STIRRING THE HORNET'S NEST: IMPLICATIONS OF ARTIFICIAL INTELLIGENCE IN IP LANDSCAPE

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ABSTRACT

Artificial Intelligence (AI) has rapidly evolved from a theoretical concept into a tool capable of performing complex tasks that rival human intellect. It is defined as a program capable of processing and acting on information similar to human intelligence, AI systems now contribute to creative processes, from producing art and literature to driving technological advancements in fields like medicine and engineering. AI systems can perform tasks requiring creativity, decision-making, and even perception, raising questions about their role in intellectual creation. This challenges the traditional understanding of ownership of Intellectual Property Right. This raises important legal issues about AI's role in intellectual property (IP), particularly whether AI-generated outputs should be afforded the same legal protections as those created by humans. As AI continues to reshape industries and challenge traditional concepts of creativity and invention, legal frameworks must adapt to address the emerging challenges posed by AI-driven innovations.

This paper attempts to analyse the concept of juridical paradigm of ownership and attempts to comprehend the legal conundrum in granting intellectual property rights to works generated by Artificial Intelligence. It attempts to identify the panacea for the legal challenge posed by these pioneering inventions and innovations.

Introduction:

The idea to build machines that emulate human intelligence dates back to ancient times when stories and tales about automatons and intelligent machines circulated. But it wasn't until the first computer systems were created in the middle of the 20th century that their actual potential was examined. The phrase "artificial intelligence" was first used by John McCarthy in 1956, and he also pioneered the creation of LISP, the first artificial intelligence programming language, in the 1960s. Due to the rule-centric nature of early artificial intelligence, funding increased and more complicated systems were created in the 1970s and 1980s. Allen Newell, J.C. Shaw, and Herbert A. Simon (Carnegie Institute of Technology, formerly known as Carnegie Mellon University or CMU) developed the first demonstration of the Logic Theorist (LT).

Although Samuel's checker's program has a strong claim as well, this is frequently referred to as the first AI software.

AI, as defined by John McCarthy, refers to a program capable of processing and acting on information in a manner similar to human intelligence. AI is capable of producing creative outputs such as poetry, artwork, and other intellectual works. The question arises as to whether these outputs deserve protection under traditional IP laws designed for human creators.

Types of AI Recognized by WIPO:

- **Expert Systems**: AI systems designed to solve problems in specialized fields like medicine and geology, as well as to create art and other works.

- **Perception Systems**: AI systems that use sensory inputs (sight, hearing) to

interact with the world, relevant to areas like topology.

- **Natural Language Systems**: AI programs that process language with attention to grammatical and textual context, used for tasks like semantic analysis.

Categories of AI-Driven Inventions and Creations:

- **AI-Assisted Inventions/Creations**: Tools used in the inventive or creative process (e.g., AlphaFold for protein structure predictions and modern camera autofocus systems). AI enhances human efforts, but the output does not indicate the use of AI.

- **AI-Based Inventions/Creations**: AI is part of the concept (e.g., Deepl.com, self-driving cars, or reactive AI-driven artworks). The AI itself plays a role in the final product or process.

- **AI-Generated Inventions/Creations**: AI autonomously generates inventions or creations with minimal human input (e.g., DABUS system or generative art by AI like ChatGPT-generated novels).

Artificial Intelligence (AI) and Intellectual Property (IP) Challenges:

AI systems are evolving rapidly and are capable of creating inventions without human intervention. This raises questions about the applicability and scope of IP laws, including patents and copyrights, in relation to AI-generated works. Legal frameworks must address how to regulate and protect AI-generated creations. Despite advances in AI, many jurisdictions have yet to fully address the legal status of works created by AI systems. There is ongoing debate about whether the outputs of AI systems should be treated as intellectual property, who should own the rights, and how criminal liability should be addressed for AI-generated content.

The Turing Test:

- Proposed by Alan Turing, this test determines if a machine's responses are indistinguishable from those of a human.

- Though it works in some contexts, it is limited to specific applications like speech and quizzes, and does not fully address AI's capabilities in creative processes.

Copyright and Works Generated by AI

As early as in 1974, the National Commission on New Technological Uses of Copyrighted Works (CONTU) dismissed the idea of AI being able to create independent works, calling it theoretical. Later in 1986, the Office of Technology Assessment (OTA) challenged this view and proposed AI be considered co-authors of creative works. The concern over AI's ability to create independently centers around whether machines can genuinely be creative or if they merely follow programmed rules. Critics like Lovelace argue that creativity is inherently unpredictable, whereas machines are rule-bound and predictable. Supporters counter this by comparing human authors to machines, as even human creators build upon pre-existing ideas (e.g., adaptations of "Romeo and Juliet") and are granted copyrights for derivative works, such as films or music based on existing ideas. This is used to argue that AI-created works, though generated through programming, similarly deserve protection.

Modicum of Creativity and Copyright:

Copyright protects original works of authorship in a tangible form. The challenge is determining whether AI-generated works meet this criterion. Courts have grappled with whether creative work produced by machines can receive copyright protection, as seen in various landmark cases.

- **Burrow Gilles Lithographic Co. v. Sarony**: Addressed whether copyright can be granted to a photograph

produced by a machine, emphasizing the distinction between mechanical and creative labour. The case suggested that copyright protection for AI-generated works would be difficult under traditional views of creativity.

- **Bleistein v. Donaldson Lithographing** and **Alfred Bell & Co. v. Catalda Fine Arts**: The case further explored the differentiation between human creativity and artificial processes.Justice Holmes emphasized the uniqueness of human personality, declaring it a prerequisite for copyright protection. The Court held that copyright should be granted to work containing "something irreducible" that is unique to a human, excluding anything not created by human creativity.

- **Alfred Bell & Co. v. Catalda Fine Arts, Inc.:** The court adopted a more lenient approach toward originality in copyright law. It ruled that work must not be copied from other artistic works but can include unintentional or accidental variations. This case opened the door for arguments in favor of copyright protection for AI-generated work, as AI-created works aren't directly copied but are generated through algorithms.

- **Case of Cummins v. Bond:** The court was asked whether a work attributed to a non-human (Jesus) could be registered for copyright. The ruling indicated that the non-human nature of the source should not bar copyright, which supporters of AI-generated works extend to apply to AI creations as well.

Copyright Ownership for AI-Generated Works: The law in many countries requires a copyright holder to be a legal person, which AI is not. The question of whether the copyright goes to the creator of the AI or the buyer of the AI system remains unresolved. Countries like the UK and New Zealand grant copyrights for AI-generated works to the programmer via legal fiction.

However, this does not fully resolve who should hold these rights when the AI system is sold.

Criminal Liability of AI: As AI continues to evolve, the problem of assigning criminal liability becomes more pressing. Since AI lacks mens rea (the mental element required for a crime), it is the creator or operator who is currently held accountable, even without their direct involvement in the AI's actions. This raises concerns, particularly when AI acts autonomously.

Patent Law and AI: AI-enabled systems are not just simplifying tasks but may also invent new products or processes. This leads to significant questions about whether AI can be considered an "inventor" under current patent laws, which generally require human involvement. The European Union has taken steps to expand intellectual property laws to include works created by computers, but the issue of granting patents to AI remains unresolved due to challenges in meeting the criteria of novelty and inventive steps.

The Inventor-AI Dichotomy: Legal systems, such as the U.S., require an inventor to have conceived of an invention in their mind, which raises difficulties when AI autonomously generates inventions. Some argue for collaborative invention, recognizing AI as an inventor alongside human counterparts. However, AI lacks the legal personality necessary for patent rights. Additionally, the lack of attachment or emotions by AI undermines the rationale behind patent laws, which aim to protect inventors who wish to control the use of their inventions.

THE AMBIDEXTRESITY IN IPR

Generative AI's capacity to create content raises concerns about copyright infringement and intellectual property rights. Determining the ownership and origin of AI-generated works

becomes challenging, potentially leading to legal disputes[1578].

One of the key challenges is determining the ownership of AI-generated content. Traditionally, copyright laws have protected works created by human authors. However, AI-generated works blur the lines of authorship. Courts and lawmakers are grappling with the question of whether AI systems can be considered authors or whether ownership should reside with their human operators.[1579] The proliferation of AI-generated content also raises questions about copyright infringement and fair use. How do copyright laws apply when AI systems generate content that mimics or directly copies existing works? Courts are tasked with establishing guidelines for distinguishing between infringement and legitimate transformative use.[1580] As AI systems become more prevalent in creative industries, there's a growing need for licensing mechanisms and royalty structures that account for AI-generated content. Artists, musicians, and writers may demand compensation when their AI-generated works are used commercially.[1581] Attribution and plagiarism concerns arise when AI-generated content is published without proper acknowledgment or when it closely resembles another person's work. Establishing mechanisms to attribute AI-generated content and detect plagiarism in AI-generated works are ongoing challenges.[1582]In the field of invention and innovation, generative AI can assist in generating ideas and solutions. This raises questions about the prior art, novelty, and non-obviousness requirements for patentability. Patent offices must adapt to assess inventions

aided by AI[1583].It often relies on vast datasets that may contain proprietary and confidential information. Protecting trade secrets and ensuring data privacy become paramount when AI systems are trained on sensitive data[1584].

On the flip side, AI can also be employed to enforce IPR laws. Machine learning models can help identify copyright violations, counterfeit products, and trademark infringements online. This presents opportunities for rights holders to protect their intellectual property more effectively.[1585] The challenges posed by AI-generated content and IPR laws transcend national borders. Achieving international harmonization and uniformity in addressing these challenges will be essential, considering that AI-generated content can be easily disseminated across the globe.[1586]

LEGAL IMPLICATIONS OF AI-CREATED WORKS IN INDIA

Since its independence, India has flourished into a global power, especially in terms of globalisation and technological advancements - India has become the IT hub of the world[1587] and one of the largest fields for the market and the development thereof. In a similar way or even faster, technology too has been on the rise - but it does not come as a conqueror, it is coming as a creator.[1588]

Copyright refers to the legal right given to the deserving creator and owner of the creative work, so they may claim the full benefit thereof and it shall not be used unfairly by anyone else. Artificial Intelligence (AI) capable to the point where it can create original works without direct

[1578] Caramelli, G., Ciriolo, M., Giancola, G., & Mazzeo, L. A. (2021). Copyright issues and challenges in AI-generated content. World Patent Information, 65, 102030.

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[1583] Yu, H. (2021). From the invention of "AI inventor" to the "creativity machine": The role of copyright and patent law in promoting AI-augmented creative processes. International Review of Intellectual Property and Competition Law, 52(4), 365-398.

[1584] Apuzzo, M., & Venkatraman, V. (2020). Protecting Trade Secrets in the Era of Big Data and AI. Harvard Business Review.

[1585] Tyagi, A., & Sayani, H. (2021). Artificial Intelligence for IP Enforcement. WIPO Journal, 13(2), 145-157

[1586] Kang, L., Yang, S. A., & Aljuffali, I. (2020). AI and intellectual property: Navigating the patent landscape in the Fourth Industrial Revolution. World Patent Information, 61, 101981.

[1587] https://www.ey.com/en_in/india-at-100/how-india-is-emerging-as-the-world-s-technology-and-services-hub

[1588] https://www.wipo.int/wipo_magazine/en/2017/05/article_0003.html

human intervention, and this raises questions about who should be considered the creator and copyright owner of such works. In such cases, there are two scenarios that arise:

Works created by AI with human guidance: In these cases, the creative inputs provided by humans play a significant role, and copyright ownership can be attributed to the human contributors.

Works created by AI without human guidance: When AI generates works independently, without direct human input, the issue of authorship becomes more complex. Attribution of authorship to AI itself requires careful consideration of legal and conceptual frameworks.

For copyright protection, a work must meet the criterion of originality. It must be the result of the author's skill, judgement, and creativity. In the case of AI-generated works, the question of whether AI can possess originality is debatable as they rely on existing data and algorithms programmed by humans. A popular example is ChatGPT which relies on vast amounts of data, including copyrighted material, to effectively train its algorithms[1589] Google has created software that can produce original music from descriptions and recordings.[1590] AI technologies have the ability to replicate and mimic existing copyrighted works, blurring the lines between original and AI-generated content and creating legal complexities. While AI may compile and arrange data in unique ways, determining whether it possesses the necessary creativity to meet the threshold of originality remains a challenge. This raises concerns about the potential infringement of copyright laws.

LEGAL LANDSCAPE OF AI-GENERATED OUTPUTS IN INDIA

In India, the subject issue of creative works is governed by the Copyright Act of 1957. India lacks inclusivity when it comes to AI-generated works. Section 2(d) of the act defines an "author" as the person who causes the work to be created, which includes a human or legal person. This definition excludes AI systems from owning authorship. Indian courts have reiterated this position in various judgments, clarifying that AI systems cannot be considered authors of copyrighted works.

As for whether AI-generated content can be copyrighted, existing copyright laws stipulate that the first owner of copyright in a work is the author. India's Copyright Act of 1957 does not specifically address AI-generated works or recognize AI as an author. One key constraint in copyright protection for AI works is that they must be original and creative to qualify for copyright protection.

Originality is a benchmark used to determine copyright protection for a work. Section 13 of the Indian Copyright Act states that copyright exists in "original literary, dramatic, musical, and artistic works." However, the Act does not explicitly define "originality," leaving it to the courts to determine whether a work meets this criterion.

Content generated by AI may not meet the standard of originality or creativity because it relies on data from existing sources on the internet and data provided during training.

'Computer generated work': The Copyright Act in India was amended in 1994 to include computer-generated works, including literary, dramatic, musical, or artistic works. Section 2(d)(v), was introduced in the act to define the authorship of such works as "the person who causes the work to be created."

How the term "person" is defined and interpreted here becomes relevant, since as of now only natural persons have been recognised

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[1589] Ruchi Shukla, 'What ChatGPT is and How it Works?', (TIMES OF INDIA, 29 January 2023) https://timesofindia.indiatimes.com/readersblog/contentthoughts/what-chagpt-is-and-how-it-works-49801/ Accessed on 16 September 2023

[1590] Daniel Dominguez, 'Google Unveils MusicLM, an AI That Can Generate Music from Text Prompts' https://www.infoq.com/news/2023/02/google-musiclm-ai-music/ (INFOQ, 1 February 2023) Accessed on 16 September 2023

as authors under law. What therefore also needs to be clarified by the law and by courts is the legal status of AI – whether AI can be defined as a 'person' under the law, and if yes, to what extent?

In a rare incident which had hogged attention, an AI-based app 'Raghav' was recognised as co- author of a copyrighted work. However, later the Copyright office had objected to the same and sought to cancel the registration. While application to register AI (RAGHAV) as the sole author of the work was rejected, Indian Copyright Office had allowed the application where the creator was named a co author to the AI tool.

The following judgements summarizes the Indian Legal position on authorship granted to non- juristic person.

Rupendra Kashyap v. Jiwan Publishing House Pvt. Ltd.[1591]

A traditional approach was observed in this case before the High Court of Delhi, which dealt with the copyright claim of the Central Board of Secondary Education over question papers.The Court determined that the CBSE cannot assert copyright without evidence of individual involvement in creating the question papers, given its status as an artificial entity.Under the Indian copyright act, authorship can only be attributed to a natural person.

Tech Plus Media Private Ltd. v. Jyoti Janda[1592]

In this case, the Court affirmed that authorship cannot be attributed to a juristic person, although it can be the copyright owner.

Navigators Logistics Ltd. v. Kashif Qureshi & Ors[1593]

The case centred on a copyright claim for a computer-generated list, which was dismissed by the Court due to the lack of human intervention.This aligns with the position in the United States, where authorship cannot be solely attributed to AI.

The Government of India has recognised the importance of AI in the developmental process .The Indian Government has taken steps such as the 'AI for All' policy and the AI Task Force to use AI for social and economic changes. Given the rapid advancement in AI technology, it becomes crucial to re-evaluate the intellectual property framework to ensure that the law keeps pace with these developments.

The Indian Copyright Act may be updated to acknowledge AI as authors. However, it is important to clarify that the ownership of the work should still reside with a natural or juristic person. This is necessary to ensure that legal actions can be taken against responsible entities.

Additionally, other considerations arise, such as situations where AI is developed by one person but generates output based on inputs from another person. In instances like these, it is necessary to establish copyright ownership among the parties involved. Any legal framework aiming to attribute authorship (either fully or partially) to AI must address these questions and provide comprehensive answers.

Proposed Solutions:

- **Uniform Recognition of AI**: More countries should recognize AI's role in intellectual property rights, potentially through amendments to international agreements like TRIPS.

- **AI Data Protection Act**: A specialized law should govern the actions of AI, addressing both civil and criminal liability and creating a regulatory framework.

- **Fixing Criminal Liability**: Current laws hold the AI's creator accountable for its actions, but there should be clearer sanctions specifically targeting AI

[1591] Rupendra Kashyap v. Jiwan Publishing House Pvt. Ltd. 1996 (38) DRJ 81

[1592] Tech Plus Media Private Ltd. v. Jyoti Janda 2014 (60) PTC 121 (Del)

[1593] Navigators Logistics Ltd. v. Kashif Qureshi & Ors Delhi. H.C CS (Comm) 735/2016

entities to protect creators from wrongful punishment.

- **Clarifying Patent Laws**: Legislators need to provide clear guidelines for inventions generated by AI, balancing the protection of human inventors and the evolving capabilities of AI systems.

Conclusion:

As AI becomes more sophisticated, its ability to autonomously create inventions and artworks without human intervention demands careful reevaluation of existing IP laws. The debate surrounding AI's role in creativity, ownership, and liability underscores the urgent need for legal reform. While some jurisdictions have begun to recognize AI's contributions to IP, much remains unresolved, particularly regarding the ownership and protection of AI-generated works and inventions. A balanced approach is necessary, one that not only protects human inventors but also acknowledges the evolving capabilities of AI. By implementing clearer guidelines and specialized laws for AI-driven innovations, society can ensure that both creators and AI systems are fairly integrated into the IP landscape, fostering continued innovation while safeguarding legal rights.