformation. Indeed, the analysis of tax law principles development shows a number of risks, including the following.

First, the list of tax law principles is not unambiguous to date. This fact significantly complicates the issue of changing the scope of taxation principles.

Such ambiguity is due to the following circumstances:

- some tax law principles are directly enshrined in tax legislation (norms-principles) and some can be “deduced from the content of law by interpretation”³. At the same time, digitalization makes it important to analyze, first of all, the generally recognized tax law principles, called the basic principles of tax legislation and contained in Article 3 of the Taxation Code of the Russian Federation (hereinafter – TC RF). Correlating new tax-legal phenomena with the content of such principles allows evaluating their development prospects.

In particular, Professors M. D. Napso and M. B. Napso note that the principle of fairness is highly important in the digital age, although it is not mentioned in Article 3 of the TC RF, which regulates the basic principles of taxation. The authors note the need to legislate such a principle, pointing to its importance along with the principles of obligation, legality, voluntariness, equality and universality of taxation (Napso & Napso, 2020).

² See, e. g.: On the application of the professional income tax in relation to leasing of non-residential premises: Letter of the Russian Ministry of Finance of February 24, 2022 No. 03-11-11/12806.

³ Tyutin, D. V. (2020). Tax law: a course of lectures. SPS KonsultantPlyus.

Another aspect of the growing importance of the fairness principle under digitalization is the need to address the issue of digital companies' profit distribution (Milogolov & Berberov, 2020). It is based on the fairness requirement that the new standards of "tax linkage" should be established. These standards help to determine which state may tax transnational companies performing transactions in the virtual environment and to use digital logistics and cooperation to prevent tax evasion and double taxation.

It is worth noting that taxation fairness, despite the absence of its legislative enshrinement, was repeatedly mentioned in the decisions of the Constitutional Court of the Russian Federation. This approach is also used for other tax-legal principles that are not contained in the TC RF, but are generally recognized in the tax law doctrine and enforcement, as they are regularly mentioned by the Court;

– some categories are referred by researchers to tax law principles, not being such. For example, one-time taxation, which is a very controversial tax law principle per se, is rather a feature of a tax, which means independence of a taxation object for each tax. In particular, this conclusion was repeatedly confirmed in both Russian and foreign practice of imposing several taxes on the same taxation object. This fully demonstrates that one-time taxation cannot be considered as the basic idea of tax legislation construction (Tyutin, 2013).

Among other things, a "catalyst" of mixing the tax law principles with related categories is the intensified use of new digital technologies in tax administration. One example is the alleged possibility of recognizing a risk-oriented approach as a sectoral principle (Efremova, 2022). This characteristic of tax monitoring is one of the main features in organization and conduct of preliminary tax control.

We see the solution to the problem of distinguishing tax law principles from other legal phenomena in defining the concept and establishing the characteristics of legal principles. Despite the objective complexity of the "principle of law" category, as was noted above, and the lack of a universally recognized definition of this concept, we may state the following.

As is known, a principle, as a theoretical and legal category of tax law, is highly abstract and reveals its meaning in the norms of tax legislation. Thus, it plays a system-forming role in its development, which is not characteristic to tax-legal categories. That is, the "reflection" of a tax law principle is a specific rule of behavior contained in a tax-legal norm. Accordingly, the existence of a certain taxation principle can be proved by the existence of a group of norms regulating various types of tax relations, which disclose the content of such principle.

In addition, the undeniable theoretical importance of tax law principles distinguishes them from other tax-legal phenomena, in particular, from tax norms and signs of tax law categories and concepts.

Under digitalization, theoretical issues related to the principles of law have become an object of numerous discussions. This is due, first of all, to the emergence of a new special tax regime, which initially had an experimental temporary nature – a tax on professional income. According to researchers, taxation of the self-employed, who pay the professional income tax, does not comply with a number of tax law principles (legality, fairness, etc.). In this regard, it is proposed to change the rules of calculation and payment of this tax (Napso, 2023). The conclusions about the inconsistency of the new tax regime with the general tax law principles seem controversial, at the very least. However, they confirm the importance of principles in the tax-legal regulation mechanism under the emergence of tax relations, which are impossible without electronic interaction between their participants (the use of My Tax application; the alleged use of blockchain for “automatic” taxation at the moment of an operation, etc.).

There are also more generalized judgments on the theoretical role of taxation principles under digitalization. For example, a research team from the Institute of Legislation and Comparative Law under the Government of the Russian Federation, studying the issues of digitalization of the financial-legal sphere, came to a conclusion that “under digitalization in the transformation of legislation on taxes and fees, the principles of taxation retain their key role in the formation of a relevant legislative array” (Kucherov & Povetkina, 2022). In turn, I. M. Stepnov and Yu. A. Kovalchuk stated the following as a key prerequisite when analyzing the impact of digital challenges on taxation: “preservation of basic principles leads to the preservation of the tax system stability, while revision of principles leads to the need for its modernization” (Stepnov & Kovalchuk, 2020).

We believe that the opinion about the theoretical value of tax-legal principles deserves unconditional support. At the same time, an unambiguous fact is the transformation of the content of individual tax law principles, which occurs under the influence of digitalization of the economy, state, and society.

2. Digital transformation of the content of tax law principles (by the example of tax obligation principles)

In the context of digital development of the state and society, various tax law principles repeatedly become researched by tax scientists: legality (Lyutova, 2022), fairness (Zhuravleva, 2020), openness in tax-legal relations (Migacheva, 2022), independence of tax duty fulfillment (Napso, 2022) and other principles. Some works mention the need to reconsider the content of tax law principles (Boboshko, 2021), which is significantly modified as a result of taxation automation and digital and other information technologies; however, the essence of such changes is not analyzed.

It is important to note that in one way or another digitalization affects all tax law principles (Ugalde et al., 2020; Pobee et al., 2023; Ouyang et al., 2023). However, the real

transformation of the content occurs at the level of tax law institutions – new norms and institutions appear; the conditions of “classical” tax relations change. Therefore, it is indicative to study the issues of digital transformation of tax law principles, primarily at the institutional level. To this end, the principles of the institute of tax obligation can be used.

The institute of tax obligation is traditionally considered one of the central in the tax law theory, at the same time playing a system-forming role, which has been repeatedly emphasized in the legal literature⁴ (Pechenkina, 2018). Accordingly, the tax obligation has its own object of legal regulation and structure, based on a set of institutional principles, which, in turn, reflect general legal principles of taxation.

It should be noted that the list of institutional principles of tax obligation is rather conditional in terms of their types, as it largely depends on the legislator discretion and can vary significantly depending on specific socio-economic conditions and the relevant political and legal documents.

Under the digitalization of the economy, the “broad discretion of the legislator” regarding the tax obligation principles is exemplified by the emergence of scientific discourse around one of the principles of tax obligation fulfillment. This principle – that of convenience, underlying the payment of the unified professional income tax, – is atypical for the Russian tax-legal doctrine. According to the Head of the Russian Federal Tax Service D. Egorov, the main components of tax payment in the Russian Federation should be inevitability and comfort⁵.

In our opinion, mentioning tax convenience as an institutional principle of tax obligation requires additional explanations. Undoubtedly, digitalization of taxation aims to simplify and accelerate interaction between tax authorities and private subjects of tax relations, which, in turn, affects their content. At the same time, convenience not only for a taxpayer, but also for a tax authority, depends on the limited possibilities of tax administration, carried out, in particular, in respect of those paying the professional income tax. Hence, under the digital development of the tax obligation institute, the principle of convenience is associated not only with the execution of such an obligation, but is also implemented at the stage of its establishment and introduction.

In general, the doctrine of tax law very rarely mentions the types of principles of tax obligation institute; most often we talk about tax obligation from the viewpoint of its fulfillment. Given the above position, it seems reasonable to classify the principles of the tax obligation institute into two groups – those related to its establishment and introduction and those related to the fulfillment of tax obligations by taxpayers.

⁴ Kucheryavenko, N. P. (2009). A course in Tax law: In 2 vol. Vol. 1. General part. Moscow: Statut. (In Russ.).

⁵ Daniil Egorov, the new Head of the Federal Tax Service, outlined the key tasks of the agency. RG.RU. <https://clck.ru/LydXx>

Thus, based on the applied research establishing the list of tax law principles and specifying for the tax obligation institute, stemming from modern issues and relations in tax-legal regulation, we can propose the following special principles of the tax obligation institute related to its fulfillment:

- the principle of independent tax obligation fulfillment by a taxpayer (also referred to as the principle of independence of calculation and payment of tax);
- the principle of good faith in tax obligation fulfillment;
- the principle of mandatory tax obligation fulfillment;
- the principle of simplicity and economy of taxation, also realized in the tax obligation fulfillment.

As for the principles governing the establishment and introduction of tax obligation, to form their set and describe their types, an intersectoral approach is necessary, which implies taking into account the provisions of political documents, constitutional-legal, administrative-legal and tax-legal norms. This, in turn, requires further research into determining the types and establishing the content of the principles of tax obligation institute.

One of the key principles of the tax obligation institute is the independence of its fulfillment (tax payment, tax reporting, taxpayer registration, accounting policy, obtaining various statuses, for example, controlled foreign company, etc.).

In a generalized version, the rule of independence of tax payment is stipulated by part 1 of Article 45 of the TC RF, according to which “a taxpayer is obliged to independently fulfill the obligation to pay tax, unless otherwise provided by the legislation on taxes and fees”. Based on the literal interpretation of the norm, this principle consists of two elements and includes, firstly, the obligation to pay tax at one’s own expense and, secondly, the fulfillment of such an obligation by the taxpayer’s own actions.

The taxpayer’s independence in the fulfillment of tax obligation both in terms of their activity and in terms of their capital was not initially absolute, because it implied a number of exceptions. These were provided, first of all, for taxpayers – physical persons in relation to both the obligation to calculate and the obligation to pay tax. Such exceptions were always objective and dictated by the convenience of tax administration for both the taxpayer and the tax authority. For example, some researchers considered the institution of tax agents as an exception, as well as indirect taxation in terms of its mechanism ([Sadchikov, 2018](#)).

The development of tax obligation institute under the digital transformation of its principles causes the expansion of the list of exceptions to the general rule of tax payment independence in the following directions.

First, the rejection of the independent tax payment was extended to certain cases of tax payment not only by organizations, but also by physical persons and individual entrepreneurs.

The development of this direction took place step by step. The first step towards the rejection of independent tax payment by physical persons was the appearance of the professional income tax, which is calculated by a tax authority and then sent to the payer as a tax notice via the My Tax mobile application.

The next stage of expanding the “non-independent” fulfillment of tax obligations was the adoption and enactment of a new special tax regime – Automated Simplified Taxation System (hereinafter – ASTS)⁶ from July 1, 2022. One of its main features is calculation of tax for taxpayers-organizations and individual entrepreneurs exclusively by a tax authority.

ASTS, compared to the taxation regime for self-employed taxpayers, implies a fundamentally different approach to the distribution of tax obligations, which affects the implementation of the principle of independence in tax relations. Namely, a credit organization is obliged to perform actions to submit to the tax authority information on transactions on an account opened in the credit organization, on transactions with electronic cash, as well as on the payment of income to physical persons, necessary for the calculation of personal income tax and insurance contributions to state non-budgetary funds in “credit organizations authorized by the taxpayer”. According to a fair remark by A. V. Krasnyukov, in the case of ASTS “a credit organization is endowed with the above additional responsibilities not by virtue of an instruction from the taxpayer, but by virtue of the law” (Krasnyukov, 2022).

Thus, digitalization is a catalyst for the process of gradual abandonment of the autonomy of taxpayers. This is expressed in a decreased number of cases when the need for the taxpayer to perform independent actions was established. This shows that the relevant principle of the tax obligation institute is implemented.

Secondly, new mechanisms for the tax obligations fulfillment appear, implying a significant expansion of the duties of tax authorities. This also leads to a decrease in the taxpayer’s independent participation in tax payment.

One of such mechanisms is the new Article 45.1 of the TC RF on the single tax payment (hereinafter – STP) of a physical person. This is essentially a mechanism of advance payment to the Russian budget by a taxpayer; the amount transferred to the tax account is subsequently redistributed by tax authorities.

We consider it important to note that the calculation and payment of STP as a new tax-legal procedure is carried out as follows. A taxpayer or a third party on their behalf makes a special advance payment in fulfillment of the obligation to pay transport, land

⁶ On conducting an experiment to establish a special tax regime “Automated simplified taxation system”. No. 17-FZ of 25.02.2022. (2022). Collection of legislation of the Russian Federation, No. 9 (part 1), Art. 1249.

and (or) property tax on physical persons to the Russian budget. The tax authority is entitled to determine independently, in accordance with the rules established in the tax legislation, which tax should be paid. The factors influencing the decision of the tax authority are, for example, the presence or absence of arrears and (or) tax debts.

Thus, after the STP emerged as a new form of fulfillment of tax obligation to pay, the taxpayer's obligation to pay tax became not a one-step, but a staged one. This mechanism also transferred the decision on the disposal of the advance payment received on the tax account to the tax authority. Accordingly, the principle of the taxpayer independence, associated with the tax payment, in this case is also not absolute and is implemented jointly by the taxpayer and the tax authorities through consecutive actions provided for by the tax legislation.

Conclusions

The tax law principles are the most important tool for the effective development of tax legislation in the era of digitalization. As for the general taxation principles, their list and content seem to be relatively stable.

At the same time, at the level of tax law institutions under the economy digitalization, global changes take place that imply a fundamental transformation in the content of such principles. In particular, the content of the principle of independence of tax obligation fulfillment is developing, as the balance is shifted towards increasing the tax authorities' duties and gradual decrease in the taxpayers' activity.

The legal discussion on the content of tax law principles should continue, first of all, in terms of compliance of legislative innovations, as well as individual decisions of state authorities, with the basic principles of tax law. Further research is also required on transforming the existing institutional principles and providing new tax-legal institutions with their own principles.

References

- Argilés-Bosch, J. M., Ravenda, D., & García-Blandón, J. (2021). E-commerce and labour tax avoidance. *Critical Perspectives on Accounting*, 81, 102202. <https://doi.org/10.1016/j.cpa.2020.102202>
- Banakas, S. (Efsthios), Petrov, D. A., Popondopulo, V. F., & Silina, E. V. (2023). Digital relationships as a subject of legal research. *Vestnik of Saint Petersburg University. Law*, 14(2), 492–509. (In Russ.). <https://doi.org/10.21638/spbu14.2023.213>
- Bassey, E., Mulligan, E., & Ojo, A. (2022). A conceptual framework for digital tax administration – A systematic review. *Government Information Quarterly*, 39(4), 101754. <https://doi.org/10.1016/j.giq.2022.101754>
- Belikov, E. G. (2020). Development of financial and legal principles in the conditions of digital economy. *Courier of Kutafin Moscow State Law University (MSAL)*, 9, 39–45. (In Russ.). <https://doi.org/10.17803/2311-5998.2020.73.9.039-045>
- Boboshko, D. Yu. (2021). Prospects for the application of imputed taxes and fees under digitalization of tax administration. *Nalogi*, 6, 2–7. (In Russ.) <https://doi.org/10.18572/1999-4796-2021-6-2-7>
- Boziev, R. M. (2022). Legal Regulation of the Professional Income Tax in Russia. *Actual Problems of Russian Law*, 17(9), 49–62. (In Russ.) <https://doi.org/10.17803/1994-1471.2022.142.9.049-062>

- Cong, L. W., Landsman, W. B., Maydew, E. L., & Rabetti, D. (2023). Tax-loss harvesting with cryptocurrencies. *Journal of Accounting and Economics*, 76(2–3), 101607. <https://doi.org/10.1016/j.jacceco.2023.101607>
- Efremova, T. A. (2022). Risk-oriented approach as a guarantor of tax security of the state. *Nalogi*, 3, 39–44. (In Russ.). <https://doi.org/10.18572/1813-1220-2020-9-7-11>
- Gracheva, E. Yu. (Ed.). (2013). *Legal regulation of financial control in the Russian Federation: problems and prospects*. Moscow: Norma: NITS Infra-M. (In Russ.).
- Guo, T., Hailin, C., Zhou, X., Ai, S., & Wang, S. (2023). Does corporate digital transformation affect the level of corporate tax avoidance? Empirical evidence from Chinese listed tourism companies. *Finance Research Letters*, 57, 104271. <https://doi.org/10.1016/j.frl.2023.104271>
- He, Y., & Yang, Y. (2023). Digitalization of tax administration and corporate performance: Evidence from China. *International Review of Financial Analysis*, 90, 102859. <https://doi.org/10.1016/j.irfa.2023.102859>
- Krasyukov, A. V. (2022). Transformation of a tax obligation within the framework of the automated simplified taxation system. *Nalogi*, 4, 10–13. (In Russ.). <https://doi.org/10.18572/1999-4796-2022-4-10-13>
- Kuchеров, I. I., & Povetkina, N. A. (Eds.). (2022). *Digital essence of financial law: past, present, future*: monograph. Moscow: Jurisprudence. (In Russ.).
- Kurbatova, O. V. (2018). Principles of tax monitoring. *Vestnik Moskovskogo universiteta MVD Rossii*, 2, 9–11. (In Russ.).
- Lyutova, O. I. (2022). On the question of development of the institute of “tax obligation” in the conditions of the digitalization of the economy. *Law Enforcement Review*, 6(3), 109–119. (In Russ.). [https://doi.org/10.52468/2542-1514.2022.6\(3\).109-119](https://doi.org/10.52468/2542-1514.2022.6(3).109-119)
- Lyutova, O. I., & Fialkovskaya, I. D. (2021). Blockchain technology in tax law theory and tax administration. *RUDN Journal of Law*, 25(3), 693–710. (In Russ.). <https://doi.org/10.22363/2313-2337-2021-25-3-693-710>
- Migacheva, E. V. (2022). The legal regulation of functioning of the tax system of the Russian Federation in the digital economy conditions. *Bezopasnost biznesa*, 3, 37–43. (In Russ.). <https://doi.org/10.18572/2072-3644-2022-3-37-43>
- Milogolov, N. S., & Berberov, A. B. (2020). Taxation of cross-border digital transactions: development of approaches to income classification. *Law Enforcement Review*, 4(4), 68–79. (In Russ.). [https://doi.org/10.24147/2542-1514.2020.4\(4\).68-79](https://doi.org/10.24147/2542-1514.2020.4(4).68-79)
- Napso, M. D., & Napso, M. B. (2020). Tax on Professional Income: The Issue of Compliance with the Taxation Principles. *Journal of Russian Law*, 3, 132–145. (In Russ.). <https://doi.org/10.12737/jrl.2020.036>
- Napso, M. B. (2022). Topical problems of establishing norms in the sphere of tax legal relations regulation: effect of the principle of independent fulfillment of tax obligation (part 2). *Nalogi*, 2, 10–17. (In Russ.). <https://doi.org/10.18572/1999-4796-2022-2-10-17>
- Napso, M. B. (2023). To the question on conformity of tax innovations of essence of the tax and levy. *Law and State: Theory and Practice*, 4(220), 132–136. (In Russ.).
- Ouyang, J., Liu, S., & Li, H. (2023). How does the development of digital finance affect small business tax compliance? Empirical evidence from China. *China Economic Review*, 80, 101971. <https://doi.org/10.1016/j.chieco.2023.101971>
- Pechenkina, A. A. (2018). Place of tax obligation in the system of Russian law in the Russian tax law system. *Gumanitarnye, sotsial'no-ehkonomicheskie i obshchestvennye nauki*, 5, 183–185. (In Russ.). <https://doi.org/10.23672/SAE.2018.5.14128>
- Pobee, F., Jibril, A. B., & Owusu-Oware, E. (2023). Does taxation of digital financial services adversely affect the financial inclusion agenda? Lessons from a developing country. *Digital Business*, 3(2), 100066. <https://doi.org/10.1016/j.digbus.2023.100066>
- Povetkina, N. A. (2017). Principles of Legal Provision of Financial Stability of the Russian Federation: Theoretical Approaches and Classification. *Journal of Russian Law*, 5(245), 64–80. (In Russ.). https://doi.org/10.12737/article_58f48b4947b517.02418784
- Sadchikov, M. N. (2018). Individualization of tax obligation. *Nalogi*, 4, 17–19. (In Russ.).
- Shokhin, S., Kudryashova, E., & Shashkova, A. (2021). Taxing Digital Economy: the End of Optimism. *International Trends*, 19, 2(65), 138–150. (In Russ.). <https://doi.org/10.17994/it.2021.19.2.65.6>
- Stepnoff, I. M., & Kovalchuk, J. A. (2020). Digital challenges and tax equity. *Digital Law Journal*, 1(1), 39–58. (In Russ.). <https://doi.org/10.38044/dlj-2020-1-1-39-58>
- Tropaskaya, S. S. (2008). Legal status of a taxpayer: balance of public and private interests in the tax sphere. *State and Law*, 5, 101–106. (In Russ.).
- Tsindeliani, I. A., Anisina, K. T., Burova, A. S., Kopina, A. A., Migacheva, E. V., & Rodygina, V. E. (2019). Main elements

- of taxation in the conditions of the development of digital economy. *Utopia y Praxis Latinoamericana*, 24 (Extra5), 129–137.
- Tyutin, D. V. (2013). Single taxation as a controversial principle of Russian tax law. *Nalogoved*, 9, 20–29. (In Russ.).
- Ugalde, A. F., Mellado-Silva, R., & Aldunate-Lizana, E. (2020). Use of artificial intelligence by tax administrations: An analysis regarding taxpayers' rights in Latin American countries. *Computer Law & Security Review*, 38, 105441. <https://doi.org/10.1016/j.clsr.2020.105441>
- Wang, D., Shi, Y., & Li, Q. (2024). The effect of digitalized tax administration on stock price crash risk: A natural experiment in China. *Research in International Business and Finance*, 69, 102219. <https://doi.org/10.1016/j.ribaf.2024.102219>
- Zhou, S., Zhou, P., & Ji, H. (2022). Can digital transformation alleviate corporate tax stickiness: The mediation effect of tax avoidance. *Technological Forecasting and Social Change*, 184, 122028. <https://doi.org/10.1016/j.techfore.2022.122028>
- Zhuravleva, O. O. (2020). Financial Support of People and Economy: The Generality Principle Vs. the Targeting Principle. *Financial law*, 9, 7–11. (In Russ.). <https://doi.org/10.18572/1813-1220-2020-9-7-11>

Author information



Olga I. Lyutova – Cand. Sci. (Law), Leading Researcher of the Institute for Public Administration and Governance, National Research University “Higher School of Economics”

Address: 11 Myasnitskaya Str., 101000 Moscow, Russian Federation

E-mail: olyutova@hse.ru

ORCID ID: <https://orcid.org/0000-0002-6603-8859>

Scopus Author ID: <https://www.scopus.com/authid/detail.uri?authorId=57223397628>

WoS Researcher ID: <https://www.webofscience.com/wos/author/record/AAD-7366-2019>

Google Scholar ID: <https://scholar.google.com/citations?user=opJc7fcAAAAJ>

RSCI Author ID: https://elibrary.ru/author_profile.asp?authorid=590631

Conflict of interest

The author declares no conflict of interest.

Financial disclosure

The research had no sponsorship.

Thematic rubrics

OECD: 5.05 / Law

PASJC: 3308 / Law

WoS: OM / Law

Article history

Date of receipt – August 17, 2023

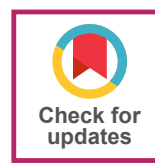
Date of approval – August 30, 2023

Date of acceptance – March 15, 2024

Date of online placement – March 20, 2024



Научная статья
УДК 34:004:336.22:347.73
EDN: <https://elibrary.ru/zuaihn>
DOI: <https://doi.org/10.21202/jdtl.2024.9>



Цифровая трансформация принципов налогового права

Ольга Игоревна Лютова 

Национальный исследовательский университет «Высшая школа экономики», Москва, Россия

Ключевые слова

единый налоговый платеж,
институт налогового права,
налог на профессиональный
доход,
налоговая обязанность,
налоговый мониторинг,
право,
принцип налогового права,
самостоятельность уплаты
налога,
справедливость
налогообложения,
цифровые технологии

Аннотация

Цель: поиск концептуальных проблем, особенностей и перспектив развития содержания принципов налогового права и института налоговой обязанности в контексте современных тенденций цифровизации.

Методы: основу исследования составляет совокупность общенаучных (анализ и синтез, индукция и дедукция) и специально-юридических (формально-юридический, сравнительно-правовой) методов познания.

Результаты: определены основные особенности принципов налогового права, позволяющие охарактеризовать процесс их цифрового развития, а именно: расширение перечня таких принципов, изменение их содержания, осуществляемое преимущественным образом на уровне институциональных принципов налогообложения. Сформулирован вывод о том, что в цифровую эпоху принципы налогового права сохраняют свое теоретическое значение как важнейшая категория соответствующей науки. Автор приходит к выводу о том, что основными направлениями цифровой трансформации институционального принципа самостоятельности исполнения налоговой обязанности являются: во-первых, расширение круга налогоплательщиков, в отношении которых допускается «переложение» обязанности по исчислению налога на налоговый орган, и, во-вторых, изменение механизма исполнения обязанности по уплате налога, реализуемое в том числе путем увеличения налоговых обязанностей у государственных органов и кредитных организаций.

Научная новизна: в работе дана оценка имеющихся в научной литературе и нормативно-правовой базе подходов к вопросу трансформации содержания принципов налогообложения, осуществляемой под влиянием активизации использования в налоговых отношениях информационно-коммуникационных технологий. Также проанализированы особенности цифровой трансформации принципов одного из основных налогово-правовых институтов – налоговой обязанности.

© Лютова О. И., 2024



Статья находится в открытом доступе и распространяется в соответствии с лицензией Creative Commons «Attribution» («Атрибуция») 4.0 Всемирная (CC BY 4.0) (<https://creativecommons.org/licenses/by/4.0/deed.ru>), позволяющей неограниченно использовать, распространять и воспроизводить материал при условии, что оригинальная работа упомянута с соблюдением правил цитирования.

Практическая значимость: обусловлена отставанием темпов развития налогового законодательства Российской Федерации от объективных процессов создания и применения новых информационно-коммуникационных технологий, используемых в налоговых и смежных с ними отношениях. Основные положения и выводы настоящего исследования могут быть использованы для совершенствования налогового законодательства в части развития положений о новых институтах налогового права – налога на профессиональный доход, налогового мониторинга, единого налогового платежа, а также в отношении автоматизированной упрощенной системы налогообложения.

Для цитирования

Лютлова, О. И. (2024). Цифровая трансформация принципов налогового права. *Journal of Digital Technologies and Law*, 2(1), 163–180. <https://doi.org/10.21202/jdtl.2024.9>

Список литературы

- Банакас, С. Э., Петров, Д. А., Попондопуло, В. Ф., Силина, Е. В. (2023). Цифровые отношения как предмет правового регулирования. *Вестник Санкт-Петербургского университета. Право*, 14(2), 492–509. <https://doi.org/10.21638/spbu14.2023.213>
- Беликов, Е. Г. (2020). Развитие финансово-правовых принципов в условиях цифровой экономики. *Вестник Университета О. Е. Кутафина (МГЮА)*, 9, 39–45. <https://doi.org/10.17803/2311-5998.2020.73.9.039-045>
- Бобошко, Д. Ю. (2021). Перспективы применения вмененных налогов и сборов в условиях цифровизации налогового администрирования. *Налоги*, 6, 2–7. EDN: <https://www.elibrary.ru/xsqogl>. DOI: <https://doi.org/10.18572/1999-4796-2021-6-2-7>
- Бозиев, Р. М. (2022). Правовое регулирование налога на профессиональный доход в России. *Актуальные проблемы российского права*, 9, 49–62. <https://doi.org/10.17803/1994-1471.2022.142.9.049-062>
- Грачева, Е. Ю. (ред.). (2013). *Правовое регулирование финансового контроля в Российской Федерации: проблемы и перспективы*. Москва: Норма: НИЦ Инфра-М.
- Ефремова, Т. А. (2022). Риск-ориентированный подход как гарант налоговой безопасности государства. *Налоги*, 3, 39–44. <https://doi.org/10.18572/1813-1220-2020-9-7-11>
- Журавлева, О. О. (2020). Финансовая поддержка людей и экономики: принцип всеобщности vs принцип адресности. *Финансовое право*, 9, 7–11. <https://doi.org/10.18572/1813-1220-2020-9-7-11>
- Красюков А. В. (2022). Трансформация налогового обязательства в рамках автоматизированной упрощенной системы налогообложения. *Налоги*, 4, 10–13. EDN: <https://www.elibrary.ru/clehmh>. DOI: <https://doi.org/10.18572/1999-4796-2022-4-10-13>
- Курбатова, О. В. (2018). Принципы налогового мониторинга. *Вестник Московского университета МВД России*, 2, 9–11. <https://www.elibrary.ru/xsqogl>
- Кучеров, И. И., Поветкина, Н. А. (ред.). (2022). *Цифровая сущность финансового права: прошлое, настоящее, будущее*: монография. Москва: ИЗиСП, Юриспруденция. <https://www.elibrary.ru/khefhz>
- Лютлова, О. И. (2022). К вопросу развития института «налоговая обязанность» в условиях цифровизации экономики. *Правоприменение*, 6(3), 109–119. EDN: <https://www.elibrary.ru/xvuqfz>. DOI: [https://doi.org/10.52468/2542-1514.2022.6\(3\).109-119](https://doi.org/10.52468/2542-1514.2022.6(3).109-119)
- Лютлова О. И., Фиалковская И. Д. (2021). Применение технологии блокчейн в налоговом администрировании. *Вестник Российского университета дружбы народов. Серия: Юридические науки*, 25(3), 693–710. <https://doi.org/10.22363/2313-2337-2021-25-3-693-710>
- Мигачева, Е. В. (2022). Правовое регулирование функционирования налоговой системы Российской Федерации в условиях цифровой экономики. *Безопасность бизнеса*, 3, 37–43. EDN: <https://www.elibrary.ru/yomypa>. DOI: <https://doi.org/10.18572/2072-3644-2022-3-37-43>
- Милоголов, Н. С., Берберов, А. Б. (2020). Налогообложение трансграничных операций, совершаемых в электронной форме. *Правоприменение*, 4(4), 68–79. EDN: <https://www.elibrary.ru/piippg>. DOI: [https://doi.org/10.24147/2542-1514.2020.4\(4\).68-79](https://doi.org/10.24147/2542-1514.2020.4(4).68-79)

- Напсо, М. Б. (2022). Актуальные проблемы нормотворчества в сфере регулирования налоговых правоотношений: действие принципа самостоятельности исполнения обязанности по уплате налога (часть 2). *Налоги*, 2, 10–17. EDN: <https://www.elibrary.ru/unpcgf>. DOI: <https://doi.org/10.18572/1999-4796-2022-2-10-17>
- Напсо, М. Б. (2023). К вопросу о соответствии налоговых новаций сущности налога и сбора. *Право и государство: теория и практика*, 4(220), 132–136. EDN: <https://www.elibrary.ru/zgcvmf>. DOI: https://doi.org/10.47643/1815-1337_2023_4_132
- Напсо, М. Д., Напсо, М. Б. (2020). Налог на профессиональный доход: к вопросу о соответствии принципам налогообложения. *Журнал российского права*, 3, 132–145. <https://doi.org/10.12737/jrl.2020.036>
- Печенкина, А. А. (2018). Место обязанности по уплате налога в системе российского права в системе российского налогового права. *Гуманитарные, социально-экономические и общественные науки*, 5, 183–185. EDN: <https://elibrary.ru/xqxigt>. DOI: <https://doi.org/10.23672/SAE.2018.5.14128>
- Поветкина, Н. А. (2017). Принципы правового обеспечения финансовой устойчивости Российской Федерации: теоретические подходы и классификация. *Журнал российского права*, 5(245), 64–80. EDN: <https://www.elibrary.ru/ypcpkn>. DOI: https://doi.org/10.12737/article_58f48b4947b517.02418784
- Садчиков, М. Н. (2018). Индивидуализация налоговой обязанности. *Налоги*, 4, 17–19. <https://www.elibrary.ru/xrufox>
- Степнов, И. М., Ковальчук, Ю. А. (2020). Цифровые вызовы и справедливость налогов. *Цифровое право*, 1(1), 39–58. EDN: <https://www.elibrary.ru/eubliq>. DOI: <https://doi.org/10.38044/dlj-2020-1-1-39-58>
- Тропская, С. С. (2008). Правовой статус налогоплательщика: баланс публичных и частных интересов в налоговой сфере. *Государство и право*, 5, 101–106. <https://elibrary.ru/inmigh>
- Тютин, Д. В. (2013). Однократность налогообложения – спорный принцип российского налогового права. *Налоговед*, 9, 20–29. <https://elibrary.ru/rawefb>
- Шохин, С., Кудряшова, Е., Шашкова, А. (2021). Налогообложение цифровой экономики: конец оптимизма. *Международные процессы*, 19, 2(65), 138–150. EDN: <https://www.elibrary.ru/wqkojj>. DOI: <https://doi.org/10.17994/it.2021.19.2.65.6>
- Argilés-Bosch, J. M., Ravenda, D., & García-Blandón, J. (2021). E-commerce and labour tax avoidance. *Critical Perspectives on Accounting*, 81, 102202. <https://doi.org/10.1016/j.cpa.2020.102202>
- Bassey, E., Mulligan, E., & Ojo, A. (2022). A conceptual framework for digital tax administration – A systematic review. *Government Information Quarterly*, 39(4), 101754. <https://doi.org/10.1016/j.giq.2022.101754>
- Cong, L. W., Landsman, W. B., Maydew, E. L., & Rabetti, D. (2023). Tax-loss harvesting with cryptocurrencies. *Journal of Accounting and Economics*, 76(2–3), 101607. <https://doi.org/10.1016/j.jacceco.2023.101607>
- Guo, T., Hailin, C., Zhou, X., Ai, S., & Wang, S. (2023). Does corporate digital transformation affect the level of corporate tax avoidance? Empirical evidence from Chinese listed tourism companies. *Finance Research Letters*, 57, 104271. <https://doi.org/10.1016/j.frl.2023.104271>
- He, Y., & Yang, Y. (2023). Digitalization of tax administration and corporate performance: Evidence from China. *International Review of Financial Analysis*, 90, 102859. <https://doi.org/10.1016/j.irfa.2023.102859>
- Lyutova, O. I., & Fialkovskaya, I. D. (2021). Blockchain technology in tax law theory and tax administration. *RUDN Journal of Law*, 25(3), 693–710. <https://doi.org/10.22363/2313-2337-2021-25-3-693-710>
- Ouyang, J., Liu, S., & Li, H. (2023). How does the development of digital finance affect small business tax compliance? Empirical evidence from China. *China Economic Review*, 80, 101971. <https://doi.org/10.1016/j.chieco.2023.101971>
- Pobee, F., Jibril, A. B., & Owusu-Oware, E. (2023). Does taxation of digital financial services adversely affect the financial inclusion agenda? Lessons from a developing country. *Digital Business*, 3(2), 100066. <https://doi.org/10.1016/j.digbus.2023.100066>
- Tsindeliani, I. A., Anisina, K. T., Burova, A. S., Kopina, A. A., Migacheva, E. V., & Rodygina, V. E. (2019). Main elements of taxation in the conditions of the development of digital economy. *Utopia y Praxis Latinoamericana*, 24(Extra5), 129–137. <https://elibrary.ru/nffmon>
- Ugalde, A. F., Mellado-Silva, R., & Aldunate-Lizana, E. (2020). Use of artificial intelligence by tax administrations: An analysis regarding taxpayers' rights in Latin American countries. *Computer Law & Security Review*, 38, 105441. <https://doi.org/10.1016/j.clsr.2020.105441>
- Wang, D., Shi, Y., & Li, Q. (2024). The effect of digitalized tax administration on stock price crash risk: A natural experiment in China. *Research in International Business and Finance*, 69, 102219. <https://doi.org/10.1016/j.ribaf.2024.102219>
- Zhou, S., Zhou, P., & Ji, H. (2022). Can digital transformation alleviate corporate tax stickiness: The mediation effect of tax avoidance. *Technological Forecasting and Social Change*, 184, 122028. <https://doi.org/10.1016/j.techfore.2022.122028>

Сведения об авторе



Лютова Ольга Игоревна – кандидат юридических наук, ведущий научный сотрудник Института государственного и муниципального управления, Национальный исследовательский университет «Высшая школа экономики»

Адрес: 101000, Россия, г. Москва, ул. Мясницкая, 11

E-mail: olyutova@hse.ru

ORCID ID: <https://orcid.org/0000-0002-6603-8859>

ScopusAuthorID: <https://www.scopus.com/authid/detail.uri?authorId=57223397628>

WoS Researcher ID: <https://www.webofscience.com/wos/author/record/AAD-7366-2019>

Google Scholar ID: <https://scholar.google.com/citations?user=opJc7fcAAAAJ>

РИНЦ Author ID: https://elibrary.ru/author_profile.asp?authorid=590631

Конфликт интересов

Автор сообщает об отсутствии конфликта интересов.

Финансирование

Исследование не имело спонсорской поддержки.

Тематические рубрики

Рубрика OECD: 5.05 / Law

Рубрика ASJC: 3308 / Law

Рубрика WoS: OM / Law

Рубрика ГРНТИ: 10.21.63 / Налоговое право

Специальность ВАК: 5.1.2 / Публично-правовые (государственно-правовые) науки

История статьи

Дата поступления – 17 августа 2023 г.

Дата одобрения после рецензирования – 30 августа 2023 г.

Дата принятия к опубликованию – 15 марта 2024 г.

Дата онлайн-размещения – 20 марта 2024 г.

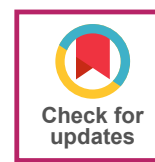


Research article

UDC 34:004:347.73:336.02

EDN: <https://elibrary.ru/bybieo>

DOI: <https://doi.org/10.21202/jdtl.2024.10>



Legal Approaches and Regulatory Methods for Fintech in the Guangdong – Hong Kong – Macao Greater Bay Area

Yaroslava Kuchina 

University of Macau, Macau SAR, China

Keywords

digital technologies,
financial innovation,
financial law,
financial technologies,
fintech regulation,
GBA,
Hong Kong,
law,
Macau,
Mainland China

Abstract

Objective: To look at the fintech regulatory policy and regulatory system in the Greater Bay Area through the lens of the Trilemma of Innovation doctrine in order to identify the applicability and extrapolation of existing legal models in the zone of accelerated economic and innovation development in Guangdong, Hong Kong and Macau.

Methods: The article is based on the comparative legal research of the regulation regarding models, existing within the regulatory framework for fintech. For that matter we conduct a generalization, introducing the classification of methods and systems that, in our opinion, can be recognized as the Lego-like systems of instruments.

Results: The research evaluates difficulties that may be faced by the participants within GBA on the way of legal harmonization regarding fintech. Special attention is paid to Hong Kong SAR, being one of the best-known examples of successful fintech regulation, and to comparing fintech regulation in Mainland China and in SAR (Macau, in particular). The author states that the last amendments to the financial law of Macau SAR also add an element of uncertainty, even though they aim to develop the situation within the framework. The author compares a technocratic approach, according to which fintech regulation is completely national (created only for the domestic market and reflects its structure) and traditional approach to regulation, a part of which is the Trilemma of Innovation. The latter implies the possibility of over-national (international) standardization, including in the form of soft law, which may eliminate the difference in understanding the fintech characteristics, its concepts and scope. Besides, the author analyses the correlation between the concepts of financial regulatory system

© Kuchina Y., 2024



This is an Open Access article, distributed under the terms of the Creative Commons Attribution licence (CC BY 4.0) (<https://creativecommons.org/licenses/by/4.0>), which permits unrestricted re-use, distribution and reproduction, provided the original article is properly cited.

and financial system of fintech regulation, extrapolation of the existing regulatory framework to the developing market of innovative technological solutions and their various models. The author highlights the regulatory response method, changing during the fintech market evolution, and applied, as a rule, together with other approaches.

Scientific novelty: the article presents a comprehensive review of the different systems of fintech legal regulation in the Guangdong – Hong Kong – Macau Greater Bay Area, whose unique experience demonstrates various trajectories of the fintech market development in southern China within the “One Country – Two Systems” concept.

Practical significance: the main conclusions and proposals resulting from the study are of significant interest for further research, regulatory policy and fintech regulatory system, as Mainland China and the special administrative regions of the Greater Bay Area use different approaches and methods of legal response that have no analogues in the modern world.

For citation

Kuchina, Y. (2024). Legal Approaches and Regulatory Methods for Fintech in the Guangdong – Hong Kong – Macao Greater Bay Area. *Journal of Digital Technologies and Law*, 2(1), 181–199. <https://doi.org/10.21202/jdtl.2024.10>

Contents

Introduction

1. Trilemma of Innovation and Regulatory Initiatives
2. Approaches and Methods: Regulatory Lego for Fintech
3. Regulation and Financial Systems
4. Methods of Regulatory Reaction
5. Greater Bay Area and Fintech: Introduction to the GBA

Conclusion

References

Introduction

Fintech is a hype topic. Some different approaches and terms can be used to describe fintech: disruptive technology, financial innovation, revolutionary services, or technology of paradox. In the law of technology, there is a term «paradigm shift» or «paradigm shift technology», which is often interpreted solely as a revolutionary turn in the IT sector.

The main aim of fintech development is to be implemented in the market of financial services, where fintech seriously competes with banks, the “traditional financial services providers” (Romanova & Kudinska, 2016). This has a great impact on the market and society, because, as Blakstad and Allen wrote, fintech’s reshaping ability is significant (Blakstad & Allen, 2017). Comparison of fintech with other technologies shows that its

quantitative estimates multiply every year¹ when other paradigm shift technologies spend years just to become the topic of discussion. Fintech spread has “spurred the progress and popularity of other technologies associated with it” (Gabor & Brooks, 2017), such as cryptocurrencies and distributed ledgers, or AI-based analyzing systems. The reason for this is the area, where it occurs – the highly and globally consumed financial sector.

At the same time, there is an objective reason why the fintech market is so hard to evaluate clearly from the legal point of view – and these reasons are also legal. First, the ability to gather reliable information in this area belongs to the private actors, not a regulator, as private actors (fintech providers) are more proactive in fintech than the actors of traditional finance (Omarova, 2020). Second, it is “too global to be estimated reliably enough” (Sarhan, 2020) and there is no single collector of statistics for technology and the sector. The rapid growth of fintech makes it almost impossible to consider the numbers. National statistics greatly vary because of different understandings of the fintech’s scope. All that creates difficulties in regulation and, technically, makes it impossible to have the scheme for harmonized regulation with a unified regulatory approach. Because of this, almost all recommendations on regulation within a particular area consist of two main parts: the lists of methods and regulatory tools, and the evaluation of a particular market’s core characteristics and features.

1. Trilemma of Innovation and Regulatory Initiatives

In 2019, Y. Yadav published a work that became a cornerstone for the theory of innovation. Considering the fintech market, Yadav and co-author stated the Trilemma of Innovation (Brummer & Yadav, 2019). They argue that in innovative market conditions, achieving a regulatory balance is impossible due to the nature of the innovations. In other words, the nature of regulation and its practices are contrary to the modern fintech market. Exploring the evolution of the Trilemma, they show that fintech represents the case, the solution of which requires an individual approach.

The approach that regulation of fintech is only national-based – which means it can be created only for the domestic market as a reflection of its structure – is common. It can be found in almost every academic paper regarding fintech and is normally called technocratic (Omarova, 2020). Regarding Trilemma, Yadav and Brummer (2019) points out that effective regulation is possible only when the regulator has a complete understanding of the object and scope of regulation. The same conclusions are made by E. Mik (2022) and C. Twigg-Flesner².

¹ Sánchez Herrera, N. (2017). What’s all this talk about fintech? an analysis of media conversations around fintech in 2016 (Order No. 11016244). Available from ProQuest Dissertations & Theses Global.

² Twigg-Flesner, C. (2016). Disruptive technology – disrupted law? How the digital revolution affects (contract) law. <https://clck.ru/39Yta7>

Yadav and Brummer argues that the regulation of fintech has three points between which the regulator seeks to strike a balance: technical, market, and legal. So, the regulator when planning a regulatory system for fintech, seeks to:

- 1) provide clear rules,
- 2) maintain market integrity,
- 3) encourage financial innovation (Brummer & Yadav, 2019).

However, the balance of all three is impossible, and «regulators can achieve, at best, two out of these three objectives» (Brummer & Yadav, 2019). A rule-based approach has the potential to cause a decline in the market of innovations, as innovations barely contribute with strict legal boundaries. At the same time, a facilitating principle-based regime is usually accompanied by higher risks for the market, as the low-intensity regulatory framework increases them in the financial sector. The rate of investment is higher for fintech startups that are in non-regulated territory (Schwartz, 2017; Pomerol, 2018), so market integrity and innovation facilitation need a very low level of regulation.

The Trilemma of Innovation allows us to evaluate the regulatory system and regulatory policy concerning fintech in a completely different way. Yadav and Brummer (2019) points out that a simple solution exists only where, within the framework of the three goals of the Trilemma, the regulator chooses to establish traditional construction features. Even within the same range of related technologies, each service on the market can be completely different in its architecture and this will not allow it to meet non-external regulatory requirements.

It is obvious that with such systematic risks emanating from fintech, its regulation requires the construction of an individual solution. Yadav and Brummer (2019) and some of the proponents consider the necessity to build international standards that will eliminate the difference in understanding the characteristics of fintech, its concept, and the scope of its phenomena. They also point out that only achieving this level will create a sufficient platform for cooperation between markets, as well as for the exchange of data between states, minimizing the risks that fintech represents in the share of the entire global financial sector.

2. Approaches and Methods: Regulatory Lego for Fintech

Trilemma is a part of the traditional regulatory approach that contradicts the so-called technocratic approach of national regulation of fintech. That approach is the most applicable one in the current situation and it has approved methods of regulation and even systems. In academic papers, it is sometimes called the domestic or micro approach as it doesn't include in the framework the possibility of over-national (international) standardization, even in the form of soft law. Within this approach, several regulatory methods could be identified. But first, we should conclude that not-regulation is not a solution. As it was proven regarding the Indonesian fintech market, not-regulation (regulatory ban) is not even a regulatory possibility (Kharisma, 2020). It is impossible to prohibit the development and fintech means the development of a market, not a solid technology (Reed, 2018). The regulatory bans that are normally applied in a particular fintech area or on a type of service don't stop the activity, as

the case of cryptocurrencies shows to us. The theory of innovations contradicts this regulatory desire. Being banned, fintech moves to the gray area, creating an illusion of regulatory success.

So, if we talk about regulatory systems, two approaches can be evaluated: rule-based and principle-based. The differentiation between rule-based and principle-based regulatory approaches can be found in the D. Arner et al paper ([Arner et al., 2016](#)). Arner, like most of the authors after him, stresses the main bullet point on fintech – for the first time since the era of financial technologies started (means since 1862) financial technologies aim to ignore traditional financial services and systems, and do not support their development. This is the main reason why the regulatory issue is the key among all challenges fintech gave birth to.

The UK Financial Services Authority (FSA) identified three key elements that differed the FSA's principle-based regulatory approach in finance from the others, that time discussed in scholars' papers and experts' opinions ([Ferran, 2015](#)). According to FSA, three elements at the minimum should be identified within the scope to call the approach "principal-based":

- 1) broad-based standards in preference to detailed rules,
- 2) outcomes-based regulation,
- 3) and increasing senior management responsibility.

These strategies "may be related and may be used together, but they are different and, importantly, they are therefore likely to raise different practical issues for regulators and regulated" ([Amstad, 2019](#)).

On the contrary, the principle-based approach is more desirable for fintech because it reflects the "spirit" ([Amstad, 2019](#)). As the "presence of a high degree of mutual trust between participants within the regulatory regime" ([Nicolaidis, & Shaffer, 2005](#)) is the point that makes the principle-based approach so desired, it, at the same time, almost reflects the practices of project development existing in fintech.

It also reflects the main difference between financial services provided by banks and fintech. Banking services are built on the base of fixed requirements, which makes a customer sure of the immutability of all-consuming services. A change in its procedures is detected by regulatory acts and standards, usually approved by law or any related act, announced in advance and approved by an agreement or amendments to the agreement, that is signed between the bank and a customer. Predictability and clear process combined with the fact that the content of banking processes and services is traditional. It interacts well with the rule-based approach of national regulation because of this.

In the case of fintech, any changes appear as technical changes, when the amendments are replaced by updates, and the contracts change differently, sometimes (depending on the technology, provider, jurisdiction, and many other obstacles) in an unnoticeable or unclear for a customer. It is worth recognizing that the technical side of a financial service turns it in the eyes of the consumer into an analog of the next virtualized product – and the consumer agrees (sometimes unintentionally) to a softened process of changing the financial part of this service through the practices inherited from its technical component.

This means, for the principle-based regulatory approach the same conditions are needed that exist between providers and consumers in self-regulation and contractual practices.

It is based on mutual trust between the parties – regulator and regulatee, and the close engagement between them. At the same time, it should be noted that the principle-based approach doesn't automatically mean the freedom of market behavior. As some scholars highlight, in practice, a lack of clarity over what enforcers will accept as compliance might cause enterprises to adopt quite conservative behavior. The principle-based approach can enable flexibility, allowing businesses to innovate in the ways that they comply (Amstad, 2019). According to the analyses made within this research, those occur in the areas where the regulator performs other activities outside the principle-based approach which creates the other model of behavior for the regulator. In the case of fintech that can be a Central Bank entity, that provides the rule-based model of compliance for banks, which makes fintechs behave like banks as much as possible.

The analyses of papers on the research-based approach help to make two important conclusions. The first is about the perception of when and where this approach is applied. From the research, one might get the impression that all the approaches that are considered in this part, and that – further, are applied separately, depending on the state and its preferences. However, it is not. As a rule, the fintech regulatory framework is built from a combination of approaches, divided according to the system of regulation of the financial sector adopted in the country.

3. Regulation and Financial Systems

The next level determines the system of fintech regulation is the system of financial regulation existing within a state. Sometimes it refers to a “financial system of regulating fintech” but this is not so. The analyses we provided show that there are no practical cases when the financial regulation system and financial system of regulating fintech alter each other. The state can (like in the case of South Africa) change the system of financial regulation to facilitate the development of the fintech market, but it will be the changing of the whole system.

This scope is known as the four models' approach or the approaches of traditional financial regulation methods (Cunningham & Zaring, 2009). It was developed after the 2008 Global Financial Crisis, and it is not a fintech-specialized one. However, it is a good example of the method that allows extrapolation of the existing regulatory framework to the emerging market of innovative technological solutions.

The four methods, according to the literature, are the following:

1. Institutional or traditional approach (China, Mexico, and Hong Kong SAR) which is sometimes also called the sectoral approach,
2. Functional approach (Brazil, Italy, and France),
3. Integrated approach (Japan, Singapore, Germany, and formerly in the United Kingdom³),

³ The statistics on Singapore and the UK, that allow to suggest the difference in numbers within one regulatory method, can be found here: Fintech Innovation: Perspectives from Singapore and London. (2018). Icaew. <https://clck.ru/39FaTz>

4. “Twin Peaks” approach (The Netherlands, Switzerland, Qatar, Australia, South Africa, Spain).

4. Methods of Regulatory Reaction

The next group of methods we suggested to be called the “reaction method”. They answer the question “When should we start regulating fintech?” (Setiawan & Maulisa, 2020). This group is directly interconnected with the Innovation Trilemma. Within it, three models of regulation are distinguished:

1. Regulate (including Case-by-Case),
2. Wait-and-See,
3. Test-and-Learn.

These methods are from those regulatory methods that can be changed during the evolution of the fintech market, it is usually combined with other approaches. The previous group of methods is based on how fintech regulation is built as a derivative of financial regulation. This one considers from what moment the previous models should be applied. In the first case, the regulator is fully convinced that fintech activities should be within its competence and has no reason to doubt.

If the current structure of financial regulation does not allow to start regulating fintech immediately, the regulator either reviews the regulatory system and makes the necessary changes to it, or completely reforms it, based on the accumulated experience, including comparative.

Options (ii) and (iii) are taken when there is regulatory uncertainty around fintech activities, when there is a need to study the market, and, most importantly, when building supervisory capacity on the technology before a regulatory response. The second approach is shown when there is no evidence that the activity should be regulated and should ideally be supplemented by some supervisory monitoring. When the situation is such that perceived risks are potentially significant, but market penetration is still low, the authorities may decide on the Test-and-Learn option and implement some form of innovation facilitator (regulatory sandbox, incubator, innovation office, and/or hub) to help gradually fill the regulatory gap.

These methods are easily combined with the previous. For example, China is famous for its Wait-and-See approach to technologies (Xu et al., 2020), which is combined with its institutional method of financial regulation and rule-based preferable approach to regulation in total. At the same time, for some technologies, related to trade, economics, and finance, China prefers to first implement the principle-based approach in combination with the Test-and-Learn method, and only then move to the Regulate method and, consequently, to the rule-based approach of regulation⁴.

⁴ World Bank. (2020). How regulators respond to Fintech: Evaluating the different approaches—sandboxes and beyond. Retrieved December 8, 2023, from the official website of the World Bank. <https://clck.ru/39FaXs>

So here it is possible to conclude that the opinions, that understand all mentioned approaches as the single options for regulators, are not particularly right. Building a fintech regulatory system is not a choice of one method, but a combined system where the regulatory financial model seems to be the most stable - at least, moving from one to another requires serious reform.

As for the other two methods, they deal with completely different regulatory aspects. The first is a system for constructing legislation, namely the choice of an approach in the form of an immediate statutory reaction or in the form of building a system of guidelines. The rate of this reaction is determined by the third of the considered methods. Moreover, in this case, there are no requirements, and in general, the last two are purely national ways of resolving the situation.

5. Greater Bay Area and Fintech: Introduction to the GBA

The Guangdong-Hong Kong-Macao Greater Bay Area (Greater Bay Area or GBA in short) includes the two Special Administrative Regions of Hong Kong and Macao as well as Guangzhou, Shenzhen, Zhuhai, Foshan, Huizhou, Dongguan, Zhongshan, Jiangmen and Zhaoqing in Guangdong province. The Area covering a total area of 56,000 square meters had a combined population of about 70 million at the end of 2017.

The Guangdong-Hong Kong-Macao Greater Bay Area Outline Development Plan⁵ seeks to create an international first-class bay area that is perfect for living, working, and traveling by strengthening ties between Guangdong, Hong Kong, and Macao through the development of the Special Administrative Regions and nine cities in the Pearl River Delta (Meulbroek et al, 2023). It also seeks to facilitate deep integration within the region by fully utilizing the combined advantages of the three locations and encouraging coordinated economic development in the area. This integration requires, among others, digital integration, where fintech plays an important role.

From the legal point of view, GBA is a territory of three jurisdictions that are organized just in the middle of the “One Country – Two Systems” concept. Here we have three systems within one state – Mainland China, Hong Kong SAR, and Macau SAR, and three regulatory frameworks. It is one of the most interesting examples of fintech. According to the Outline, the GBA is arranged among others, as an international innovation and technology hub, a platform for in-depth cooperation between the Mainland’s nine cities in the Pearl River Delta, Hong Kong SAR, and Macao SAR.

Why it is interesting? First, because of the duality in regulation, these three systems – the Mainland’s civil law model, Hong Kong’s common law, and Macau’s civil law based on Portuguese legal experience and legal interpretation. From the position of fintech and

⁵ 人才發展委員會 – Positioning and Guiding the Development of Macau in the Greater Bay – Advantages and Opportunities for the Population Of Macau. (2023). Retrieved December 8, 2023, from Macao Special Administrative Region (MSAR) Government website. <https://clck.ru/39FabM>

the importance of the market's particularities, the GBA combines three different domestic fintech markets – e-commerce of China, highly-developed Hong Kong, and Macau, which attracts less attention within the fintech.

And here we should start from the fact that one of the most famous definitions of fintech was created in Hong Kong SAR. Hong Kong is named among the most rapid development markets of the sector and the interest in fintech and GBA comes, first, from its experience and the combination of Hong Kong's regulation and regulation of fintech in China (mainland) itself. The second is the difference that can be found even with the brief analyses.

The financial regulation method of all three parts makes the evaluation easier, as all of them belong to a so-called traditional system of regulation, according to the different academic opinions. However, if we consider it closely, we will see that Hong Kong, regarding fintech, creates the unique, almost only example of the "Twin Peak" system of regulation, when one is higher than the other.

Also, the approach and understanding of fintech within the three is different. The Mainland's legislation doesn't have the definition of fintech. China's first comprehensive regulation, Guiding Opinions on Promoting the Healthy Development of Internet Finance, suggests the definition of "Internet Finance". According to the scholars, this refers to the promotion of the "Internet Plus" strategy in all relevant sectors of the market⁶. At the same time, the Internet Finance concept is comparable to the fintech concept, and both can be used as synonyms to describe innovative financial services technologies. According to Guiding Opinions, Internet Finance includes:

- 1) internet payment;
- 2) online lending;
- 3) equity crowdfunding;
- 4) Internet fund sales;
- 5) online insurance services;
- 6) Internet consumer finance.

The other view on fintech comes from the highest peak of fintech regulation of Hong Kong SAR, the Hong Kong Monetary Authority (HKMA). It is the term that is "commonly considered to cover the application of artificial intelligence, blockchain, cloud computing, and big data in areas such as payments, clearing and settlement, deposits, lending and capital raising, insurance, investment management, and market support" (Au, 2021).

Hong Kong policies related to fintech are among the most developed. HKMA is one of the peaks that supervises Fintech Supervisory Sandbox launched in 2016. In 2017 it also launched seven Smart Banking Initiatives. In June 2021 a strategy called «Fintech 2025» was introduced to drive fintech development in Hong Kong. As can be seen fintech of Hong Kong is not equal to the fintech of China, however, both are significant policymakers in the area,

⁶ See: Hong Kong Innovation and Technology Development Blueprint (2021) Innovation, Technology and Industrial Bureau. Itib.gov.hk. <https://clck.ru/39Fafy>

especially in Asia. Unfortunately, we cannot say this about Macau SAR, moreover, Macau's fintech regulation is, technically, underdeveloped.

So, from the position of the market, the three areas greatly vary. On the one hand, we have Hong Kong which actively facilitates fintech by offering incentives to fintech businesses operating in the SAR and by establishing guidelines for the application and evaluation of fintech solutions. On the other – the Mainland, the cradle of e-commerce, implements not technological neutrality, but the technological equality approach, staying mostly on the position of an “information-orientated” regulatory system, not “technology-based”. Such kind of approach is not unique, it is common in states that have highly developed and digitalized markets. For them, separate fintech regulation, like in Hong Kong, will lead to the duplication of legal rules.

Moreover, in some cases the legal views on the reaction methods within the areas are different. An example is cryptocurrencies, banned in the Mainland (regulatory ban as a method imposed), which, instead, has the first and the most prominent experience with CBDC, which is now on the stage of “Test-and-Learn”. On the contrary, we have the example of Hong Kong, whose recent experience in cryptocurrency raises academic and practical discussions all over the world. Like the case in February 2023, when the Hong Kong SAR Supreme Court recognized that “cryptocurrency is “property” and is capable of being held on trust”⁷ and thus gave rise to an incredible number of questions and doubts⁸ regarding legal interpretations and amendments.

As for Macau SAR, the Legislative Assembly approved a law on August 2023, that empowered the 1st of November of the same year. The act permits the registration of banks with restricted operations and expanded usage of financial technology or fintech. The present law, which has been in force for thirty years and regulates the SAR's financial system, was replaced by the new law.

According to the law, banks with limited scope are those that are only allowed to provide a small number of banking services. Regarding fintech, the new law gives the government the authority to grant digital companies, academic or research organizations, and financial institutions temporary permits for fintech projects to be operated as trials. That became the moment of fintech's visibility – the starting point that will allow us to evaluate the market and understand the possible reaction of a regulator.

Or the local method that allows to avoid a complete regulatory ban, when the regulator decides to “share the license”, allowing banks and other financial organizations to become co-founders and co-providers of fintech services⁹. In Hong Kong the Fintech Supervisory

⁷ The text of the judicial decision can be found here: HCCW 18/2019 [2023] HKCFI 914. (2023). <https://clck.ru/39Faib>

⁸ Sajnani, S., Knight, S., & Chen, M. (2023, May 10). Hong Kong Court Confirms Cryptocurrency is “Property.” Lexology; King & Wood Mallesons. <https://clck.ru/39Fak6>

⁹ Restoy, F. (2021). Fintech regulation: how to achieve a level playing field. Financial Stability Institute, Bank for International Settlements. Piie.com. <https://clck.ru/39Fank>

Sandbox (FSS), launched by the HKMA in September 2016, allows banks and their partnering technology firms (tech firms) to conduct pilot trials of their fintech initiatives. This process includes involving a limited number of participating customers without the need to achieve full compliance with the HKMA's supervisory requirements¹⁰. So, the ignorance that most of the anonymous fintech services have cannot be explained as a "shadow ban"¹¹ as some authors call this method of regulation (Chapin, 2020).

From here we can conclude that the differences within the markets and regulations are significant. At the same time for the lawyers, it may mean that the understanding of what is fintech and how it should be regulated – the cross-border transboundary virtualized services and products – also varies. The GBA as a hub may face difficulties, especially if fintech starts "melting" through the legal borders, the tendency we can see in the case of some African fintech technologies and markets.

First, the differences in market and regulation are the differences in interpretation. At the current moment, there is no possibility to distinguish fintech services from non-fintech services using just the regulatory policy papers without the list of fintech services authorized as it is. Moreover, during the research examples were found when the same service was defined as fintech and non-fintech within one jurisdiction, so it is highly possible within three legal systems. In some cases, it even leads to the conclusion that if a service is not called a fintech by the developers there is no possibility to define it as fintech on its own.

Moreover, fintech creates a lot of challenges for both academic research and legislation initiatives. It strictly links to the concept of disruptiveness, and also explains why so much attention is paid to the regulatory frameworks and their concepts and models. At the same time, there are no full statistics on how the service, especially complex, may influence the market. In some cases, in the Mainland and both SARs fintech regulator adopts the concept and recreates the one-way of regulatory behavior with same-aimed services like WePay, MPay, and Alipay. But what can be the same concept at first glance may be very different in depth.

The institutional or sectoral approach, also called traditional, focuses on the form of a legal entity and assigns a particular regulator to it (Cunningham & Zaring, 2009). So, the market is divided into sectors, regulated by the institution, responsible for the supervision. Usually, the sectors are those, related to depositary financial institutions, securities and futures market sectors, and sectors of other entities. They can be sharded into more subsectors, or have a smaller number of supervisors, as in the case of the Mainland. The most successful and classic organization within this method is Hong Kong SAR, which shows less failure and provides a good balance between the protection of the traditional system and the facilitation of innovations. However, as it was said, in every method all the particularities of a state should be evaluated, so what suits Hong Kong may not be relevant (and, surely, is not relevant) to Macau and the Mainland.

¹⁰ Fintech Supervisory Sandbox (FSS). (2023, May 25). Hong Kong Monetary Authority. <https://clck.ru/39Faqv>

¹¹ Kumar, R. (2023, August 29). SEC's sealed motion against Binance and CEO CZ. The Crypto Times. <https://clck.ru/39Fat6>; The note on Motion see here: <https://clck.ru/39Fav2>

The boundaries between sectors in such a model can be blurred – and this happens very often even without challenges like fintech – so it can cause confusion and potential conflicts, especially when the regulated entity is not so-called “brick-and-mortar” or traditional. Technically, traditionality seems to be the main problem of such a method if it fails when it meets something not traditional or contradictory.

Conclusion

All the challenges cannot be solved in any of the approaches. First, it is what to regulate and what to not. Concerns on that matter go from the conflict of form and nature. The form, from the legal point of view, is familiar – fintech is financial services. But the nature of them is technological, what makes fintech so competitive and so customary attractive. This freedom from the past, as it was described regarding the tendency among Zoomers to prefer fintech to banking ([Evdokimova, 2020](#)), this the biggest challenge all the regulators face.

The second one is the deployment of fintech – for now, the market development brings two types of players on the field: pure fintech providers, which are called fintechs by some of the authors¹², and traditional actors, who try to be competitive, and start launch fintech services and products ([Wonglimpiyarat, 2017](#)), especially during a pandemic ([Tut, 2023](#)). The first one is not covered by financial regulation – the second is the object, the subject, and the producers of financial law and politics.

That is the main challenge that can be found in every fintech market. But, within the GBA, there are special ones, that should be mentioned. First, the issue is that the development of all three fintech markets followed completely different trajectories – and within the framework of the “one country, two systems” principle, three different fintech markets emerged. This situation is unique and no state, not even the United States with its federal and state legislation, has encountered such an experience.

Further, we are talking about the fact that within China and the two SARs there are three different legal systems and, most importantly, legal interpretations. This leads to significant differences in understanding of what the fintech problem is. Having conducted research in this area, not only within the framework of the GBA, but we can also say that the difference in fintech regulatory approaches in civil law states and common law states exists and in some aspects it is significant. Moreover, even with its preference for the “Test-and-Learn” reaction method, the Mainland, as a civil law state (so, possibly Macau is the same) prefers the rule-based approach as a state of civil law. Hong Kong SAR, as a common law area, is a principle-based and, at the same time, “Case-by-Case” territory.

¹² Eickhoff, M., Muntermann, J., & Weinrich, T. (2017, December). What do Fintechs Actually Do? A Taxonomy of Fintech Business Models. In ICIS.

Well, the last, important difference is that fintech regulation does not focus only on the regulation of fintech. It is formed from norms that already exist, and here, since fintech is “located” in the territory of technology law and financial law at the same time, the differences are even more dramatic. Technology law as such, where we can also include data law, is more general; it focuses on a huge sector and cannot be allocated a separate “untouchable” territory. The difference in approaches in these areas, even if it is not visible now, will one day manifest itself in one way or another. And, following the issues highlighted in the Trilemma of Innovation, depending on which two aspects dominate it, the impact on the market can be unpredictable. In the case of GBA, when the Mainland and the SARs have their own Trilemmas, it may affect not only the one but all three markets at the same time – but which area will be the initiator of that affection, is, at least for now, unpredictable.

References

- Amstad, M. (2019). Regulating Fintech: Objectives, principles, and practices. *Asian Development Bank Institute Working Paper Series*, 1016. <https://doi.org/10.2139/ssrn.3541003>
- Arner, D. W., Barberis, J., & Buckley, R. P. (2016). The Evolution of FinTech: A New Post-Crisis Paradigm? *Georgetown Journal of International Law*, 47, 127. <http://dx.doi.org/10.2139/ssrn.2676553>
- Au, A. (2021). Fintech Innovation and Knowledge Flows in Hong Kong's Financial Sector: A Social Network Analysis Approach. *Journal of Asia Business Studies*, 16(2), 294–307. <https://doi.org/10.1108/JABS-09-2020-0381>
- Chapin, Ch. F. (2020). The Long Shadow of Prohibition. In P. Baker, & D. T. Critchlow (Eds.), *The Oxford handbook of American political history*. Oxford University Press.
- Blakstad, S., & Allen, R. (2018). *FinTech Revolution*. Springer International Publishing. <https://doi.org/10.1007/978-3-319-76014-8>
- Brummer, C., & Yadav, Y. (2019). Fintech and The Innovation Trilemma. *The Georgetown Law Journal*, 107, 235. <https://doi.org/10.2139/ssrn.3054770>
- Cunningham, L. A., & Zaring, D. (2009). The Three or Four Approaches to Financial Regulation: A Cautionary Analysis Against Exuberance in Crisis Response. *The George Washington Law Review*, 78, 39.
- Evdokimova, Y. (2020). Digitalization of the Financial Sector: Background and Specifics. In *Proceedings of the 2nd International Scientific and Practical Conference on Digital Economy (ISCDE 2020)* (pp. 179–183). <https://doi.org/10.2991/aebmr.k.201205.029>
- Ferran, E. (2015). The Break-up of the Financial Services Authority in the UK. In *Institutional Structure of Financial Regulation* (pp. 127–154). Routledge.
- Gabor, D., & Brooks, S. (2017). The Digital Revolution in Financial Inclusion: International Development in the Fintech Era. *New Political Economy*, 22(4), 423–436. <https://doi.org/10.1080/13563467.2017.1259298>
- Kharisma, D. B. (2020). Urgency of Financial Technology (Fintech) Laws in Indonesia. *International Journal of Law and Management*, 63(3), 320–331. <https://doi.org/10.1108/IJLMA-08-2020-0233>
- Meulbroek, C., Peck, J., & Zhang, J. (2023). Bayspeak: Narrating China's Greater Bay Area. *Journal of Contemporary Asia*, 53(1), 95–123. <https://doi.org/10.1080/00472336.2021.1998579>
- Mik, E. (2022). Smart Contracts: Tales of Trust and Certainty. *Technology and Regulation*, 100–112. <https://doi.org/10.26116/techreg.2022.010>
- Nicolaidis, K., & Shaffer, G. (2005). Transnational Mutual Recognition Regimes: Governance without Global Government. *Law and Contemporary Problems*, 68(3/4), 263–317. <https://doi.org/10.2307/27592113>
- Omarova, S. T. (2020). Technology v technocracy: Fintech as a regulatory challenge. *Journal of Financial Regulation*, 6(1), 75–124. <https://doi.org/10.1093/jfr/fjaa004>
- Pomeroy, J. C. (2018). Business Uncertainty, Corporate Decisions and Startups. *Journal of Decision Systems*, 27(sup1), 32–37. <https://doi.org/10.1080/12460125.2018.1460162>
- Reed, C. (2018). How Should We Regulate Artificial Intelligence? *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*, 376(2128), 20170360. <https://doi.org/10.1098/rsta.2017.0360>

- Romānova, I. & Kudinska, M. (2016). Banking and Fintech: A Challenge or Opportunity? In *Contemporary Issues in Finance: Current Challenges from Across Europe (Contemporary Studies in Economic and Financial Analysis, Vol. 98, pp. 21–35)*. Bingley: Emerald Group Publishing Limited. <https://doi.org/10.1108/S1569-375920160000098002>
- Sarhan, H. (2020). Fintech: An Overview. *ResearchGate*: Berlin, Germany, 1–34. <https://doi.org/10.13140/RG.2.2.17196.28804>
- Schwartz, J. (2017). Should Mutual Funds Invest in Startups? A Case Study of Fidelity Magellan Fund's Investments In Unicorns (And Other Startups) And The Regulatory Implications. *North Carolina Law Review*, 95(5), 1341–1402.
- Setiawan, K., & Maulisa, N. (2020, March). The Evolution of Fintech: A Regulatory Approach Perspective. In *Proceeding of the 3rd International Conference on Law and Governance (ICLAVE 2019)* (pp. 218–225). Atlantis Press. <https://doi.org/10.2991/aebmr.k.200321.029>
- Tut, D. (2023). Fintech and the Covid-19 Pandemic: Evidence from Electronic Payment Systems. *Emerging Markets Review*, 54, 100999. <https://doi.org/10.1016/j.ememar.2023.100999>
- Wonglimpiyarat, J. (2017). FinTech banking industry: a systemic approach. *Foresight*, 19(6), 590–603. <https://doi.org/10.1108/FS-07-2017-0026>
- Xu, D., Taylor, C. J., & Ren, Y. (2023). Wait-and-See or Whack-a-Mole: What Is the Best Way to Regulate Fintech in China? *Asian Journal of Law and Society*, 10(3), 433–462. <https://doi.org/10.1017/als.2022.7>

Author information



Yaroslava Kuchina – Cand. Sci. (Law), Assistant Professor, PhD Candidate, Research Assistant, Faculty of Law, University of Macau

Address: E 32 Avenida da Universidade, Macau SAR, China

E-mail: yakuchina@gmail.com

ORCID ID: <https://orcid.org/0000-0003-1681-1038>

Scopus Author ID: <https://www.scopus.com/authid/detail.uri?authorId=57191665336>

WoS Researcher ID: <https://www.webofscience.com/wos/author/record/K-4849-2017>

Google Scholar ID: <https://scholar.google.hu/citations?user=wBNuZRwAAAAJ>

Conflict of interest

The author declares no conflict of interests.

Financial disclosure

The research had no sponsorship.

Thematic rubrics

OECD: 5.05 / Law

PASJC: 3308 / Law

WoS: OM / Law

Article history

Date of receipt – December 8, 2023

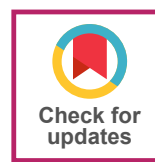
Date of approval – December 20, 2023

Date of acceptance – March 15, 2024

Date of online placement – March 20, 2024



Научный обзор
УДК 34:004:347.73:336.02
EDN: <https://elibrary.ru/bybieo>
DOI: <https://doi.org/10.21202/jdtl.2024.10>



Правовые подходы и методы регулирования финтеха в регионе Большого залива Гуандун – Гонконг – Макао

Ярослава Кучина 

Университет Макао, Макао, Китай

Ключевые слова

Гонконг,
Китай,
Макао,
право,
регион Большого залива,
финансовое право,
финансовые инновации,
финансовые технологии,
финтехрегулирование,
цифровые технологии

Аннотация

Цель: через призму разработанной в доктрине трилеммы инноваций взглянуть на регуляторную политику и систему регулирования финтеха в регионе Большого залива с тем, чтобы выявить применимость и экстраполяцию существующих правовых моделей в зоне ускоренного экономического и инновационного развития, объединяющей Гуандун, Гонконг и Макао.

Методы: в основе работы лежит сравнительно-правовой метод исследования моделей правового регулирования финтеха, в связи с чем обобщаются имеющиеся данные и вводится классификация методов и систем, представляющих собой инструментарий по принципу лего.

Результаты: в исследовании представлена оценка трудностей, с которыми могут столкнуться члены региона Большого залива на пути гармонизации законодательства в области финтеха. Особое внимание уделяется Гонконгу, являющемуся одним из самых известных примеров успешного регулирования сектора финтеха, а также сопоставлению регулирования финтеха в материковом Китае и специальных административных районах (в частности, Макао). Отмечается, что недавно принятые поправки к финансовому законодательству специального административного района Макао также вносят элемент неопределенности, хотя и направлены на развитие ситуации в рамках этого законодательства. Сопоставляются технократический подход, согласно которому регулирование финансовых технологий является исключительно национальным (создается только для внутреннего рынка и отражает его структуру), и традиционный подход к регулированию, частью которого является трилемма инноваций, предусматривающий возможность наднациональной (международной) стандартизации, в том числе в форме мягкого права, способный устранить разницу в понимании характеристик финтеха, их концепции и масштабов этого явления. Кроме того, проводится анализ соотношения понятий

© Кучина Я., 2024



Статья находится в открытом доступе и распространяется в соответствии с лицензией Creative Commons «Attribution» («Атрибуция») 4.0 Всемирная (CC BY 4.0) (<https://creativecommons.org/licenses/by/4.0/deed.ru>), позволяющей неограниченно использовать, распространять и воспроизводить материал при условии, что оригинальная работа упомянута с соблюдением правил цитирования.

системы финансового регулирования и финансовой системы регулирования финтеха, экстраполяция существующей нормативной базы на развивающийся рынок инновационных технологических решений, их разные модели. Внимание акцентируется на методе регуляторного реагирования, изменяющегося в процессе эволюции финтехрынка и применяемого, как правило, вместе с другими подходами.

Научная новизна: представлен комплексный взгляд на различные системы правового регулирования финансовых технологий в регионе Большого залива Гуандун – Гонконг – Макао, уникальный опыт которого демонстрирует разные траектории развития финтехрынка на юге Китая в рамках принципа «Одна страна – две системы».

Практическая значимость: основные выводы и предложения, полученные в результате проведенного исследования, представляют значительный интерес для дальнейших исследований, регуляторной политики и системы регулирования финтеха, поскольку в материковом Китае и в специальных административных районах региона Большого залива применяются разные подходы и методы правового реагирования, не имеющие аналогов в современном мире.

Для цитирования

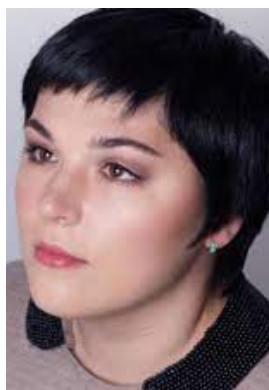
Кучина, Я. (2024). Правовые подходы и методы регулирования финтеха в регионе Большого залива Гуандун – Гонконг – Макао. *Journal of Digital Technologies and Law*, 2(1), 181–199. <https://doi.org/10.21202/jdtl.2024.10>

Список литературы

- Amstad, M. (2019). Regulating Fintech: Objectives, principles, and practices. *Asian Development Bank Institute Working Paper Series*, 1016. <https://doi.org/10.2139/ssrn.3541003>
- Arner, D. W., Barberis, J., & Buckley, R. P. (2016). The Evolution of FinTech: A New Post-Crisis Paradigm? *Georgetown Journal of International Law*, 47, 127. <http://dx.doi.org/10.2139/ssrn.2676553>
- Au, A. (2021). Fintech Innovation and Knowledge Flows in Hong Kong's Financial Sector: A Social Network Analysis Approach. *Journal of Asia Business Studies*, 16(2), 294–307. <https://doi.org/10.1108/JABS-09-2020-0381>
- Chapin, Ch. F. (2020). The Long Shadow of Prohibition. In P. Baker, & D. T. Critchlow (Eds.), *The Oxford handbook of American political history*. Oxford University Press.
- Blakstad, S., & Allen, R. (2018). *FinTech Revolution*. Springer International Publishing. <https://doi.org/10.1007/978-3-319-76014-8>
- Brummer, C., & Yadav, Y. (2019). Fintech and The Innovation Trilemma. *The Georgetown Law Journal*, 107, 235. <https://doi.org/10.2139/ssrn.3054770>
- Cunningham, L. A., & Zaring, D. (2009). The Three or Four Approaches to Financial Regulation: A Cautionary Analysis Against Exuberance in Crisis Response. *The George Washington Law Review*, 78, 39.
- Evdokimova, Y. (2020). Digitalization of the Financial Sector: Background and Specifics. In *Proceedings of the 2nd International Scientific and Practical Conference on Digital Economy (ISCDE 2020)* (pp. 179–183). EDN: <https://www.elibrary.ru/lkqbax>. DOI: <https://doi.org/10.2991/aebmr.k.201205.029>
- Ferran, E. (2015). The Break-up of the Financial Services Authority in the UK. In *Institutional Structure of Financial Regulation* (pp. 127–154). Routledge.
- Gabor, D., & Brooks, S. (2017). The Digital Revolution in Financial Inclusion: International Development in the Fintech Era. *New Political Economy*, 22(4), 423–436. <https://doi.org/10.1080/13563467.2017.1259298>
- Kharisma, D. B. (2020). Urgency of Financial Technology (Fintech) Laws in Indonesia. *International Journal of Law and Management*, 63(3), 320–331. <https://doi.org/10.1108/IJLMA-08-2020-0233>
- Meulbroek, C., Peck, J., & Zhang, J. (2023). Bayspeak: Narrating China's Greater Bay Area. *Journal of Contemporary Asia*, 53(1), 95–123. <https://doi.org/10.1080/00472336.2021.1998579>

- Mik, E. (2022). Smart Contracts: Tales of Trust and Certainty. *Technology and Regulation*, 100–112. <https://doi.org/10.26116/techreg.2022.010>
- Nicolaidis, K., & Shaffer, G. (2005). Transnational Mutual Recognition Regimes: Governance without Global Government. *Law and Contemporary Problems*, 68(3/4), 263–317. <https://doi.org/10.2307/27592113>
- Omarova, S. T. (2020). Technology v technocracy: Fintech as a regulatory challenge. *Journal of Financial Regulation*, 6(1), 75–124. <https://doi.org/10.1093/jfr/fjaa004>
- Pomerol, J. C. (2018). Business Uncertainty, Corporate Decisions and Startups. *Journal of Decision Systems*, 27(sup1), 32–37. <https://doi.org/10.1080/12460125.2018.1460162>
- Reed, C. (2018). How Should We Regulate Artificial Intelligence? *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*, 376(2128), 20170360. <https://doi.org/10.1098/rsta.2017.0360>
- Romānova, I. & Kudinska, M. (2016). Banking and Fintech: A Challenge or Opportunity? In *Contemporary Issues in Finance: Current Challenges from Across Europe (Contemporary Studies in Economic and Financial Analysis, Vol. 98, pp. 21–35)*. Bingley: Emerald Group Publishing Limited. <https://doi.org/10.1108/S1569-375920160000098002>
- Sarhan, H. (2020). Fintech: An Overview. *ResearchGate*: Berlin, Germany, 1–34. <https://doi.org/10.13140/RG.2.2.17196.28804>
- Schwartz, J. (2017). Should Mutual Funds Invest in Startups? A Case Study of Fidelity Magellan Fund's Investments In Unicorns (And Other Startups) And The Regulatory Implications. *North Carolina Law Review*, 95(5), 1341–1402.
- Setiawan, K., & Maulisa, N. (2020, March). The Evolution of Fintech: A Regulatory Approach Perspective. In *Proceeding of the 3rd International Conference on Law and Governance (ICLAVE 2019)* (pp. 218–225). Atlantis Press. <https://doi.org/10.2991/aebmr.k.200321.029>
- Tut, D. (2023). Fintech and the Covid-19 Pandemic: Evidence from Electronic Payment Systems. *Emerging Markets Review*, 54, 100999. <https://doi.org/10.1016/j.ememar.2023.100999>
- Wonglimpiyarat, J. (2017). FinTech banking industry: a systemic approach. *Foresight*, 19(6), 590–603. <https://doi.org/10.1108/FS-07-2017-0026>
- Xu, D., Taylor, C. J., & Ren, Y. (2023). Wait-and-See or Whack-a-Mole: What Is the Best Way to Regulate Fintech in China? *Asian Journal of Law and Society*, 10(3), 433–462. <https://doi.org/10.1017/als.2022.7>

Сведения об авторе



Ярослава Кучина – кандидат юридических наук, доцент, соискатель степени PhD, младший научный сотрудник, факультет права, Университет Макао

Адрес: Китай, САР Макао, Авенида да Универсидаде, E 32

E-mail: yakuchina@gmail.com

ORCID ID: <https://orcid.org/0000-0003-1681-1038>

Scopus Author ID: <https://www.scopus.com/authid/detail.uri?authorId=57191665336>

WoS Researcher ID: <https://www.webofscience.com/wos/author/record/K-4849-2017>

Google Scholar ID: <https://scholar.google.hu/citations?user=wBNuZRwAAAAJ>

Конфликт интересов

Автор сообщает об отсутствии конфликта интересов.

Финансирование

Исследование не имело спонсорской поддержки.

Тематические рубрики

Рубрика OECD: 5.05 / Law

Рубрика ASJC: 3308 / Law

Рубрика WoS: OM / Law

Рубрика ГРНТИ: 10.21.91 / Финансовое право отдельных стран

Специальность ВАК: 5.1.2 / Публично-правовые (государственно-правовые) науки

История статьи

Дата поступления – 8 декабря 2023 г.

Дата одобрения после рецензирования – 20 декабря 2023 г.

Дата принятия к опубликованию – 15 марта 2024 г.

Дата онлайн-размещения – 20 марта 2024 г.

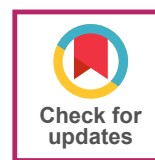


Research article

UDC 34:004:347.73:336.1

EDN: <https://elibrary.ru/yxcjno>

DOI: <https://doi.org/10.21202/jdtl.2024.11>



Financial and Legal Development of Social Relations Using Digital Currencies in Metaverses

Maksim S. Sitnikov 

Volgograd State University, Volgograd, Russia

Keywords

blockchain,
Central Bank,
cryptocurrency,
digital currency,
digital ruble,
digital sovereignty,
digital technologies,
financial law,
legislation,
metaverse

Abstract

Objective: based on the analysis of financial and legal policy of certain jurisdictions, to determine the initial prospects of financial and legal development of social relations in metaverse using digital currencies.

Methods: the research is based on the system of cognitive tools: first of all, formal-legal, comparative-legal, statistical methods, and the method of legal forecasting, which help to interpret the legal norms and financial-legal policy of various jurisdictions, assess the degree of current development of legislation on regulation of technologies in virtual worlds, and formulate ideas about the financial-legal regulation of public relations using digital currencies in the metaverse.

Results: the study reveals that modern legislation on metaverses is at the initial stage of its formation, as in developed jurisdictions metaverse is still considered only as a future technology. The author shows the degree of popularity of the metaverse first prototypes and the growing attention of some states to the metaverse in order to develop their socio-economic potential and consolidate international leadership in digital development. The paper points out the shortcomings of the metaverse definitions developed in doctrine and practice, and long proposes the author's definition. It is argued that in order to fully integrate metaverse technology into a certain country, whose policy is focused on achieving (maintaining) a high rating in terms of the economy digital transformation, it is necessary to determine the currency that will be legitimately used in the metaverse in future. A conclusion is made that it is necessary to plan financial and legal policy in this area, which will largely depend on the legal regime of cryptocurrency in a particular country. It is argued

© Sitnikov M. S., 2024



This is an Open Access article, distributed under the terms of the Creative Commons Attribution licence (CC BY 4.0) (<https://creativecommons.org/licenses/by/4.0>), which permits unrestricted re-use, distribution and reproduction, provided the original article is properly cited.

that further development of the metaverse concept in Russia will depend on the results of testing the digital ruble.

Scientific novelty: the paper is one of the first devoted to the convergence of metaverse and financial law, which proposes a concept for establishing full-fledged legality of digital currency in the metaverse depending on the attitude of a particular country to decentralized finance. Along with popular definitions formulated in doctrine and practice, the author presents their own interpretation of the metaverse, indicating its essential features.

Practical significance: the conclusions and proposals obtained can be used to improve the mechanisms of financial and legal regulation of social relations under the emerging metaverse concept. The presented ideas are important for further research of various financial and legal aspects of metaverses' development and functioning.

For citation

Sitnikov, M. S. (2024). Financial and legal development of social relations using digital currencies in metaverses. *Journal of Digital Technologies and Law*, 2(1), 200–220. <https://doi.org/10.21202/jdtl.2024.11>

Contents

Introduction

1. Concept of metaverse and specificity of financial and legal policies of individual jurisdictions
2. Financial control (monitoring) under metaverse conditions
3. Option of cryptocurrency integration as a basis for metaverses
4. Searching for further development of the metaverses concept: shortcomings of legislation and testing of the digital ruble

Conclusions

References

Introduction

A metaverse is defined as the next stage in the Internet development, which is gradually being fulfilled in real life. One of the motives for the metaverses creation is the development of commerce, which implies the movement of money flows within this virtual space. This circumstance cannot but cause interest of the state, suggesting the need to elaborate a flexible and effective legal regulation of a new form of economic turnover for the purposes of financial and legal policy of the state. In this connection many questions arise, including, in particular, the interest of the state in the metaverses development, specific options of financial regulation of the metaverses market, the

possibility of adapting the existing finance legislation to the emerging metaverses market, and others. This paper is devoted to answering these and some other questions.

1. Concept of metaverse and specificity of financial and legal policies of individual jurisdictions

One cannot imagine the future of all legal matter without the functioning of digital technologies. Recently, the issue of legal regulation of social relations in the innovative virtual space – metaverse – has gained relevance. Legal regulation of relations in virtual worlds has been the object of research for more than 10 years. For example, in 2008, a large-scale scientific study on the law of virtual worlds was published, authored by an American jurist B. T. Duranske (Duranske, 2008). A year before that, a work of another American legal scholar, E. Reuveni, had been published, covering the issues of copyright and contract law in the virtual world (Reuveni, 2007). In Russia, among the first of the most well-known publications on this topic are, in particular, the studies of V. V. Arkhipov (Arkhipov, 2013) and A. I. Savelyev (Savelyev, 2014). At the same time, the authors understood the virtual world primarily as an online game.

The metaverse cannot be labeled solely as an online game. These categories relate to each other as general and particular, respectively. Therefore, a metaverse is something larger than an ordinary online game. It should be noted that the subject of metaverses has long been mentioned in scientific research. For example, in 2008, American scientists in co-authorship with a Swiss expert drew attention to the possibility of embodying the idea of a metaverse (Hendaoui et al., 2008). The currently high attention to metaverse is very often associated with Meta company¹. In autumn 2021, Mark Zuckerberg stated that one of the corporation's activities would be connected with the construction of immersive virtual space Horizon Worlds. Although the project has received wide publicity, it should be said that the metaverse development is not limited to the embodiment of Horizon Worlds. The fact is that today there are many other projects called metaverse. According to statistics from foreign researchers, the total capitalization of the virtual real estate market in some metaverse prototypes was estimated at more than 1.4 billion dollars in 2022². Leadership is given to such platforms as Decentraland, The sandbox, and Somnium Space. Positive dynamics was also observed in the first quarter of 2023³.

¹ The organization is recognized as extremist, its functioning is prohibited in the territory of the Russian Federation.

² 2022 Annual Metaverse Virtual Real Estate Report. (2023, January 11). Parcel. <https://clck.ru/39CTbo>

³ Gherghelas, S. (2023, March 23). Virtual Worlds Soar: Record Land Sales Generate \$311M. DappRadar. <https://clck.ru/39CTdf>

The economic development of metaverses is gradually gaining momentum. According to experts of Citibank – the largest international bank – the total market of metaverse can be estimated from 8 to 13 trillion dollars by 2030⁴. It is worth mentioning the forecasts of metaverse development in the People's Republic of China (hereinafter – PRC, China). For example, the Shanghai plan for the metaverse development stipulates that the market will be estimated at 350 billion yuan by 2025⁵. Sichuan Province estimated the economic development of the metaverse sphere at 250 billion yuan⁶. Today, China appears to be one of the leaders in the metaverse development. At the end of 2021, PRC established a sectoral committee for metaverse development under the China Mobile and Communications Association. At the state level, it is recognized that the metaverse development will strengthen the PRC's position as a global technology leader⁷. It is also worth noting that the Chinese Institute of Contemporary International Relations issued a report on the country's national security in the context of metaverse development, emphasizing technological hegemony and information security⁸.

China's leadership in the metaverse development is explained by the country's special economic and legal policy. According to P. V. Troshchinsky, China's digital economy is based on its national interests. For this reason, Chinese platforms have displaced Western technologies from its market. In this regard, we can say that China is a stronghold of digital sovereignty (Troshchinsky, 2021).

This study will be incomplete without mentioning definitions of the term "metaverse". An American venture specialist M. Ball notes: "A metaverse should be understood as a scalable and interoperable network of 3D virtual worlds, visualized in real time, that can be accessed synchronously and continuously by a practically unlimited number of users with an individual perception of presence and continuity of data such as identity, history, rights, objects, communications, and payments" (Ball, 2022). According to Chinese and Canadian experts, the metaverse is a synthesized world (virtual and real) that consists of user-controlled avatars, digital things, virtual environment, and other elements that allow people to use this space for communication, collaboration, and other purposes (Wang et al., 2022). Another study notes a metaverse is a new stage in the development of the Internet, characterized by the following aspects: (1) a symbiosis

⁴ Citi: Metaverse market size could reach \$13 trillion within 8 years. (2022, April 1). P&K. <https://clck.ru/39CViN>

⁵ Shanghai announces action plan for metaverse industry development. (2022, August 22). CJO. <https://clck.ru/39CVmw>

⁶ Ivanov, P. (2023, August 17). Authorities of China's Sichuan Province estimate the metaverse market at \$34 billion. Blockchair. <https://clck.ru/39CVpZ>

⁷ Hui, M. (2021, November 17). China is eyeing the metaverse as the next internet battleground. Quartz. <https://clck.ru/39Cm6r>

⁸ 元宇宙与国家安全 原创 美国研究所 中国现代国际关系研究院. <https://clck.ru/39CVuQ>

of different technologies, which can generate a mirror of the real world based on digital twin technology and blockchain to build an ecosystem, (2) a metaverse is a special form of social interaction between users, (3) hyperspatial temporality, which implies an open, free and captivating experience of using an immersive virtual reality (Wang et al., 2023).

A Russian legal scholar I. V. Ponkin uses the term cyber-meta-universe: “cyber-meta-universe is a complex virtual-real (hybrid) homeostatic and persistent digital multiuser meta-space formed and maintained by means of interoperable dynamic digital simulations and synthesis, which includes multiple decentralized and/or intersectional real-virtual multiscale (and scalable) three-dimensional spatial worlds (ecosystems, universes) of complex-cognitive and holographic-visual orders (of augmented or reproduced reality – in accordance and harmony with the natural laws of physical existence and human perception, understanding and transformation of the world), providing for interactive involvement (participation, interaction, active transformation) of users through their avatars and providing for the user immersion into the ontologies of these worlds” (Ponkin, 2023). A simpler definition is proposed by a Pakistani scholar who points out that a metaverse is a simulated digital environment that combines augmented (AR) and virtual (VR) reality, blockchain and social media principles to create an area of abundant interaction between users, which aims to simulate the real world⁹.

One cannot but mention the definition of virtual worlds, which is formulated in the Strategy of the European Commission of the European Union (hereinafter – EU), dedicated to the development of the Web 4.0 concept. According to this act, virtual worlds are permanent immersive environments based on technologies, including 3D and mixed reality (XR), that allow the integration of physical and digital worlds in real time for various purposes such as design, simulation, collaboration, learning, communication, transactions and entertainment¹⁰. Although the strategy uses the term “virtual worlds”, it most likely refers to the metaverse. It is worth noting that this is not the first time that the EU touches upon the topic of metaverse. For example, in 2022, the European Parliamentary Research Service published the results of the briefing “Metaverse: Opportunities, risks and policy implications”¹¹.

Recently, a sufficient number of definitions of the “metaverse” have appeared. However, the author of this paper believes that the existing positions regarding this category contain one or more defects, among which the following we can mention complexity for perception and/or lack of important features. Therefore, sometimes the metaverse is described through the plot of movies (Ready Player One, The Matrix, Protagonist, etc.). We believe

⁹ Laeeq, K. (2022). *Metaverse: why, how and what. How and What*.

¹⁰ EU. (2023, July 5). An EU initiative on virtual worlds: a head start in the next technological transition. <https://clck.ru/39CW2G>

¹¹ EU. (2022, June 27). Metaverse: Opportunities, risks and policy implications. <https://clck.ru/39CWFF>

that any definition should contain only two aspects: brevity and comprehensibility. In this regard, the following definition of a metaverse is proposed: a metaverse is an immersive virtual space with its own social and economic systems. Based on this definition, the following features can be distinguished:

1. A metaverse is virtual space.

2. A metaverse is an immersive space, which implies the effect of full presence of a user in the virtual space. Immersiveness is provided through the use of virtual and augmented reality technologies.

3. A metaverse has its own social and economic systems. This feature is expressed in the possibility for users to implement a special form of social interaction – in virtual reality. At the same time, a metaverse should allow users to profit from their activities (content monetization, full-fledged labor activity, activity based on gig-economy principles, etc.).

This interpretation does not claim to be legally enshrined, as it contains only a general understanding of the metaverse. It is impossible to formulate a single legal concept of a metaverse due to the specifics of the legislation of individual countries, which may differ significantly. Such a goal was not set within the present study. We can only assume that the definition of a metaverse in the Russian law will be related, first of all, to the provisions of the Federal Law “On Information, Information Technologies and Information Protection”¹², namely, to the “information system” notion.

It should be taken into account that despite the current attention to metaverses, today we cannot talk about its full-fledged embodiment in the life of society, because there is no criterion of scale. No platform positioned as a metaverse is such in the sense presented above. At the current stage of digital technologies development, it is more correct to speak about the first successful prototypes of metaverses.

2. Financial control (monitoring) under metaverse conditions

It was shown above that a metaverse should have its own economic system in the future. Today, Decentraland is probably the closest to a full-fledged ecosystem. This project is positioned as a decentralized metaverse based on the Ethereum blockchain, which allows users to earn profits that have value in the real world. The earning process can be outlined as follows: (1) a user converts real (fiat) currency into Ethereum cryptocurrency, (2) the user undergoes a full-fledged registration on the Decentraland platform by linking a MetaMask crypto wallet, which allows converting Ethereum cryptocurrency into Decentraland currency, called Mana, (3) the user multiplies Mana through various transactions, (4) the profit in

¹² On information, information technologies and information protection. No. 149-FZ of 27.07.2006. Collection of legislation of the Russian Federation, 31 (Part I), Art. 3448.

Mana can be converted into real currency in reverse sequence (Mana – Ethereum – real currency). Due to the high forecasts for metaverses development, it is necessary to consider the prospects of transactions' legal regulation in terms of financial control and monitoring.

As S. M. Mironova notes, financial control is one of the foundations for the economic well-being of the state: "Financial control is the control over the legality and expediency of actions when forming, distributing and using the state and municipal monetary funds with the aim of effective socio-economic development of the country as a whole and its regions" (Mironova, 2009). One of the varieties of financial control is financial monitoring, which M. M. Proshunin and M. A. Tatchuk understand as the system of informational, controlling and law enforcement legal procedures carried out by the financial monitoring bodies and agents and aimed at excluding the penetration of criminal proceeds into the national economy and preventing the use of financial monitoring agents for criminal proceeds laundering and terrorism financing¹³.

The object of financial control is money transactions. In the legal sense, the categories of "money" and "currency" are identical. Cryptocurrency is the key basis for metaverses development. It is worth noting that the issue of legal specificity of cryptocurrency use in metaverses was partially touched upon in scientific studies. For example, experts from Germany and the Netherlands noted that the cryptocurrency system development in metaverse can negatively affect the responsibilities of a country's central bank (Kasiyanto & Kilinc, 2022). Consequently, it is important to analyze the possible prospects for the development of financial and legal policy of certain jurisdictions in the field of metaverses, as it will allow (1) achieving technological leadership, (2) ensuring the legalization of shadow economy, (3) attracting new funds to the country's budgets due to the development of economic turnover in metaverse.

3. Option of cryptocurrency integration as a basis for metaverses

The issues of cryptocurrency functioning and development have been the object of research of various scientists for about 10-15 years. In doctrine, the cryptocurrency emergence is associated with the most famous one, i. e. Bitcoin, which became known in 2009¹⁴. Currently, the cryptocurrency market has achieved significant development. According to the Central Bank of Russia in December 2021, the total capitalization of cryptocurrency was estimated at \$ 2.3 trillion¹⁵. At the moment, despite the past "cryptowinter", the state

¹³ Proshunin, M. M., Tatchuk, M. A. (2014). Financial monitoring (combating legalization (laundering) of criminal proceeds and terrorism financing): tutorial. Kaliningrad: Izd-vo BFU im. I. Kanta.

¹⁴ Árnason, S. L. (2015). Cryptocurrency and Bitcoin: A possible foundation of future currency: why it has value, what is its history and its future outlook (Doctoral dissertation). Reykjavík: Verslunarfélag Reykjavíkur.

¹⁵ Bank of Russia. (2022, January 20). Cryptocurrency risks and possible regulatory measures: report for public consultations. <https://clck.ru/39CX2S>

of the cryptocurrency market can be assessed as positive. Traditionally, the top three leaders in terms of capitalization are Bitcoin, Ethereum and Tether.

As noted by Russian legal scholars I. A. Khavanova and I. I. Kuchero, cryptocurrency in its essence is private money, the use of which is implemented through a distributed ledger system (Kuchero & Khavanova, 2017). Due to the special economic value of cryptocurrency, the state needs to regulate operations with this digital asset. The main legal challenges are related, according to American researchers, to the very specifics of the blockchain system in which cryptocurrency circulation takes place. The high degree of anonymity of the digital asset owners allows its use for illegal purposes: terrorism financing, legalization of criminal proceeds, and tax evasion (Jafari et al., 2018).

At the same time, today a number of states are implementing positive legal policies regarding the use of cryptocurrency. In the opinion of the author of this paper, the legislation of the United Arab Emirates (hereinafter – UAE) is the most progressive in this regard. In accordance with the provisions of UAE Law No. 4¹⁶, cryptocurrency is a full-fledged digital asset that can be used as a means of payment, investment, accumulation and exchange. In addition, as of recently, the world's first International Court of Justice to hear cases in the digital economy between individuals has been launched at the International Financial Center in Dubai. In October 2022, the first judgment was rendered on a dispute directly related to cryptocurrency sale¹⁷. It should be noted that the UAE government is much interested in the development of metaverse. For example, in 2022 it was announced that the authorities developed a strategy for the metaverse development in the UAE, which provides for the organization of 40,000 jobs¹⁸. Sharjah launched a project of meta-city, called SharjahVerse. As was noted, its main objective was to develop tourism¹⁹. It is worth noting that the above-mentioned problem of control over the cryptocurrency circulation in the UAE is solved through the functioning of a special state executive authority, namely the Dubai Virtual Assets Regulatory Authority, established by Law No. 4²⁰. The authority has a wide range of powers to control cryptocurrency circulation (establishing special rules for the cryptocurrency use, attracting investors, controlling crypto exchanges, etc.). At the same time, it should be noted that the UAE has strict rules for crypto-business (for example, to establish a crypto-exchange), including obligatory licensing.

¹⁶ Law No. (4) of 2022 Regulating Virtual Assets in the Emirate of Dubai. (2022). <https://clck.ru/39CXHX>

¹⁷ (1) Gate Mena DMCC (2) Huobi Mena FZE v (1) Tabarak Investment Capital Limited (2) Christian Thurner 2020 DIFC TCD 001. <https://clck.ru/39CXJz>

¹⁸ Cabral, A. R. (2022, July 18). Dubai's new metaverse strategy to add \$4 bn to economy and create more than 40,000 jobs. The National. <https://clck.ru/39Ca9m>

¹⁹ Boreham, J. (2023, August 10). SharjahVerse: Where The Metaverse And Tourism Converge. The Metaverse Insider. <https://clck.ru/39CaBH>

²⁰ Árnason, S. L. (2015). Cryptocurrency and Bitcoin: A possible foundation of future currency: why it has value, what is its history and its future outlook (Doctoral dissertation). Reykjavík: Verslunarfélag Reykjavíkur.

Analysis shows that the UAE financial and legal policy regarding the cryptocurrency use as an economic basis for the metaverse functioning will be further developed in the following directions: (1) due to the authorities' special attention to cryptocurrency and metaverse, one may assume that a separate state authority on metaverse will be established, with a function of the metaverse financial development based on implantation of cryptocurrencies in the UAE; (2) the creation of metaverses requires significant investments, which will likely lead to establishing special tax benefits and preferences for investors; (3) one may assume that cryptocurrency will be used in metaverse directly, i.e. without conversion into the metaverse currency, as is typical, for example, for the Decentraland project.

It was mentioned above that the issues of metaverse development were repeatedly touched upon by the European Commission of the EU; however to date Europe has no plans to develop its own metaverse. Perhaps the reason lies in the unsuccessful experience of using metaverse technology. In December 2022, the European Commission launched the Global Gateway project, positioned as a metaverse. Almost 400,000 dollars were spent on the implementation of this idea. The event was attended by no more than six people²¹. It is possible that the development of metaverse in the EU directly depends on the regulation of competition law, as IT-giants can monopolize the market of potential projects. In this regard, scholars analyze the possibility of reviewing the concept of competition regulation (Angeles, 2023).

The plan on virtual worlds²² contains provisions proclaiming the importance of elaborating virtual worlds for the socio-economic development of Europe. The document refers to the recently developed draft of the Markets in Cryptoassets (hereinafter – MiCA) ²³ regulation, which will be effective from 2024. The doctrine marks that the EU seeks to develop the crypto market through effective interaction between the state and business, so the attitude to regulating cryptocurrency transactions in the EU is assessed as positive (Tauda et al., 2023). Most likely, this approach was the main reason for the MiCA development, the central provisions of which can be reduced to two interrelated aspects: establishing rules for persons performing services with cryptoassets in relation to EU residents and protecting the rights of resident consumers using crypto-services. The doctrine states that, despite the ambition and scope of the initiative, there are many unresolved issues, particularly related to central bank currencies and decentralized finance (Teichmann et al., 2023).

²¹ Surgan, I. (2022, December 2). The European Commission's \$400k metaverse gala has failed miserably. Incrypted. <https://clck.ru/39CaGF>

²² EU. (2023, July 5). An EU initiative on virtual worlds: a head start in the next technological transition. <https://clck.ru/39CaJE>

²³ EU. (2023, June 9). Regulation (EU) 2023/1114 of the European Parliament and of the Council of 31 May 2023 on markets in crypto-assets, and amending Regulations (EU) No 1093/2010 and (EU) No 1095/2010 and Directives 2013/36/EU and (EU) 2019/1937. <https://clck.ru/39Caq5>

Based on the above, it should be assumed that today, despite the lack of plans to develop its own metaverse, the EU is pursuing an active policy to build a legal framework in this area, including in the field of finance. Consequently, to preserve the leading positions in digital development, it is necessary, first, to allocate part of the state budget for the development of own metaverse projects. However, if the provided funds are used without a concrete plan of the metaverse technology creation and smooth implementation in the social life, it may lead to the same situation as with the Global Gateway project. Second, recognizing cryptocurrency as a legal means of payment, it is necessary to address the existing shortcomings in the control of cryptocurrency circulation. According to the MiCA provisions, the tracking of transactions rests entirely with cryptocurrency exchanges. Perhaps a specialized committee within the European Commission should be established to better control the activities of cryptocurrency exchanges.

Another country to pay attention to is South Korea. Recently, its capital, Seoul, launched a virtual city project, whose users can interact not only among themselves, but also with the state²⁴. The Metaverse Seoul project is often explored through the lens of urban science. For example, a Portuguese scholar notes that society is gradually moving from the concept of “smart” cities to the next stage – meta-cities, Metaverse Seoul being such. The aggregation of high technologies allows for a new view at the combination of real and virtual worlds, which requires the development of proper state policies (de Almeida, 2023).

It is still difficult to talk about the possibility of implanting cryptocurrency in the Metaverse Seoul project. This is due to the lack of legislative certainty. In a 2018 publication, a Malaysian scholar pointed out that South Korea’s policy in relation to crypto-exchanges hacking could have followed the Chinese approach (that is, to ban cryptocurrencies). At the same time, the state was developing regulations on the use of digital assets in ICOs (Moorthy, 2018). A more recent research suggests that South Korea is developing a framework law dedicated solely to digital assets²⁵. At the time of writing this paper, no evidence of the adoption of this law was found by the author. Consequently, the first priority in the development of South Korea’s financial policy in the field of metaverse is to determine the clear and unambiguous nature of cryptocurrency as a legitimate means of payment. If cryptocurrency is recognized as a legitimate means of payment, we can talk about its possible transformation into Metaverse Seoul.

²⁴ Shcheglov, G. (2023, March 6). Metaverse Seoul – South Korean government launches long-awaited metaverse with “public services” and brand offices. RB.RU. <https://clck.ru/39Cq5>

²⁵ George, K. (2024, January 17). Cryptocurrency regulations around the world. Investopedia. <https://clck.ru/39CbHr>

4. Searching for further development of the metaverses concept: shortcomings of legislation and testing of the digital ruble

The Russian doctrine marks that with the emergence of private decentralized financial instruments, the state faces the need to search for new state-oriented options for money transformation (Sidorenko, 2023). In this regard, the idea began taking shape that national digital currencies should be issued by the countries' central banks. In the opinion of the author of this paper, one should agree with the International Monetary Fund that the development of central bank digital currencies (hereinafter – CBDC) is a response from the state to the emerging private decentralized digital currencies (Bossu et al., 2020). It is most likely that the broad popularity of CBDC is characteristic of countries that are leading in terms of digital development, but do not fully or partially recognize cryptocurrency as a legitimate means of payment.

In this respect, the experience of China is of interest. In 2022 the People's Bank of China emphasized once again that the use of cryptocurrency is not safe for the social and economic development of the country²⁶. Despite the negative policy of China in relation to cryptocurrency, the country does not prohibit the possession of this digital asset. For example, D. Riley, analyzing the judicial practice of some Chinese provinces, wrote that the PRC recognizes the economic value of cryptocurrency, which implies the recognition of such as property, the rights to which should be subject to protection (Riley, 2021).

The PRC has long been developing a model for a national digital currency, and recently it has been successfully tested. According to the People's Bank of China, various transactions worth 87 billion yuan were made in China in 2021²⁷. However, the doctrine notes that the pilot testing of China's CBDC raised a number of questions not regulated at the level of legislation. A Singaporean scholar points out one of the main problems of the China's CBDC operation, which is the confidentiality of digital currency users. It is about the processing and collecting the users' personal data during CBDC transactions. The author justifies the need to solve this problem in the further implementation of the CBDC (Cheng, 2023). It is possible that this is due to the special state policy of China, where national interests are at the center.

As it was mentioned above, the top Chinese leadership is directly interested in its own metaverse development, which will not only ensure the country's leadership in the international arena, but also promote socio-economic development. The author of this paper is convinced that in the near future China will be the leader in the functioning of its own metaverses under state control. Since the use of cryptocurrency does not allow controlling operations, it is assumed that the digital yuan will be the economic basis of Chinese

²⁶ 企业不可用虚拟货币支付工资 北京日报 | 2022年07月06. <https://clck.ru/39Cbte>

²⁷ 2021年金融统计数据新闻发布会文字实录. <https://goo.su/lnzJ>

metaverse. This is one of the main directions of China's financial and legal policy in the field of metaverse development. There are no significant obstacles to the implementation of this idea.

Recently, the metaverses development in Russia has been discussed at the level of theory and practice. In September 2022, the issues of legal regulation of relations in the metaverse were raised at the Federation Council with participating representatives of the business community²⁸. At the time of writing this paper, no other discussions on the topic of metaverse at the level of the highest state bodies have been found. However, a number of the country's leading educational institutions organize round tables devoted to the metaverse development in Russia. For example, in the summer of 2023 at Moscow State University of International Relations, experts made proposals for further legal regulation of social relations in metaverse²⁹.

The Russian legal doctrine analyzes the possibility of changing the legislation under the pressure of the metaverse development. For example, I. A. Filipova conducted a study that raises the issue of labor relations transformation in the metaverse (Filipova, 2023). Based on our analysis of the studies by Russian legal scholars, we can state that none of the publications indicates the possibility of financial law transformation in connection with the metaverse development. It is very likely that this is due to the novelty of the topic of metaverses.

At the same time, it can be said that Russia is smoothly moving towards the development of its own metaverse. In August 2023, the Russian Ministry of Digital Development, Communications and Mass Media presented a draft strategy for the development of the communications industry up to 2030³⁰. One of the main messages of this document implies ensuring the competitiveness of Russian software along with foreign analogs. Consequently, Russia's policy will have to move towards the formation of its own digital sovereignty, which will allow creating its own metaverses. Some steps in this direction have been made already. For example, Sber launched the CoMeta platform, which is a virtual space where educational projects are implemented. Based on the above, more large-scale projects are likely to be developed in the future, in which certain transactions could be made. In this regard, it is possible to predict some directions of financial and legal policy of Russia in the field of metaverse.

²⁸ Federation Council. (2022, September 19). The Federation Council discussed legal aspects of metaverse regulation. <https://clck.ru/39Cc4s>

²⁹ Round table "Regulation of metaverse: using the existing arsenal of measures or developing new ones?" of MGIMO Center for Artificial Intelligence. June 27, 2023, Moscow. <https://clck.ru/39Cc7d>

³⁰ Mintsifri. (2023, August 15). Draft strategy for the development of the communications industry of the Russian Federation up to 2035. <https://clck.ru/39CcAy>

It is worth saying that the option of using cryptocurrency is of little use. The main and probably the only law to determine the legal nature of cryptocurrency is the Federal Law “On digital financial assets, digital currency and on amendments to certain legislative acts of the Russian Federation” (hereinafter – the DFA Law)³¹. The legislator does not use the term “cryptocurrency” (before the adoption of the said law, various drafts with a legal definition of cryptocurrency were proposed). Instead, the “digital currency” category was legally enshrined, defined by part 3 of Article 1 of the DFA Law as a set of electronic data (digital code or designation) contained in an information system, which are offered and/or may be accepted as a means of payment that is not a monetary unit of the Russian Federation, a monetary unit of a foreign state and/or an international monetary or settlement unit, and/or as an investment, and in respect of which there is no person obliged to each holder of such electronic data, except for the operator and/or information system nodes, which are obliged only to ensure compliance of the procedure for issuing such electronic data and actions in respect thereof making (changing) entries in such information system by its rules.

This definition is not quite correct, as it is limited only to the essence of decentralized finance. Actually, every decentralized digital currency is a digital currency, but not every digital currency is a decentralized digital currency. Along with a decentralized digital currency, there is a centralized digital currency, meaning CBDC.

The approach of the Russian legislator to the use of cryptocurrency as a means of payment can be called special. According to part 6 of Article 14 of the DFA Law, judicial protection of property rights to digital currency (cryptocurrency) is possible only in case of its tax declaration. Consequently, if the tax service is not officially informed, the court must refuse to protect a person's rights to cryptocurrency. This provision was criticized by a number of Russian scholars. For example, R. M. Yankovsky, considering this issue in a civil law context, points out that part 6 of Article 14 of the DFA Law hardly correlates with the provisions of the Russian Constitution on the guaranteed judicial protection. At the same time, not quite clear is the motive for the dependence of judicial protection on the fulfillment of tax obligations (Yankovsky, 2020). In general, the legislator's solution is understandable. The establishment of the obligation of cryptocurrency tax declaration in order to obtain judicial protection implies the cryptocurrency market legalization from the financial legal standpoint (budget replenishment); however, in practice it has led to a shadow crypto market development. Owners of cryptocurrencies perform transactions at their own risk, which does not protect their interests and hinders the implementation of financial policy in this area.

³¹ On digital financial assets, digital currency and on amendments to certain legislative acts of the Russian Federation. No. 259-FZ of 31.07.2020. (2020). Collection of legislation of the Russian Federation, 31 (Part I), Art. 5018.

Well-known is the position of the Bank of Russia³² that the cryptocurrency legalization may lead to financing crime. The Bank of Russia also holds that the cryptocurrency market has many characteristics of a pyramid scheme. Thus, the legislative regulation of cryptocurrency in Russia is very vague and ineffective. One may hardly expect that cryptocurrency will function as an economic basis for Russian metaverses.

The official and only currency in Russia is the ruble. The attention of the author of this paper was attracted by the provision on testing the digital ruble concept. In August 2023, the Central Bank of Russia issued a Regulation on the digital ruble platform³³, which regulates the general procedure for conducting the experiment with the digital ruble. The digital ruble concept has been developed since December 2021. This has led to a massive proliferation of scientific publications on the digital ruble. For example, T. V. Deryugina, based on the analysis of Russian legislation, concludes that the legal nature of a digital currency is different from that of the digital ruble (Deryugina, 2022).

One should agree with this opinion. According to the adopted law³⁴ on the digital ruble introduction, the digital ruble is not a digital currency. When the term “currency” is used, it should refer to it as a means of payment. It is known that the primary essence of money is a means of payment. Hence, the legislative meaning of digital currency is reduced to the following: digital currency is money that can be used under certain conditions only. To describe the essence of the digital ruble, the legislator uses the digital form of money. One cannot but notice some confusion of concepts, which may lead to some confusion in the legislation.

Despite the existing shortcomings of the legislation, one should admit that the testing of the digital ruble may affect further development of metaverses in Russia. Undoubtedly, now it is too early to speak even about approximate directions of the Russian financial and legal policy in the field of metaverses, but there are prospects for their further formation at the current stage of the Russian economy development.

Conclusions

Today we are witnessing a new stage in the development of the Internet, which is associated with innovative immersive virtual spaces – metaverses. The analysis of statistical data has shown the degree of development and popularity of the first metaverse prototypes, which, apparently, have a great future. The growing attention of some states to the topic of metaverses with a view of advancing their socio-economic potential and strengthening

³² Proshunin, M. M., & Tatchuk, M. A. (2014). Financial monitoring (combating legalization (laundering) of criminal proceeds and terrorism financing): tutorial. Kaliningrad: Izd-vo BFU im. I. Kanta.

³³ Regulation of the Bank of Russia No. 820-P of 03.08.2023. (2023). Garant.ru. <https://clck.ru/39CcLQ>

³⁴ Law draft No. 270838-8 “On amending certain legislative acts of the Russian Federation (as regards the formation of a legal framework for the introduction of the digital ruble)”. <https://clck.ru/39CcPF>

their global leadership in terms of digital development makes it necessary to plan financial and legal policy in this area.

Financial and legal development of legislation on metaverses directly depends on the regulation of the cryptocurrency legal regime in a particular country. Depending on this circumstance, it is possible to assess the prospects of cryptocurrency implantation as an economic basis for metaverses. The UAE is the undoubted leader in this area, as it has all the necessary conditions for the creation of its own metaverse. MiCA provisions, which will be applied in the EU from 2024, deserve special attention. It should be noted that the EU pays special attention to the prospects of regulating social relations in the metaverse, but there are no plans to create their own platforms in the EU. An opposite example is South Korea, where the meta-city project is being successfully implemented, but the legal regime of cryptocurrency has not yet been defined.

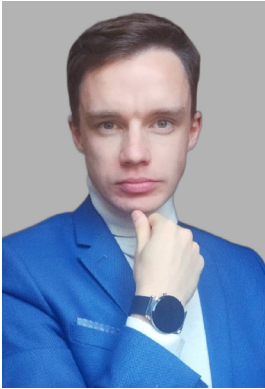
At the same time, there are a number of states that are leading in the digital economy but do not recognize cryptocurrency as a legitimate means of payment. Such countries are characterized by the use of the national central bank digital currency. The undisputed leader among them is China, where the digital yuan model has been successfully tested since 2021. Moreover, the Chinese authorities are much interested in creating their own national metaverses. Russia is likely to follow this path as well. The topic of metaverse development in Russia is just beginning to be discussed in science and practice. Since August 2023, the Bank of Russia has been testing the third form of the ruble – the digital ruble. It can be assumed that in the future the digital ruble will function as a financial basis for Russian metaverses.

References

- Angeles, J. C. (2023). Los guardianes de acceso al metaverso. (Re)pensando el Derecho de la competencia de la Unión Europea. *Cuadernos De Derecho Transnacional*, 15, 275. <https://doi.org/10.20318/cdt.2023.7541>. (In Spain).
- Arhipov, V. V. (2013). Virtual law: main problems of the new direction of legal studies. Proceedings of Higher Educational Institutions. *Pravovedenie*, 2, 93–114. (In Russ.).
- Ball, M. (2022). *The metaverse: and how it will revolutionize everything*. New York: Liveright Publishing, W.W. Norton & Company.
- Bossu, W., Itatani, M., Margulis, C., Rossi, A., Weenink, H., & Yoshinaga, A. (2020). *Legal aspects of central bank digital currency: Central bank and monetary law considerations*. <https://doi.org/10.5089/9781513561622.001>
- Cheng, P. (2023). Decoding the rise of Central Bank Digital Currency in China: designs, problems, and prospects. *Journal of Banking Regulation*, 24(2), 156–170. <https://doi.org/10.1057/s41261-022-00193-5>
- de Almeida, G. G. F. (2023). Cities and Territorial Brand in The Metaverse: The Metaverse SEOUL Case. *Sustainability*, 15(13), 10116. <https://doi.org/10.3390/su151310116>
- Deryugina, T. V. (2022). The digital currency and the digital ruble: to the question of the legal innovation. *Tsivist*, 1(37), 8–11. (In Russ.).
- Duranske, B. T. (2008). *Virtual law: Navigating the legal landscape of virtual worlds*. Chicago: American Bar Association.
- Filipova, I. A. (2023). Metaverses: how their development will affect workers and employers. *Russian Journal of Labour & Law*, 13, 45–64. (In Russ.). <https://doi.org/10.21638/spbu32.2023.103>
- Hendaoui, A., Limayem, M., & Thompson, C. W. (2008). 3D social virtual worlds: research issues and challenges. *IEEE Internet Computing*, 12(1), 88–92. <https://doi.org/10.1109/MIC.2008.1>

- Jafari, S., Vo-Huu, T., Jabiyev, B., Mera, A., & Farkhani, R. M. (2018). *Cryptocurrency: A challenge to legal system. Reza, Cryptocurrency: A Challenge to Legal System*. <https://dx.doi.org/10.2139/ssrn.3172489>
- Kasiyanto, S., & Kilinc, M. R. (2022). The legal conundrums of the metaverse. *Journal of Central Banking Law and Institutions*, 1(2), 299–322. <https://doi.org/10.21098/jcli.v1i2.25>
- Kuchеров, I. I., & Khavanova, I. A. (2017). Tax Consequences of Using Alternative Means of Payment (Theoretical and Legal Aspects). *Perm University Herald. Juridical Sciences*, 35, 66–72. (In Russ.). <https://doi.org/10.17072/1995-4190-2017-35-66-72>
- Mironova, S. M. (2009). Legal bases of financial control: problems and prospects of development. *Finansovoe pravo*, 4, 6–9. (In Russ.).
- Moorthy, D. (2018). A study on rising effects of cryptocurrency in the regulations of Malaysian legal system. *International Journal of Business, Economics and Law*, 15(4), 35–41.
- Ponkin, I. (2023). Metaverse: Legal Perspective. *International Journal of Open Information Technologies*, 11(1), 118–127. (In Russ.).
- Reuveni, E. (2007). On virtual worlds: copyright and contract law at the dawn of the virtual age. *Indiana Law Journal*, 82(2), Art. 2.
- Riley, J. (2021). The current status of cryptocurrency regulation in China and its effect around the world. *China and WTO Review*, 7(1), 135–152. <http://dx.doi.org/10.14330/cwr.2021.7.1.06>
- Savelyev, A. I. (2014). Legal nature of virtual objects purchased for real money in multiplayer online games. *Civil Law Review*, 1, 127–150. (In Russ.).
- Sidorenko, E. (2021). Digital currency of central banks economic scenarios and forecasts. *International Trends*, 19(2), 151–165. (In Russ.). <https://doi.org/10.17994/IT.2021.19.2.65.8>
- Tauda, G. A., Omara, A., & Arnone, G. (2023). Cryptocurrency: Highlighting the Approach, Regulations, and Protection in Indonesia and European Union. *Bestuur*, 11(1), 1–25. <https://doi.org/10.20961/bestuur.v11i1.67125>
- Teichmann, F. M. J., Boticiu, S. R., & Sergi, B. S. (2023). The EU MiCA Directive—chances and risks from a compliance perspective. *Journal of Money Laundering Control*, 27(2), 275–283. <https://doi.org/10.1108/jmlc-02-2023-0030>
- Troshchinskiy, P. V. (2021). Digital economy of modern China: features of legal regulation. In *Transformation of the national social and economic system of Russia, the trend of digital technologies. Works of the 3rd International scientific-practical conference, Moscow, December 4, 2020* (pp. 345–349). Moscow. (In Russ.).
- Wang, H., Ning, H., Lin, Y., Wang, W., Dhelim, S., Farha, F., Ding, J., & Daneshmand, M. (2023). A Survey on the Metaverse: The State-of-the-Art, Technologies, Applications, and Challenges. *IEEE Internet of Things Journal*, 10(16), 14671–14688. <https://doi.org/10.1109/JIOT.2023.3278329>
- Wang, Y., Su, Z., Zhang, N., Xing, R., Liu, D., Luan, T. H., & Shen, X. (2022). A survey on metaverse: Fundamentals, security, and privacy. *IEEE Communications Surveys & Tutorials*, 25(1), 319–352. <https://doi.org/10.1109/comst.2022.3202047>
- Yankovskiy, R. M. (2020). Cryptovalues in the Russian Law: surrogates, “other property” and digital money. *Pravo. Zhurnal Vysshey shkoly ekonomiki*, 4, 43–77. (In Russ.). <https://doi.org/10.17323/2072-8166.2020.4.43.77>

Author information



Maksim S. Sitnikov – postgraduate student, Department of Constitutional and Municipal Law, Volgograd State University

Address: 100 Universitetskiy pr., 400062 Volgograd, Russian Federation

E-mail: c_i_c_e_r_o@mail.ru

ORCID ID: <https://orcid.org/0000-0002-7769-0295>

WoS Researcher ID: <https://www.webofscience.com/wos/author/record/JEZ-2565-2023>

Google Scholar ID: <https://scholar.google.com/citations?user=7w60M80AAAAJ>

Conflict of interest

The author declares no conflict of interest.

Financial disclosure

The research had no sponsorship.

Thematic rubrics

OECD: 5.05 / Law

PASJC: 3308 / Law

WoS: OM / Law

Article history

Date of receipt – October 15, 2023

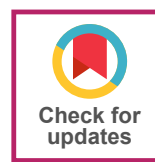
Date of approval – October 25, 2023

Date of acceptance – March 15, 2024

Date of online placement – March 20, 2024



Научный обзор
УДК 34:004:347.73:336.1
EDN: <https://elibrary.ru/yxcjno>
DOI: <https://doi.org/10.21202/jdtl.2024.11>



Финансово-правовое развитие общественных отношений с использованием цифровых валют в метавселенных

Максим Сергеевич Ситников 

Волгоградский государственный университет, Волгоград, Россия

Ключевые слова

блокчейн,
законодательство,
криптовалюта,
метавселенная,
финансовое право,
центральный банк,
цифровая валюта,
цифровой рубль,
цифровой суверенитет,
цифровые технологии

Аннотация

Цель: на основе анализа финансово-правовой политики отдельных юрисдикций определить исходную перспективу финансово-правового развития общественных отношений в метавселенных с использованием цифровых валют.

Методы: исследование основано на системе познавательных инструментов, прежде всего, формально-юридическом, сравнительно-правовом, статистическом методах, а также методе правового прогнозирования, способствующих истолкованию норм права и финансово-правовой политики разных юрисдикций, оценке степени сегодняшнего развития законодательства в области регулирования технологий виртуальных миров, формулированию представлений о финансово-правовой регуляции общественных отношений с использованием цифровых валют в метавселенной.

Результаты: в проведенном исследовании выявлено, что современное законодательство о метавселенных находится на начальном этапе своего формирования, поскольку в развитых юрисдикциях метавселенная рассматривается пока что только как технология будущего. Показана степень популярности первых прототипов метавселенных и возрастающий рост внимания отдельных государств к тематике метавселенных с целью развития собственного социально-экономического потенциала и закрепления международных лидерских позиций по уровню цифрового развития. Отмечены недостатки выработанных в доктрине и практике определений метавселенных, наряду с которыми предлагается авторская дефиниция. Утверждается, что для полноценной интеграции технологии метавселенной в отдельно взятую страну, политика которой сосредоточена на достижении (сохранении) высокого рейтинга в части цифровой трансформации экономики, необходимо определиться с валютой, которая легитимно может использоваться в метавселенной в будущем. Сделан вывод

© Ситников М. С., 2024



Статья находится в открытом доступе и распространяется в соответствии с лицензией Creative Commons «Attribution» («Атрибуция») 4.0 Всемирная (CC BY 4.0) (<https://creativecommons.org/licenses/by/4.0/deed.ru>), позволяющей неограниченно использовать, распространять и воспроизводить материал при условии, что оригинальная работа упомянута с соблюдением правил цитирования.

о необходимости планирования финансово-правовой политики в данной области, которая во многом будет зависеть от правового режима криптовалюты в конкретной стране. Утверждается, что дальнейшее развитие концепта метавселенных в России будет зависеть от результатов тестирования цифрового рубля.

Научная новизна: данная работа является одной из первых, посвященных вопросам конвергенции метавселенной и финансового права, в которой предлагается концепция по установлению полноценной легальности цифровой валюты в метавселенной в зависимости от отношения конкретной страны к децентрализованным финансам. Наряду с популярными определениями, сформулированными в доктрине и практике, представлена собственная трактовка метавселенной с указанием ее существенных признаков.

Практическая значимость: полученные выводы и предложения могут быть использованы для совершенствования механизмов финансово-правового регулирования общественных отношений в условиях формирующейся концепции метавселенных. Высказанные идеи и утверждения имеют значение для дальнейшего исследования разнообразных финансово-правовых аспектов развития и функционирования метавселенных.

Для цитирования

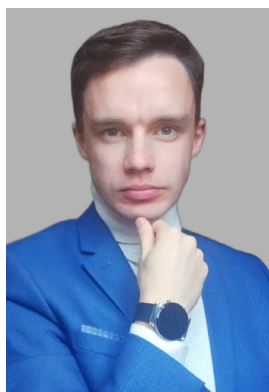
Ситников, М. С. (2024). Финансово-правовое развитие общественных отношений с использованием цифровых валют в метавселенных. *Journal of Digital Technologies and Law*, 2(1), 200–220. <https://doi.org/10.21202/jdtl.2024.11>

Список литературы

- Архипов, В. В. (2013). Виртуальное право: основные проблемы нового направления юридических исследований. Известия высших учебных заведений. *Правоведение*, 2, 93–114. <https://elibrary.ru/qbkcff>
- Дерюгина, Т. В. (2022). Цифровая валюта и цифровой рубль: к вопросу о правовой новации. *Цивилист*, 1(37), 8–11. <https://elibrary.ru/uxvdmu>
- Кучеров, И. И., & Хаванова, И. А. (2017). Налоговые последствия использования альтернативных платежных средств (теоретико-правовые аспекты). *Вестник Пермского университета. Юридические науки*, 1(35), 66–72. EDN: <https://elibrary.ru/ynbrqd>. DOI: <https://doi.org/10.17072/1995-4190-2017-35-66-72>
- Миронова, С. М. (2009). Правовые основы финансового контроля: проблемы и перспективы развития. *Финансовое право*, 4, 6–9. <https://elibrary.ru/kdrnnp>
- Понкин, И. В. (2023). Кибер-мета-вселенная: правовой взгляд. *International Journal of Open Information Technologies*, 11(1), 118–127. <https://elibrary.ru/cuhrzx>
- Савельев, А. И. (2014). Правовая природа виртуальных объектов, приобретаемых за реальные деньги в многопользовательских играх. *Вестник гражданского права*, 1, 127–150. <https://elibrary.ru/smtixj>
- Сидоренко, Э. (2023). Цифровая валюта центральных банков экономические сценарии и прогнозы. *Международные процессы*, 19(2), 151–165. EDN: <https://elibrary.ru/eafigwe>. DOI: <https://doi.org/10.17994/IT.2021.19.2.65.8>
- Трощинский, П. В. (2021). Цифровая экономика современного Китая: особенности правового регулирования. В сб. *Трансформация национальной социально-экономической системы России, тренд цифровые технологии: материалы III Международной научно-практической конференции*, Москва, 4 декабря 2020 г. (с. 345–349). Москва. <https://elibrary.ru/jvrlts>
- Филипова, И. А. (2023). Метавселенные: как их развитие повлияет на работников и работодателей. *Ежегодник трудового права*, 13, 45–64. <https://doi.org/10.21638/spbu32.2023.103>
- Янковский, Р. М. (2020). Криптовалюты в российском праве: суррогаты, «иное имущество» и цифровые деньги. *Право. Журнал Высшей школы экономики*, 4, 43–77. EDN: <https://elibrary.ru/dllnyf>. DOI: <https://doi.org/10.17323/2072-8166.2020.4.43.77>

- Angeles, J. C. (2023). Los guardianes de acceso al metaverso. (Re)pensando el Derecho de la competencia de la Unión Europea. *Cuadernos De Derecho Transnacional*, 15, 275. <https://doi.org/10.20318/cdt.2023.7541>. (In Spain).
- Ball, M. (2022). *The metaverse: and how it will revolutionize everything*. New York: Liveright Publishing, W.W. Norton & Company.
- Bossu, W., Itatani, M., Margulis, C., Rossi, A., Weenink, H., & Yoshinaga, A. (2020). *Legal aspects of central bank digital currency: Central bank and monetary law considerations*. <https://doi.org/10.5089/9781513561622.001>
- Cheng, P. (2023). Decoding the rise of Central Bank Digital Currency in China: designs, problems, and prospects. *Journal of Banking Regulation*, 24(2), 156–170. <https://doi.org/10.1057/s41261-022-00193-5>
- de Almeida, G. G. F. (2023). Cities and Territorial Brand in The Metaverse: The Metaverse SEOUL Case. *Sustainability*, 15(13), 10116. <https://doi.org/10.3390/su151310116>
- Duranske, B. T. (2008). *Virtual law: Navigating the legal landscape of virtual worlds*. Chicago: American Bar Association.
- Hendaoui, A., Limayem, M., & Thompson, C. W. (2008). 3D social virtual worlds: research issues and challenges. *IEEE Internet Computing*, 12(1), 88–92. <https://doi.org/10.1109/MIC.2008.1>
- Jafari, S., Vo-Huu, T., Jabiyeve, B., Mera, A., & Farkhani, R. M. (2018). *Cryptocurrency: A challenge to legal system*. Reza, Cryptocurrency: A Challenge to Legal System. <https://dx.doi.org/10.2139/ssrn.3172489>
- Kasiyanto, S., & Kilinc, M. R. (2022). The legal conundrums of the metaverse. *Journal of Central Banking Law and Institutions*, 1(2), 299–322. <https://doi.org/10.21098/jcli.v1i2.25>
- Moorthy, D. (2018). A study on rising effects of cryptocurrency in the regulations of Malaysian legal system. *International Journal of Business, Economics and Law*, 15(4), 35–41.
- Reuveni, E. (2007). On virtual worlds: copyright and contract law at the dawn of the virtual age. *Indiana Law Journal*, 82(2), Art. 2.
- Riley, J. (2021). The current status of cryptocurrency regulation in China and its effect around the world. *China and WTO Review*, 7(1), 135–152. <http://dx.doi.org/10.14330/cwr.2021.7.1.06>
- Tauda, G. A., Omara, A., & Arnone, G. (2023). Cryptocurrency: Highlighting the Approach, Regulations, and Protection in Indonesia and European Union. *Bestuur*, 11(1), 1–25. <https://doi.org/10.20961/bestuur.v11i1.67125>
- Teichmann, F. M. J., Boticiu, S. R., & Sergi, B. S. (2023). The EU MiCA Directive—chances and risks from a compliance perspective. *Journal of Money Laundering Control*, 27(2), 275–283. <https://doi.org/10.1108/jmlc-02-2023-0030>
- Wang, H., Ning, H., Lin, Y., Wang, W., Dhelim, S., Farha, F., Ding, J., & Daneshmand, M. (2023). A Survey on the Metaverse: The State-of-the-Art, Technologies, Applications, and Challenges. *IEEE Internet of Things Journal*, 10(16), 14671–14688. <https://doi.org/10.1109/JIOT.2023.3278329>
- Wang, Y., Su, Z., Zhang, N., Xing, R., Liu, D., Luan, T. H., & Shen, X. (2022). A survey on metaverse: Fundamentals, security, and privacy. *IEEE Communications Surveys & Tutorials*, 25(1), 319–352. <https://doi.org/10.1109/comst.2022.3202047>

Сведения об авторе



Ситников Максим Сергеевич – аспирант кафедры конституционного и муниципального права, Волгоградский государственный университет

Адрес: 400062, Россия, г. Волгоград, пр. Университетский, 100

E-mail: c_i_c_e_r_o@mail.ru

ORCID ID: <https://orcid.org/0000-0002-7769-0295>

WoS Researcher ID: <https://www.webofscience.com/wos/author/record/JEZ-2565-2023>

Google Scholar ID: <https://scholar.google.com/citations?user=7w60M80AAAAJ>

Конфликт интересов

Автор сообщает об отсутствии конфликта интересов.

Финансирование

Исследование не имело спонсорской поддержки.

Тематические рубрики

Рубрика OECD: 5.05 / Law

Рубрика ASJC: 3308 / Law

Рубрика WoS: OM / Law

Рубрика ГРНТИ: 10.21.61 / Правовые основы расчетов и денежного обращения. Основы валютного законодательства

Специальность ВАК: 5.1.2 / Публично-правовые (государственно-правовые) науки

История статьи

Дата поступления – 15 октября 2023 г.

Дата одобрения после рецензирования – 25 октября 2023 г.

Дата принятия к опубликованию – 15 марта 2024 г.

Дата онлайн-размещения – 20 марта 2024 г.

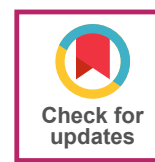


Review

UDC 34:004:347.9:655.535.257

EDN <https://elibrary.ru/idviewc>

DOI: <https://doi.org/10.21202/jdtl.2024.12>



Research of Innovation and Digital Transformation in Justice: A Systematic Review

Pedro Miguel Alves Ribeiro Correia  

University of Coimbra, Coimbra, Portugal

Sandra Patrícia Marques Pereira 

University of Coimbra, Coimbra, Portugal

João Abreu de Faria Bilhim 

University of Lisbon, Lisboa, Portugal

Keywords

comparative research,
digital transformation,
e-justice,
innovation in justice,
legal studies,
PRISMA method,
public administration,
public sector,
research methodology,
systematic review

Abstract

Objective: To develop a mapping of studies on innovation and digital transformation in the justice sector, publishes from 2001 to 2022. Five research questions were defined: 1) How to define innovation and digital transformation introduced in the justice sector? 2) What types of innovations and digital transformations are implemented in the justice sector? 3) What are the objectives of introducing innovation and digital transformation in the justice sector? 4) What are the antecedents that influence the process of innovation and digital transformation in the justice sector? 5) What are the results of the innovation and digital transformation process in the justice sector?

Methods: The systematic review of sources (scientific articles, conference proceedings, monographs and institutional documents) presented in this paper was conducted in accordance with the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) protocol. Selected by “research field”, “topic”, “research design”, “year of publication” and the keywords “public administration”, “public sector”, “e-justice”, “digital transformation”, and “innovation”, the sources were analyzed and evaluated according to five main aspects: (1) definition of innovation; (2) types of innovation; (3) objectives of innovation; (4) antecedents of innovation; and (5) results of innovation.

 Corresponding author

© Correia P. M. A. R., Pereira S. P. M., Bilhim J. A. de F., 2024

Paper originally published, in Portuguese, in the Annals of the Administration of Justice Meeting – EnAJUS 2023 (Pereira, et al., 2023). <https://www.enajus.org.br/anais/assets/papers/2023/sessao-3/inovacao-e-transformacao-digital-na-justica-uma-revisao-sistemica-de-literatura.pdf>



This is an Open Access article, distributed under the terms of the Creative Commons Attribution licence (CC BY 4.0) (<https://creativecommons.org/licenses/by/4.0>), which permits unrestricted re-use, distribution and reproduction, provided the original article is properly cited.

Results: The heuristic model for studying innovation in the public sector developed by Vries et al. (2015) was adapted and applied to the research field of justice. The adaptation of the heuristic model allowed forming the following areas of analysis: contextual antecedents in justice; institutional antecedents in justice; characteristics of innovation and digital transformation in justice; individual antecedents in justice; types of innovation and digital transformation in justice; results of the process of innovation and digital transformation in justice.

Scientific novelty: a comprehensive review of the literature in the field of innovation and digital transformation in justice is presented by adapting the approach to conducting systematic studies of the literature in the social sciences. It helped to identify gaps and define directions for further research in the given field, including the activation of comparative legal research, expansion of the methodological base, reliance on the theories of public administration, etc.

Practical significance: the obtained results allow forming a heuristic map of innovation and digital transformation in justice, create antecedents (contextual, institutional and individual) and the basis for future empirical research in the field of justice, analysis, evaluation and improvement of public policy in the field of innovation and digital transformation in this area.

For citation

Correia, P. M. A. R., Pereira, S. P. M., & Bilhim, J. A. de F. (2024). Innovation and Digital Transformation in Justice: A Systematic Literature Review. *Journal of Digital Technologies and Law*, 2(1), 221–250. <https://doi.org/10.21202/jdtl.2024.12>

Content

Introduction

1. Methodology of systematic (review) research

2. Heuristic model for researching innovation and digital transformation in justice

Conclusions

References

Introduction

The research aims to provide a comprehensive overview of innovation and digital transformation in the justice sector and understand how it has been studied. Five research questions were defined: 1. What types of innovations and digital transformations are implemented in the justice sector? 2. What are the objectives of innovation and digital transformation in the justice sector? 3. What are the antecedents that influence the process of innovation and digital transformation in the justice sector? 4. What are the results of the innovation and digital transformation process in the justice sector?

Through a systematic literature review, 140 scientific articles, conference papers, books, and organizational documents on innovation and digital transformation in justice published between 2001 and 2022 were analyzed. These studies were examined based on the heuristic framework of innovation in the public sector validated by Vries et al. (2015), which considers five major dimensions, namely 1) definitions of innovation; 2) types of innovation; 3) objectives of innovation; 4) antecedents of innovation; and 5) results of innovation.

This research aims to contribute to the academic and knowledge area of justice administration in three central points. The first contribution is methodological, providing a comprehensive and systematic understanding of innovation and digital transformation in the justice sector. The second contribution is conceptual, aiming to understand how concepts related to innovation and transformation are operationalized and measured in the field of justice administration. The third contribution concerns the antecedents of the innovation and transformation process, allowing for a mapping of these antecedents. Finally, the adaptation of the heuristic framework of innovation in the public sector by Vries et al. (2015) in the justice sector contributes to proposing a framework for innovation and digital transformation in the justice sector, including antecedents (contextual, institutional, and individual), characteristics of innovation and digital transformation, types of innovation and digital transformation, and results of various processes of innovation and digital transformation in justice.

1. Methodology of systematic (review) research

This research aims to develop a mapping of studies on innovation and digital transformation in the justice sector. To achieve this, a systematic literature review was conducted following the PRISMA protocol – Preferred Reporting Items for Systematic Reviews and Meta-Analyses (Page et al., 2021). The research design adopted in this work aligns with other systematic literature reviews in the social sciences, such as Vries et al. (2015) and Scognamiglio et al. (2023).

Following the PRISMA protocol's indications, four strategies were employed in the literature search to identify studies eligible for the research (Cooper, 2016), namely 1) scientific area; 2) topic; 3) research design; 4) year of publication. Regarding the scientific area, included studies must be in the field of public administration, focusing on justice. Concerning topics, studies should include the following terms in their title, abstract, or keywords: «public administration,» «public sector,» «ejustice,» «digital transformation,» «innovation.» Regarding the research design criterion, both empirical and theoretical studies were considered. Studies applying questionnaires, case studies, experiments, literature reviews, systematic reviews, among other research designs, were included. Finally, studies published between 2001 and 2022 were considered.

Firstly, searches were conducted via Clarivate Web of Science, Scopus, and Google Scholar, using keywords such as «public administration,» «public sector,» «ejustice,» «digital transformation,» «innovation.» This search yielded over 3,000 studies. Secondly,

articles in scientific journals of public administration were searched, generating 41 more articles for potential inclusion in the research. Searches in specialized organizations also produced 9 relevant documents included in the analysis. Relevant citations from scientific articles were also considered, adding 52 more sources. In the end, 11 more studies were identified.

In total, 3,514 research outputs were examined. Based on eligibility criteria, removing duplicate documents, inappropriate topics, and articles not in English, Portuguese, or Spanish, we eventually reached 140 studies for content analysis (Fig. 1). Of the 140 studies, 30 publications were published between 2001 and 2011, while 110 sources were published between 2012 and 2022. Of the total selected sources, 73 are scientific articles (accounting for 52% of the included studies), 37 are book chapters (accounting for 26% of the included studies), 16 are conference proceedings (accounting for 11% of the included studies), 9 sources are organizational documents (accounting for 6% of the included studies), and 6 are books (accounting for 4% of the included studies) (Table 1). The studies were identified with a specific ID (Table 2). Subsequently, the selected studies were categorized according to the dimensions developed by Vries et al. (2015). For each dimension, the heuristic model includes explanatory subsections analyzed in the results section.

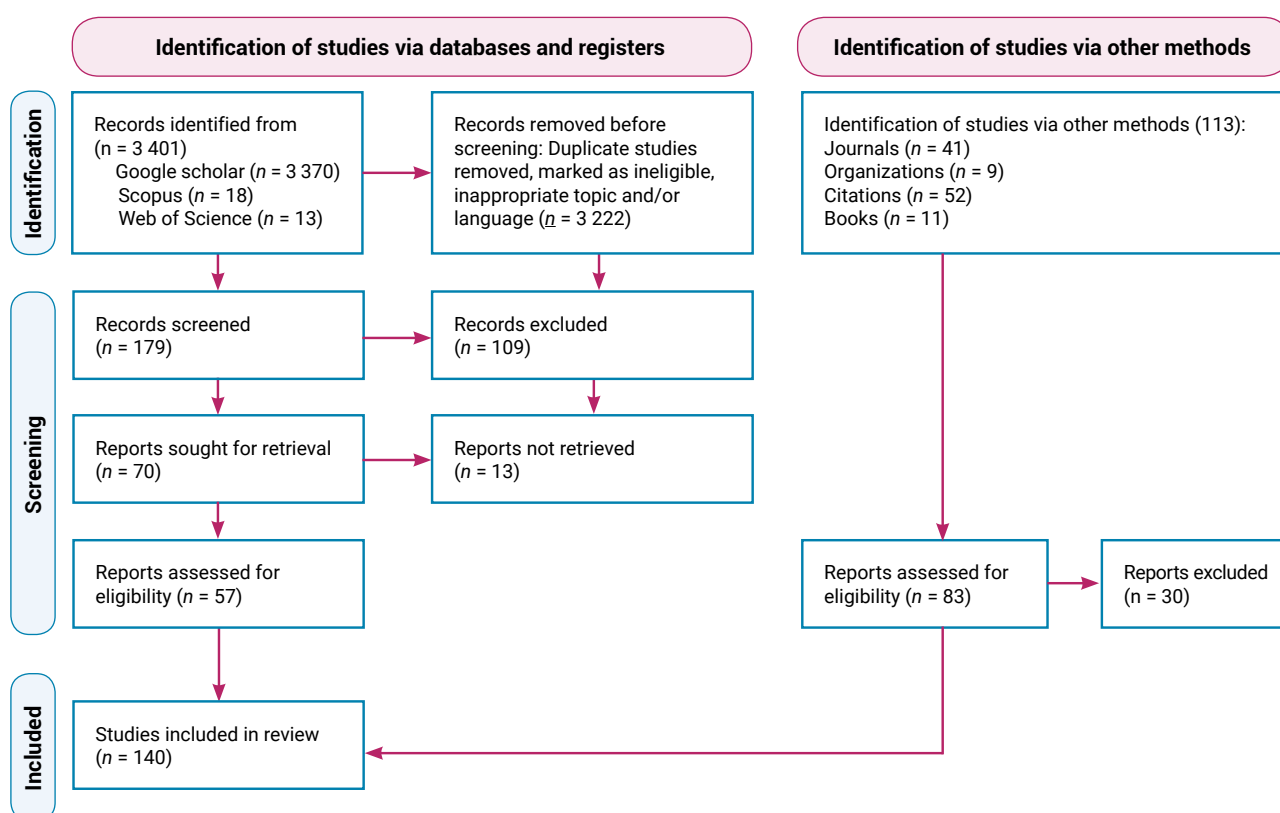


Figure 1

Source: Own elaboration based on the Prisma Flow Diagram (Page et al., 2021)

Table 1. Characteristics of the studies under analysis

Characteristics	N (%)	Study ID
Publication date (N = 140)		
2001–2011	30 (21 %)	3, 20, 21, 23, 27, 31, 42, 47, 48, 52, 56, 61, 62, 66, 76, 77, 78, 89, 90, 91, 94, 100, 102, 107, 117, 118, 120, 128, 129, 133
2012–2022	110 (79 %)	1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 22, 25, 26, 28, 29, 30, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 43, 44, 45, 46, 49, 50, 51, 53, 54, 55, 57, 58, 59, 60, 63, 64, 65, 67, 68, 69, 70, 71, 72, 73, 74, 75, 79, 80, 81, 82, 83, 84, 85, 86, 87, 92, 93, 95, 96, 97, 98, 99, 101, 103, 104, 105, 106, 108, 109, 110, 111, 112, 113, 114, 115, 116, 119, 121, 122, 123, 124, 125, 126, 127, 130, 131, 132, 134, 135, 136, 137, 138, 139, 140
Publication type (N = 140)		
Scientific article	73 (52 %)	5, 7, 9, 10, 15, 16, 17, 18, 19, 26, 30, 31, 32, 43, 44, 45, 49, 51, 53, 54, 55, 56, 58, 60, 61, 63, 64, 66, 68, 72, 73, 74, 75, 79, 80, 81, 82, 84, 85, 86, 87, 89, 92, 93, 94, 95, 96, 97, 100, 101, 104, 105, 107, 108, 109, 110, 111, 112, 113, 115, 119, 120, 122, 124, 125, 126, 130, 131, 132, 134, 138, 139
Book	6 (4 %)	11, 23, 24, 57, 69, 77
Chapter	37 (26 %)	2, 3, 4, 6, 8, 12, 14, 21, 22, 25, 29, 33, 42, 46, 48, 59, 62, 65, 67, 70, 71, 76, 78, 83, 88, 90, 91, 103, 114, 116, 117, 118, 121, 123, 129, 136, 140
Conference proceeding	16 (11 %)	1, 13, 20, 27, 28, 47, 50, 52, 98, 99, 102, 106, 128, 133, 135, 137
Organizational document	9 (6 %)	34, 35, 36, 37, 38, 39, 40, 41, 127

Table 2. Included publications, ID, and type of publication

ID	Author, Year	Publication type
1	(Abdulvaliev, 2017)	Conference proceeding
2	(Adeleye et al., 2022)	Chapter
3	(Adler & Henman, 2009)	Chapter
4	(Ahmed et al., 2020)	Chapter
5	(Ahmed et al., 2021)	Scientific Article
6	(Andrade et al., 2012)	Chapter
7	(Arias & Maçada, 2020)	Scientific Article
8	(Axpe, 2021)	Chapter
9	(Bănică, 2020)	Scientific Article
10	(Bex et al., 2017)	Scientific Article
11	(Bochenek et al., 2022)	Book
12	(Borisova & Afanasiev, 2019)	Chapter
13	(Cano et al., 2015)	Conference proceeding
14	(Cano et al., 2017)	Chapter
15	(Carboni & Velicogna, 2012)	Scientific Article
16	(Carullo, 2015)	Scientific Article
17	(Chatfield & Reddick, 2020)	Scientific Article
18	(Chawinga et al., 2020)	Scientific Article
19	(Clarival et al., 2020)	Scientific Article
20	(Contini & Cordella, 2004)	Conference proceeding
21	(Contini & Cordella, 2009)	Chapter
22	(Contini & Lanzara, 2014)	Chapter

Continuation of table 2

23	(Contini & Lanzara, 2009)	Book
24	(Cordella & Contini, 2020)	Book
25	(Covelo de Abreu, 2019)	Chapter
26	(Creutzfeldt, 2021)	Scientific Article
27	(De Rugeris, 2010)	Conference proceeding
28	(Deligiannis & Anagnostopoulos, 2017)	Conference proceeding
29	(Di Natale & Cordella, 2022)	Chapter
30	(Dillon & Beresford, 2014)	Scientific Article
31	(Doty & Erdelez, 2002)	Scientific Article
32	(Dumoulin & Licoppe, 2016)	Scientific Article
33	(Ermakova & Frolova, 2022)	Chapter
34	(CEPEJ, 2016) ¹	Organizational document
35	(CEPEJ, 2019a) ²	Organizational document
36	(CEPEJ, 2019b) ³	Organizational document
37	(CEPEJ, 2019c) ⁴	Organizational document
38	(CEPEJ, 2021a) ⁵	Organizational document
39	(CEPEJ, 2021b) ⁶	Organizational document
40	(CEPEJ, 2021c) ⁷	Organizational document
41	(CEPEJ, 2021d) ⁸	Organizational document
42	(Fabri, 2009)	Chapter
43	(Fabri, 2018)	Scientific Article
44	(Fabri, 2021)	Scientific Article
45	(Fernandes et al., 2018)	Scientific Article
46	(Fernando et al., 2014)	Chapter
47	(Fersini et al., 2010)	Conference proceeding
48	(Filho & Veronese, 2009)	Chapter
49	(Frade et al., 2020)	Scientific Article

- ¹ European Commission for the Efficiency of Justice (CEPEJ). (2016). Guidelines on how to drive change towards Cyberjustice. Council of Europe.
- ² European Commission for the Efficiency of Justice (CEPEJ). (2019a). European Ethical Charter on the Use of Artificial Intelligence in Judicial Systems and their Environment. Council of Europe.
- ³ European Commission for the Efficiency of Justice (CEPEJ). (2019b). Breaking up Judges' Isolation: Guidelines to Improve the Judge's Skills and Competences, Strengthen Knowledge Sharing and Collaboration, and Move Beyond a Culture of Judicial Isolation. Council of Europe.
- ⁴ European Commission for the Efficiency of Justice (CEPEJ). (2019c). Toolkit for supporting the implementation of the Guidelines on how to drive change towards Cyberjustice. Council of Europe.
- ⁵ European Commission for the Efficiency of Justice (CEPEJ). (2021a). Revised Roadmap for Ensuring an Appropriate Follow-Up of the CEPEJ Ethical Charter on the Use of Artificial Intelligence in Judicial Systems and Their Environment. Council of Europe.
- ⁶ European Commission for the Efficiency of Justice (CEPEJ). (2021b). Guidelines on Electronic Court Filing (e-filing) and Digitalisation of Courts. Council of Europe.
- ⁷ European Commission for the Efficiency of Justice (CEPEJ). (2021c). 2022 – 2025 CEPEJ Action Plan: "Digitalisation for a Better Justice". Council of Europe.
- ⁸ European Commission for the Efficiency of Justice (CEPEJ). (2021d). Guidelines on Videoconferencing in Judicial Proceedings. Council of Europe.

Continuation of table 2

50	(Francesconi, 2014)	Conference proceeding
51	(Freitas & Medeiros, 2015)	Scientific Article
52	(Gascó & Jiménez, 2011)	Conference proceeding
53	(Gibson, 2016)	Scientific Article
54	(Greenwood & Bockweg, 2012)	Scientific Article
55	(Greenwood & Brinkema, 2015)	Scientific Article
56	(Henning & Ng, 2009)	Scientific Article
57	(Kengyel & Nemessányi, 2012)	Book
58	(Kettiger & Lienhard, 2021)	Scientific Article
59	(Kettiger et al., 2019)	Chapter
60	(Kiršienė et al., 2022)	Scientific Article
61	(Kiškis & Petrauskas, 2004)	Scientific Article
62	(Kitoogo & Bitwayiki, 2010)	Chapter
63	(Konina, 2020)	Scientific Article
64	(Kovalenko & Bernaziuk, 2018)	Scientific Article
65	(Kramer et al., 2018)	Chapter
66	(Lodge, 2005)	Scientific Article
67	(Lourenço et al., 2020)	Chapter
68	(Loutocký, 2022)	Scientific Article
69	(Lunardi & Clementino, 2021)	Book
70	(Lupo, 2015)	Chapter
71	(Lupo, 2019)	Chapter
72	(Lupo & Bailey, 2014)	Scientific Article
73	(Lupo & Carnevali, 2022)	Scientific Article
74	(Lyon et al., 2015)	Scientific Article
75	(Viktora, 2022)	Scientific Article
76	(Martínez, 2009)	Chapter
77	(Martínez & Abat, 2009)	Book
78	(McMillan, 2009)	Chapter
79	(Meyer, 2014)	Scientific Article
80	(Minbaleev & Evsikov, 2022)	Scientific Article
81	(Morison & Harkens, 2019)	Scientific Article
82	(Murillo & Zuniga, 2013)	Scientific Article
83	(Nikolaychenko & Nikolaychenko, 2019)	Chapter
84	(Oktal et al., 2016)	Scientific Article
85	(Olugasa, 2020)	Scientific Article
86	(Olugasa & Davies, 2022)	Scientific Article
87	(Pangalos et al., 2014)	Scientific Article
88	(Poblet et al., 2009)	Chapter
89	(Politis et al., 2008)	Scientific Article
90	(Potter, Farrelly & Begg, 2009)	Chapter
91	(Pouillet, 2009)	Chapter
92	(Rattan & Rattan, 2021)	Scientific Article
93	(Reiling, 2020)	Scientific Article
94	(Reiling, 2011)	Scientific Article
95	(Reiling, 2012)	Scientific Article

End of table 2

96	(Reiling, 2017)	Scientific Article
97	(Reiling & Contini, 2022)	Scientific Article
98	(Rocha, 2021)	Conference proceeding
99	(Romdoni et al., 2022)	Conference proceeding
100	(Rooze, 2010)	Scientific Article
101	(Rosa et al., 2013)	Scientific Article
102	(Rugeriis, 2010)	Conference proceeding
103	(Rusakova & Frolova, 2022)	Chapter
104	(Sanders, 2021)	Scientific Article
105	(Sandoval-Almazan & Gil-Garcia, 2020)	Scientific Article
106	(Santuber et al., 2022)	Conference proceeding
107	(Sarantis & Askounis, 2009)	Scientific Article
108	(Seepma et al., 2021)	Scientific Article
109	(Shahbazov, 2019)	Scientific Article
110	(Shi et al., 2021)	Scientific Article
111	(Silveira & Covelo de Abreu, 2018)	Scientific Article
112	(Sousa et al., 2022)	Scientific Article
113	(Taal et al., 2019)	Scientific Article
114	(Themeli, 2022)	Chapter
115	(Karasev et al., 2021)	Scientific Article
116	(Tokarev et al., 2019)	Chapter
117	(Trochev, 2009)	Chapter
118	(Tyler, 2009)	Chapter
119	(Valeev & Nuriev, 2019)	Scientific Article
120	(van den Hoogen, 2008)	Scientific Article
121	(Velicogna, 2014)	Chapter
122	(Velicogna, 2017)	Scientific Article
123	(Velicogna, 2018)	Chapter
124	(Velicogna et al., 2013)	Scientific Article
125	(Velicogna et al., 2020)	Scientific Article
126	(Voigt, 2018)	Scientific Article
127	(Vucheva et al., 2020)	Organizational document
128	(Vuyst & Fairchild, 2006)	Conference proceeding
129	(Wallace, 2009)	Chapter
130	(Wallace, 2017)	Scientific Article
131	(Wallace, 2019)	Scientific Article
132	(Wallace & Laster, 2021)	Scientific Article
133	(Wallace & Rowden, 2009)	Conference proceeding
134	(Warren, 2014)	Scientific Article
135	(Wienrich et al., 2022)	Conference proceeding
136	(Yavuz et al., 2022)	Chapter
137	(Yu, 2021)	Conference proceeding
138	(Yu & Xia, 2020)	Scientific Article
139	(Zelevnikow, 2017)	Scientific Article
140	(Zelevnikow & Esteban de la Rosa, 2021)	Chapter

2. Heuristic model for researching innovation and digital transformation in justice

The heuristic framework for innovation in the public sector was developed by Vries et al. (2015). This article sought to adapt the framework to the specific sector of justice. Thus, dimensions/themes on definitions of innovation, types of innovation, innovation objectives, innovation antecedents, and innovation outcomes were considered. The dimensions were adapted, generating the following spheres of analysis: 1) contextual antecedents in the justice sector; 2) institutional antecedents in the Justice sector; 3) characteristics of innovation and digital transformation in the justice sector; 4) individual antecedents in the justice sector; 5) types of innovation and digital transformation in justice; 6) results of the innovation and digital transformation process in justice. In this way, a version is proposed for a specific sector of public administration: justice (Fig. 2).

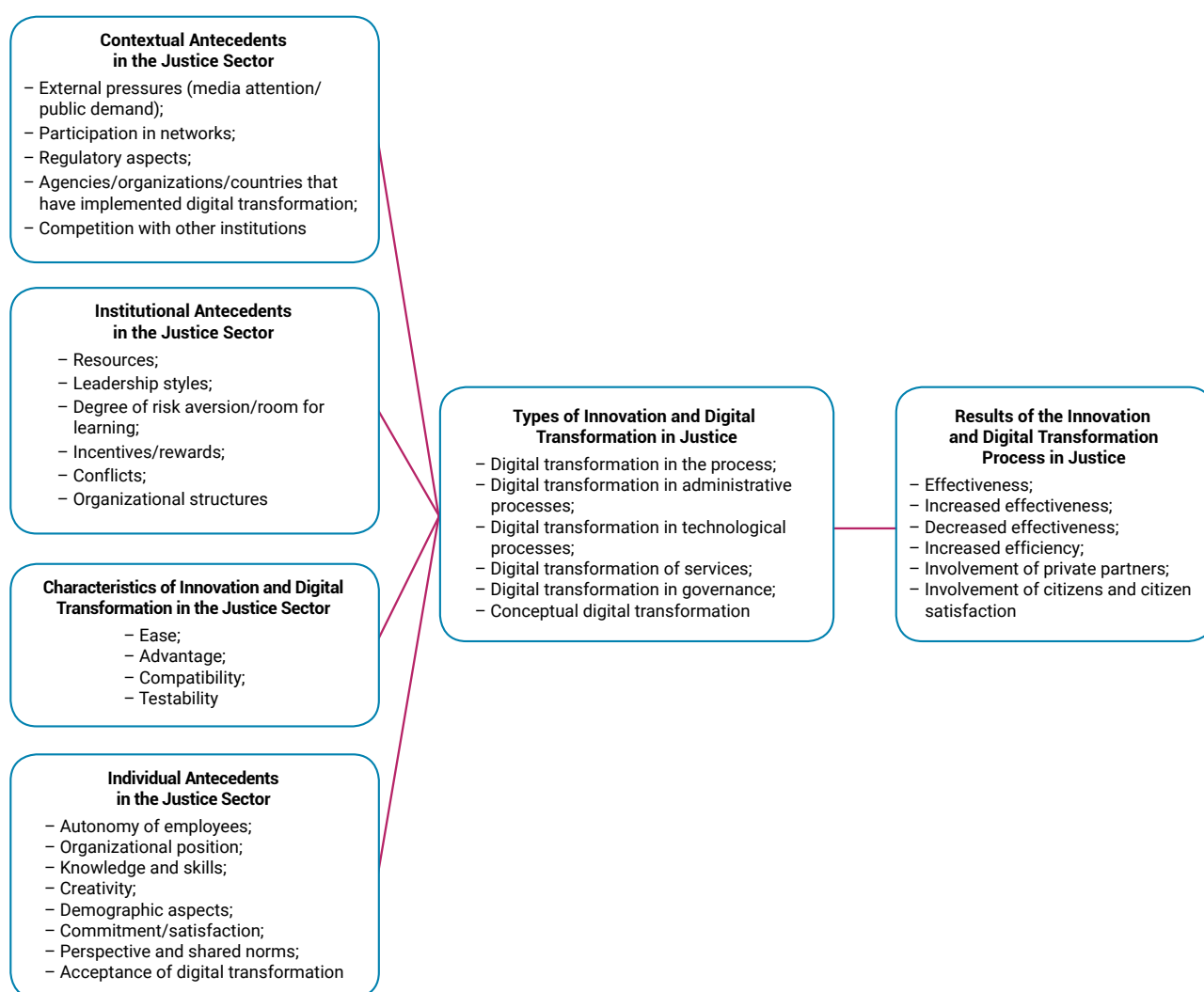


Figure 2. Innovation and Digital Transformation Framework in the Justice Sector

Source: adapted from Vries et al. (2015).

In the dimension on contextual antecedents in the justice sector, the considered contextual antecedents relate to external pressures, public attention, participation in networks, regulatory aspects, the implementation of transformations and innovations in agencies/organizations/countries, and the possibility of competition with other institutions. In the dimension on institutional antecedents in the Justice sector, the considered institutional antecedents relate to resources, leadership, risk aversion, and establishing space for institutional learning. Regarding the dimension on the characteristics of innovation and digital transformation in the justice sector, characteristics related to ease, benefits, compatibility, and testability are included. Individual antecedents in the justice sector include employee autonomy, organizational position, knowledge and skills, creativity, relevant demographic aspects, commitment and satisfaction, perspectives and shared norms, and acceptance of digital transformation. The types of innovation and digital transformation in justice defined in the considered heuristic model include digital transformation in the process, digital transformation in administrative processes, digital transformation in technological processes, digital transformation of services, digital transformation in governance, and conceptual digital transformation. Finally, the dimension of the results of the innovation and digital transformation process in justice includes studies that address effectiveness, efficiency, relationship with partners, focus on citizens involved, as well as their satisfaction with digital justice services.

The studies included for this review were organized and allocated to each of the innovation and digital transformation dimensions in the justice sector. Some publications were included in more than one dimension of innovation and digital transformation in the Justice sector (Table 3).

Table 3. Innovation and Digital Transformation Dimensions in the Justice Sector

Dimension	N (%)	Study ID
Contextual Antecedents in the Justice Sector	17(12%)	11; 14; 23; 24; 34; 35; 36; 37; 38; 39; 40; 41; 57; 59; 61; 83; 129
Institutional Antecedents in the Justice Sector	24(17%)	11; 15; 23; 25; 27; 29; 34; 35; 36; 37; 38; 39; 40; 41; 42; 51; 59; 63; 69; 73; 75; 90; 103; 108
Characteristics of Innovation and Digital Transformation in the Justice Sector	18(13%)	1; 2; 5; 11; 13; 16; 17; 18; 24; 28; 52; 67; 72; 74; 110; 111; 134; 137
Individual Antecedents in the Justice Sector	18(13%)	4; 7; 11; 18; 19; 32; 34; 35; 36; 37; 38; 39; 40; 41; 69; 79; 84; 87
Types of Innovation and Digital Transformation in the Justice Sector	62(44%)	1, 2, 3, 4, 5, 7, 8, 10, 12, 14, 18, 20, 24, 30, 31, 33, 34, 37, 39, 41, 42, 44, 45, 46, 47, 50, 51, 57, 61, 66, 68, 74, 76, 82, 84, 85, 86, 87, 88, 90, 93, 96, 97, 99, 104, 106, 113, 116, 119, 120, 121, 122, 127, 130, 131, 132, 133, 135, 136, 138, 139, 140
Outcomes of the Innovation and Digital Transformation Process in the Justice Sector	30(21%)	1, 2, 5, 6, 7, 18, 19, 21, 25, 32, 43, 44, 53, 70, 71, 73, 76, 79, 80, 82, 84, 96, 99, 103, 113, 115, 118, 136, 137, 139

Note: total N = 140 (100%) – some studies were included in more than one dimension of innovation and digital transformation in the Justice sector.

The type of innovation and digital transformation in justice encompasses 62 publications (corresponding to 44 % of all sources under analysis). Following is the dimension that considers the results of the innovation and digital transformation process in justice with 30 publications included (corresponding to 21 % of all sources under analysis). Next, the dimension with the most included studies relates to institutional antecedents in the Justice sector with 24 sources (corresponding to 17 % of all sources under analysis). Individual antecedents in the justice sector and the characteristics of innovation and digital transformation in the justice sector each include 18 studies (corresponding to 13 % of all sources under analysis for each dimension). Finally, contextual antecedents consider 17 publications, which corresponds to 12 % of the sources selected for this review.

Conclusions

By adopting a deductive research approach, it was possible to adapt and replicate the framework developed by Vries et al. (2015) in the specific theme of innovation and digital transformation in the justice sector.

The goal of this research was to provide a comprehensive view of innovation and digital transformation in the justice sector, mapping relevant studies for future investigations. We analyzed 140 sources on innovation and digital transformation in justice published between 2001 and 2022, using the heuristic framework of innovation in the public sector developed by Vries et al. (2015).

Considering the established questions, various innovations and digital transformations were identified, covering processes in general, administrative processes, technological processes, justice services, justice governance, as well as conceptual and design-related innovations. The central objectives of these innovations are to provide greater ease, accessibility, benefits, participation, involvement, and satisfaction (Cordella & Contini, 2020). Regarding antecedents, contextual factors, considering the specificities of the justice sector, institutional factors, and individual factors, with a special focus on the acceptance of transformations by those involved, stand out. However, it is necessary to interpret the results with caution, as the studies mention results oriented towards effectiveness, efficiency, speed, access, quality, partnership development, and a focus on the involvement and satisfaction of citizens.

The research conducted by Yavuz et al. (2022) identified four research areas in eJustice. The first is related to success and risk factors in the implementation of electronic justice. The second focuses on evaluating the impact of the implementation of e-justice projects. The third addresses citizen satisfaction, exploring experiences and better designs to meet the needs of society. The fourth highlights the evaluation of websites, considering quantity, quality, security, accessibility, openness, and participation.

This research contributes to justice administration on several fronts. The first contribution is methodological, by conducting a broad systematic review, identifying a considerable set of sources on the studied topic. The conceptual contribution aims to understand how concepts related to innovation and transformation are operationalized and measured in the administration of justice. The third contribution relates to the antecedents of the innovation and transformation process, allowing for reflection on these elements. Finally, there is

a contribution to the knowledge area by adapting the heuristic framework of innovation in the public sector validated by Vries et al. (2015) to the justice sector.

The mapping carried out in this article should be continued and deepened, especially regarding the research designs adopted.

In conclusion, four future research lines are suggested for studies on innovation and digital transformation in the justice sector: 1) greater methodological diversity, including mixed methods approaches; 2) more theoretically robust studies, with a greater application of public administration theories; 3) comparative investigations between countries to understand different developments and effects of innovation and digital transformation in the justice sector; and 4) analysis and evaluation of public policies for innovation and digital transformation in the justice sector.

References

- Abdulvaliev, A. (2017). Court, internet technologies and their role in ensuring the well-being of society. In *Responsible Research and Innovation Proceedings of the International Conference "Responsible Research and Innovation"* (RRI 2016), 07-10 November, 2016, Tomsk Polytechnic University. <http://dx.doi.org/10.15405/epsbs.2017.07.02.2>
- Adeleye, J. T., Ahmed, R. K., Nyman-Metcalf, K., & Draheim, D. (2022). E-Court Transition Process: Identifying Critical Factors and Recommendations for Developing Countries. In A. V. Chugunov, M. Janssen, I. Khodachek, Y. Misnikov, & D. Trutnev (Eds.), *Electronic Governance and Open Society: Challenges in Eurasia. EGOSE 2021. Communications in Computer and Information Science*, 1529. Springer. https://doi.org/10.1007/978-3-031-04238-6_23
- Adler, M., & Henman, P. (2009). Justice beyond the courts: The implications of computerisation for procedural justice in social security. In A. Martínez, & P. Abat (Eds.), *E-Justice: Using Information Communication Technologies in the Court System* (pp. 65–86). IGI Global. <https://doi.org/10.4018/978-1-59904-998-4.ch005>
- Ahmed, R. K., Muhammed, K. H., Pappel, I., & Draheim, D. (2020). Challenges in the Digital Transformation of Courts: A Case Study from the Kurdistan Region of Iraq. In *2020 Seventh International Conference on eDemocracy & eGovernment (ICEDEG)* (pp. 1–6). <https://doi.org/10.1109/ICEDEG48599.2020.9096801>
- Ahmed, R. K., Muhammed, K. H., Pappel, I., & Draheim, D. (2021). Impact of e-court systems implementation: a case study. *Transforming Government: People, Process and Policy*, 15(1), 108–128. <https://doi.org/10.1108/TG-01-2020-0008>
- Andrade, A., Joia, L. A., & Kamlot, D. (2012). E-government in the judiciary system: Assessing the correlation between IT investment and the efficiency of courts of justice in Brazil. In K. J. Bwalya & S. F. Zulu (Eds.), *Handbook of Research on E Government in Emerging Economies: Adoption, E-Participation, and Legal Frameworks* (pp. 158–178). IGI Global. <https://doi.org/10.4018/978-1-4666-0324-0.ch008>
- Arias, M. I., & Maçada, A. C. G. (2020). Judiciaries' modernisation through electronic lawsuits: Employees' perceptions from the Brazil and Argentina federal justice services. *Information Development*, 37(2). <https://doi.org/10.1177/0266666920910489>
- Axpe, M. R. V. (2021). Ethical Challenges from Artificial Intelligence to Legal Practice. In H. Sanjurjo González, I. Pastor López, P. García Bringas, H. Quintián & E. Corchado (Eds.), *Hybrid Artificial Intelligent Systems. HAIS 2021 (Lecture Notes in Computer Science, 12886)*. Springer. https://doi.org/10.1007/978-3-030-86271-8_17
- Bănică, R. A. (2020). Digitization of justice in the context of the COVID-19 pandemic and the implications of digitalization on constitutional rights. *Revista de Drept Constituțional*, 2, 11–30. <https://doi.org/10.47743/rdc-2020-2-0001>
- Bex, F., Prakken, H., van Engers, T., & Verheij, B. (2017). Introduction to the special issue on Artificial Intelligence for Justice. *Artificial Intelligence and Law*, 25(1), 1–3. <https://doi.org/10.1007/s10506-017-9198-5>
- Bochenek, A. C., Haddad, C. H. B., & Cantuária, E. da S. R. (Eds.). (2022). *Gestão, Redes e Design Organizacional*. Escola Nacional de Formação e Aperfeiçoamento de Magistrados – Enfam.
- Borisova, V. F., & Afanasiev, S. F. (2019). Realia and prospects of civil e-justice legal regulation. In E. Popkova (Ed.), *Ubiquitous computing and the internet of things: Prerequisites for the development of ICT* (pp. 403–410). Springer International Publishing. https://doi.org/10.1007/978-3-030-13397-9_47

- Cano, J., Jimenez, C. E., Hernandez, R., et al. (2015). New tools for e-justice: legal research available to any citizen. In L. Terán & A. Meier (Eds.), *Proceedings of 2015 Second International Conference on eDemocracy & eGovernment (ICEDEG)* (pp. 108–111). IEEE. <https://doi.org/10.1109/ICEDEG.2015.7114455>
- Cano, J., Pomed, L., Jiménez-Gómez, C. E., & Hernández, R. (2017). Open Judiciary in High Courts: Securing a Networked Constitution, Challenges of E-Justice, Transparency, and Citizen Participation. In *Achieving Open Justice through Citizen Participation and Transparency* (pp. 36–54). <https://doi.org/10.4018/978-1-5225-0717-8.ch003>
- Carboni, N., & Velicogna, M. (2012). Electronic Data Exchange within European Justice: A Good Opportunity? *International Journal for Court Administration*, 4(3), 104–120. <https://doi.org/10.18352/ijca.90>
- Carullo, G. (2015). Services in the Field of Law within the Internal Market: Promoting e-Justice through Interoperability. *Laws*, 5(1), 1. <https://doi.org/10.3390/laws5010001>
- Chatfield, A. T., & Reddick, C. G. (2020). Collaborative network governance framework for aligning open justice and e-justice ecosystems for greater public value. *Social Science Computer Review*, 38(3), 252–273. <https://doi.org/10.1177/0894439318771968>
- Chawinga, W. D., Chawinga, C., Kapondera, S. K., Chipeta, G. T., Majawa, F., & Nyasulu, C. (2020). Towards e-judicial services in Malawi: Implications for justice delivery. *The Electronic Journal of Information Systems in Developing Countries*, 86, e12121. <https://doi.org/10.1002/isd2.12121>
- Clarinal, A., Simonofski, A., Vanderose, B., & Dumas, B. (2020). Public displays and citizen participation: A systematic literature review and research agenda. *Transforming Government: People, Process and Policy*, 15(1), 1–35. <https://doi.org/10.1108/TG-12-2019-0127>
- Contini, F., & Cordella, A. (2004). Information System and Information Infrastructure Deployment: The Challenge of the Italian eJustice Approach. *European Conference on Information Systems 2004 Proceedings*, 40.
- Contini, F., & Cordella, A. (2009). Italian justice system and ICT: Matches and mismatches between technology and organisation. In A. Martínez & P. Abat (Eds.), *E-Justice: Using information communication technologies in the court system* (pp. 117–134). IGI Global. <https://doi.org/10.4018/978-1-59904-998-4.ch008>
- Contini, F., & Lanzara, G. F. (2014). Introduction: The challenge of interoperability and complexity in european civil proceedings online. In F. Contini & G. F. Lanzara (Eds.), *The circulation of agency in e-justice: Interoperability and infrastructures for European transborder judicial proceedings* (pp. xiii–xxi). Springer.
- Contini, F., & Lanzara, G. F. (Eds.). (2009). *ICT and Innovation in the Public Sector: European Studies in the Making of E-Government*. Palgrave Macmillan. <https://doi.org/10.1057/9780230227293>
- Cooper, H. (2016). *Research Synthesis and Meta-Analysis: A Step-by-Step Approach* (fifth edition). Sage.
- Cordella, A., Contini, F. (2020). *Digital Technologies for Better Justice: A Toolkit for Action*. Inter-American Development Bank. <http://dx.doi.org/10.18235/0002297>
- Covelo de Abreu, J. (2019). The Role of Artificial Intelligence in the European e-Justice Paradigm – Suiting Effective Judicial Protection Demands. In P. Moura Oliveira, P. Novais, & L. Reis. (Eds.), *Progress in Artificial Intelligence. EPIA 2019. Lecture Notes in Computer Science*, 11804. Springer. https://doi.org/10.1007/978-3-030-30241-2_26
- Creutzfeldt, N. (2021). Towards a digital legal consciousness? *European Journal of Law and Technology*, 12(3).
- De Rugeris, G. (2010). *The Online Criminal Trial in Italy Seeks an Identity*. In *Proceedings of the 10th European Conference on e-Government* (pp. 492–499). Academic Publishing Limited.
- Deligiannis, A. P., & Anagnostopoulos, D. (2017). Towards Open Justice: ICT Acceptance in the Greek Justice System: The Case of the Integrated Court Management System for Penal and Civil Procedures (OSDDY/PP). In *Proceedings of the 7th International Conference for E-Democracy and Open Government, CeDEM 2017* (Art. No. 8046275, pp. 82–91). <https://doi.org/10.1109/cedem.2017.26>
- Di Natale, L. J., & Cordella, A. (2022). Digitising the Judicial Sector: A Case Study of the Dutch KEI Programme. In R. Krimmer et al., *Electronic Participation. ePart 2022. Lecture Notes in Computer Science*, 13392. Springer. https://doi.org/10.1007/978-3-031-23213-8_9
- Dillon, M. P., & Beresford, D. (2014). Electronic Courts and the Challenges in Managing Evidence. A View from Inside the International Criminal Court. *International Journal for Court Administration*, 6(1), 29–36. <https://doi.org/10.18352/ijca.132>
- Doty, P., & Erdelez, S. (2002). Information micro-practices in Texas rural courts: Methods and issues for e-government. *Government Information Quarterly*, 19(4), 369–387. [https://doi.org/10.1016/S0740-624X\(02\)00121-1](https://doi.org/10.1016/S0740-624X(02)00121-1)
- Dumoulin, L., & Licoppe, C. (2016). Videoconferencing, New Public Management, and Organizational Reform in the Judiciary. *Policy & Internet*, 8(3), 313–333. <https://doi.org/10.1002/poi3.124>
- Ermakova, E. P., & Frolova, E. E. (2022). Using Artificial Intelligence in Dispute Resolution. In A. O. Inshakova, E. E. Frolova (Eds.), *Smart Technologies for the Digitisation of Industry: Entrepreneurial Environment. Smart Innovation, Systems and Technologies*, 254. Springer. https://doi.org/10.1007/978-981-16-4621-8_11

- Fabri, M. (2009). The Italian style of e-justice in a comparative perspective. In A. Martínez & P. Abat (Eds.), *E-Justice: Using Information Communication Technologies in the Court System* (pp. 1–19). IGI Global. <https://doi.org/10.4018/978-1-59904-998-4.ch001>
- Fabri, M. (2018). Pitfalls in Data Gathering to Assess Judiciaries. *International Journal for Court Administration*, 9(3), 67–75. <https://doi.org/10.18352/ijca.278>
- Fabri, M. (2021). Will COVID-19 Accelerate Implementation of ICT in Courts? *International Journal for Court Administration*, 12(2), 2. <https://doi.org/10.36745/ijca.384>
- Fernandes, R. V. de C., Rule, C., Ono, T. T., & Cardoso, G. E. B. (2018). The expansion of online dispute resolution in Brazil. *International Journal for Court Administration*, 9(2), 20–30. <https://doi.org/10.18352/ijca.255>
- Fernando, P., Gomes, C., & Fernandes, D. (2014). The Piecemeal Development of an e-Justice Platform: The CITIUS Case in Portugal. In F. Contini, & G. Lanzara (Eds.), *The Circulation of Agency in E-Justice*. Law, Governance and Technology Series, 13. Springer, Dordrecht. https://doi.org/10.1007/978-94-007-7525-1_6
- Fersini, E., Messina, V., Toscani, D., et al. (2010). Semantics and machine learning for building the next generation of judicial court management systems. In K. Liu & J. Filipe (Eds.), *Proceedings of the International Conference on Knowledge Management and Information Sharing* (Vol. OIC3K, pp. 51–60), Valencia, Spain. <https://doi.org/10.5220/0003099300510060>
- Filho, R. F., & Veronese, A. (2009). Electronic justice in Brazil. In A. Martínez & P. Abat (Eds.), *E-Justice: Using information communication technologies in the court system* (pp. 135–151). IGI Global. <https://doi.org/10.4018/978-1-59904-998-4.ch009>
- Frade, C., Fernando, P., & Conceição, A. F. (2020). The performance of the courts in the digital era: The case of insolvency and restructuring proceedings. *International Insolvency Review*, 29(3), 346–359. <https://doi.org/10.1002/iir.1390>
- Francesconi, E. (2014). An Interoperability Approach for Enabling Access to e-Justice Systems across Europe. In *Electronic Government and the Information Systems Perspective: Third International Conference, EGOVIS 2014*, Munich, Germany, September 1–3, 2014. Proceedings.
- Freitas, C. S. de, & Medeiros, J. J. (2015). Organizational Impacts of the Electronic Processing System of the Brazilian Superior Court of Justice. *JISTEM – Journal of Information Systems and Technology Management*, 12(2), 317–332. <https://doi.org/10.4301/S1807-17752015000200007>
- Gascó, M., & Jimenez-Gomez, C. E. (2011). Interoperability in the justice field: Variables that affect implementation. In M. Klun, M. Decman & T. Jukic (Eds.), *Proceedings of the 11th European Conference on eGovernment* (pp. 272–279). Academic Publishing Limited.
- Gibson, J. (2016). Social Media and the Electronic “New World” of Judges. *International Journal for Court Administration*, 7(2), 1–9. <https://doi.org/10.18352/ijca.199>
- Greenwood, J. M., & Bockweg, G. (2012). Insights to Building a Successful E-filing Case Management Service: U.S. Federal Court Experience. *International Journal for Court Administration*, 4(2), 2–10. <https://doi.org/10.18352/ijca.74>
- Greenwood, J. M., & Brinkema, J. (2015). E-Filing Case Management Services in the US Federal Courts: The Next Generation: A Case Study. *International Journal for Court Administration*, 7(1), 3–17. <https://doi.org/10.18352/ijca.179>
- Henning, F., & Ng, G. (2009). The challenge of collaboration—ICT implementation networks in courts in The Netherlands. *Transylvanian Review of Administrative Sciences*, 5(28), 27–44.
- Karasev, A. T., Savoskin, A. V., & Meshcheryagina, V. A. (2021). On the Effectiveness of the Digital Legal Proceedings Model in Russia. *Mathematics*, 9(2), 125. <https://doi.org/10.3390/math9020125>
- Kengyel, M., & Nemessányi, Z. (Eds.). (2012). *Electronic technology and civil procedure: New paths to justice from around the world*. Springer. <https://doi.org/10.1007/978-94-007-4072-3>
- Kettiger, D., & Lienhard, A. (2021). Swiss Courts Facing the Challenges of COVID-19. *International Journal for Court Administration*, 12(2), 5. <https://doi.org/10.36745/ijca.380>
- Kettiger, D., Lienhard, A., Langbroek, Ph., & Fabri, M. (2019). Court Management: A Young Field of Public Management. In E. Ongaro (Ed.), *Public Administration in Europe. Governance and Public Management* (pp. 309–315). https://doi.org/10.1007/978-3-319-92856-2_28
- Kiršienė, J., Amilevičius, D., & Stankevičiūtė, D. (2022). Digital Transformation of Legal Services and Access to Justice: Challenges and Possibilities. *Baltic Journal of Law & Politics*, 15(1), 141–172. <https://doi.org/10.2478/bjlp-2022-0007>
- Kiškis, M., & Petrauskas, R. (2004). ICT adoption in the judiciary: Classifying of judicial information. *International Review of Law, Computers & Technology*, 18(1), 37–45. <https://doi.org/10.1080/13600860410001674724>
- Kitoogo, F. E., & Bitwayiki, C. (2010). e-Justice implementation at a national scale: The Ugandan case. In A. Villafiorita, R. Saint-Paul & A. Zorer (Eds.), *E-infrastructures and e-services on developing countries* (pp. 40–49). Springer. https://doi.org/10.1007/978-3-642-12701-4_5

- Konina, A. (2020). Technology-Driven Changes in an Organizational Structure: The Case of Canada's Courts Administration Service. *International Journal for Court Administration*, 11(2), 6. <https://doi.org/10.36745/ijca.326>
- Kovalenko, N., & Bernaziuk, I. (2018). Topical issues of financing electronic legal proceedings in Ukraine. *Baltic Journal of Economic Studies*, 4(5), 100–104. <https://doi.org/10.30525/2256-0742/2018-4-5-100-104>
- Kramer, X. E., van Gelder, E., & Themeli, E. (2018). e-Justice in the Netherlands: the Rocky Road to Digitised Justice. In M. Weller & M. Wendland (Eds.), *Digital Single Market: Bausteine eines Rechts in der Digitalen Welt* (pp. 209–235). Tübingen: Mohr Siebeck. <https://dx.doi.org/10.2139/ssrn.3167543>
- Lodge, J. (2005). eJustice, Security and Biometrics: the EU's Proximity Paradox. *European Journal of Crime, Criminal Law and Criminal Justice*, 13(4), 533–564. <https://doi.org/10.1163/157181705774662607>
- Lourenço, R. P., Fernando, P., & Gomes, C. (2020). From eJustice to Open Judiciary: An Analysis of the Portuguese Experience. In *Open Government: Concepts, Methodologies, Tools, and Applications* (pp. 1161–1186). <https://doi.org/10.4018/978-1-5225-9860-2.ch055>
- Loutocký, P. (2022, May 31). Possible approaches towards the architecture of online courts and their potential in the decision-making process. *Jusletter IT*. <https://doi.org/10.38023/f37d20de-4f8c-4421-afaa-0d914636f226>
- Lunardi, F. C., & Clementino, M. B. M. (Eds.). (2021). *Inovação Judicial: Fundamentos e Práticas para uma Jurisdição de Alto Impacto*. Brasília: Escola Nacional de Formação e Aperfeiçoamento de Magistrados – Enfam.
- Lupo, G. (2015). Evaluating e-Justice: The Design of an Assessment Framework for e-Justice Systems. In K. Benyekhlef, J. Bailey, J. Burkell, & F. Gélinas (Eds.), *eAccess to Justice* (pp. 53–94). University of Ottawa Press.
- Lupo, G. (2019). Assessing e-Justice smartness: A new framework for e-Justice Evaluation Through Public Values. In M. P. Rodriguez Bolivar (Ed.), *Setting Foundations for the Creation of Public Value in Smart Cities* (pp. 77–113). Springer. https://doi.org/10.1007/978-3-319-98953-2_4
- Lupo, G., & Bailey, J. (2014). Designing and implementing e-Justice Systems: Some Lessons Learned from EU and Canadian Examples. *Laws*, 3(2), 353–387. <https://doi.org/10.3390/laws3020353>
- Lupo, G., & Carnevali, D. (2022). Smart Justice in Italy: Cases of Apps Created by Lawyers for Lawyers and Beyond. *Laws*, 11(3), 51. <https://doi.org/10.3390/laws11030051>
- Lyon, F., Gyateng, T., Pritchard, D., Vaze, P., Vickers, I., & Webb, N. (2015). Opening access to administrative data for evaluating public services: The case of the Justice Data Lab. *Evaluation*, 21(2), 232–247. <https://doi.org/10.1177/1356389015577507>
- Martínez, A. (2009). E-justice in Spain. In A. Martínez & P. Abat (Eds.), *E-justice: Using information communication technologies in the court system* (pp. 98–116). IGI Global. <https://doi.org/10.4018/978-1-59904-998-4.ch007>
- Martínez, A., & Abat, P. (2009). *E-justice: Using information communication technologies in the court system*. IGI Global. <https://doi.org/10.4018/978-1-59904-998-4>
- McMillan, J. E. (2009). The potential of computerized court case management to battle judicial corruption. In A. Martínez & P. Abat (Eds.), *E-justice: Using information communication technologies in the court system* (pp. 57–64). IGI Global. <https://doi.org/10.4018/978-1-59904-998-4.ch004>
- Meyer, N. (2014). Social Media and the Courts: Innovative Tools or Dangerous Fad? A Practical Guide for Court Administrators. *International Journal for Court Administration*, 6(1), 2–28. <https://doi.org/10.18352/ijca.136>
- Minbaleev, A. V., & Evsikov, K. S. (2022). Alternative dispute resolution in digital government. *RBADR*, 4(7), 119–146. <https://doi.org/10.52028/rbadr.v4i7.8>
- Morison, J., & Harkens, A. (2019). Re-engineering justice? Robot judges, computerised courts and (semi) automated legal decision-making. *Legal Studies*, 39(4), 618–635. <https://doi.org/10.1017/lst.2019.5>
- Murillo, R., & Zuniga, R. (2013). Could Innovation also Emerge from the Public Sector? Creating an ISO-like Judiciary Quality Management Standard. *International Journal for Court Administration*, 5(2), 10–30. <https://doi.org/10.18352/ijca.16>
- Nikolaychenko, O., & Nikolaychenko, V. V. (2019). Transformation of the procedural obligations of the court under electronic justice conditions. In E. G. Popkova (Ed.), *Ubiquitous computing and the internet of things: Prerequisites for the development of ICT* (pp. 379–385). Springer International Publishing. https://doi.org/10.1007/978-3-030-13397-9_44
- Oktal, O., Alpu, O., & Yazici, B. (2016). Measurement of internal user satisfaction and acceptance of the e-justice system in Turkey. *Aslib Journal of Information Management*, 68(6), 716–735. <https://doi.org/10.1108/AJIM-04-2016-0048>

- Olugasa, O. (2020). Utilising Technology in Making the Nigerian Administration of Criminal Justice Act Effective for Criminal Trials. *International Journal for Court Administration*, 11(2), 5. <https://doi.org/10.36745/ijca.332>
- Olugasa, O., & Davies, A. (2022). Remote Court Proceedings in Nigeria: Justice Online or Justice on the Line. *International Journal for Court Administration*, 13(2), 2. <https://doi.org/10.36745/ijca.448>
- Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., ... Moher, D. (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *Research Methods & Reporting*, 372(71), 1–9. <https://doi.org/10.1136/bmj.n71>
- Pangalos, G., Salmatzidis, I., & Pagkalos, I. (2014). Using IT to Provide Easier Access to Cross-Border Legal Procedures for Citizens and Legal Professionals – Implementation of a European Payment Order e-CODEX pilot. *International Journal for Court Administration*, 6(2), 43–52. <https://doi.org/10.18352/ijca.137>
- Pereira, S., Correia, P., & Bilhim, J. (2023). Inovação e Transformação Digital na Justiça: uma Revisão Sistemática de Literatura. *Anais do Encontro de Administração da Justiça – EnAJUS 2023*.
- Poblet, M., Vallbé, J. J., Casellas, N., & Casanovaset, P. (2009). Judges as IT users: The iuriservice example. In A. Martínez & P. Abat (Eds.), *E-justice: Using information communication technologies in the court system* (pp. 38–56). IGI Global. <https://doi.org/10.4018/978-1-59904-998-4.ch003>
- Politis, D., Donos, G., Christou, G., Giannakopoulos, P., & Papapanagiotou-Leza, A. (2008). Implementing E-justice on a national scale: Coping with balkanization and socio-economical divergence. *Journal of Cases on Information Technology*, 10(2), 41–59. <https://doi.org/10.4018/jcit.2008040104>
- Potter, S., Farrelly, P., & Begg, D. (2009). The e-court roadmap: Innovation and integration an Australian case study. In A. Martínez & P. Abat (Eds.), *E-justice: Using information communication technologies in the court system* (pp. 165–185). IGI Global. <https://doi.org/10.4018/978-1-59904-998-4.ch011>
- Poullet, Y. (2009). The Belgian case: Phenix or how to design E justice through privacy requirements and in full respect of the separation of powers. In A. Martínez & P. Abat (Eds.), *E-justice: Using information communication technologies in the court system* (pp. 186–195). IGI Global. <https://doi.org/10.4018/978-1-59904-998-4.ch012>
- Rattan, J., & Rattan, V. (2021). The COVID-19 Crisis – the New Challenges Before the Indian Justice and Court Administration System. *International Journal for Court Administration*, 12(2). <https://doi.org/10.36745/ijca.391>
- Reiling, A. D. (2020). Courts and Artificial Intelligence. *International Journal for Court Administration*, 11(2), 8. <https://doi.org/10.36745/ijca.343>
- Reiling, D. (2011). Understanding IT for Dispute Resolution. *International Journal for Court Administration*, 3(2), 34–44. <https://doi.org/10.18352/ijca.61>
- Reiling, D. (2012). Technology in Courts in Europe: Opinions, Practices and Innovations. *International Journal for Court Administration*, 4(2), 11–20. <https://doi.org/10.18352/ijca.75>
- Reiling, D. (2017). Beyond court digitalization with ODR. *International Journal for Court Administration*, 8(2), 1–6. <https://doi.org/10.18352/ijca.225>
- Reiling, D., & Contini, F. (2022). E-Justice Platforms: Challenges for Judicial Governance. *International Journal for Court Administration*, 13(1), 6. <https://doi.org/10.36745/ijca.445>
- Rocha, C. (2021). Success Factors for e-Justice Adoption. In *ISLA 2021 Proceedings*, 12 (pp.1–6).
- Romdoni, M., Lussak, A., & Darmawan, I. (2022). Success Factors for Using E-Court in Indonesian Courts. *Proceeding of International Academic Symposium of Social Science 2022*, 82(1), 58. <http://dx.doi.org/10.3390/proceedings2022082058>
- Rooze, E. (2010). Differentiated Use of Electronic Case Management Systems. *International Journal for Court Administration*, 3(1), 50–60. <https://doi.org/10.18352/ijca.53>
- Rosa, J., Teixeira, C., & Pinto, J. S. (2013). Risk factors in e-justice information systems. *Government Information Quarterly*, 30(3), 241–256. <https://doi.org/10.1016/j.giq.2013.02.002>
- Rusakova, E. P., & Frolova, E. E. (2022). Current Problems of Digital Justice in the BRICS Countries. In A. O. Inshakova & E. E. Frolova (Eds.), *Smart Technologies for the Digitisation of Industry: Entrepreneurial Environment. Smart Innovation, Systems and Technologies*, 254. Springer. https://doi.org/10.1007/978-981-16-4621-8_12
- Sanders, A. (2021). Video-Hearings in Europe Before, During and After the COVID-19 Pandemic. *International Journal for Court Administration*, 12(2), 3. <https://doi.org/10.36745/ijca.379>
- Sandoval-Almazan, R., & Gil-Garcia, J. R. (2020). Understanding e-Justice and Open Justice Through the Assessment of Judicial Websites: Toward a Conceptual Framework. *Social Science Computer Review*, 38(3), 334–353. <https://doi.org/10.1177/0894439318785957>

- Santuber, J., Abou Refaie, R., & Meinel, C. (2022). Interrogating e-Justice: Lessons from Digitalizing Courts in Chile. In *Conference EGOV-CeDEM-ePart 2022*, September 6–8, 2022, Linköping University, Sweden (Hybrid). <https://ceur-ws.org/Vol-3399/paper5.pdf>
- Sarantis, D., & Askounis, D. (2009). Electronic criminal record in Greece: Project management approach and lessons learned in public administration. *Transylvanian Review of Administrative Sciences*, 5(25), 132–146.
- Scognamiglio, F., Sancino, A., Caló, F., Jacklin-Jarvis, C., & Rees, J. (2023). The public sector and co-creation in turbulent times: A systematic literature review on robust governance in the COVID-19 emergency. *Public Administration*, 101(1), 53–70. <https://doi.org/10.1111/padm.12875>
- Seepma, A. P., de Blok, C., & Van Donk, D. P. (2021). Designing digital public service supply chains: Four country-based cases in criminal justice. *Supply Chain Management*, 26(3), 418–446. <https://doi.org/10.1108/SCM-03-2019-0111>
- Shahbazov, I. (2019). Exploring the attitudes of university students and criminal justice professionals towards electronic monitoring in Azerbaijan: A focus group study. *International Journal of Law, Crime and Justice*, 58, 44–55. <https://doi.org/10.1016/j.ijlcj.2019.06.003>
- Shi, C., Sourdin, T., & Li, B. (2021). The Smart Court – A New Pathway to Justice in China? *International Journal for Court Administration*, 12(1), 4. <https://doi.org/10.36745/ijca.367>
- Silveira, A., & de Abreu, J. C. (2018). Interoperability solutions under Digital Single Market: European e-Justice rethought under e-Governance paradigm. *European Journal of Law and Technology*, 9(1). <https://ejlt.org/index.php/ejlt/article/view/590>
- Sousa, M., Kettiger, D., & Lienhard, A. (2022). E-justice in Switzerland and Brazil: Paths and Experiences. *International Journal for Court Administration*, 13(2), 3. <https://doi.org/10.36745/ijca.368>
- Taal, S., Kolitsi, Z., Velicogna, M., Groustra, J., & Steigenga, E. (2019). Connecting the European e-Justice Community: Towards a New Governance Model for e-CODEX. *Public Sciences & Policies*, 5(1), 33–51. <https://doi.org/10.33167/2184-0644.CPP2019.VVN1/pp.33-51>
- Themeli, E. (2022). The Frontiers of Digital Justice in Europe. In X. Kramer, J. Hoevenaars, B. Kas, & E. Themeli (Eds.), *Frontiers in Civil Justice* (pp. 102–120). <https://doi.org/10.4337/9781802203820.00013>
- Tokarev, D. A., Usanova, V. A., Kagalnikskova, N., & Sandalova, V. A. (2019). Development of E-justice in Russia: Modernization of legal regulation and deepening of scientific research. In E. Popkova (Ed.), *Ubiquitous computing and the internet of things: Prerequisites for the development of ICT* (pp. 215–222). Springer. https://doi.org/10.1007/978-3-030-13397-9_25
- Trochev, A. (2009). Courts on the Web in Russia. In A. Martínez & P. Abat (Eds.), *E-Justice: Using information communication technologies in the court system* (pp. 196–203). IGI Global. <https://doi.org/10.4018/978-1-59904-998-4.ch013>
- Tyler, M. H. C. (2009). Online dispute resolution. In A. Martínez & P. Abat (Eds.), *E-Justice: Using information communication technologies in the court system* (pp. 87–96). IGI Global. <https://doi.org/10.4018/978-1-59904-998-4.ch006>
- Valeev, D. K., & Nuriev, A. G. (2019). Unity of judicial power: Development of elements of electronic justice. *Revista Turismo: Estudos e Práticas*, 2, 1–5.
- van den Hoogen, R. (2008). Will E-Justice still be Justice? Principles of a Fair Electronic Trial. *International Journal for Court Administration*, 1(1), 65–73. <https://doi.org/10.18352/ijca.128>
- Velicogna, M. (2014). Coming to Terms with Complexity Overload in Transborder e-Justice: The e-CODEX Platform. In F. Contini & G. Lanzara (Eds.), *The Circulation of Agency in E-Justice*. Springer. https://doi.org/10.1007/978-94-007-7525-1_13
- Velicogna, M. (2017). In search of smartness: The EU e-justice challenge. *Informatics*, 4(4), 38. <https://doi.org/10.3390/informatics4040038>
- Velicogna, M. (2018). E-Justice in Europe: From National Experiences to EU Cross-Border Service Provision. In L. Alcaide Muñoz & M. Rodríguez Bolívar (Eds.), *International E-Government Development*. Palgrave Macmillan. https://doi.org/10.1007/978-3-319-63284-1_3
- Velicogna, M., Errera, A., & Derlange, S. (2013). Building e-Justice in Continental Europe: The TeleRecours Experience in France. *Utrecht Law Review*, 9, 38–59. <https://doi.org/10.18352/ulr.211>
- Velicogna, M., Steigenga, E., Taal, S., Schmidt, A. (2020). Connecting EU jurisdictions: Exploring how to open justice across member states through ICT. *Social Science Computer Review*, 38(3), 274–294. <https://doi.org/10.1177/0894439318786949>
- Viktora, M. (2022). Innovative Leadership-a Missing Puzzle in the Economic Administration of the Judiciary in the Czech Republic. *International Journal for Court Administration*, 13(3), 3. <https://doi.org/10.36745/ijca.438>

- Voigt, S. (2018). Innovate – Don't Imitate! – ENCJ Research Should Focus on Research Gaps. *International Journal for Court Administration*, 9(3), 47–53. <https://doi.org/10.18352/ijca.279>
- Vries, H., Bekkers, V., & Tummers, L. (2015). Innovation in the Public Sector: A Systematic Review and Future Research Agenda. *Public Administration*, 94(1), 146–166. <https://doi.org/10.1111/padm.12209>
- Vucheva, M., Rocha, M., Renard, R., & Stasinopolous, D. (2020). *Study on the use of innovative technologies in the justice field*. <https://doi.org/10.2838/585101>
- Vuyt, B., & Fairchild, A. (2006). The Phenix project: A case study of e-justice in Belgium. In M. S. Fox & B. Spencer (Eds.), *ICEC'06: Proceedings of the 8th International Conference on Electronic Commerce: The New e-Commerce: Innovations for Conquering Current Barriers, Obstacles and Limitations to Conducting Successful Business on the Internet* (pp. 327–333). ACM. <https://doi.org/10.1145/1151454.1151509>
- Wallace, A. (2009). E-justice: An Australian perspective. In A. Martínez & P. Abat (Eds.), *E-justice: Using information communication technologies in the court system* (pp. 204–228). IGI Global. <https://doi.org/10.4018/978-1-59904-998-4.ch014>
- Wallace, A. (2017). The Impact of Technology on Courts. *International Journal for Court Administration*, 8(2), 1. <https://doi.org/10.18352/ijca.236>
- Wallace, A. (2019). Ten Questions for Dory Reiling – Developing IT for Courts. *International Journal for Court Administration*, 10(1), 1–3. <https://doi.org/10.18352/ijca.293>
- Wallace, A., & Laster, K. (2021). Courts in Victoria, Australia, During COVID: Will Digital Innovation Stick? *International Journal for Court Administration*, 12(2), 9. <https://doi.org/10.36745/ijca.389>
- Wallace, A., & Rowden, E. (2009). Gateways to Justice: The Use of Videoconferencing Technology to Take Evidence in Australian Courts. In *Proceedings of the 9th European Conference on e-Government*. University of Westminster Business School, London, England.
- Warren, M. (2014). Open justice in the technological age. *Monash University Law Review*, 40(1), 45–58.
- Wienrich, C., Fries, L., & Latoschik, M. (2022). Remote at Court: Challenges and Solutions of Video Conferencing in the Judicial System. In G. Salvendy, J. Wei (Eds.), *Proceedings of the 3rd International Conference on Design, Operation and Evaluation of Mobile Communications. 24th International Conference on Human-Computer Interaction (HCII)*. https://doi.org/10.1007/978-3-031-05014-5_8
- Yavuz, N., Karkin, N., & Yildiz M. (2022). E-Justice: A Review and Agenda for Future Research. In Y. Charalabidis, L. S. Flak & G. V. Pereira (Eds.), *Scientific Foundations of Digital Governance and Transformation: Concepts, Approaches and Challenges* (pp. 385–414). https://doi.org/10.1007/978-3-030-92945-9_15
- Yu, J. (2021). Citizen adoption of e-justice services: An empirical research in China. In *AISS'2021: Proceedings of the 3rd International Conference on Advanced Information Science and System*, November 26–28, 2021, Sanya, China. Association for Computing Machinery. <https://doi.org/10.1145/3503047.3503061>
- Yu, J., & Xia, J. (2020). E-justice evaluation factors: The case of smart court of China. *Information Development*, 37(4). <https://doi.org/10.1177/0266666920967387>
- Zelevnikow, J. (2017). Can Artificial Intelligence and Online Dispute Resolution enhance efficiency and effectiveness in Courts. *International Journal for Court Administration*, 8(2), 30–45. <https://doi.org/10.18352/ijca.223>
- Zelevnikow, J., & Esteban de la Rosa, F. (2021). Artificial Intelligence as a New Component of the Justice System: How it creates New Possibilities, but has Limitations especially with regards to Governance. In F. E. de la Rosa, J. M. Gil Ruiz, L. M. Hinojosa Martínez, A. Orti Vallejo, S. A. Sánchez Lorenzo, & J. Vals Prieto (Eds.), *Justice, Trade, Security, and Individual Freedoms in the Digital Society* (pp. 59–101).

Authors information



Pedro Miguel Alves Ribeiro Correia – PhD in Social Sciences (Specialty in Public Administration), Invited Associate Professor, Faculty of Law, University of Coimbra
Address: Pátio da Universidade, 3004-528 Coimbra, Portugal
E-mail: pcorreia@fd.uc.pt
ORCID ID: <https://orcid.org/0000-0002-3111-9843>
Scopus Author ID: <https://www.scopus.com/authid/detail.uri?authorId=58223408400>
WoS Researcher ID: <https://www.webofscience.com/wos/author/record/B-2753-2015>
Google Scholar ID: <https://scholar.google.hu/citations?user=KABKPUAAAAJ>



Sandra Patrícia Marques Pereira – PhD student, Master in Public Administration (Specialty in Justice Administration), Assistant Lecturer, Faculty of Law, University of Coimbra
Address: Pátio da Universidade, 3004-528 Coimbra, Portugal
E-mail: smpereira@fd.uc.pt
ORCID ID: <https://orcid.org/0000-0002-7374-3847>
Scopus Author ID: <https://www.scopus.com/authid/detail.uri?authorId=55929186300>
WoS Researcher ID: <https://www.webofscience.com/wos/author/record/X-3842-2019>
Google Scholar ID: <https://scholar.google.hu/citations?user=JkKwoIYAAAAJ>



João Abreu de Faria Bilhim – PhD in Social Sciences (Specialty in Sociology of Organizations), Retired Full Professor, University of Lisbon
Address: Cidade Universitária, Alameda da Universidade, 1649-004 Lisboa, Portugal
E-mail: j.bilhim@sapo.pt
ORCID ID: <https://orcid.org/0000-0001-9419-0009>
Scopus Author ID: <https://www.scopus.com/authid/detail.uri?authorId=57200310364>
WoS Researcher ID: <https://www.webofscience.com/wos/author/record/AAM-9835-2021>
Google Scholar ID: <https://scholar.google.hu/citations?user=gil6lCgAAAAJ>

Author's contributions

Pedro Miguel Alves Ribeiro Correia, Sandra Patrícia Marques Pereira and João Abreu de Faria Bilhim equally contributed into conceptualization, methodology, validation, formal analysis, investigation, selection of resources, writing a review, editing, visualization, supervision, and project administration.

Conflict of interest

The authors declares no conflict of interest.

Financial disclosure

This work is supported by Portuguese national funds through FCT–Fundação para a Ciência e a Tecnologia, under project UIDB/04643/2020.

Thematic rubrics

OECD: 5.05 / Law

PASJC: 3308 / Law

WoS: OM / Law

Article history

Date of receipt – January 5, 2024

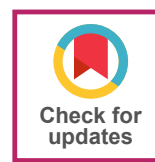
Date of approval – January 20, 2024

Date of acceptance – March 15, 2024

Date of online placement – March 20, 2024



Научный обзор
УДК 34:004:347.9:655.535.257
EDN: <https://elibrary.ru/idviewc>
DOI: <https://doi.org/10.21202/jdtl.2024.12>



Исследования инноваций и цифровой трансформации в правосудии: систематический обзор

Педро Мигель Алвес Рибейро Коррейя  

Коимбрский университет, Коимбра, Португалия

Сандра Патрисиа Маркес Перейра 

Коимбрский университет, Коимбра, Португалия

Жоао Абреу де Фариа Билхим 

Лиссабонский университет, Лиссабон, Португалия

Ключевые слова

государственное управление,
государственный сектор,
инновации в правосудии,
метод PRISMA,
методология исследования,
систематический обзор,
сравнительные исследования,
цифровая трансформация,
электронное правосудие,
юридическая наука

Аннотация

Цель: составление карты исследований в сфере инноваций и цифровой трансформации правосудия, опубликованных в период с 2001 по 2022 г., в соответствии со следующими четырьмя вопросами: (1) какие типы инноваций и цифровых трансформаций внедряются в область правосудия в настоящее время; (2) каковы цели внедрения инноваций и цифровых трансформаций в области правосудия; (3) каковы предпосылки, определяющие появление инноваций и цифровой трансформации в области правосудия; (4) каковы результаты внедрения инноваций и цифровой трансформации в область правосудия.

Методы: представленный в работе систематический обзор источников (научных статей, материалов конференций, монографий и организационных документов) проведен в соответствии с протоколом PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses (Предпочтительные элементы отчетности для систематических обзоров и мета-анализов). Отобранные по критериям «научная область», «тема», «дизайн исследования», «год публикации» и ключевым словам «государственное управление», «государственный сектор», «электронное правосудие», «цифровая трансформация», «инновации» источники анализировались и оценивались по пяти основным аспектам:

 Контактное лицо

© Коррейя П. М. А. Р., Перейра С. П. М., Билхим Ж. А. де Ф., 2024

Статья была первоначально опубликована на португальском языке в Annals of the Administration of Justice Meeting – EnAJUS 2023 (Pereira, et al, 2023). <https://www.enajus.org.br/anais/assets/papers/2023/sessao-3/inovacao-e-transformacao-digital-na-justica-uma-revisao-sistematica-de-literatura.pdf>



Статья находится в открытом доступе и распространяется в соответствии с лицензией Creative Commons «Attribution» («Атрибуция») 4.0 Всемирная (CC BY 4.0) (<https://creativecommons.org/licenses/by/4.0/deed.ru>), позволяющей неограниченно использовать, распространять и воспроизводить материал при условии, что оригинальная работа упомянута с соблюдением правил цитирования.

(1) определение инноваций; (2) типы инноваций; (3) цели инноваций; (4) предпосылки инноваций; (5) результаты инноваций.

Результаты: адаптация и применение к области исследования правосудия разработанной Vries et al. (2015) эвристической модели изучения инноваций в государственном секторе. Проведенная адаптация эвристической модели позволила сформировать следующие направления анализа: контекстуальные предпосылки в области правосудия; институциональные предпосылки в области правосудия; характеристики инноваций и цифровой трансформации в области правосудия; индивидуальные предпосылки в области правосудия; типы инноваций и цифровой трансформации в правосудии; результаты процесса инноваций и цифровой трансформации в правосудии.

Научная новизна: представлен комплексный взгляд на литературу в области инноваций и цифровой трансформации в правосудии на основе адаптации подхода к проведению систематических исследований литературы в области социальных наук, что позволило выявить пробелы и определить направления дальнейших изысканий в заданной области, включая активизацию сравнительно-правовых исследований, расширение методологической базы, опору на теории государственного управления и др.

Практическая значимость: полученные результаты позволяют сформировать эвристическую карту инноваций и цифровых трансформаций в правосудии, создают предпосылки (контекстуальные, институциональные и индивидуальные) и основу для будущих эмпирических исследований в области правосудия, анализа, оценки и совершенствования государственной политики в области инноваций и цифровой трансформации в данной сфере.

Для цитирования

Коррейя, П. М. А. Р., Перейра, С. П. М., Билхим, Ж. А. де Ф. (2024). Исследования инноваций и цифровой трансформации в правосудии: систематический обзор. *Journal of Digital Technologies and Law*, 2(1), 221–250. <https://doi.org/10.21202/jdtl.2024.12>

Список литературы

- Abdulvaliev, A. (2017). Court, internet technologies and their role in ensuring the well-being of society. In *Responsible Research and Innovation Proceedings of the International Conference «Responsible Research and Innovation»* (RRI 2016), 07-10 November, 2016, Tomsk Polytechnic University. <http://dx.doi.org/10.15405/epsbs.2017.07.02.2>
- Adeleye, J. T., Ahmed, R. K., Nyman-Metcalf, K., & Draheim, D. (2022). E-Court Transition Process: Identifying Critical Factors and Recommendations for Developing Countries. In A. V. Chugunov, M. Janssen, I. Khodachek, Y. Misnikov, & D. Trutnev (Eds.), *Electronic Governance and Open Society: Challenges in Eurasia. EGOSE 2021. Communications in Computer and Information Science*, 1529. Springer. https://doi.org/10.1007/978-3-031-04238-6_23
- Adler, M., & Henman, P. (2009). Justice beyond the courts: The implications of computerisation for procedural justice in social security. In A. Martínez, & P. Abat (Eds.), *E-Justice: Using Information Communication Technologies in the Court System* (pp. 65–86). IGI Global. <https://doi.org/10.4018/978-1-59904-998-4.ch005>
- Ahmed, R. K., Muhammed, K. H., Pappel, I., & Draheim, D. (2020). Challenges in the Digital Transformation of Courts: A Case Study from the Kurdistan Region of Iraq. In *2020 Seventh International Conference on eDemocracy & eGovernment (ICEDEG)* (pp. 1–6). <https://doi.org/10.1109/ICEDEG48599.2020.9096801>

- Ahmed, R. K., Muhammed, K. H., Pappel, I., & Draheim, D. (2021). Impact of e-court systems implementation: a case study. *Transforming Government: People, Process and Policy*, 15(1), 108–128. <https://doi.org/10.1108/TG-01-2020-0008>
- Andrade, A., Joia, L. A., & Kamlot, D. (2012). E-government in the judiciary system: Assessing the correlation between IT investment and the efficiency of courts of justice in Brazil. In K. J. Bwalya & S. F. Zulu (Eds.), *Handbook of Research on E Government in Emerging Economies: Adoption, E-Participation, and Legal Frameworks* (pp. 158–178). IGI Global. <https://doi.org/10.4018/978-1-4666-0324-0.ch008>
- Arias, M. I., & Maçada, A. C. G. (2020). Judiciaries' modernisation through electronic lawsuits: Employees' perceptions from the Brazil and Argentina federal justice services. *Information Development*, 37(2). <https://doi.org/10.1177/0266666920910489>
- Axpe, M. R. V. (2021). Ethical Challenges from Artificial Intelligence to Legal Practice. In H. Sanjurjo González, I. Pastor López, P. García Bringas, H. Quintián & E. Corchado (Eds.), *Hybrid Artificial Intelligent Systems. HAIS 2021* (Lecture Notes in Computer Science, 12886). Springer. https://doi.org/10.1007/978-3-030-86271-8_17
- Bănică, R. A. (2020). Digitization of justice in the context of the COVID-19 pandemic and the implications of digitalization on constitutional rights. *Revista de Drept Constituțional*, 2, 11–30. <https://doi.org/10.47743/rdc-2020-2-0001>
- Bex, F., Prakken, H., van Engers, T., & Verheij, B. (2017). Introduction to the special issue on Artificial Intelligence for Justice. *Artificial Intelligence and Law*, 25(1), 1–3. <https://doi.org/10.1007/s10506-017-9198-5>
- Bochenek, A. C., Haddad, C. H. B., & Cantuária, E. da S. R. (Eds.). (2022). *Gestão, Redes e Design Organizacional*. Escola Nacional de Formação e Aperfeiçoamento de Magistrados – Enfam.
- Borisova, V. F., & Afanasiev, S. F. (2019). Realia and prospects of civil e-justice legal regulation. In E. Popkova (Ed.), *Ubiquitous computing and the internet of things: Prerequisites for the development of ICT* (pp. 403–410). Springer International Publishing. https://doi.org/10.1007/978-3-030-13397-9_47
- Cano, J., Jimenez, C. E., Hernandez, R., et al. (2015). New tools for e-justice: legal research available to any citizen. In L. Terán & A. Meier (Eds.), *Proceedings of 2015 Second International Conference on eDemocracy & eGovernment (ICEDEG)* (pp. 108–111). IEEE. <https://doi.org/10.1109/ICEDEG.2015.7114455>
- Cano, J., Pomed, L., Jiménez-Gómez, C. E., & Hernández, R. (2017). Open Judiciary in High Courts: Securing a Networked Constitution, Challenges of E-Justice, Transparency, and Citizen Participation. In *Achieving Open Justice through Citizen Participation and Transparency* (pp. 36–54). <https://doi.org/10.4018/978-1-5225-0717-8.ch003>
- Carboni, N., & Velicogna, M. (2012). Electronic Data Exchange within European Justice: A Good Opportunity? *International Journal for Court Administration*, 4(3), 104–120. <https://doi.org/10.18352/ijca.90>
- Carullo, G. (2015). Services in the Field of Law within the Internal Market: Promoting e-Justice through Interoperability. *Laws*, 5(1), 1. <https://doi.org/10.3390/laws5010001>
- Chatfield, A. T., & Reddick, C. G. (2020). Collaborative network governance framework for aligning open justice and e-justice ecosystems for greater public value. *Social Science Computer Review*, 38(3), 252–273. <https://doi.org/10.1177/0894439318771968>
- Chawinga, W. D., Chawinga, C., Kapondera, S. K., Chipeta, G. T., Majawa, F., & Nyasulu, C. (2020). Towards e-judicial services in Malawi: Implications for justice delivery. *The Electronic Journal of Information Systems in Developing Countries*, 86, e12121. <https://doi.org/10.1002/isd2.12121>
- Clarinal, A., Simonofski, A., Vanderose, B., & Dumas, B. (2020). Public displays and citizen participation: A systematic literature review and research agenda. *Transforming Government: People, Process and Policy*, 15(1), 1–35. <https://doi.org/10.1108/TG-12-2019-0127>
- Contini, F., & Cordella, A. (2004). Information System and Information Infrastructure Deployment: The Challenge of the Italian eJustice Approach. *European Conference on Information Systems 2004 Proceedings*, 40.
- Contini, F., & Cordella, A. (2009). Italian justice system and ICT: Matches and mismatches between technology and organisation. In A. Martínez & P. Abat (Eds.), *E-Justice: Using information communication technologies in the court system* (pp. 117–134). IGI Global. <https://doi.org/10.4018/978-1-59904-998-4.ch008>
- Contini, F., & Lanzara, G. F. (2014). Introduction: The challenge of interoperability and complexity in european civil proceedings online. In F. Contini & G. F. Lanzara (Eds.), *The circulation of agency in e-justice: Interoperability and infrastructures for European transborder judicial proceedings* (pp. xiii–xxi). Springer.
- Contini, F., & Lanzara, G. F. (Eds.). (2009). *ICT and Innovation in the Public Sector: European Studies in the Making of E-Government*. Palgrave Macmillan. <https://doi.org/10.1057/9780230227293>
- Cooper, H. (2016). *Research Synthesis and Meta-Analysis: A Step-by-Step Approach* (fifth edition). Sage.
- Cordella, A., Contini, F. (2020). *Digital Technologies for Better Justice: A Toolkit for Action*. Inter-American Development Bank. <http://dx.doi.org/10.18235/0002297>

- Covelo de Abreu, J. (2019). The Role of Artificial Intelligence in the European e-Justice Paradigm – Suiting Effective Judicial Protection Demands. In P. Moura Oliveira, P. Novais, & L. Reis. (Eds.), *Progress in Artificial Intelligence. EPIA 2019. Lecture Notes in Computer Science*, 11804. Springer. https://doi.org/10.1007/978-3-030-30241-2_26
- Creutzfeldt, N. (2021). Towards a digital legal consciousness? *European Journal of Law and Technology*, 12(3).
- De Rugeriis, G. (2010). *The Online Criminal Trial in Italy Seeks an Identity*. In *Proceedings of the 10th European Conference on e-Government* (pp. 492–499). Academic Publishing Limited.
- Deligiannis, A. P., & Anagnostopoulos, D. (2017). Towards Open Justice: ICT Acceptance in the Greek Justice System: The Case of the Integrated Court Management System for Penal and Civil Procedures (OSDDY/PP). In *Proceedings of the 7th International Conference for E-Democracy and Open Government, CeDEM 2017* (Art. No. 8046275, pp. 82–91). <https://doi.org/10.1109/cedem.2017.26>
- Di Natale, L. J., & Cordella, A. (2022). Digitising the Judicial Sector: A Case Study of the Dutch KEI Programme. In R. Krimmer et al., *Electronic Participation. ePart 2022. Lecture Notes in Computer Science*, 13392. Springer. https://doi.org/10.1007/978-3-031-23213-8_9
- Dillon, M. P., & Beresford, D. (2014). Electronic Courts and the Challenges in Managing Evidence. A View from Inside the International Criminal Court. *International Journal for Court Administration*, 6(1), 29–36. <https://doi.org/10.18352/ijca.132>
- Doty, P., & Erdelez, S. (2002). Information micro-practices in Texas rural courts: Methods and issues for e-government. *Government Information Quarterly*, 19(4), 369–387. [https://doi.org/10.1016/S0740-624X\(02\)00121-1](https://doi.org/10.1016/S0740-624X(02)00121-1)
- Dumoulin, L., & Licoppe, C. (2016). Videoconferencing, New Public Management, and Organizational Reform in the Judiciary. *Policy & Internet*, 8(3), 313–333. <https://doi.org/10.1002/poi3.124>
- Ermakova, E. P., & Frolova, E. E. (2022). Using Artificial Intelligence in Dispute Resolution. In A. O. Inshakova, E. E. Frolova (Eds.), *Smart Technologies for the Digitisation of Industry: Entrepreneurial Environment. Smart Innovation, Systems and Technologies*, 254. Springer. https://doi.org/10.1007/978-981-16-4621-8_11
- Fabri, M. (2009). The Italian style of e-justice in a comparative perspective. In A. Martínez & P. Abat (Eds.), *E-Justice: Using Information Communication Technologies in the Court System* (pp. 1–19). IGI Global. <https://doi.org/10.4018/978-1-59904-998-4.ch001>
- Fabri, M. (2018). Pitfalls in Data Gathering to Assess Judiciaries. *International Journal for Court Administration*, 9(3), 67–75. <https://doi.org/10.18352/ijca.278>
- Fabri, M. (2021). Will COVID-19 Accelerate Implementation of ICT in Courts? *International Journal for Court Administration*, 12(2), 2. <https://doi.org/10.36745/ijca.384>
- Fernandes, R. V. de C., Rule, C., Ono, T. T., & Cardoso, G. E. B. (2018). The expansion of online dispute resolution in Brazil. *International Journal for Court Administration*, 9(2), 20–30. <https://doi.org/10.18352/ijca.255>
- Fernando, P., Gomes, C., & Fernandes, D. (2014). The Piecemeal Development of an e-Justice Platform: The CITIUS Case in Portugal. In F. Contini, & G. Lanzara (Eds.), *The Circulation of Agency in E-Justice*. Law, Governance and Technology Series, 13. Springer, Dordrecht. https://doi.org/10.1007/978-94-007-7525-1_6
- Fersini, E., Messina, V., Toscani, D., et al. (2010). Semantics and machine learning for building the next generation of judicial court management systems. In K. Liu & J. Filipe (Eds.), *Proceedings of the International Conference on Knowledge Management and Information Sharing* (Vol. 01C3K, pp. 51–60), Valencia, Spain. <https://doi.org/10.5220/0003099300510060>
- Filho, R. F., & Veronese, A. (2009). Electronic justice in Brazil. In A. Martínez & P. Abat (Eds.), *E-Justice: Using information communication technologies in the court system* (pp. 135–151). IGI Global. <https://doi.org/10.4018/978-1-59904-998-4.ch009>
- Frade, C., Fernando, P., & Conceição, A. F. (2020). The performance of the courts in the digital era: The case of insolvency and restructuring proceedings. *International Insolvency Review*, 29(3), 346–359. <https://doi.org/10.1002/iir.1390>
- Francesconi, E. (2014). An Interoperability Approach for Enabling Access to e-Justice Systems across Europe. In *Electronic Government and the Information Systems Perspective: Third International Conference, EGOVIS 2014*, Munich, Germany, September 1–3, 2014. Proceedings.
- Freitas, C. S. de, & Medeiros, J. J. (2015). Organizational Impacts of the Electronic Processing System of the Brazilian Superior Court of Justice. *JISTEM – Journal of Information Systems and Technology Management*, 12(2), 317–332. <https://doi.org/10.4301/S1807-17752015000200007>
- Gascó, M., & Jimenez-Gomez, C. E. (2011). Interoperability in the justice field: Variables that affect implementation. In M. Klun, M. Decman & T. Jukic (Eds.), *Proceedings of the 11th European Conference on eGovernment* (pp. 272–279). Academic Publishing Limited.
- Gibson, J. (2016). Social Media and the Electronic “New World” of Judges. *International Journal for Court Administration*, 7(2), 1–9. <https://doi.org/10.18352/ijca.199>

- Greenwood, J. M., & Bockweg, G. (2012). Insights to Building a Successful E-filing Case Management Service: U.S. Federal Court Experience. *International Journal for Court Administration*, 4(2), 2–10. <https://doi.org/10.18352/ijca.74>
- Greenwood, J. M., & Brinkema, J. (2015). E-Filing Case Management Services in the US Federal Courts: The Next Generation: A Case Study. *International Journal for Court Administration*, 7(1), 3–17. <https://doi.org/10.18352/ijca.179>
- Henning, F., & Ng, G. (2009). The challenge of collaboration—ICT implementation networks in courts in The Netherlands. *Transylvanian Review of Administrative Sciences*, 5(28), 27–44.
- Karasev, A. T., Savoskin, A. V., & Meshcheryagina, V. A. (2021). On the Effectiveness of the Digital Legal Proceedings Model in Russia. *Mathematics*, 9(2), 125. <https://doi.org/10.3390/math9020125>
- Kengyel, M., & Nemessányi, Z. (Eds.). (2012). *Electronic technology and civil procedure: New paths to justice from around the world*. Springer. <https://doi.org/10.1007/978-94-007-4072-3>
- Kettiger, D., & Lienhard, A. (2021). Swiss Courts Facing the Challenges of COVID-19. *International Journal for Court Administration*, 12(2), 5. <https://doi.org/10.36745/ijca.380>
- Kettiger, D., Lienhard, A., Langbroek, Ph., & Fabri, M. (2019). Court Management: A Young Field of Public Management. In E. Ongaro (Ed.), *Public Administration in Europe. Governance and Public Management* (pp. 309–315). https://doi.org/10.1007/978-3-319-92856-2_28
- Kiršienė, J., Amilevičius, D., & Stankevičiūtė, D. (2022). Digital Transformation of Legal Services and Access to Justice: Challenges and Possibilities. *Baltic Journal of Law & Politics*, 15(1), 141–172. <https://doi.org/10.2478/bjlp-2022-0007>
- Kiškis, M., & Petrauskas, R. (2004). ICT adoption in the judiciary: Classifying of judicial information. *International Review of Law, Computers & Technology*, 18(1), 37–45. <https://doi.org/10.1080/13600860410001674724>
- Kitoogo, F. E., & Bitwayiki, C. (2010). e-Justice implementation at a national scale: The Ugandan case. In A. Villaflorida, R. Saint-Paul & A. Zorer (Eds.), *E-infrastructures and e-services on developing countries* (pp. 40–49). Springer. https://doi.org/10.1007/978-3-642-12701-4_5
- Konina, A. (2020). Technology-Driven Changes in an Organizational Structure: The Case of Canada's Courts Administration Service. *International Journal for Court Administration*, 11(2), 6. <https://doi.org/10.36745/ijca.326>
- Kovalenko, N., & Bernaziuk, I. (2018). Topical issues of financing electronic legal proceedings in Ukraine. *Baltic Journal of Economic Studies*, 4(5), 100–104. <https://doi.org/10.30525/2256-0742/2018-4-5-100-104>
- Kramer, X. E., van Gelder, E., & Themeli, E. (2018). e-Justice in the Netherlands: the Rocky Road to Digitised Justice. In M. Weller & M. Wendland (Eds.), *Digital Single Market: Bausteine eines Rechts in der Digitalen Welt* (pp. 209–235). Tübingen: Mohr Siebeck. <https://dx.doi.org/10.2139/ssrn.3167543>
- Lodge, J. (2005). eJustice, Security and Biometrics: the EU's Proximity Paradox. *European Journal of Crime, Criminal Law and Criminal Justice*, 13(4), 533–564. <https://doi.org/10.1163/157181705774662607>
- Lourenço, R. P., Fernando, P., & Gomes, C. (2020). From eJustice to Open Judiciary: An Analysis of the Portuguese Experience. In *Open Government: Concepts, Methodologies, Tools, and Applications* (pp. 1161–1186). <https://doi.org/10.4018/978-1-5225-9860-2.ch055>
- Loutocký, P. (2022, May 31). Possible approaches towards the architecture of online courts and their potential in the decision-making process. *Jusletter IT*. <https://doi.org/10.38023/f37d20de-4f8c-4421-afaa-0d914636f226>
- Lunardi, F. C., & Clementino, M. B. M. (Eds.). (2021). *Inovação Judicial: Fundamentos e Práticas para uma Jurisdição de Alto Impacto*. Brasília: Escola Nacional de Formação e Aperfeiçoamento de Magistrados –Enfam.
- Lupo, G. (2015). Evaluating e-Justice: The Design of an Assessment Framework for e-Justice Systems. In K. Benyekhlef, J. Bailey, J. Burkell, & F. Gélinas (Eds.), *eAccess to Justice* (pp. 53–94). University of Ottawa Press.
- Lupo, G. (2019). Assessing e-Justice smartness: A new framework for e-Justice Evaluation Through Public Values. In M. P. Rodriguez Bolivar (Ed.), *Setting Foundations for the Creation of Public Value in Smart Cities* (pp. 77–113). Springer. https://doi.org/10.1007/978-3-319-98953-2_4
- Lupo, G., & Bailey, J. (2014). Designing and implementing e-Justice Systems: Some Lessons Learned from EU and Canadian Examples. *Laws*, 3(2), 353–387. <https://doi.org/10.3390/laws3020353>
- Lupo, G., & Carnevali, D. (2022). Smart Justice in Italy: Cases of Apps Created by Lawyers for Lawyers and Beyond. *Laws*, 11(3), 51. <https://doi.org/10.3390/laws11030051>
- Lyon, F., Gyateng, T., Pritchard, D., Vaze, P., Vickers, I., & Webb, N. (2015). Opening access to administrative data for evaluating public services: The case of the Justice Data Lab. *Evaluation*, 21(2), 232–247. <https://doi.org/10.1177/1356389015577507>
- Martínez, A. (2009). E-justice in Spain. In A. Martínez & P. Abat (Eds.), *E-justice: Using information communication technologies in the court system* (pp. 98–116). IGI Global. <https://doi.org/10.4018/978-1-59904-998-4.ch007>

- Martínez, A., & Abat, P. (2009). *E-justice: Using information communication technologies in the court system*. IGI Global. <https://doi.org/10.4018/978-1-59904-998-4>
- McMillan, J. E. (2009). The potential of computerized court case management to battle judicial corruption. In A. Martínez & P. Abat (Eds.), *E-justice: Using information communication technologies in the court system* (pp. 57–64). IGI Global. <https://doi.org/10.4018/978-1-59904-998-4.ch004>
- Meyer, N. (2014). Social Media and the Courts: Innovative Tools or Dangerous Fad? A Practical Guide for Court Administrators. *International Journal for Court Administration*, 6(1), 2–28. <https://doi.org/10.18352/ijca.136>
- Minbaleev, A. V., & Evsikov, K. S. (2022). Alternative dispute resolution in digital government. *RBADR*, 4(7), 119–146. <https://doi.org/10.52028/rbadr.v4i7.8>
- Morison, J., & Harkens, A. (2019). Re-engineering justice? Robot judges, computerised courts and (semi) automated legal decision-making. *Legal Studies*, 39(4), 618–635. <https://doi.org/10.1017/lst.2019.5>
- Murillo, R., & Zuniga, R. (2013). Could Innovation also Emerge from the Public Sector? Creating an ISO-like Judiciary Quality Management Standard. *International Journal for Court Administration*, 5(2), 10–30. <https://doi.org/10.18352/ijca.16>
- Nikolaychenko, O., & Nikolaychenko, V. V. (2019). Transformation of the procedural obligations of the court under electronic justice conditions. In E. G. Popkova (Ed.), *Ubiquitous computing and the internet of things: Prerequisites for the development of ICT* (pp. 379–385). Springer International Publishing. https://doi.org/10.1007/978-3-030-13397-9_44
- Oktal, O., Alpu, O., & Yazici, B. (2016). Measurement of internal user satisfaction and acceptance of the e-justice system in Turkey. *Aslib Journal of Information Management*, 68(6), 716–735. <https://doi.org/10.1108/AJIM-04-2016-0048>
- Olugasa, O. (2020). Utilising Technology in Making the Nigerian Administration of Criminal Justice Act Effective for Criminal Trials. *International Journal for Court Administration*, 11(2), 5. <https://doi.org/10.36745/ijca.332>
- Olugasa, O., & Davies, A. (2022). Remote Court Proceedings in Nigeria: Justice Online or Justice on the Line. *International Journal for Court Administration*, 13(2), 2. <https://doi.org/10.36745/ijca.448>
- Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., ... Moher, D. (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *Research Methods & Reporting*, 372(71), 1–9. <https://doi.org/10.1136/bmj.n71>
- Pangalos, G., Salmatzidis, I., & Pagkalos, I. (2014). Using IT to Provide Easier Access to Cross-Border Legal Procedures for Citizens and Legal Professionals – Implementation of a European Payment Order e-CODEX pilot. *International Journal for Court Administration*, 6(2), 43–52. <https://doi.org/10.18352/ijca.137>
- Pereira, S., Correia, P., & Bilhim, J. (2023). Inovação e Transformação Digital na Justiça: uma Revisão Sistemática de Literatura. *Anais do Encontro de Administração da Justiça – EnAJUS 2023*. <https://goo.su/UOQBye>
- Poblet, M., Vallbé, J. J., Casellas, N., & Casanovaset, P. (2009). Judges as IT users: The iuriservice example. In A. Martínez & P. Abat (Eds.), *E-justice: Using information communication technologies in the court system* (pp. 38–56). IGI Global. <https://doi.org/10.4018/978-1-59904-998-4.ch003>
- Politis, D., Donos, G., Christou, G., Giannakopoulos, P., & Papapanagiotou-Leza, A. (2008). Implementing E-justice on a national scale: Coping with balkanization and socio-economical divergence. *Journal of Cases on Information Technology*, 10(2), 41–59. <https://doi.org/10.4018/jcit.2008040104>
- Potter, S., Farrelly, P., & Begg, D. (2009). The e-court roadmap: Innovation and integration an Australian case study. In A. Martínez & P. Abat (Eds.), *E-justice: Using information communication technologies in the court system* (pp. 165–185). IGI Global. <https://doi.org/10.4018/978-1-59904-998-4.ch011>
- Poullet, Y. (2009). The Belgian case: Phenix or how to design E justice through privacy requirements and in full respect of the separation of powers. In A. Martínez & P. Abat (Eds.), *E-justice: Using information communication technologies in the court system* (pp. 186–195). IGI Global. <https://doi.org/10.4018/978-1-59904-998-4.ch012>
- Rattan, J., & Rattan, V. (2021). The COVID-19 Crisis – the New Challenges Before the Indian Justice and Court Administration System. *International Journal for Court Administration*, 12(2). <https://doi.org/10.36745/ijca.391>
- Reiling, A. D. (2020). Courts and Artificial Intelligence. *International Journal for Court Administration*, 11(2), 8. <https://doi.org/10.36745/ijca.343>
- Reiling, D. (2011). Understanding IT for Dispute Resolution. *International Journal for Court Administration*, 3(2), 34–44. <https://doi.org/10.18352/ijca.61>
- Reiling, D. (2012). Technology in Courts in Europe: Opinions, Practices and Innovations. *International Journal for Court Administration*, 4(2), 11–20. <https://doi.org/10.18352/ijca.75>

- Reiling, D. (2017). Beyond court digitalization with ODR. *International Journal for Court Administration*, 8(2), 1–6. <https://doi.org/10.18352/ijca.225>
- Reiling, D., & Contini, F. (2022). E-Justice Platforms: Challenges for Judicial Governance. *International Journal for Court Administration*, 13(1), 6. <https://doi.org/10.36745/ijca.445>
- Rocha, C. (2021). Success Factors for e-Justice Adoption. In *ISLA 2021 Proceedings*, 12 (pp.1–6).
- Romdoni, M., Lussak, A., & Darmawan, I. (2022). Success Factors for Using E-Court in Indonesian Courts. *Proceeding of International Academic Symposium of Social Science 2022*, 82(1), 58. <http://dx.doi.org/10.3390/proceedings2022082058>
- Rooze, E. (2010). Differentiated Use of Electronic Case Management Systems. *International Journal for Court Administration*, 3(1), 50–60. <https://doi.org/10.18352/ijca.53>
- Rosa, J., Teixeira, C., & Pinto, J. S. (2013). Risk factors in e-justice information systems. *Government Information Quarterly*, 30(3), 241–256. <https://doi.org/10.1016/j.giq.2013.02.002>
- Rusakova, E. P., & Frolova, E. E. (2022). Current Problems of Digital Justice in the BRICS Countries. In A. O. Inshakova & E. E. Frolova (Eds.), *Smart Technologies for the Digitisation of Industry: Entrepreneurial Environment. Smart Innovation, Systems and Technologies*, 254. Springer. https://doi.org/10.1007/978-981-16-4621-8_12
- Sanders, A. (2021). Video-Hearings in Europe Before, During and After the COVID-19 Pandemic. *International Journal for Court Administration*, 12(2), 3. <https://doi.org/10.36745/ijca.379>
- Sandoval-Almazan, R., & Gil-Garcia, J. R. (2020). Understanding e-Justice and Open Justice Through the Assessment of Judicial Websites: Toward a Conceptual Framework. *Social Science Computer Review*, 38(3), 334–353. <https://doi.org/10.1177/0894439318785957>
- Santuber, J., Abou Refaie, R., & Meinel, C. (2022). Interrogating e-Justice: Lessons from Digitalizing Courts in Chile. In *Conference EGOV-CeDEM-ePart 2022*, September 6–8, 2022, Linköping University, Sweden (Hybrid). <https://ceur-ws.org/Vol-3399/paper5.pdf>
- Sarantis, D., & Askounis, D. (2009). Electronic criminal record in Greece: Project management approach and lessons learned in public administration. *Transylvanian Review of Administrative Sciences*, 5(25), 132–146.
- Scognamiglio, F., Sancino, A., Caló, F., Jacklin-Jarvis, C., & Rees, J. (2023). The public sector and co-creation in turbulent times: A systematic literature review on robust governance in the COVID-19 emergency. *Public Administration*, 101(1), 53–70. <https://doi.org/10.1111/padm.12875>
- Seepma, A. P., de Blok, C., & Van Donk, D. P. (2021). Designing digital public service supply chains: Four country-based cases in criminal justice. *Supply Chain Management*, 26(3), 418–446. <https://doi.org/10.1108/SCM-03-2019-0111>
- Shahbazov, I. (2019). Exploring the attitudes of university students and criminal justice professionals towards electronic monitoring in Azerbaijan: A focus group study. *International Journal of Law, Crime and Justice*, 58, 44–55. <https://doi.org/10.1016/j.ijlcrj.2019.06.003>
- Shi, C., Sourdin, T., & Li, B. (2021). The Smart Court – A New Pathway to Justice in China? *International Journal for Court Administration*, 12(1), 4. <https://doi.org/10.36745/ijca.367>
- Silveira, A., & de Abreu, J. C. (2018). Interoperability solutions under Digital Single Market: European e-Justice rethought under e-Governance paradigm. *European Journal of Law and Technology*, 9(1). <https://ejlt.org/index.php/ejlt/article/view/590>
- Sousa, M., Kettiger, D., & Lienhard, A. (2022). E-justice in Switzerland and Brazil: Paths and Experiences. *International Journal for Court Administration*, 13(2), 3. <https://doi.org/10.36745/ijca.368>
- Taal, S., Kolitsi, Z., Velicogna, M., Groustra, J., & Steigenga, E. (2019). Connecting the European e-Justice Community: Towards a New Governance Model for e-CODEX. *Public Sciences & Policies*, 5(1), 33–51. <https://doi.org/10.33167/2184-0644.CPP2019.VVN1/pp.33-51>
- Themeli, E. (2022). The Frontiers of Digital Justice in Europe. In X. Kramer, J. Hoevenaars, B. Kas, & E. Themeli (Eds.), *Frontiers in Civil Justice* (pp. 102–120). <https://doi.org/10.4337/9781802203820.00013>
- Tokarev, D. A., Usanova, V. A., Kagalnitskova, N., & Sandalova, V. A. (2019). Development of E-justice in Russia: Modernization of legal regulation and deepening of scientific research. In E. Popkova (Ed.), *Ubiquitous computing and the internet of things: Prerequisites for the development of ICT* (pp. 215–222). Springer. https://doi.org/10.1007/978-3-030-13397-9_25
- Trochev, A. (2009). Courts on the Web in Russia. In A. Martínez & P. Abat (Eds.), *E-Justice: Using information communication technologies in the court system* (pp. 196–203). IGI Global. <https://doi.org/10.4018/978-1-59904-998-4.ch013>
- Tyler, M. H. C. (2009). Online dispute resolution. In A. Martínez & P. Abat (Eds.), *E-Justice: Using information communication technologies in the court system* (pp. 87–96). IGI Global. <https://doi.org/10.4018/978-1-59904-998-4.ch006>
- Valeev, D. K., & Nuriev, A. G. (2019). Unity of judicial power: Development of elements of electronic justice. *Revista Turismo: Estudos e Práticas*, 2, 1–5.

- van den Hoogen, R. (2008). Will E-Justice still be Justice? Principles of a Fair Electronic Trial. *International Journal for Court Administration*, 1(1), 65–73. <https://doi.org/10.18352/ijca.128>
- Velicogna, M. (2014). Coming to Terms with Complexity Overload in Transborder e-Justice: The e-CODEX Platform. In F. Contini & G. Lanzara (Eds.), *The Circulation of Agency in E-Justice*. Springer. https://doi.org/10.1007/978-94-007-7525-1_13
- Velicogna, M. (2017). In search of smartness: The EU e-justice challenge. *Informatics*, 4(4), 38. <https://doi.org/10.3390/informatics4040038>
- Velicogna, M. (2018). E-Justice in Europe: From National Experiences to EU Cross-Border Service Provision. In L. Alcaide Muñoz & M. Rodríguez Bolívar (Eds.), *International E-Government Development*. Palgrave Macmillan. https://doi.org/10.1007/978-3-319-63284-1_3
- Velicogna, M., Errera, A., & Derlange, S. (2013). Building e-Justice in Continental Europe: The TeleRecours Experience in France. *Utrecht Law Review*, 9, 38–59. <https://doi.org/10.18352/ulr.211>
- Velicogna, M., Steigenga, E., Taal, S., Schmidt, A. (2020). Connecting EU jurisdictions: Exploring how to open justice across member states through ICT. *Social Science Computer Review*, 38(3), 274–294. <https://doi.org/10.1177/0894439318786949>
- Viktora, M. (2022). Innovative Leadership-a Missing Puzzle in the Economic Administration of the Judiciary in the Czech Republic. *International Journal for Court Administration*, 13(3), 3. <https://doi.org/10.36745/ijca.438>
- Voigt, S. (2018). Innovate – Don't Imitate! – ENCJ Research Should Focus on Research Gaps. *International Journal for Court Administration*, 9(3), 47–53. <https://doi.org/10.18352/ijca.279>
- Vries, H., Bekkers, V., & Tummers, L. (2015). Innovation in the Public Sector: A Systematic Review and Future Research Agenda. *Public Administration*, 94(1), 146–166. <https://doi.org/10.1111/padm.12209>
- Vucheva, M., Rocha, M., Renard, R., & Stasinopolous, D. (2020). Study on the use of innovative technologies in the justice field. <https://doi.org/10.2838/585101>
- Vuyst, B., & Fairchild, A. (2006). The Phenix project: A case study of e-justice in Belgium. In M. S. Fox & B. Spencer (Eds.), *ICEC'06: Proceedings of the 8th International Conference on Electronic Commerce: The New e-Commerce: Innovations for Conquering Current Barriers, Obstacles and Limitations to Conducting Successful Business on the Internet* (pp. 327–333). ACM. <https://doi.org/10.1145/1151454.1151509>
- Wallace, A. (2009). E-justice: An Australian perspective. In A. Martínez & P. Abat (Eds.), *E-justice: Using information communication technologies in the court system* (pp. 204–228). IGI Global. <https://doi.org/10.4018/978-1-59904-998-4.ch014>
- Wallace, A. (2017). The Impact of Technology on Courts. *International Journal for Court Administration*, 8(2), 1. <https://doi.org/10.18352/ijca.236>
- Wallace, A. (2019). Ten Questions for Dory Reiling – Developing IT for Courts. *International Journal for Court Administration*, 10(1), 1–3. <https://doi.org/10.18352/ijca.293>
- Wallace, A., & Laster, K. (2021). Courts in Victoria, Australia, During COVID: Will Digital Innovation Stick? *International Journal for Court Administration*, 12(2), 9. <https://doi.org/10.36745/ijca.389>
- Wallace, A., & Rowden, E. (2009). Gateways to Justice: The Use of Videoconferencing Technology to Take Evidence in Australian Courts. In *Proceedings of the 9th European Conference on e-Government*. University of Westminster Business School, London, England.
- Warren, M. (2014). Open justice in the technological age. *Monash University Law Review*, 40(1), 45–58.
- Wienrich, C., Fries, L., & Latoschik, M. (2022). Remote at Court: Challenges and Solutions of Video Conferencing in the Judicial System. In G. Salvendy, J. Wei (Eds.), *Proceedings of the 3rd International Conference on Design, Operation and Evaluation of Mobile Communications. 24th International Conference on Human-Computer Interaction (HCI)*. https://doi.org/10.1007/978-3-031-05014-5_8
- Yavuz, N., Karkin, N., & Yildiz M. (2022). E-Justice: A Review and Agenda for Future Research. In Y. Charalabidis, L. S. Flak & G. V. Pereira (Eds.), *Scientific Foundations of Digital Governance and Transformation: Concepts, Approaches and Challenges* (pp. 385–414). https://doi.org/10.1007/978-3-030-92945-9_15
- Yu, J. (2021). Citizen adoption of e-justice services: An empirical research in China. In *AISS'2021: Proceedings of the 3rd International Conference on Advanced Information Science and System*, November 26–28, 2021, Sanya, China. Association for Computing Machinery. <https://doi.org/10.1145/3503047.3503061>
- Yu, J., & Xia, J. (2020). E-justice evaluation factors: The case of smart court of China. *Information Development*, 37(4). <https://doi.org/10.1177/0266666920967387>
- Zelevnikow, J. (2017). Can Artificial Intelligence and Online Dispute Resolution enhance efficiency and effectiveness in Courts. *International Journal for Court Administration*, 8(2), 30–45. <https://doi.org/10.18352/ijca.223>
- Zelevnikow, J., & Esteban de la Rosa, F. (2021). Artificial Intelligence as a New Component of the Justice System: How it creates New Possibilities, but has Limitations especially with regards to Governance. In F. E. de la Rosa, J. M. Gil Ruiz, L. M. Hinojosa Martínez, A. Orti Vallejo, S. A. Sánchez Lorenzo, & J. Vals Prieto (Eds.), *Justice, Trade, Security, and Individual Freedoms in the Digital Society* (pp. 59–101).

Информация об авторах



Педро Мигель Алвес Рибейро Коррейя – PhD в области социологии (специализация в области государственного управления), приглашенный доцент, факультет права, Коимбрский университет

Адрес: 3004-528 Португалия, г. Коимбра, Патио да Универсидаде

E-mail: pcorreia@fd.uc.pt

ORCID ID: <https://orcid.org/0000-0002-3111-9843>

Scopus Author ID: <https://www.scopus.com/authid/detail.uri?authorId=58223408400>

WoS Researcher ID: <https://www.webofscience.com/wos/author/record/B-2753-2015>

Google Scholar ID: <https://scholar.google.hu/citations?user=KABKPUAAAAJ>



Сандра Патрисиа Маркес Перейра – соискатель степени PhD, магистр в области государственного управления (специализация в области управления правосудием), ассистент преподавателя, факультет права, Коимбрский университет

Адрес: 3004-528 Португалия, г. Коимбра, Патио да Универсидаде

E-mail: smpereira@fd.uc.pt

ORCID ID: <https://orcid.org/0000-0002-7374-3847>

Scopus Author ID: <https://www.scopus.com/authid/detail.uri?authorId=55929186300>

WoS Researcher ID: <https://www.webofscience.com/wos/author/record/X-3842-2019>

Google Scholar ID: <https://scholar.google.hu/citations?user=JkKwoIYAAAAJ>



Жоао Абреу де Фариа Билхим – PhD в области социологии (специализация в области социологии организаций), профессор в отставке, Лиссабонский университет

Адрес: 1649-004, Португалия, г. Лиссабон, Сиададе Университариа, Аламеда да Универсидаде

E-mail: j.bilhim@sapo.pt

ORCID ID: <https://orcid.org/0000-0001-9419-0009>

Scopus Author ID: <https://www.scopus.com/authid/detail.uri?authorId=57200310364>

WoS Researcher ID: <https://www.webofscience.com/wos/author/record/AAM-9835-2021>

Google Scholar ID: <https://scholar.google.hu/citations?user=gil6ICgAAAAJ>

Вклад авторов

Коррейя Педро Мигель Алвес Рибейро, Перейра Сандра Патрисиа Маркес, Билхим Жоао Абреу де Фариа внесли равный вклад в разработку концепции, методологии, валидацию, формальный анализ, проведение исследования, подбор источников, написание обзора, редактирование текста, визуализацию, руководство и управление проектом.

Конфликт интересов

Авторы сообщают об отсутствии конфликта интересов.

Финансирование

Работа выполнена при поддержке Национального фонда Португалии посредством Фонда науки и технологий (Fundação para a Ciência e a Tecnologia) в рамках проекта UIDB/04643/2020.

Тематические рубрики

Рубрика OECD: 5.05 / Law

Рубрика ASJC: 3308 / Law

Рубрика WoS: OM / Law

Рубрика ГРНТИ: 10.31.91 / Гражданско-процессуальное право отдельных стран

Специальность ВАК: 5.1.3 / Частно-правовые (цивилистические) науки

История статьи

Дата поступления – 5 января 2024 г.

Дата одобрения после рецензирования – 20 января 2024 г.

Дата принятия к опубликованию – 15 марта 2024 г.

Дата онлайн-размещения – 20 марта 2024 г.

