

Evaluating IPR Laws for AI-generated content: Challenges and Opportunities

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How to cite this article: Aditi Panjabi (2024) Evaluating IPR Laws for AI-generated content: Challenges and Opportunities. *Library Progress International*, 44(3), 9739-9744.

Abstract

The environment of intellectual property (IP) is transforming owing to the bearing of artificial intelligence (AI), which is presenting businesses and inventors with both obstacles and opportunities. AI can generate, manage, and utilize IP assets, which raises a number of complicated legal along with ethical issues concerning ownership, and patentability, and copyright infringement, along with data protection. In contrast, AI could assist in the automation and streamlining of the management of intellectual property assets, as well as in the search along with analysis of current IP assets, and new business models' development, and the enhancement of IP enforcement. In order to assure that intellectual property law grows to meet the requirements of this quickly shifting technological landscape, it is vital for policymakers and experts working within IP to stay current of these advances. Within the framework of IP rights, this study examines the opportunities and difficulties that AI continues to provide.

Keywords: Artificial Intelligence, Intellectual Property, Ownership

Introduction

AI has become a formidable instrument that is revolutionizing the creation, management, and utilization of IP. This technology revolution is generating novel difficulties and opportunities for innovators, enterprises, and policymakers. AI is supporting the progress of novel intellectual property assets, enhancing IP asset management (IPAM) efficiency, and enabling innovative IP exploiting business models. Conversely, AI presents intricate legal along with ethical dilemmas with ownership, and patentability, and copyright infringement, along with data protection (Mariani & Dwivedi, 2024).

AI is an extensive domain within computer science concentrated on the progress of intelligent computers that can do tasks usually necessitating human intelligence (HI). Artificial intelligence possesses the capacity to transform many facets of our existence, encompassing the generation, administration, and utilization of intellectual property. IP pertains to mental creations, counting inventions, and literary along with creative works, and symbols, and names, images, and designs, that are safeguarded by legal provisions. Artificial intelligence possesses the capability to create novel types of intellectual property assets, including machine-produced inventions, artistic works, and musical compositions. Artificial intelligence can facilitate the management of IP assets, encompassing search along with analysis, and licensing, along with enforcement. Nonetheless, the utilization of AI in IP presents several legal and ethical dilemmas, including matters of ownership, and patentability, and copyright infringement, along with data protection (Ahmad et al., 2023). A mixture of numerous IPs counting patent, and copyright, and trade secret, and defensive disclosure, and trademark along with domain name is recommended to thoroughly formulate for upcoming IP competitions.

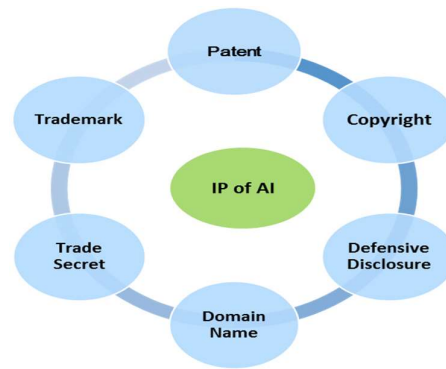


Figure 1: All-Round IP Protection in AI¹

AI and IP's convergence is a swiftly advancing domain that necessitates meticulous examination and evaluation. This study paper delivers an exhaustive review of the bearing of AI on IP rights, while identifying the problems and opportunities posed by this developing technology. This article will elucidate the legal and policy frameworks essential for the evolution of IP law to address the demands of a swiftly transforming technology environment.

Objectives

1. To analyze the bearing of AI on IP ownership.
2. To evaluate the role of AI in enhancing IP management and enforcement.

Scope and Methodology

A literature study of academic investigation, governmental documents, and judicial cases on AI and IP rights worldwide is used in this qualitative research report. This study explores AI's effects on intellectual property rights. The study explores AI's legal and ethical effects on IP ownership, patentability, and copyright infringement. The paper will also discuss how AI can improve IPAM, and search and analysis, and IP exploitation business models. Finally, the article analyzes the legislative and legal frameworks (LFs) needed to adapt IP law to this fast evolving technological context. AI's impact on intellectual property rights is examined in this article using research and case studies. AI and IP rights are complicated, thus policymakers and IP professionals are advised.

Literature Review

AI is a domain of computer science devoted to the conception of intelligent machines executing activities ordinarily necessitating HI, counting visual perception, and speech recognition, and choice-making, along with language translation. So, AI systems employ a synthesis of ML, DL, NLP, and additional methodologies to analyze data, acquire knowledge from experience, and provide conclusions. The convergence of AI and IP rights has emerged as a progressively significant concern recently. With the advancement of AI technologies, there is an increasing necessity to comprehend current IP rights rules' applicability to AI-produced works and to formulate new LFs to tackle the distinct issues presented by these technologies (Castets-Renard, C., 2020). A primary concern in AI and IP rights is the problem of ownership along with authorship of AI-produced works. In conventional IP rights frameworks, ownership and authorship are generally attributed to human creators. Nonetheless, with AI-produced is been trained on an extensive dataset of existing works (Tripathi, S., 2018). The dilemma arises as to whether AI systems should be thought of as creators or only as instruments employed by human creators. An further significant concern in AI along with IP rights is the matter of patentability. With the ongoing progression of AI technology, novel inventions may emerge that are developed by or with the aid of AI systems (Changqing Shi, 2021).

Concerns exist regarding the prospective for bias along with discrimination in AI systems, especially in domains like facial recognition along with predictive policing. These worries prompt inquiries on the function of IP rights in governing the advancement and implementation of AI systems, guaranteeing these technologies are produced and utilized justly and equitably. As artificial intelligence progresses and becomes increasingly embedded in our daily existence, it is crucial to evaluate the applicability of current IP rights rules to emerging technologies and to formulate new LFs to tackle the distinctive difficulties they provide (Jain A, 2021). By ensuring that intellectual property rights regulations evolve alongside technological breakthroughs, we can foster innovation and guarantee the equitable distribution of AI advantages. The relationship across AI and IP is intricate and dynamic, necessitating that policymakers, and legal professionals, and industry stakeholders meticulously evaluate these matters and establish a LF fostering innovation and creativity while simultaneously addressing these challenges

¹ Intellectual property protection for AI in China-LIU SHEN & ASSOCIATES-Home. (n.d.). <https://www.liu-shen.com/Content-2773.html>

(Ghanghash S., 2022).

Result and Discussion

AI and IP – Ownership Issues

AI is revolutionizing the processes of IP creation, management, and protection. A primary concern regarding the utilization of AI within the generation of IP is ownership. In conventional intellectual property frameworks, ownership is generally attributed to human creators or even inventors. Nonetheless, AI's proliferation complicates the issue of ownership. Artificial intelligence can generate ideas that are both unique and nonobvious; yet, the issue of ownership emerges when the rightful creator is ambiguous. Most jurisdictions' existing LFs fail to resolve the matter of AI-produced inventions, resulting in ambiguity regarding whether AI qualifies as an inventor or if ownership should be attributed to the individual or entity that possesses or governs the AI system (Nyaboke, 2024).

The European Patent Office² (EPO) asserts that an inventor ought to be a human and cannot be an AI system. The USPTO³ has asserted that an inventor ought to be a person, however it has not yet resolved the matter of AI-produced inventions. Some legal scholars contend that existing LFs fail to address the intricacies of AI-produced inventions, demanding the development of new legal structures (Ali & Kamraju, 2023).

Comparable difficulties emerge within the realm of copyright law. Artificial intelligence can produce creative works, including visual art, music, and literary compositions. According to copyright law, a work must originate from a human author to be eligible for copyright protection. The existing LFs fail to address the matter of AI-produced authorship works, resulting in ambiguity on if copyright ought to be attributed to the AI system or to the individual or entity that manages or supervises the system. Certain legal academics contend that existing LFs are insufficient to address the intricacies of AI-produced works of authorship, necessitating the development of new LFs (Gaffar, H., 2024).

AI-produced IP's ownership is intricate and presents significant legal and policy challenges. Most jurisdictions' existing LFs cannot address the intricacies of AI-produced intellectual property, resulting in ambiguity over the attribution of creation or invention. New LFs are required to tackle these concerns and to guarantee that AI's advantages are actualized while safeguarding the rights of intellectual property owners (Ray, 2023).

Legal and Ethical issues in Ownership of AI-Generated IP

AI-produced IP's ownership presents many legal along with ethical dilemmas. The ambiguity in existing LFs generates uncertainty regarding the attribution of creation or invention. This ambiguity may lead to disputes and legal actions, resulting in time consumption and substantial costs. From an ethical standpoint, the matter of ownership prompts inquiries regarding the function of AI inside society and the degree to which AI ought to be regarded as independent. AI's application in intellectual property production obscures the distinction across human and machine innovation, prompting inquiries regarding the worth of human creativity along with the function of AI within society (Abdallah & Salah, 2023).

Concerns exist regarding the influence of AI-produced IP on innovation along with competition. The concentration of AI-produced IP's ownership within a limited number of large businesses may stifle innovation and competition, rendering smaller entities incapable of competing or innovating effectively. New LFs and policy solutions are required to solve these legal and ethical challenges. A potential answer is to create a new legal classification for AI-produced intellectual property, which would elucidate ownership and credit. A potential approach is to mandate the registration of AI systems as inventors or creators, so ensuring that ownership is allocated to the correct entities. Another potential answer is to institute ethical criteria for the utilization of AI within the generation of IP, thereby fostering openness and accountability. These recommendations may tackle concerns such as bias, transparency, and accountability, so promoting the responsible along with ethical utilization of AI.

AI-produced IP's ownership is intricate and presents significant legal and ethical dilemmas. New LFs and regulatory solutions are essential to elucidate ownership and attribution, and to guarantee that AI is utilised responsibly and also ethically. By tackling these concerns, we can guarantee the realization of AI's advantages while concurrently protecting the rights of intellectual property owners and fostering innovation and creativity (Cuntz et al., 2022).

International Perspective

AI-produced IP's ownership is a difficult matter necessitating a comparative exploration of existing IP laws across many nations. Although there are many parallels across the intellectual property laws of various nations, substantial disparities exist that can influence the ownership and attribution of AI-produced IP. In the US, patent law stipulates that the inventor ought to be human. This indicates that AI systems cannot be recognized as inventors, and AI-produced IP's ownership would likely reside with the individual or group that created the AI system. Conversely, the European Patent Convention does not stipulate that the inventor ought to be human, hence

² The European Patent Office (EPO)

³ The United States Patent and Trademark Office (USPTO)

allowing for the possibility of AI systems being recognized as inventors (Ali & Kamraju, 2023). Copyright law differs markedly among nations and can substantially influence the ownership of AI-produced IP. In the United States, copyright law confers title to the creator of a work, implying that ownership of AI-produced works would likely reside with the individual or entity that built the AI system. Conversely, throughout the European Union, copyright law confers ownership to the creator of the work while also acknowledging "moral rights," which afford the creator specific entitlements about the work, including the right to attribution as the author. The disparities in international intellectual property rules can profoundly affect the ownership and attribution of AI-produced IP. As AI increasingly contributes to the generation of IP, it is a must to synchronize the intellectual property laws of various nations to guarantee clarity and consistency in ownership and attribution across borders (Zhuk, 2023).

Case Studies – Ownership Issues

The DABUS case⁴: In 2018, an AI system called DABUS produced two innovations, a food container along with a light beacon, which were given in for patent applications in the UK, and the US, along with Europe. The applications were rejected on the grounds that an AI system cannot be designated as an inventor per existing patent law. The case is now on appeal and may have significant implications for the ownership along with attribution of AI-produced IP.

Qualcomm v. Apple⁵: In 2017, Qualcomm initiated legal proceedings against Apple, claiming that Apple had violated many patents pertaining to smartphone technology. One of the contested patents pertained to an AI-driven power management system intended to enhance smartphone battery longevity. Apple contended that the patent was invalid due to its reliance on an AI-produced algorithm, thus lacking human ingenuity. The court finally found in favor of Qualcomm, determining that the patent was valid and had been infringed upon by Apple. This case exemplifies the difficulties in assessing the originality of AI-produced ideas and the possible ramifications for patent conflicts related to AI technology.

Image Processing Technologies LLC v. Samsung Electronics Co.⁶: In 2016, Image Processing Technologies LLC filed a lawsuit against Samsung Electronics Co. for patent infringement concerning image processing technologies. Samsung contended that the patent was invalid due to its reliance on an AI-produced algorithm, hence lacking human ingenuity. The court finally decided in favor of Image Processing Technologies LLC, determining that the patent was valid and had been infringed upon by Samsung. This case underscores the necessity of safeguarding AI-produced inventions through intellectual property rights, irrespective of direct human involvement.

Findings: Challenges And Opportunities

The convergence of AI with intellectual property rights offers substantial opportunities and challenges. AI could produce innovative technologies, artistic creations, and music, resulting in the development of new IP forms. Moreover, AI improves the administration of intellectual property assets by automating functions like searching, analysing, licensing, and enforcing rights, thus augmenting efficiency. This technical innovation may also stimulate novel economic models for intellectual property exploitation, potentially creating fresh revenue streams. Moreover, AI tools can enhance the monitoring of infringements, hence augmenting total intellectual property enforcement. The dynamic development of AI fosters global discourse, advocating for the alignment of LFs to establish a unified approach to ownership and attribution across many jurisdictions.

Conversely, the obstacles are equally substantial. rights and authorship dilemmas emerge, as current LFs frequently fail to acknowledge AI as an inventor or creator, resulting in ambiguity around intellectual property rights. Assessing the requisite degree of human input for AI-assisted inventions challenges patent applications about patentability. Copyright legislation inadequately addresses works produced by AI, resulting in unresolved issues around attribution and ownership. The ethical issues further complicate the situation, as the utilization of AI in producing intellectual property raises concerns regarding prejudice, responsibility, and the significance of human innovation. There is an urgent necessity for new legal categories and frameworks to tackle these distinct difficulties, as existing laws may not keep pace with the swift evolution of technology. Continuous research and the formulation of adaptive legal and regulatory frameworks will be crucial to harmonize innovation with the safeguarding of IP rights.

Future Trends and Predictions

Anticipating prospective legal challenges and opportunities. The legal system will likely encounter persistent

⁴ Thaler (Appellant) v Comptroller-General of Patents, Designs and Trademarks (Respondent), Case ID: 2021/0201.

⁵ Qualcomm Inc. v. Apple Inc., Case No.: 3:17-cv-2403-CAB-MDD (S.D. Cal. Aug. 29, 2018).

⁶ Image Processing Techs. v. Samsung Elecs. Co., CIVIL ACTION NO. 2:20-CV-00050-JRG-RSP (E.D. Tex. Jun. 18, 2020)

obstacles in adjusting to rapid technological advancements, necessitating continuous evaluation and modification of intellectual property rules (Hsieh et al., 2023). Legislators must engage in proactive reform, considering the technological, and ethical, along with financial ramifications of AI in intellectual property protection. Practitioners must remain informed on AI trends and characteristics, incorporating this knowledge into their intellectual property strategies and methodologies. The convergence of artificial intelligence and intellectual property law is a dynamic area, necessitating careful study of ethical implications, policy modifications, and continuous legal reforms. This section aims to offer a framework for addressing these intricate challenges, delivering insights and directives for a future in which AI assumes an increasingly pivotal position in the intellectual property realm.

Conclusion

AI's advancement is transforming the creation, and management, along with enforcement of IP assets. Nonetheless, it also presents other legal and ethical dilemmas around ownership, and patentability, and copyright infringement, and data protection, and privacy. The case studies have elucidated the practical ramifications of the legal and ethical issues. Moreover, there is an urgent necessity for policymakers and intellectual property specialists to establish comprehensive policy and LFs to assure the appropriate and ethical use of AI technologies. AI possesses the capacity to revolutionize the intellectual property landscape in multiple dimensions, offering novel opportunities for IP proprietors and consumers, while simultaneously posing considerable obstacles. Optimal strategies and novel methodologies for managing intellectual property assets through AI-based systems may enable IP owners to secure a competitive edge in the marketplace. Additional investigation into the ethical and legal implications for AI-produced IP's ownership, especially within the framework of international intellectual property laws and relevant case studies, is necessary. As AI progresses and reshapes the intellectual property landscape, continuous study will be essential to assure that IP laws and practices remain current and successfully respond to the problems and possibilities posed by this developing technology.

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