

THE INTERPLAY BETWEEN ARTIFICIAL INTELLIGENCE AND INTELLECTUAL PROPERTY LAW

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ABSTRACT

Artificial intelligence in the modern world has attained universal acknowledgement and sudden progression in today's advance world. As more advanced technologies are integrated into the same, it won't be long until these systems begin to create amazing ideas on their own, completely independent of human input. This raises important issues with regard to intellectual property rights (IPR) since it casts doubt on conventional understandings of ideas like patents and copyrights and raises issues with regard to how these inventions should be regulated among other things. Considering that AI is not new, after its evolution and development with due course of time the capabilities of AI have developed to the point where they can now support inventors and artists in almost every field. This paper seeks to delve into the expanding scope of IPR laws and its application regarding artificial intelligence, along with the unavoidable and unforeseen challenges. It also attempts to provide some discourse with respect to IPR, and seeks to address issues concerned with liability for the content created by such technologies and machine learning.

INTRODUCTION

Artificial Intelligence (AI) is emerging as a transformative force in various fields, reshaping industries, economies, and the fabric of society itself. As AI continues to evolve, it brings with it a host of legal challenges, particularly in the realm of Intellectual Property (IP) law. The intersection of AI and IP law is a dynamic and complex area that raises critical questions about ownership, authorship, and the protection of innovations. This essay explores the interplay between AI and IP law, examining how traditional legal frameworks are adapting to the rapid advancements in AI technology and the implications for creators, innovators, and society at large. The protection of AI-assisted and AI-generated works causes problems for existing intellectual property law. However, it is doubtful whether the purposes of patent law would be served by granting patents for AI-generated inventions. Furthermore, AI systems lack the creative judgment necessary to safeguard their results with copyright. But even with AI-assisted outputs, the programmer or user can still have made enough inventive decisions to classify the result as intellectual property. AI fundamentally challenges the anthropocentric copyright regime. AI technologies will require us to rethink fundamental concepts within IP law, including, for instance, the standard of obviousness applied within patent law.

What is IPR?

Before understanding the interrelation between AI and intellectual property rights law a brief understanding of intellectual property right law must be gained. Intellectual Property Rights (IPR) law is a critical area of legal practice that deals with protecting the creativity of the mind, which includes inventions, literary and artistic works, designs, symbols, names, and images used in commerce. The foremost aim of IPR law is to provide creators with certain exclusive rights to their creations, thus encouraging innovation and creativity.

Intellectual Property Rights: Types

Patents: A patent is an exclusive right granted for an invention.¹ Patents are exclusive rights granted for an invention, which may be a product or any process that provides a unique way to do something or effectively provides an unprecedented technical solution to a problem. The right to control how or whether an innovation can be used by third parties is granted to the patent owner. The patent holder grants the public access to technical details of the invention through the published patent document in exchange for this right. Generally, patents are granted for 20 years from the filing date. Only an invention must be novel, non-obvious, and useful in order to be patented.

Copyrights: Copyright is a legal term used to describe the rights that creators have over their literary and artistic works.² Copyrights protect literary, musical, and artistic works such as books, music, paintings, and films, as well as software and databases. The duration varies, but it generally lasts for the life of the author plus 70 years after their death. It includes the right to reproduce, distribute, perform, display, or license the work.

Trademarks: A trademark is a sign capable of distinguishing the goods or services of one enterprise from those of other enterprises.³ Trademarks protect symbols, names, and slogans used to identify goods and services. They are key to brand identity. Trademarks may be renewed indefinitely as long as the trademark is in use. They must be distinctive and not deceptive or scandalous.

Trade Secrets: Trade secrets encompass confidential business information that provides a competitive edge. It is considered an unfair practice and a breach of trade secret protection when someone else obtains, uses, or discloses such confidential knowledge without authorization or in a way that goes against ethical business practices. This can include formulas, practices, processes, designs, instruments, or a compilation of information. Protection lasts as long as the information remains confidential.

Industrial Designs: Industrial designs protect the ornamental or aesthetic aspect of an article. A model can consist of three-dimensional features, such as the shape or surface of an object, or two-dimensional features, such as patterns, lines, or colours. Typically protected for a period of 10 to 25 years.

Geographical Indications: Geographical indications and appellations of origin are signs used on goods that have a specific geographical origin and possess qualities, a reputation or characteristics that are essentially attributable to that place of origin. Most commonly, a geographical indication includes the

¹ What is Intellectual Property, WIPO. Available at: <https://www.wipo.int/about-ip/en/>

² *supra* note 1.

³ *supra* note 1.

name of the place of origin of the goods.⁴

Importance Of Intellectual Property Rights

Encourages Innovation: By providing legal protection for creators, IPR law incentivizes individuals and companies to develop new products and services.

Economic Growth: Intellectual property rights can significantly contribute to the economic growth of a country by promoting industrial and technological development. IP rights stimulate innovation and creativity by providing financial incentives and legal protection to creators and inventors. This leads to technological advancements and cultural enrichment, driving economic growth.

Consumer Protection: Trademarks and other IPR help consumers identify and choose between different goods and services. IP rights stimulate innovation and creativity by providing financial incentives and legal protection to creators and inventors. This leads to technological advancements and cultural enrichment, driving economic growth.

Cultural Development: Copyright protection encourages the creation and dissemination of cultural products.

Challenges of Intellectual Property Rights

Global Enforcement: Protecting IP rights internationally can be challenging due to varying laws and enforcement mechanisms across countries.

Digital Age: The rise of the internet and digital technologies has created new challenges in protecting and enforcing IP rights, such as online piracy and unauthorized distribution.

Balancing Interests: IP law must balance the interests of creators, consumers, and the public. Overly restrictive IP laws can hinder access to knowledge and stifle innovation.

In summary, intellectual property right law is a critical component of the legal system that protects the creations of the mind, encourages innovation, and promotes economic development. Understanding and navigating the complexities of IPR law is essential for creators, businesses, and legal professionals in today's knowledge-driven economy.

Legal Framework and Enforcement

International Treaties: Several international treaties provide a framework for the protection of intellectual property across borders, such as the TRIPS Agreement (Trade-Related Aspects of Intellectual Property Rights), the Paris Convention for the Protection of Industrial Property, and the Berne Convention for the Protection of Literary and Artistic Works.

National/Domestic Laws: Each country has its own set of laws and regulations governing IPR, which must comply with international agreements.

Enforcement: IP rights can be enforced through civil litigation, where IP holders can sue infringers for damages and injunctions to stop the infringement. Criminal penalties may also apply in cases of counterfeiting and piracy. Enforcement mechanisms vary by jurisdiction but generally involve courts,

⁴ *supra* note 1.

administrative bodies, and sometimes customs authorities.

What is Artificial Intelligence (AI)?

Intelligence is a gift which human beings have been vested with naturally. The level of intelligence varies from species to species and generations to generations. However, when intelligence is embedded in a machine, not naturally but by enabling it in the form of input, analysis and output, it is machine intelligence or AI.⁵

Artificial intelligence is a branch of computer science that includes machine learning and deep learning, and is frequently discussed in conjunction with them. These fields focus on creating artificial intelligence (AI) algorithms that can "learn" from available data and gradually produce predictions or classifications that are more accurate. These algorithms are made after the decision-making processes of the human brain.

AI and Patent Law

Patents are crucial in protecting inventions and encouraging innovation by granting inventors exclusive rights to their creations for a limited period. Patent law aims to protect inventions by giving inventors exclusive rights if their creations meet certain criteria, such as novelty, non-invention and utility. The advent of AI has complicated the landscape of patent law in several ways:

Inventor-Ship

Traditional patent law requires a human inventor. However, AI systems, particularly those using machine learning and neural networks, can autonomously generate patentable inventions. This raises the question: Can AI be recognized as an inventor? Presently, across jurisdictions AI is not recognised as an inventor, as pre-requisite is being a human to be listed on the patent application. Such legal requirement challenges the notion of true inventor-ship when AI is now contributing to or solely creating inventions. Traditional patent systems are designed around human inventors. AI systems, capable of generating novel inventions independently or semi-independently, challenge the notion of human inventors-hip. Should AI be recognized as an inventor, and if so, who owns the rights to its inventions – the developer, the user, or the AI itself? AI's ability to analyse vast datasets and identify patterns can lead to inventions that might seem obvious to an AI but not to a human. This disparity necessitates a re-examination of what constitutes non-obviousness in the age of AI.

Patentability

Determining the patentability of AI-generated inventions also poses challenges. AI can create inventions that might not be obvious to a person skilled in the art, a key criterion for patentability. However, the threshold for non-obviousness may need to be re-evaluated in the context of AI's capabilities. The patentability of AI-generated innovations involves assessing whether the output of an AI system can be considered an invention and if so, under what criteria. The European Patent Office and the United States Patent and Trademark Office have begun addressing these issues, but harmonized international standards are yet to be established.

⁵ *Intersection of Artificial Intelligence, Copyright and COVID*, LiveLaw, Justice Prathiba M. Singh, 25 June 2020.

Prior Art and Disclosure

AI can process vast amounts of data to generate new inventions. This raises concerns about whether AI should be required to disclose the data and algorithms used in the invention process as part of the patent application. Additionally, the concept of prior art, which determines the novelty of an invention, becomes more complex when considering AI's ability to analyse and build upon a vast corpus of existing knowledge.

In *United Kingdom Intellectual Property Office decision* BL O/741/19⁶ of December 4, 2019, while considering the issue *whether an artificial intelligence, DABUS, could be named as an inventor (Section 7 and 13 of the Patents Act, 1977)*, the Intellectual Property Officer, Hearing Officer answered in negative stating that

“I have found that DABUS is not a person as envisaged by sections 7 and 13 of the Act and so cannot be considered an inventor. However, even if I am wrong on this point, the applicant is still not entitled to apply for a patent simply by virtue of ownership of DABUS, because a satisfactory derivation of right has not been provided.”

Although it was argued by the Applicant that enabling the owner of the machine to acquire the right to the patent is the way to allow the work of the machine to be protected under the patents law. However, the Hearing Officer disagreed and also noted that although it was never expected that the current system would support such ideas, circumstances have changed and technology has advanced. It is appropriate that there be a wider discussion about this and that any modifications to the law be taken into account within the framework of that discussion rather than being tacked on to already-existing laws.

This was challenged and the England & Wales High Court has upheld the decision of the UK Intellectual Property Office (UKIPO) deeming the UK patent applications to be withdrawn⁷ and later dismissed by the England and Wales Court of Appeal.⁸

AI and Copyright Law

Copyright law protects original works of authorship, including literature, music, and art, providing creators with exclusive rights to use and distribute their works. Copyright law protects original works of authorship, granting creators exclusive rights to their creations. AI's capability to generate music, art, literature, and other creative works introduces several complexities. The integration of AI into the creative process raises significant questions regarding authorship and the protection of AI-generated works:

Authorship

Copyright law traditionally recognizes humans as authors. However, AI can independently create music, literature, and visual art. The question of whether AI can be considered an author challenges the human-centric foundation of copyright law. Current legal frameworks generally do not recognize AI as an author, necessitating a human to claim authorship, which may not accurately reflect the creation process. Similar to patent law, the question of authorship in AI-generated works is contentious. Can an AI be considered

⁶ *United Kingdom Intellectual Property Office decision* BL O/741/19, Applicant *Stephen L Thaler*. Available at: <https://www.ipo.gov.uk/p-challenge-decision-results/o74119.pdf> .

⁷ *Thaler v The Comptroller-General of Patents, Designs and Trade Marks* [2020] EWHC 2412 (Pat) (21 September 2020).

⁸ *Stephen Thaler v Comptroller General of Patents Trade Marks and Designs* [2021] EWCA Civ 1374.

an author, and if not, who owns the copyright – the programmer, the user, or the entity controlling the AI?

Originality

For a work to be copyrighted, it must be original. AI's ability to generate content by learning from existing works complicates the notion of originality. If an AI creates a work based on patterns and data from existing copyrighted works, the extent to which the new creation is original becomes a contentious issue. Copyright protection hinges on the originality and creativity of the work. AI systems, which often learn from existing works to create new ones, blur the line between original creation and derivative work. Legal frameworks must adapt to determine the extent to which AI-generated works can be considered original.

Ownership

Determining the ownership of AI-generated works is another challenge. If an AI creates a work under the guidance or instruction of a human, the human may be considered the owner. However, if an AI operates autonomously, assigning ownership becomes problematic, particularly in collaborative environments where multiple parties might have contributed to the development and training of the AI.

Moral Rights

Moral rights, which include the right of attribution and the right to integrity, traditionally apply to human authors. The application of these rights to AI-generated works raises ethical and legal questions that need careful consideration.

Trade Secrets and AI

Trade secrets protect confidential business information that provides a competitive edge. Trade secret law protects confidential business information that provides a competitive edge. AI algorithms, models, and data can constitute trade secrets. AI's role in developing and utilizing trade secrets introduces unique considerations:

Confidentiality

Ensuring the confidentiality of trade secrets becomes more complex with AI. The data used to train AI models, as well as the algorithms themselves, need to be protected from unauthorized access. This requires robust cybersecurity measures and legal protections against misappropriation.

Protection Mechanisms

Ensuring the protection of AI-related trade secrets involves robust cybersecurity measures and legal agreements. As AI systems become more complex, safeguarding proprietary algorithms and training data from industrial espionage and cyber threats becomes increasingly challenging.

Disclosure and Reverse Engineering

Balancing the protection of trade secrets with the need for transparency and accountability in AI systems is critical. Excessive secrecy can hinder innovation and public trust, while insufficient protection can expose valuable intellectual property to exploitation.

Ethical and Policy Considerations

Balancing Innovation and Protection to ensure that IP laws protect inventors and creators while also promoting innovation and the dissemination of knowledge. Further, ensuring transparency in AI operations and accountability for decisions made by AI systems, particularly in the context of IP.

The interplay between AI and IP law extends beyond legal doctrines to encompass ethical and policy considerations:

1. Access to Technology

Equitable access to AI technology and innovations is a key concern. IP laws should foster innovation while ensuring that advancements in AI are accessible and beneficial to society as a whole.

2. Bias and Fairness

AI systems can perpetuate and amplify biases present in their training data. Legal frameworks must address issues of fairness and accountability, ensuring that IP protections do not reinforce existing inequalities.

3. International Harmonization

As AI technology transcends borders, harmonizing IP laws internationally is crucial. Global cooperation is necessary to develop coherent policies that address the unique challenges posed by AI.

Legal Adaptations and Regulatory Responses

Harmonizing AI and IPR law involves addressing the unique challenges posed by AI through legal adaptations, international cooperation, and ongoing policy discussions. As AI technology continues to evolve, so too must the legal frameworks that govern IP to ensure they remain relevant and effective in protecting rights and promoting innovation.

1. **Updating Definitions and Frameworks:** Legal systems are gradually adapting to address AI-related issues. This involves updating definitions of "inventor" or "author" in IP laws to potentially include AI or its human developers.
2. **Guidelines and Policies:** Governments and international bodies are developing guidelines to navigate AI and IP. For example, the World Intellectual Property Organization (WIPO) has initiated discussions and studies on AI and IP, aiming to create a balanced and equitable framework.
3. **International Harmonization:**
 - A. **Global Standards and Agreements:** International collaboration is crucial for harmonizing AI and IP laws. Organizations like WIPO and trade agreements can play a pivotal role in creating standardized approaches to AI and IP.
 - B. **Cross-Border Issues:** Addressing cross-border IP issues related to AI, such as the protection of AI-generated works in different jurisdictions and enforcement of IP rights internationally.

Case Law and Precedents

Court Decisions: Judicial decisions in various jurisdictions are shaping the landscape of AI and IP law. For example, recent rulings on whether AI can be recognized as an inventor under patent law influence future legislative changes.

Legal Precedents: As more cases involving AI and IP are adjudicated, legal precedents will provide guidance on how to handle these issues consistently.

Legislative Reforms: Continuous legislative reforms are expected as AI technology advances. This includes potential amendments to existing IP laws or the creation of new legal frameworks tailored to AI.

Technological Solutions: Leveraging technology to manage IP issues, such as using block chain for IP rights management or AI for IP enforcement.

Conclusion

The interplay between artificial intelligence and intellectual property law is a dynamic and evolving field. As AI continues to advance, it challenges existing legal frameworks and prompts a re-evaluation of traditional notions of inventor-ship, authorship, and ownership. Addressing these challenges requires a multidisciplinary approach, incorporating legal, ethical, and policy perspectives to create a balanced and forward-looking IP regime that fosters innovation while protecting the rights and interests of all stakeholders. The future of IP law in the age of AI will depend on our ability to adapt and evolve in response to the transformative potential of this ground-breaking technology.

In India, the focus with respect to fusion of AI in Healthcare, Agriculture, Education, Smart Cities and Infrastructure, and Smart Mobility and Transport, which also highlights the multitude of challenges such as lack of enabling data ecosystems, low intensity of AI research, inadequate availability of AI expertise among others.⁹

The importance of intellectual property rights for AI-based inventions is covered. With the launch of its "WIPO Conversation on IP and AI," the WIPO agency has started interacting with the stakeholders. When it comes to AI innovation protection, the US, South Korea, Japan, and China are in the lead. The policies of the several patent offices will also be important. The rate at which these AI-based innovations are emerging hasn't done anything to offset the lapse in intellectual property rules. In the interim, businesses like Google have developed their own guidelines for safeguarding intellectual property. The laws governing AI inventions should, in the grand scheme of things, be able to both reward and protect the inventor for the good of society. Additionally, it should also stipulate how the invention's advantages will be distributed fairly to all societal segments.¹⁰

⁹ *National Strategy for Artificial Intelligence*, NITI Aayog, June 2018. Available at: <https://www.niti.gov.in/sites/default/files/2023-03/National-Strategy-for-Artificial-Intelligence.pdf>.

¹⁰ Sonali Kokane, *The Intellectual Property Rights of Artificial Intelligence based Inventions*, Journal of Scientific Research, Banaras Hindu University, Volume 65, Issue 2, 2021.

References

- 1) What is Intellectual Property, WIPO. Available at: <https://www.wipo.int/about-ip/en/>
- 2) *supra* note 1.
- 3) *supra* note 1.
- 4) *supra* note 1.
- 5) *Intersection of Artificial Intelligence, Copyright and COVID*, LiveLaw, Justice Prathiba M. Singh, 25 June 2020.
- 6) *United Kingdom Intellectual Property Office* decision BL O/741/19, Applicant *Stephen L Thaler*. Available at: <https://www.ipo.gov.uk/p-challenge-decision-results/o74119.pdf> .
- 7) *Thaler v The Comptroller-General of Patents, Designs and Trade Marks* [2020] EWHC 2412 (Pat) (21 September 2020).
- 8) *Stephen Thaler v Comptroller General of Patents Trade Marks and Designs* [2021] EWCA Civ 1374.
- 9) *National Strategy for Artificial Intelligence*, NITI Aayog, June 2018. Available at: <https://www.niti.gov.in/sites/default/files/2023-03/National-Strategy-for-Artificial-Intelligence.pdf> .
- 10) Sonali Kokane, *The Intellectual Property Rights of Artificial Intelligence based Inventions*, *Journal of Scientific Research*, Banaras Hindu University, Volume 65, Issue 2, 2021.