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REDEFINING LIABILITY: INTELLECTUAL PROPERTY CHALLENGES IN THE AGE OF AI

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I. ABSTRACT

The rapid advancement of artificial intelligence (AI) has raised significant challenges for traditional intellectual property (IP) frameworks, particularly regarding authorship, ownership, and liability for AI-generated works. This paper examines these issues within the context of India's IP laws, specifically under the Copyright Act of 1957 and the Patents Act of 1970, highlighting the limitations of these frameworks in addressing AI's complexities.

AI-generated content blurs the line between human and machine creativity, making it difficult to assign ownership and enforce rights under existing legal structures that assume human authorship. Moreover, the patentability of AI-generated innovations is hindered by current laws that only recognize human inventors. The paper explores various challenges, such as determining liability for copyright infringement and the uncertainty of fair use when training AI models with copyrighted data. Proposed solutions include introducing new IP categories for AI-generated content, reforming authorship laws, enhancing transparency and accountability in AI systems, and developing AI-specific enforcement mechanisms. International cooperation and ethical considerations are also emphasized as critical to establishing a fair and effective global IP framework.

Ultimately, the paper argues for an updated legal landscape that balances innovation and protection, ensuring India remains competitive in the evolving AI landscape while fostering responsible and ethical AI use.

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II. INTRODUCTION

The transformative rise of generative AI is challenging traditional notions of authorship, ownership, and accountability, revealing critical gaps in existing intellectual property frameworks that demand urgent re-evaluation.

The rapid advancement of artificial intelligence (AI) has profoundly transformed various sectors, including healthcare, finance, manufacturing, and entertainment. Among these, AI's impact on creativity and creation stands out as particularly revolutionary. Generative AI systems, which are capable of producing art, music, literature, and even novel solutions to complicated problems, call into question our traditional understandings of authorship and ownership.² This transition has brought to light substantial difficulties involving intellectual property (IP) rights, prompting a reassessment of existing legal frameworks.

Intellectual property law has long existed to protect the rights of creators and inventors, ensuring that their work is recognized and rewarded. The fundamental tenet of intellectual property law is to assign ownership and accountability to identifiable human agents, who may be held liable for both invention and future infringement. However, the incorporation of AI into the creative process complicates this simple attribution of liability.

Generative AI systems use complex algorithms and large datasets to produce outputs that are indistinguishable from human-created material. These systems learn and evolve independently, making judgments beyond human control.³ As a result, the question arises: who owns intellectual property rights to AI-created works? Furthermore, who is accountable if these AI-generated works violate existing IP rights?

Traditional legal systems, which are best suited for human players, struggle to answer these concerns.⁴ When AI systems generate unauthorized content, it is difficult to

² Ahmed Elgammal et al., *CAN: Creative Adversarial Networks, Generating 'Art' by Learning About Styles and Deviating from Style Norms*, arXiv preprint arXiv:1706.07068, (2017).

³ Sam Ricketson & Jane C. Ginsburg, *International Copyright and Neighbouring Rights: The Berne Convention and Beyond* (Oxford University Press 2006).

⁴ Ricketson & Ginsburg, 2006.

determine who is responsible. Should the developer who built the AI, the owner who uses it, or the end-user who gains from it be held accountable? Each of these stakeholders influences the AI's output, but none has complete control over the AI's autonomous behaviour's.

Furthermore, the rapid rate of AI development frequently exceeds the ability of legal institutions to adapt. Existing laws may not fully reflect the complexities of AI technology, resulting in gaps in protection and enforcement.⁵ As AI advances, it introduces new behaviors and capabilities that existing intellectual property regulations were not built to address. This generates an urgent need for new legal norms or processes capable of properly addressing the particular difficulties brought by artificial intelligence.

In addition to legal improvements, ethical issues are critical in influencing the future of intellectual property law in the context of artificial intelligence. As AI systems advance and integrate into all sectors of society, it is critical to strike a balance between the interests of developers, users, and the general public.⁶ Ensuring that AI-generated works are used ethically and responsibly is critical for preserving public trust and encouraging innovation.

III. ARTIFICIAL INTELLIGENCE AND ITS CONNECTION WITH IPR

John McCarthy created the term "Artificial Intelligence" at Dartmouth College in New Hampshire in 1956⁷. "Artificial intelligence" refers to the intelligence demonstrated by automated systems that can execute tasks faster than humans. Artificial intelligence is gaining importance in fields such as medicine, training, financial management, advertising, and information exchange.

⁵ Ryan Calo, "Artificial Intelligence Policy: A Primer and Roadmap," 51 U.C. Davis L. Rev. 399, 399-435 (2017).

⁶ Ryan Abbott, *The Reasonable Robot: Artificial Intelligence and the Law* (Cambridge University Press 2020).

⁷ Swapnil Tripathi & Chandni Ghatak, What is Artificial Intelligence?, in *Artificial Intelligence and Intellectual Property Law* (2018), <https://core.ac.uk/download/pdf/236436865.pdf> (accessed Jan. 1, 2023).

Even so, it was unclear whether the computer's effectiveness was due to its internal intelligence, knowledge, or directives. Alan Turing, a mathematician, proposed the "Turing test" trial to overcome this issue. "What is the Turing Test?"⁸. The technique required consumers to engage in an SMS chat with a machine and then demonstrate whether they believed they were speaking with a person or a gadget. Mister Turing defined artificial intelligence as replies that appear to be incomprehensible to normal human interactions.

Although such an experiment has been employed for several decades, it has only been applied to speech devices and relatively few interrogating software applications. Artificial intelligence has improved tremendously in recent years, with some claiming that it may someday eliminate human civilization.

AI has introduced profound challenges to intellectual property rights (IPR), particularly as AI systems increasingly produce creative content independently.⁹ Unlike early AI concepts, the recent surge in generative AI—such as OpenAI's GPT models and deep-learning algorithms—has produced outputs ranging from art and music to complex problem-solving solutions, raising urgent questions about ownership and accountability.

For instance, in the case of *Thaler v. Comptroller-General of Patents*¹⁰, the UK court ruled that AI cannot be recognized as an inventor under patent law, highlighting the tension between traditional IP frameworks and autonomous AI-generated work.

The core challenge is the legal status of AI-generated content. Existing IPR laws are designed around human creators and inventors, defining authorship and ownership based on identifiable human agents. However, generative AI systems operate independently of human intervention once trained, producing works that are indistinguishable from those created by humans.

⁸ Alexander Gillis, 'What is the Turing Test?' (Turing Test) <<https://searchenterpriseai.techtarget.com/definition/Turing-test>> accessed 01 January 2023

⁹ Abbott, R. (2020). *The Reasonable Robot: Artificial Intelligence and the Law*. Cambridge University Press.

¹⁰ *Thaler v. Comptroller-General of Patents, Designs and Trade Marks* (2023, UKSC 49)

In *Zarya of the Dawn*¹¹, the U.S. Copyright Office granted, and later partially revoked, copyright for AI-assisted art, sparking debate about the boundaries of human authorship. These examples underscore the pressing need for updated legal frameworks that can accommodate non-human creators.

The intersection of AI and IPR involves three key dimensions: AI as a tool to manage IP, IP as a mechanism to protect AI innovations, and IP's role in shielding against potential AI misuse.¹² As AI-generated works proliferate, the gaps in current regulations become more evident, necessitating a rethinking of ownership and enforcement. Future disputes will likely intensify as AI becomes increasingly autonomous, further complicating the attribution of intellectual property rights.

IV. KEY CHALLENGES IN PROTECTING AI-GENERATED WORKS UNDER INDIA'S IPR LAWS

As artificial intelligence (AI) technology improves and permeates numerous sectors, the subject of how to secure AI-generated works under India's intellectual property rights (IPR) regulations becoming more relevant. The existing legal structure, which is principally governed by the Copyright Act of 1957 and the Patents Act of 1970, confronts substantial hurdles in dealing with the complications brought on by AI. This essay examines the primary problems of safeguarding AI-generated works in India, emphasizing the need for legal reform and adaptability.

A. Authorship and Ownership Issues

One of the most fundamental issues in safeguarding AI-generated works is determining authorship and ownership. The Indian Copyright Act defines an author as a "person" who creates a work. This definition raises important problems about AI's

¹¹ U.S. Copyright Office, *Zarya of the Dawn: Decision Regarding Registration of a Work Containing AI-Generated Material*, (2023), [<https://www.copyright.gov/docs/zarya-of-the-dawn.pdf>].

¹² Solum, L. B. (1992). "Legal Personhood for Artificial Intelligence." *North Carolina Law Review*, 70(4), 1231-1287.

standing as a creator. Because AI lacks legal personhood, it cannot be recognized as an author under current legal provisions.¹³

This constraint raises questions regarding who owns the rights to works created by AI systems.¹⁴ For example, if an AI develops a piece of music, art, or literature, it is unclear who owns the rights to that work: the programmer, the AI user, or the organization that owns the AI system. This uncertainty can lead to disputes over ownership and may discourage investment in AI technologies, as potential creators may hesitate to engage with AI systems without clear guidelines on rights and ownership.

B. Patentability of AI Innovations

According to the Patents Act, only "persons" can be recognized as inventors, thus prohibiting artificial intelligence.¹⁵ This provides a hurdle to patenting inventions created autonomously by AI systems. If an AI system creates a breakthrough medication formulation or a groundbreaking technology, the inability to trace the idea to the AI can stymie the patent filing process.

As a result, many potentially game-changing breakthroughs may go unprotected, diminishing corporations' incentives to engage in AI research and development. The Indian government claims that existing patent laws are sufficient to safeguard ideas, but in reality, many AI-generated breakthroughs may not obtain the protection they need under the current framework. This condition may hamper technical innovation and undermine India's competitiveness in the global AI scene.

C. Inadequate legal framework for generative AI

While the Indian government claims that existing rules are sufficient to protect AI-generated works, many stakeholders believe the framework is out of date and does

¹³ Raquel Acosta, "Artificial Intelligence and Authorship Rights," JOLT Digest (Feb. 17, 2012), <https://jolt.law.harvard.edu/digest/artificial-intelligence-and-authorship-rights> (accessed Mar. 17, 2021)

¹⁴ Swapnil Tripathi & Chandni Ghatak, "Artificial Intelligence and Intellectual Property Law," 7 *Christ U. L.J.* 83 (2018).

¹⁵ Jagriti Rana, "Patents and Artificial Intelligence," *Artificial Intelligence and IPR*, [<http://www.legalserviceindia.com/legal/article-2867-artificial-intelligence-and-ipr.html>] (accessed Jan. 1, 2023)

not effectively address the particular difficulties created by generative AI technologies. The rapid evolution of AI has surpassed the establishment of legal frameworks, resulting in a gap between technological capabilities and legal protections.¹⁶

Calls for the creation of a separate category of intellectual property rights for AI-generated works have surfaced. Such a framework could establish more specific standards for authorship, ownership, and protection of works created by AI systems. The absence of such provisions may cause uncertainty and confusion, discouraging creators from fully participating in AI technologies.

D. Fair Use and Licensing Concerns

The existing copyright policy requires users of generative AI to get authorization to utilize copyrighted works commercially. However, the implementation of "fair use" restrictions is frequently uncertain, particularly when using copyrighted content to train AI systems. This lack of transparency might lead to potential infringement issues and discourage innovation in AI development¹⁷.

Many AI systems learn and generate new content using massive datasets, which frequently contain copyrighted material. If this material is found infringing, AI developers and users may face legal consequences. However, if the usage is declared fair, the standards for defining fair use remain vague, generating additional uncertainty for artists and developers.

E. Enforcement Challenges

Even while Indian law includes methods for enforcing rights, the practical application of these rights in the context of AI-generated works remains an issue. Users of AI technologies frequently bear the burden of compliance, even if they are unfamiliar with their copyright obligations. This circumstance may result in unauthorized usage of protected works, complicating the landscape of IP protection in the AI era.

¹⁶ Behara S., *Artificial Intelligence in the World of IP*, 3 *Int'l J. Legal Sci. & Innovation* 96, (2024).

¹⁷ Philipp Hacker, "Teaching Fairness to Artificial Intelligence: Existing and Novel Strategies Against Algorithmic Discrimination Under EU Law," 55 *Common Mkt. L. Rev.* 1143 (2018)

Law enforcement agencies struggle to keep up with the rapid rate of technological progress. Traditional techniques of monitoring and enforcing intellectual property rights may be insufficient to address the specific issues presented by AI-generated material. As a result, creators may find it tough to successfully safeguard their rights, perhaps resulting in financial and recognition losses.¹⁸

V. PROPOSED SOLUTIONS AND FUTURE DIRECTIONS

As artificial intelligence (AI) technology advances and intersects with intellectual property (IP) law, existing legal frameworks become increasingly insufficient. Addressing the difficulties brought by AI in IP necessitates novel solutions and forward-thinking legislation. This section looks at potential solutions and future directions for efficiently managing AI-related IP concerns.

A. Introduction of New Categories of Intellectual Property Rights

One proposed solution is to develop new categories of IP rights that are expressly designed for AI-generated content. Current intellectual property rules are geared towards human creators and inventors, rendering them unsuitable for addressing the intricacies of AI-generated work. New categories, such as "AI-Generated IP," could help legal systems provide clearer standards on ownership, authorship, and rights related to AI works. This strategy would entail defining the scope of these rights and how they apply to various sorts of AI-generated content, such as books, artworks, and innovations¹⁹.

B. Reforming the Inventorship and Authorship Laws

Another crucial area for reform is determining inventorship and authorship in the context of artificial intelligence. Traditional patent and copyright regulations need human inventors or writers, but artificial intelligence (AI) challenges these criteria. In response, some have proposed recognizing AI as an inventor or author in some settings, while others support granting rights to human entities involved in the

¹⁸ Namit Saxena & Swapnil Upman, "AI on Trial: Legal Dimensions of Intellectual Property in India," Firstpost (Jan. 2, 2024), <https://www.firstpost.com/opinion/ai-on-trial-legal-dimensions-of-intellectual-property-in-india-13565882.html>.

¹⁹ Daniel Gervais, "The Regulation of Artificial Intelligence," 89 Fordham L. Rev. 531, 531-73 (2020)

development and deployment of AI systems²⁰. Reforms might include explicit standards for attribution of rights to AI-related ideas and creations, ensuring that intellectual property laws take into account the unique character of AI contributions.

C. Improving Transparency and Accountability in AI

To solve the issue of intellectual property infringement and responsibility, AI systems must be more transparent and accountable. This includes putting in place mechanisms to ensure that AI systems are developed and run in such a way that their decision-making processes can be traced and understood. For example, creating standards for documenting the data sources and methods utilized by AI systems can assist reduce the risk of infringement by giving a clear record of the AI's outputs and their origins. Furthermore, developing auditing mechanisms for AI systems may aid in identifying potential infringement issues before they grow into legal challenges.

D. Creating AI-specific IP enforcement mechanisms

Current IP enforcement tools are primarily designed for human actors, rendering them ineffective when dealing with AI-generated content. Developing AI-specific enforcement tools is critical to closing this gap. This could include establishing specialized IP enforcement agencies or using new legal mechanisms to address the particular elements of AI-related conflicts. For example, regulatory authorities might develop rules for addressing AI-generated intellectual property issues, such as methods for reviewing infringement allegations and identifying suitable remedies. These methods would need to be adaptive and capable of dealing with the continually changing nature of AI technology.

E. International Cooperation and Harmonisation

Given the global nature of AI technology and intellectual property, international cooperation and harmonization are critical in tackling AI-related IP concerns. Different countries may take different approaches to AI and IP, resulting in discrepancies and difficulty in enforcement. To solve this, international organizations

²⁰ Ryan Calo, "Artificial Intelligence Policy: A Primer and Roadmap," 51 U.C. Davis L. Rev. 399, 399-435 (2017)

such as the World Intellectual Property Organisation (WIPO) could play an important role in promoting debates and defining consistent rules for AI-related IP concerns²¹. Harmonizing IP rules across borders would assist in ensuring that AI-generated work is protected uniformly and fairly, creating a more predictable and stable environment for innovation.

F. Ethical Concerns and Policy Recommendations

Finally, addressing AI-related IP issues necessitates the serious examination of the ethical implications. Ensuring that IP rules balance the interests of creators, users, and the general public is critical for sustaining confidence and supporting innovation. Policymakers should evaluate the ethical implications of AI-generated IP, such as justice, access, and the potential influence on human inventors.²² Developing rules that promote responsible AI use while protecting intellectual property rights can assist ensure that the benefits of AI technology are realized equitably and fairly in existing IP frameworks.²³

VI. CONCLUSION

The convergence of artificial intelligence (AI) and intellectual property (IP) law raises important issues that existing legal frameworks struggle to solve. Traditional intellectual property rules, which were created to protect human creators and innovators, are becoming more insufficient in the face of AI's independent capabilities. AI systems that can generate creative works and inventions challenge traditional conceptions of authorship and invention.

To solve these challenges, there is an urgent need to create new legal categories and frameworks specific to AI. This entails updating current intellectual property rules to recognize AI-generated work and setting clearer standards for responsibility and enforcement. Improving openness in AI systems and encouraging international

²¹ World Intellectual Property Organization (WIPO). "Artificial Intelligence and Intellectual Property." WIPO, <https://www.wipo.int>. Accessed September 2024

²² Sam Ricketson & Jane C. Ginsburg, *International Copyright and Neighbouring Rights: The Berne Convention and Beyond* (Oxford University Press 2006)

²³ Sana Singh & Sonil Singhania, "India: Redefine Intellectual Property With Artificial Intelligence," Mondaq (Mar. 18, 2021), <https://www.mondaq.com/india/patent/1036180/define-intellectual-property-with-artificial-intelligence>

cooperation is also critical for efficiently managing IP rights across several jurisdictions.

Furthermore, ethical issues must be factored into the establishment of AI-related intellectual property rules to achieve a fair balance between innovation and rights protection. By adjusting IP rules to the reality of AI, we can better safeguard intellectual property, foster innovation, and create a more equal legal environment for both human and AI producers.

The combination of artificial intelligence and intellectual property rights in India creates important difficulties that must be carefully considered and potentially addressed. As AI technologies grow, the legal framework must adjust to the complexity of authorship, ownership, and enforcement for AI-generated works.

Looking ahead, addressing these challenges will be pivotal in shaping a dynamic and equitable future where AI and intellectual property rights can coexist and thrive. By pioneering a robust and adaptable IPR framework, India has the opportunity to lead globally in crafting solutions that not only protect intellectual property but also drive the next wave of innovation.

Embracing this transformative moment will enable India to leverage its burgeoning AI sector to its fullest potential, ensuring that both human and AI contributions are recognized and rewarded, and setting a precedent for international standards in AI and IPR integration. The evolution of IPR laws in response to AI will not only benefit creators but also contribute to the overall growth and development of the AI sector in India, propelling it to the forefront of global technological and legal advancements.