Intellectual property law: In the hands of artificial creator

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Аннотация

Review of a book: Lee, J-.A., Hilty, R., & Liu, K-.C. (Eds.). (2021). Artificial intelligence and intellectual property. Oxford University Press. https://doi.org/10.1093/oso/9780198870944.001.0001

Ключевые слова: Intellectual Property, digital law, intellectual property law, artificial intelligence

Every year, digitalization covers more and more areas of social life, algorithmization expands the horizons of human capabilities, and mechanization accelerates the interaction of subjects of social relations. A growing number of innovations appears in the turnover of property; it is here that the consequences of the digital revolution most acutely affect a wide range of persons participating in it. Should the conservative civil law regulation of property and personal non-property relations change under the pressure of digital technologies? Should we destroy the foundations and institutions tested by many years of experience in social communication, or will the existing civil law norms be able to withstand change, only requiring a little adaptation to new circumstances?

All these issues are even more relevant in the field of intellectual activity and the protection of intellectual property. One of the challenges is related to the development and implementation of artificial intelligence. Significant advances in the creation of algorithmic software raise the question of the possibility of legal protection of the results of its activities. The merit of the first comprehensive and multifaceted study of this problem belongs to the authors of the recently published monograph "Artificial Intelligence and Intellectual Property" by Oxford University Press, which is reviewed in this article.

This monograph was prepared in a truly international vein and is the result of the collaborative efforts of authors from the academic schools of the Asian Center for Intellectual Assets and Law, the School of Law of the Singapore Management University, the Chinese University of Hong Kong Faculty of Law, and the Max Planck Institute for Innovation and Competition. This circumstance, of course, is an advantage of this publication, since it has allowed the authors to look at the problems of intellectual property law and the introduction of artificial intelligence into the legal field from global and comparative legal perspectives.

The content of the book is clearly structured. It consists of seven parts, each of which presents a separate semantic block and covers a specific problem area. Together, the parts of the book form a comprehensive picture of the issues associated with the role of artificial intelligence and the recognition of intellectual rights. Each part includes from two to three chapters, tackling the question stated in the title of the corresponding part from different sides. The presentation of the main parts is preceded by a foreword by the executive editors Jyh-An Lee, Reto M. Hilty, and Kung-Chung Liu, who, by formulating a roadmap for studying the relevant problems,

show the logic of the presentation of the material in the monograph and briefly present each article.

The first part is intended to draw the readers' attention to the basics of interaction between AI, technological innovation, and business. It is the "common part" of the study in question.

To determine the optimal model for regulating public relations, it is necessary to understand the potential of AI, as well as the essence and limits of the opportunities it provides. Therefore, the reasoning of Anthony Man-Cho So is extremely relevant. The first chapter of the book acquaints readers with the functionality of artificial intelligence technologies or algorithmic machine learning of our time. The key issue that the author concentrates on is the possibility of independent thinking and the creativity of human-developed algorithms when solving various problems. Based on real-life examples — in particular, on the experience of Amazon in using the personnel-recruiting program — the author demonstrates a whole range of tasks implemented by such programs; the author concludes that it would be somewhat premature to call them artificial intelligence. Today, technologies are not able to fully take into account many ethical or legal aspects of the field of activity in which they operate. By identifying the numerous possibilities of machine learning algorithmic software, the author recognizes the potential for them that has yet to be realized.

The second chapter, authored by Ivan Khoo Yi and Andrew Fang Hao Sen, is a logical continuation of the introduction to the problem of using artificial intelligence technologies in modern society. The authors aim to track how AI was introduced in such a specific public sphere as healthcare, and to establish the depth of its implementation. Researchers study the issue systematically — from the standpoint of each participant in the public relations of a given market (service providers, patients, pharmaceutical companies, financial organizations, main regulators) — at the macro and micro levels. As healthcare automation inevitably raises legal and ethical issues of medical intervention, the authors' observations contribute significantly to the debate that has raged since Hippocrates' times.

In the third chapter of the book, Reto M. Hilty, Jörg Hoffmann, and Stefan Scheuerer somewhat deconstruct the issue of the legal regulation of public relations in the era of the development of programs capable of deep machine learning. Usually, the discussion proceeds by focusing on the need to amend the existing legal regulation in connection with the emergence of technologies previously unknown to humanity. However, the authors encourage

thinking about the legal protection of artificial intelligence itself. Turning to deeply theoretical, policy, and legal arguments for the need for civil-legal protection of the results of intellectual activity, the researchers conclude that the degree to which society uses artificial intelligence distorts the incentives for the development of such programs. This transforms the usual rationale for regulator intervention into the realm of human creativity.

Having become familiar with the need for the legal protection of artificial intelligence itself, readers have the opportunity to analyze, together with Raphael Zingg, the current state of patent protection for programs with signs of artificial intelligence, applications for which have been submitted to patent offices of three jurisdictions — the United States, Europe, and Japan. Based on the statistical analysis of applications for such "triple" patents for AI, the author concludes that it is necessary to change the standards of patent protection, and formulates other theses that will be of interest to other researchers and readers.

Deep machine learning programs are iconic inventions of modern scientific thought. But what are the features of the patentability of inventions created directly by artificial intelligence itself or constructed by humans using artificial intelligence? Ichiro Nakayama has provided answers to these burning issues based on the regulatory experience of Japan. The author critically examines the explanations of the Japanese Patent Office, updated in connection with the emergence of new models of algorithmic programs, and suggests acknowledging the impossibility of restoring or describing the course of creating inventions designed in the course of the automated work of artificial intelligence.

In the next chapter, Feroz Ali takes a historical perspective on how an invention can be presented to patent offices. Having demonstrated how the presentation of a model (reduced copy) of an invention was replaced by a textual description of its main characteristics, the author predicts that the emergence of such innovations as blockchain and artificial intelligence will contribute to the introduction of a new digital form for filing a patent application, before discussing the implications of this method for the global patent system.

The third part focuses on copyright in the context of developing programs that have signs of artificial intelligence.

Andres Guadamuz, in chapter seven, explores the problem of the emergence of new copyright objects created on a neural network technology basis. The author argues how modern copyright,

"programmed" for such features characterizing an object as original or the author's connection with his work, should respond to new challenges when the connection with the author's personality becomes more and more ephemeral and the programmed mechanisms gain the ability to create. The question of whether it is possible to speak of creativity as such in the execution of artificial intelligence programs, as well as some other related problems, are considered by the researcher deeply and thoroughly.

The issues of the emergence of new ways of creating works make it necessary to conduct an examination of the already existing legal regulation for its readiness to cover new objects with the system of existing norms. Jyh-An Lee conducted such a study on the United Kingdom's Copyright, Industrial Designs and Patents Act of 1988, also known as CDPA. In chapter eight, the author accompanies his research with an analysis of relevant judicial practice, which somewhat softens the adaptation of the law adopted at the end of the 1980s to the conditions of the new reality.

The next chapter, authored by Tianxiang He, focuses on the exception to copyright protection for so-called big data. As the author writes, big data is a resource for the development of artificial intelligence. Indeed, in order to build algorithms, it is necessary to analyze a huge amount of information, the rights to which may belong to third parties. The researcher, having chosen the current copyright law of China as the object of his research, is convinced that, in order to ensure the further development of AI, it is necessary to provide for partial exceptions to the rules on the protection of intellectual rights to information contained in big data.

Benjamin Sobel, in Chapter ten, "A Taxonomy of Training Data," also looks at big data access for machine learning programs, but from a completely different perspective. The researcher sees the root of the problem not in the absence of limitations and exceptions to copyright protection, but in the reasons of a systemic nature, including the low threshold of the required originality of the work, the lack of formal procedures for providing access to big data, which are necessary for market participants. The author systemizes the copyright protection regimes for the information contained in the total volume of big data. Based on an analysis of the current European Copyright Directive in the Digital Single Market, he formulates recommendations to address the problem of coexistence and interaction between artificial intelligence and big data.

The next part examines the purely practical aspects of the administration of relations regarding the results of intellectual activity and the rights to them.

The seventh chapter, prepared by Jianchen Liu and Ming Liu, is devoted to the problem of the patentability of inventions created using programs based on the principle of artificial intelligence. Jianchen Liu and Ming Liu chose the rules of Chinese law — in particular, the manual on patent examination of Chinese patent offices — as an empirical basis for their research. Patentability issues are viewed from the perspective of the patent office, whose purpose is to administer the process of examining a patent application. It is interesting to compare the authors' practice-oriented positions with the theoretical conclusions of Ichiro Nakayama, who analyzes the corresponding Japanese regulation (chapter five of the book).

Anke Moerland and Conrado Freitas explored the practice of using artificial intelligence to analyze trademark filings in the next chapter. It is noteworthy that the authors reviewed the existing positive experience of using this technology by such organizations as the World Intellectual Property Organization, the European Intellectual Property Office, the Australian Intellectual Property Office, etc. The applied methodology revealed the strengths and weaknesses of the use of artificial intelligence in this area.

Daniel Seng, in the chapter "Detecting and Prosecuting IP Infringement with AICan the AI Genie Repulse the Forty Counterfeit Thieves of Alibaba?", examines the issues of liability for copyright infringement, including the possibility of using artificial intelligence-driven programs to detect copyright and trademark infringements in the online environment. The author analyzed a number of legal acts of the European Union and formulated proposals for their improvement in order to make the fullest possible use of artificial intelligence for the protection of intellectual rights.

The fifth part is devoted to the political and legal aspects necessary for any lawful protection of new generation software.

Hao-Yun Chen, in the chapter "Copyright Protection for Software 2.0?", emphasizes the specific features of software created on the basis of neural networks, which include the ability to make subsequent automatic changes by the program itself, subject to access to data for encoding. These features give rise to some concerns about the need to develop new legal regulation for such software, which is the purpose of the author's research to dispel or confirm.

According to Peter R. Slowinski's opinion, outlined in the next chapter, the emergence of such neural network-based programs presents an excellent opportunity to rethink and change the existing regime of intellectual property rights in software. The author, taking full advantage of the opportunity provided, predicts the optimal models of legal software regimes in connection with the development of artificial intelligence.

The sixth part of the book sets out some issues around the legal protection of data and access to them.

Kung-Chung Liu and Shufeng Zheng open the discussion on the general aspects of personal data protection. Researchers systemize the different types of data that are used in programs to build algorithms. On the basis of the classification carried out, the authors analyze the mechanisms of legal protection of these data from the point of view of copyright and ensuring access to their unhindered use.

In the next chapter, Matthias Leistner analyzes the data access problem. Particular attention is paid to the sui generis regime of databases existing in the intellectual property law of the member states of the European Union. The author criticizes the existing approach in the field of legal regulation of databases and suggests ways of reforming it.

The seventh and final part presents questions of a fundamental theoretical, legal, and systemic nature. The second article is devoted to the possibility of recognizing the legal personality of artificial intelligence.

Anselm Kamperman Sanders, based on the published report "Artificial Intelligence — A European Approach to Excellence and Trust", analyzed the main concepts that emerged during the "Fourth Industrial Revolution": the Internet of Things, artificial intelligence of things, the concept of a "digital twin", etc. The researcher cites political and legal rationale for changes in how European jurisdictions approach the existing system of competition law norms, which have arisen due to the widespread development of artificial intelligence.

The last chapter, penned by Eliza Mik, reveals the traditional problem faced by any legal study of artificial intelligence — the issue of recognizing its legal personality. The author is critical of such theories; Mik convinces the reader that the possibility of creating an AI work with originality, novelty, or even of creative character is not an argument in favor of recognizing AI as a legal person. The author compares the concepts of "autonomy" and the "ability to create",

proving that one does not follow from the other, and proves attempts to equalize them in the legal field are doomed to failure.

Thus, the book "Artificial Intelligence and Intellectual Property" is a systematic scientific work covering the most diverse aspects of the intersection of intellectual property law and artificial intelligence. This book can be recommended to students, graduate students, young scientists for research work, practicing lawyers, and people whose practical field meets the issues of the legal protection of the results of intellectual activity. Undoubtedly, it makes a significant contribution to the development of the theory of intellectual property law, opening up opportunities for the further development of new scientific concepts.