

AI INNOVATIONS AND IPR- A LEGAL ASPECT

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ABSTRACT

Since AI and IPR are both intangible outcomes of human ingenuity, intellectual property rights (IPR) are becoming increasingly important in today's knowledge-driven economy. The world's traditional intellectual property rights (IPR) regimes, including those in India, face unprecedented challenges as artificial intelligence (AI) continues to develop its creative capacities. A comprehensive review of our approach to intellectual property rights (IPR) in the era of artificial intelligence is required, as the current legal frameworks for copyrights and patents did not account for the possibility of machines independently producing protectable content. This article talks about the growing concerns about how AI would affect India's intellectual property rights (IPR). IPR protection is required to encourage investment and research in AI-related industries since it promotes expansion and provides assurances that inventors can profit from their ideas and introduce new technology, lack of specific data relating to protection laws and guidelines. It also raises questions about why should such intelligence be treated differently and not be provided with the rights available to intellectual property developed by human beings, why should the creator of such a machine not get authorship of the work done by such a machine or why should such a machine not get authorship of the work developed by it autonomously without the intervention of humans.

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“AI is likely to be either the best or worst thing to happen to humanity” - Stephen Hawking.

This conundrum is a very real one today. The paradox we face in modern times is this: while we appreciate the help that Alexa and Siri provide, we also lament the fact that companies like Amazon and Facebook continue to force products in our faces based on our browsing and purchase histories. This is especially true when it comes to the fact that our entire existence is now being watched, from what we watch on Netflix to what we buy, eat, message, talk, and consider. It is indisputable that technological advancements have influenced every aspect of modern life in the modern world. The extent to which technology has permeated our everyday

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lives presents a picture of a world in which the boundaries between the actual and digital worlds have become increasingly hazy. Today, technology provides an essential and inevitable role in the invention process. As useful as technology is for innovative inventions, not only does AI significantly reduce burden, but it also gives objective and structured results, allowing humans to provide proficiently within a short period of time, it has diminished and, in many cases, completely supplanted the proportion of human labor. This creates a special situation where it is impossible to identify newly created works produced by software applications and algorithms from those produced by human effort. Decision-making, adaptive learning, creative output, problem-solving, and many other cognitive abilities are inherent to humans. Due to the mere fact that individuals use their human intelligence to create and invent, they are duly awarded protection under intellectual property laws, which take the shape of patents, trademarks, copyrights, and other rights. For us, artificial intelligence (or "AI") would be demonstrated if a machine could replicate human behavior, think critically, make judgments, and boost human productivity. Combining artificial intelligence ("AI") with intellectual property rights ("IPR") opens a world of uncharted territory.

In the field of law, AI has a significant impact on various types of intellectual property rights, including copyrights, trade secrets, patents, trademarks, and designs. AI is used to complete tasks such as processing large amounts of data, conducting legal research, and examining documents and contracts that were previously performed by people. Despite the numerous benefits of AI in the realm of intellectual property, certain issues concerning authorship and ownership of generated works, as well as the impact on copyright, trademark, trade secret, and patent laws, must not be overlooked. This dissertation makes the case that comprehending legal principles and technical breakthroughs in a nuanced way is essential for negotiating the complex relationship between AI creation and intellectual property rights. India has the potential to establish a more fair and sustainable system that promotes innovation and upholds the core values of intellectual property law by adopting interdisciplinary methods and encouraging conversation among stakeholders. While we continue to struggle with this, technological growth continues for what I hope is the benefit of humanity, and the information age.

MEANING OF ARTIFICIAL INTELLIGENCE

The birth of AI dates to 1956 when the term was coined by John McCarthy at the Dartmouth Summer Research Project¹. The science and engineering of building intelligent machines, notably through the creation of complex computer programs, is the essence of artificial intelligence, according to John McCarthy, who is frequently referred to as the father of the field. These programs use learning, reasoning, and perceptual techniques in an attempt to "think" like humans. The overarching goal of AI is to imbue machines with cognitive capabilities that enable them to replicate human-like decision-making processes and actions. However, it was unclear whether the machine's output was the result of its own intelligence or algorithms and directives. To address the issue, Sir Alan Turing created the "Turing test"². The test required participants to converse with a machine/human in a text-only format and then indicate whether they believed they were communicating with a human or machine. According to Turing, an AI computer was said to be intelligent when its responses were indistinguishable from those of real humans.

The three types of artificial intelligence (AI) that the World Intellectual Property Organization (WIPO) recognized are perception systems, expert systems, and natural language systems.³ Expert systems are computer programs that diagnose and prescribe treatments for medical illnesses, determine geological conditions, and other specialized fields of knowledge. These systems are also used for artistic purposes, such as creating artwork and other such works. This system gained legal attention when the Registrar refused copyright to a computer-authored work due to the unclear legal status of works made with the aid of computers.

Perception systems enable a computer to see the world through the senses of sight and hearing. This is used by word context experts and others.

Finally, natural language software is designed to grasp the meanings of words, which necessitates a dictionary database. What is remarkable is that the system considers various grammatical and textual circumstances while providing a semantic analysis.

¹ Gunjan Paharia, 'intersection of artificial intelligence and IPR' (Forbes india) <<https://www.forbesindia.com/article/legalpowerlist2020/intersection-of-artificial-intelligence-and-ipr-gunjan-paharia/65843/1>>

² Christ University Law Journal, 'Artificial Intelligence and Intellectual Property Law' (2018) Vol. 7, No. 1, <<https://core.ac.uk/download/pdf/236436865.pdf>>

³ Johnson-Laird, Neural Networks: The Next Intellectual Property Nightmare, 7 THE COMPUTER LAWYER 14 (March 1990).

The use of these AI systems got so widespread that people sought security for the results. However, the 1956 denial of copyright to a literary work gave these applicants very low prospects. However, the dispute persisted and even reached national courts due to its relevance to the realm of intellectual property, including copyrights and patents.

REASONS FOR THE GROWTH OF AI AND IMPACT ON THE INDIAN ECONOMY

REASONS FOR GROWTH

Artificial intelligence is being adopted and developed more widely worldwide due to a number of important aspects:-

- **Technological Advancements-** The exponential rise of processing power has enabled AI systems to achieve previously unattainable levels of performance. Algorithm breakthroughs, particularly deep learning, have revolutionized AI applications across a wide range of domains, from natural language processing to image recognition. Advancements in natural language processing (NLP), such as the introduction of pre-trained language models like OpenAI's GPT series and Google's BERT⁴, have resulted in significant performance improvements, democratizing access to cutting-edge capabilities.
- **Data abundance and quality-** The growth of digital gadgets and IoT (Internet of Things) sensors has produced massive amounts of data, which serves as the lifeblood of AI algorithms. More precise AI models are now possible because of enhanced data-gathering strategies and data-cleaning approaches that have raised the caliber and applicability of datasets.
- **Cloud Computing-** The cloud's flexible processing capacity allows businesses to cost-effectively exploit AI by eliminating infrastructure constraints.
- **Industry investments and competition-** Corporations across industries understand the strategic importance of AI adoption for increasing efficiency, fostering innovation, and gaining a competitive advantage. Global AI investment surpassed \$90 billion in 2021, with prominent businesses including Google, Amazon, and Microsoft investing extensively in AI research and development. Venture capital investments in AI firms have skyrocketed, creating a thriving environment of entrepreneurship and

⁴ Thomas lee, 'why AI is growing so fast now?' (2024)< <https://www.linkedin.com/pulse/why-ai-growing-so-fast-now-thomas-lee-w2qfc>>

technological innovation. According to CB Insights, AI startups raised a record \$83 billion in funding in 2022⁵, demonstrating strong investor confidence in the AI market's development potential. The expectation of financial return on investment (ROI) and yield from AI investments is a major driving force behind the boom in AI adoption. The potential of AI technology to boost revenue growth, reduce costs, and provide businesses with a competitive edge is becoming more widely recognized by businesses. Businesses that invest in AI, for example, are more likely to see substantial financial returns, according to a Deloitte report. Businesses with greater AI maturity levels witnessed an average 10% increase in revenue and a 20% rise in EBITA margin when compared to their counterparts.

IMPACT OF AI ON THE INDIAN ECONOMY

Artificial Intelligence (AI) is transforming traditional management approaches and the Indian economy at a rapid and considerable pace. Estimates from the McKinsey Global Institute demonstrate the immense potential; by 2035, AI is expected to have a staggering \$15.7 trillion economic impact on India⁶. Furthermore, it is anticipated that the quickly expanding AI sector will provide jobs. By 2025, the industry group NASSCOM predicts that India will have created nearly 400,000 new jobs, illustrating the profound changes artificial intelligence has already brought about in the country. India, the third-largest start-up environment in the world, with multiple start-ups leading the way in cutting-edge AI-powered solutions, provides further confirmation of India's strong commitment to investing in AI. AI has already had an impact on a wide number of organizations and sectors in India. AI is being used by businesses to improve operations in numerous industries, including finance, retail, and manufacturing. Indian banks, for example, are adopting artificial intelligence to increase fraud detection systems and improve customer service, resulting in a more secure and seamless experience. In a similar vein, AI is being used by Indian merchants to optimize productivity, personalize recommendations, and enhance supply chains. Indian firms are utilizing artificial intelligence (AI) to enhance quality control measures and encourage cost efficiency, showcasing the manifold advantages that AI can offer. Even with all of AI's benefits, concerns about its possible drawbacks remain. Issues such as employment loss and the emergence of moral dilemmas necessitate careful

⁵ CB Insights, 'state of AI 2022 report' (2023) <<https://www.cbinsights.com/research/report/artificial-intelligence-trends-2022/>>

⁶ Ashok Panigrahi, Shrinivas C Ahirrao, Arav Patel, 'The Impact of Artificial Intelligence on Indian Economy, (2024), <https://www.researchgate.net/publication/378715670_Impact_of_Artificial_Intelligence_on_Indian_Economy>

consideration and proactive policy development. Sustaining equilibrium to optimize artificial intelligence's benefits while mitigating its risks is crucial for the technology's sustained advancement and expansion.

- Impact on the GDP

The National Association of Software and Service Companies (NASSCOM) projects that by 2035, artificial intelligence will boost the Indian economy by \$967 billion. This will contribute 10% to India's \$5 trillion GDP target by 2025⁷. In the years to come, AI is expected to have a significant and positive impact on the growth of India's GDP. AI is expected to accelerate GDP growth through increasing productivity, allowing the development of new products and services, and enhancing global competitiveness.

- Impact on tech start-ups

As technology and artificial intelligence continue to advance, more people are attempting to launch their own businesses, leading to a dramatic surge in start-ups in India. In India, there are now about 3,782 new AI-based businesses. With the end of COVID-19, there has been a sharp increase in the number of AI-based startups. More AI-based start-ups are emerging in India as a result of expanded AI subsidies. Artificial Intelligence is one area that is developing at a very rapid pace globally. Artificial Intelligence Proficiency increased by 210 percent between 2015 and 2021. After the United States and China, India is ranked third among the G20 countries in terms of the overall number of artificial intelligence startups. This shows that the government is acting to encourage AI development in India, eventually leading to the growth in the country's GDP⁸.

- Impact on industry

AI is expected to have a significant impact on several Indian industries, including⁹:

1. Agriculture- Artificial intelligence has the potential to boost crop yields, reduce crop losses, and improve agricultural product quality. AI is being used in India to

⁷ Ashok Panigrahi, Shrinivas C Ahirrao, Arav Patel, 'Impact of AI on Indian Economy', (2024), <
https://www.researchgate.net/publication/378715670_Impact_of_Artificial_Intelligence_on_Indian_Economy#pfb8>

⁸ Manoh Kumar P., 'Impact of AI on IPR in Indian Tech startups', (2024), <
<https://www.linkedin.com/pulse/impact-ai-ipr-indian-tech-startups-issues-concerns-pattanaik-9mb7c>>

⁹ Ashok Panigrahi, Shrinivas C Ahirrao, Arav Patel, 'Impact of AI on Indian Economy', (2024), <
https://www.researchgate.net/publication/378715670_Impact_of_Artificial_Intelligence_on_Indian_Economy#pfb8>

establish early detection techniques for pests and diseases, as well as to optimize irrigation and fertilizer use.

2. Manufacturing- AI can help to automate industrial methods, improve product quality, and save expenses. In India, for example, AI is being used to automate manufacturing line procedures as well as predict and prevent equipment breakdowns.
 3. Medical- AI has the power to develop new drugs and therapies, enhance disease detection and treatment, and personalize healthcare delivery. AI is being used, for example, in India to develop innovative imaging algorithms for medical use and to develop personalized cancer treatment plans.
 4. Education- AI has the power to improve accessibility, elevate educational standards, and personalize learning. For example, AI is being used in India to provide instructors with real-time feedback and to generate individualized learning programs for pupils.
- Production of new goods and services- Businesses in India can now manufacture brand-new goods and services that were previously inconceivable. As a result, Indian firms are discovering new markets and economic opportunities, which is boosting GDP.
 - Impact on International Competition- AI has made Indian enterprises more competitive in the global market. For example, AI may assist organizations in lowering costs, improving quality, and accelerating the development of new goods and services. India gains from greater exports and international investment.
 - Impact on Job Creation- The swift integration of artificial intelligence (AI) into numerous Indian businesses is leading to significant advancements in technology and employment creation. Data and analysis show that job opportunities have noticeably increased in a number of significant fields.

Thus, these pointers give a fair idea about the significant potential of AI to boost productivity, produce new products and services and thereby leading to the growth of the Indian economy. Numerous industries, including telecommunications, e-commerce, and IT services, are effectively utilizing AI, and the consequences are quantifiable. These include streamlined operations, increased network efficiency, and higher consumer engagement. AI has the potential to improve India's resilience and economic competitiveness abroad. Still, ensuring ethical AI use and bridging the talent gap are significant concerns that need to be addressed.

Talent development and ethical AI deployment will be essential for optimizing the potential advantages of this revolutionary technology while lowering associated risks.

AI AND IPR

The confluence of Artificial Intelligence (AI) and Intellectual Property Rights (IPR) is one of the most fascinating and intricate developments in the contemporary history of law and technology. In addition to serving as an essential tool for safeguarding and enhancing human creativity and discoveries, intellectual property rights also allow the authors to be fairly compensated for their contributions. The topic of artificial intelligence and rules such as copyright and patents are still in its early stages. When it comes to Intellectual Property Rights (IPR) and Artificial Intelligence (AI), the most common issue of discussion is how to discern between real human consciousness and artificial consciousness. One of the biggest issues is determining who is to blame for the failures of these technologies. The current rules pertaining to intellectual property (IP), like, the Copyright Act 1957, Patent Act 1970, and Trade marks Act 1999 lack the necessary authority to handle matters with inventor identification and other infractions involving the creation of artificial intelligence (AI) and thus has shown policy gaps in the prevailing laws. The policymakers face a plethora of issues, and this has been a subject of ongoing discussion among lawmakers and specialists. This has led to calls to modernize India's intellectual property regime to meet the challenges of AI innovation and align with international standards and practices.

AI AND COPYRIGHT

The debate on the relationship between copyright law and artificial intelligence (AI) in India covers a wide range of topics, most notably the originality standard included in Section 13 of the Copyright Act¹⁰. This clause stipulates that a work must demonstrate a necessary degree of originality in order to be eligible for copyright protection. Courts have historically interpreted originality as originating from the human intellectual endeavor, which has led to important questions about how much AI-generated content satisfies this requirement. But it is also argued that the development of new copyrightable works in a variety of artistic fields is increasingly dependent on AI systems. These systems can create original content, including music, visual art, literature, and even movie scripts because they are outfitted with sophisticated algorithms

¹⁰ Teesha Hemangkumar Soni, 'Impact of AI creations and IPR Framework' (2024) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4831898>

and machine learning functionalities. AI can independently create original and inventive works by analyzing large datasets and patterns present in previously published works. The possibilities of artificial intelligence's creative potential are extending the bounds of conventional artistic expression, from image-generating models that create visual art to music composition algorithms that compose inventive tunes.

The uniqueness of this artificial intelligence (AI) created works is sometimes questioned when we view AI systems as creators of works that are developed based on the data it is fed. How much data is gathered is another important factor to consider. The most important thing is that the data sets used to train AI systems come from legal and ethical sources, with the author's express consent and without the infringement of the copyrights of the existing work. Currently, there are two potential issues: One, if an AI generates an original work (literary, artistic, photographic, etc.) without human interference, who owns the copyright: the normal person who authored the code and constructed the AI, or the person who owns the AI? The second issue is who should be held accountable if an AI plagiarizes or infringes on another's copyright without any 'human provocation'. Due to this intricacy, it is imperative that the applicability of copyright to AI works in India be clarified. This may need careful legal interpretations and maybe legislative changes.

Transitioning to the Copyright Act of 1957, which forms the cornerstone of copyright law in India, the idea of uniqueness becomes essential. According to this principle, an author must independently develop a work that demonstrates a minimal amount of originality and discernment. Within this paradigm, two key doctrines¹¹—the Sweat of the Brow Doctrine and the Modicum of Creativity—influence the appraisal of originality. While the former focuses on the creator's work and expense, the latter highlights the importance of intellectual originality in the creation process. Although there were initial difficulties in applying these theories to works created by artificial intelligence, court rulings have indicated a readiness to accept the possibility that AI systems are capable of achieving the necessary level of creativity, meeting the prerequisite for originality. Except Section 2(d) of the Copyright Act defines "author" as the person who causes the work to be made, which presents a major obstacle. Given the general lack of legal personality in AI systems, this rule presents a challenging situation for works made by AI. As such, AI is not included in the concept of "author" under the existing legislative

¹¹ Teesha Hemangkumar Soni, 'Impact of AI creations and IPR Framework' (2024) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4831898>

framework, which creates uncertainty over who is the creator of AI-generated works under Indian copyright laws.

In 2020, the Indian Copyright Office dealt with a noteworthy case involving an AI system termed 'RAGHAV' and its effort to acquire copyright registration for an artwork called 'Suryast'.¹² Initially denied for lack of a human author, the picture was later given protection once a natural person was designated as a co-author alongside 'RAGHAV.' A withdrawal notice was then sent, seeking clarity on the legal status of 'RAGHAV,' underscoring the ambiguity surrounding AI's eligibility as an artist under the Copyright Act.

The Berne Convention for the Protection of Literary and Artistic Works, established in 1886¹³, is an international treaty that aims to provide a unified framework for the protection of copyright across participating countries. Article 2(3) defines 'derivative works' as a new creative work that is based on or derived from one or more previously existing works. Securing copyright for derivative works, according to the Berne agreement, requires a noticeable and non-trivial deviation from the original source. Even though AI tools use data from pre-existing sources, the output they produce is not exactly a replica; rather, it is modified by the particular AI model's distinct learning capabilities. As a result, it is impossible to claim that AI-generated works are copies. This complexity gives rise to a strong argument: rather than being merely rearranged or duplicates of previously published content, AI-generated outputs ought to be acknowledged as unique, derived works that capture the insights of the AI. As a result, works produced by generative AI models or software may be protected as derivative works, provided that the original authors of the works used to train the models or software gave their agreement and the materials were legally obtained.

Currently, however, applicants of translated or modified works (derived works) can request copyright protection from the Indian Copyright Office by mentioning the source works at the time of application submission. We believe that this could provide support for the mandate that existing copyrighted works be cited when training AI systems to produce new, copyrightable works. The premise that creativity is solely a human quality, which is at the core of the concept

¹² Nayantara Sanyal, Sheetal Mishra, Nihal Shah, ' Intersection of Intellectual Property Rights and AI Generated work'(2024) < <https://www.barandbench.com/law-firms/view-point/intersection-intellectual-property-rights-ai-generated-works-part-i>>

¹³ Nayantara Sanyal, Sheetal Mishra, Nihal Shah, ' Intersection of Intellectual Property Rights and AI Generated work'(2024) < <https://www.barandbench.com/law-firms/view-point/intersection-intellectual-property-rights-ai-generated-works-part-i>>

of authorship/ownership, means that the question of authorship still remains unclear. The question then becomes: is an AI system using creativity to produce new works, or is it just copying the style of the artists that were included in the training data sets?

According to Indian copyright law, a work must be written by a human in order to be protected by copyright. While the Copyright Act of 1957 recognizes creators of computer-generated works, the legal status of AI-generated content remains unclear. Furthermore, the usual protection period for original works under Indian copyright law is 60 years, beginning the year following the author's death. If AI systems are assigned authorship over works, the AI system's eternal life calls into question the core purpose of this protection term, as it will live indefinitely.

It has been suggested by the Parliamentary Standing Committee report to create a distinct IPR category specifically for the protection of AI-based ideas. The Committee acknowledges the importance and practicality of emerging technologies, such as artificial intelligence and machine learning, and their part in generating income for India. It has also suggested that the Department for Promotion of Industry and Internal Trade evaluate the current laws, such as the Copyright Act of 1957 and the Patent Act of 1970, in order to include new developments in artificial intelligence and its related works under its purview.

Thus, the unexpected increase in AI-generated content creates complex issues regarding the authorship, ownership, enforcement, and other aspects of such works, as the existing legal frameworks attempt to adjust to the changing environment in which machines play a major role in the creative process. The inevitable convergence of AI and current Indian copyright law calls for a review and improvement of the pertinent legislation to handle the potential and problems brought about by AI's rise to prominence as a creator of unique, copyrightable content.

AI and PATENT

A patent can be defined as the only right to an innovation. This 'innovation' has been defined as any product or procedure that offers people a novel way of accomplishing a certain task, including those that offer a new solution to an existing technological problem¹⁴. The holder of such a privilege is legally authorized to exclude others from creating, selling, or even utilizing the protected innovation for a certain time. As a result, the right given in such a case legitimizes

¹⁴ Patents, 'WORLD INTELLECTUAL PROPERTY ORGANIZATION' <[http:// www.wipo.int/patents/en/](http://www.wipo.int/patents/en/)>

the establishment of a monopoly in favor of the original creator. AI-enabled systems, as previously mentioned, are capable of carrying out tasks and even inventing, which often comes from the application of human cognitive processes. As a matter of fact, the output that these machines are generating may well be considered patented.

According to the World Intellectual Property Office¹⁵, innovators and researchers have filed applications for almost 340,000 AI-related inventions and published more than 1.6 million scholarly articles. India has been no exception, with multiple AI-related patent submissions in the recent few years. Given the ambiguity of the legislation, it would be accurate to say that officials have not had an easy time reviewing and processing applications submitted for work involving artificial intelligence.

Complicated legal and policy issues are brought up by the patentability of AI-generated innovations. Innovative products powered by artificial intelligence, including computer programs or hardware, are capable of doing complex tasks on their own. Gradually, they continue to grow and learn. AI-generated innovation applications have been denied by courts and patent offices. This is so because inventors are presumed to be human by the patent law. The patentability of AI-generated inventions has been hampered by the inventorship question. Artificial intelligence (AI) inventions that are deemed "autonomously generated" lack a set of precise standards. AI systems are contributing more and more to innovation. How AI-generated inventions will be protected by the patent system has been an important topic. AI as a tool and AI as the main source of inventions have not been distinguished by conventional patent laws. Large corporations are prepared to invest in the advancement of AI. Yet, the ambiguity surrounding AI patents may have an impact on economic expansion and innovation. If AI inventions are not patentable, investment in AI technologies may decline. Some argue that AI-generated works should be made available to the public for open access and mutual benefit. On the other hand, there are justifications for using patents to protect AI work, which encourages investment and innovation. Some have expressed worry that an excessive number of patents for AI inventions could impede research and development. The most obvious sets of problems are those of ownership, liability, and the activity of AI, as well as how to address the claim that the claimed innovation is not explicit to a person with the necessary skills. The issue of responsibility resulting from an artificial intelligence act remains a serious problem. AI looks

¹⁵ Gunjan Paharia, 'Intersection of Artificial Intelligence and IPR' (2021) <<https://www.forbesindia.com/article/legalpowerlist2020/intersection-of-artificial-intelligence-and-ipr-gunjan-paharia/65843/1>>

to be quite powerless when it comes to granting consent to third parties and an analogous problem arises when it comes to transferring its rights, given that AI is unable to own rights in its production. Regrettably, there are many difficulties and uncertainties in the law that affect the safety and implementation of AI-generated processes and products.

Whether an innovation may adequately meet the patentability requirements is a critical component in determining whether it will be granted a patent or not. This means that it must be innovative, have a creative step, and be suitable for industrial use. The largest obstacle to getting a patent for inventions involving AI-enabled systems or technology is passing this three-step examination. The innovation must be distinct from anything found in the prior art in order to be considered new. In most cases, this means that the inventor must conduct a thorough review of the previous art in order to ascertain, during the invention process, whether his idea is easily foreseeable or the result of further research and creative thought. Due to human scientists supervising it and feeding it knowledge, an AI system will undoubtedly have access to prior art, but can it really be considered independent, much alone able to determine whether its innovation can legitimately explain something novel? In terms of an inventive step, if uniqueness is difficult for the AI system to determine, the odds of developing innovations on existing models or concepts that are not clear to a human trained in the art are even more difficult to achieve. Currently, AI is frequently fed pre-existing objectives that it is programmed to pursue. Technology must first evolve to equip these systems with human-like intelligence in order to make judgment calls on novel conditions.

For instance, DABUS (Device for the Autonomous Bootstrapping of Unified Sentience) is an artificial intelligence system developed by American scientist and inventor Dr. Stephen Thaler. One form of "connectionist AI" is DABUS¹⁶. It generates new ideas using various neural networks and then evaluates their uniqueness using another neural network system. DABUS has produced two "inventions" on its own through this procedure. The first was a food container, a fractal container, and the second was a neural flame, a beacon for search and rescue operations. In New Zealand, Taiwan, Israel, the Republic of Korea, Canada, Brazil, and India, Dr. Thaler's patent applications have been denied. The only two exclusions are Saudi Arabia

¹⁶ Ipleader, ' Intersection of Artificial intelligence and Intellectual Property Rights' (2024) <[\[www.jlrjs.com\]\(http://www.jlrjs.com\)](https://blog.ipleaders.in/intersection-of-artificial-intelligence-and-intellectual-property-rights-challenges-and-opportunities/#:~:text=AI%20and%20Intellectual%20Property%20Rights,copyright%20protection%2C%20and%20trademark%20impacts.></p></div><div data-bbox=)

and South Africa, even though the patents in those two countries haven't yet completed a thorough assessment.

In India, the Patents Act of 1970 governs the patentability of AI-generated innovations, outlining the conditions for patenting¹⁷. To be eligible for a patent, an invention must be innovative, non-obvious, and have industrial application. However, there is no particular provision in the Act that addresses AI-generated inventions and has declared that inventions that are produced entirely by artificial intelligence (AI) systems without human involvement are not eligible for patent protection because they do not satisfy the prerequisite of being created by a living person. Nonetheless, it can be eligible for a patent if it combines human and artificial intelligence input and satisfies the additional requirements for patentability,

Furthermore, instructions for the assessment of computer-related inventions—which can include AI-generated inventions—have been released by the Indian Patent Office. According to these recommendations, if artificial intelligence (AI) and machine learning algorithms are not only being utilized for automation or computational efficiency, then their employment in an invention may be deemed to contribute to the inventive step and industrial applicability. The criteria further stipulate that the description of the innovation must clearly indicate the technological improvement made possible using AI. Section 6 of the Patents Act creates further ambiguity by defining a "true and first inventor," a term that could make it difficult to include AI innovators in the current legal system¹⁸. Overall, while there is no explicit provision in Indian patent law dealing with AI-generated innovations, the Indian Patent Office has issued instructions on how such inventions can be assessed for patentability.

When comparing Indian laws with those of other countries, it is observed that even the UK specifically protects computer-generated works that are not created by humans under copyright. The Copyright, Designs and Patents Act ("CDPA") stipulates in Section 9(3) that "the author shall be taken to be the person by whom the arrangements necessary for the creation of the work are undertaken in the case of a literary, dramatic, musical, or artistic work which is computer-generated." A work that "is generated by computer in circumstances such that there is no human author of the work" is classified as computer-generated content under Section 178

¹⁷ IIPRD, 'Intellectual Property Rights in the Age of Artificial Intelligence: Navigating Challenges and Seizing Opportunities,' (2024) <<https://www.iiprd.com/intellectual-property-rights-in-the-age-of-artificial-intelligence-navigating-challenges-and-seizing-opportunities/>>

¹⁸ Teesha Hemangkumar Soni, 'Impact of AI creations and IPR Framework' (2024) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4831898>

of the CDPA¹⁹. New Zealand and Ireland's laws, among others, have incorporated similar measures after drawing inspiration from the CDPA.

There is an increasing need for more precise rules to assess and assign patents for AI outputs as the number of AI-related patent applications soars. Modernizing India's patent law system will require defining the bounds of AI systems' ingenuity while preserving the rights of human inventors. Inspired by efforts in the US and UK patent offices, India might investigate procedures to acknowledge AI systems as co-applicants on patents they co-invent alongside human inventors. This strategy supports the overarching objective of protecting intellectual rights and encouraging AI innovation.

It also emphasizes how intellectual property laws are changing in response to developments in AI technology and how important it is for legislative changes to take into account the particular difficulties presented by inventions created by AI. Comprehensive reforms are required to eliminate ambiguity regarding ownership, accountability, and enforcement methods in light of the changing landscape of artificial intelligence and its implications for patent law. It is crucial to modify patent rules to account for the intricacies of AI innovation as India continues on its path as a developing country in order to promote an atmosphere that is favorable to innovation and technological advancement.

It's undeniable that artificial intelligence will advance daily. Complex technologies based on AI are certain to expand the amount of such "inventions" that may come about as businesses like GE, IBM, Apple, etc., advance their attempts to revolutionize technology connected to offering software solutions. There is a great deal of room for legislators to create rules for identifying these kinds of circumstances and offering the best possible legal protection. However, I agree with Stephen Hawking when he says that AI's independence may make human creativity and thought less valuable.

A more attractive alternative would be to provide a more collaborative kind of patent protection for AI inventions. This is because a human element is required to administer the rights and obligations related to patents, which cannot be done exclusively by a machine. Furthermore, with the increasing possibility of using thousands of AI-enabled networks that function with or without human intervention, patent protection must be granted to some anthropomorphic agent,

¹⁹ Andres Guadamuz, 'Artificial Intelligence and Copy Right'(2017)
<https://www.wipo.int/wipo_magazine/en/2017/05/article_0003.html>

who may be recognized in the event that such invention malfunctions or causes a possible violation of law, resulting in criminal liability. Hence, it is important to keep in mind that in the pursuit of modifying intellectual property laws to accommodate evolving technological advancements, one cannot opt to undermine the intended consequences of criminal laws, which inevitably depend on human involvement. Furthermore, we cannot fully rely on AI technology, which could diminish the significance of the human race.

AI AND TRADEMARK

As per the Indian legal system, a trademark is any mark that is utilized or intended to be utilized in connection with products or services to signify a link between the legal owner of the mark and the goods or services. Trademarks are the tangible, observable markers that set a brand apart from its competitors' products and services. The Trademarks Registry is in charge of reviewing and approving trademark registrations. Trademark registration is completed through this registry. In India, AI is increasingly being applied in a variety of areas, including brand management, advertising, and marketing. As a result, AI systems can develop trademarks or assist with trademark registration.

The domain of trademarks is undergoing a transformative phase, as Artificial Intelligence (AI) has greater sway over our decision-making process, ranging from recommendation to representation. Consumer decision-making during online buying is already declining as a result of the AI era's arrival in marketing and product branding. AI is being used by e-commerce enterprises to make product recommendations to customers based on their search history, purchasing patterns, previous purchases, and other data. Trademarks serve as source identifiers, assisting customers in recognizing the brands they enjoy, trust, and want to purchase from. Brand owners worry that as AI develops, consumers will lose their freedom of choice, which would lower their brand's value and sales. An illustrious case in the United Kingdom addressed a comparable issue. The plaintiffs in *Cosmetic Warriors Ltd. and Lush Ltd. v. Amazon.co.uk Ltd.* filed a lawsuit against Amazon, claiming that Amazon had violated their trademark rights in relation to their mark "Lush." The claimants in this case were able to demonstrate that Amazon had utilized their mark, "Lush," without getting their permission. Amazon purchased the term "Lush" through Google AdWords. As a result, if a customer searches for products under the "Lush" brand on Google, an advertisement will appear indicating that "Lush" products are available on Amazon, even though Amazon does not sell "Lush" products. If a customer clicks on the aforementioned advertisement, similar products will be displayed on the

Amazon website, but not "Lush" products. Additionally, a consumer will see similar products rather than a notification stating that there are no "Lush" products available if they search for "Lush" products directly on the Amazon website²⁰. When considering the extent to which AI can influence consumer choices and decision-making, it seems likely that these instances will increase in the near future unless the fundamental issue is resolved, and gaps are closed through the creation and implementation of appropriate legislation.

However, as AI's capabilities advance, so do the challenges and disruptions to this fundamental framework. More than just technical, the interaction between AI and trademark law is an intricate collaboration of innovation, technology, and legality. With AI becoming more creative, the basic concepts of ownership, accountability, and trademark rights are coming under scrutiny. In the dynamic world of trademarks, artificial intelligence (AI) has ushered in a new era of search and clearance procedures. Trademark searches have undergone a revolution since the advent of artificial intelligence (AI), which provides greater efficiency and precision. Its capacity to assess big datasets and enhance search results aligns nicely with the intricate prerequisites of trademark clearance. It's difficult for AI-powered trademark searches to achieve absolute precision. Determining trademark similarities and potential issues requires navigating the nuances of human perception and interpretation, which is challenging yet vital. AI systems struggle with the nuances and contextual knowledge that people take for granted, which also has an impact on how accurate search results are. Setting up the conditions for registering an AI-generated trademark is a challenging process. AI's self-generating trademarks frequently fall short of the distinctiveness and ability to distinguish goods or services requirements set forth by conventional trademark rules. This challenges the conventional understanding of trademarks and demands that the legal frameworks be reevaluated.

The Indian Trademark Act, 1999, does not specifically address the issue of AI-generated trademarks. Section 9(2) of the Trademark Act 1999 states that only distinctive trademarks may be registered and that trademarks that are solely composed of marks or indications that have evolved into common usage in the language of the day or in legitimate, established trade practices are not eligible for registration. The Tamil term "Aachi" for grandmother is utilized in the names of both companies in "Aachi Masala Foods Pvt. Ltd vs. Aachi Cargo Channels

²⁰ Gunjan Paharia, 'intersection of Artificial Intelligence and IPR' (2021) <<https://www.forbesindia.com/article/legalpowerlist2020/intersection-of-artificial-intelligence-and-ipr-gunjan-paharia/65843/1>>

Pvt."²¹Aachi Masala Foods Pvt. Ltd. has claimed that Aachi Cargo Channels Private Limited. must pay damages for allegedly violating its trademark in this dispute. The Madras High Court ruled that there cannot be the creation of an exclusive monopoly on the use of the term "Aachi" because it has a clearly ordinary quality. It follows that the fundamental tenet of trademark rights is the necessity of eliminating any possibility of misunderstanding about the origin, source, or sponsorship of products or services. Thus, unless and until it does not create confusion or pose a threat to the other business, the trademark created by AI will be protected by law. Under trademark law, the rights of those who produce and sell items with distinctive trademarks are protected from infringement by third parties who could try to pass off their goods as imitations.

A major issue faced in this area is trademark dilution. It is a serious challenge in the digital age, especially with the incorporation of AI. Trademark dilution occurs when an unregistered trademark is associated with or used with unrelated goods or services, reducing its distinctiveness or reputation²². AI has an impact on dilution because of its ability to independently generate content and promote products, which could cause trademarks to be associated with subpar or irrelevant goods or services. AI-powered recommendation algorithms, for example, have the power to damage a reputable brand's image by linking it to products that are unrelated to or fraudulent. Furthermore, trademarks may be misused by unapproved AI-generated content, diluting them. Understanding the relationship between trademark dilution and AI is crucial. It highlights the risks that artificial intelligence-generated information presents to the integrity and reputation of trademarks. The evolving landscape emphasizes the need for stricter laws and enforcement to safeguard brand identities online and demands a deeper examination of the ways in which AI's self-governing decisions impact trademark dilution.

To sum up, Determining who is at fault when artificial intelligence generates data that infringes on trademarks is the main problem. It might be difficult to determine who is legally liable for offenses committed by AI systems. There are major barriers to the defense and enforcement of trademark rights because of this ambiguity. Another difficulty of distinguishing between real and artificial intelligence (AI)-generated logos, slogans, and other trademark-related content is

²¹ IIPRD, 'Intellectual Property Rights in the Age of Artificial Intelligence: Navigating Challenges and Seizing Opportunities' (2024) < <https://www.iiprd.com/intellectual-property-rights-in-the-age-of-artificial-intelligence-navigating-challenges-and-seizing-opportunities/>>

²² mondaq, 'intersection of AI and trademark' < <https://www.mondaq.com/india/trademark/1409950/the-intersection-of-ai-and-trademarks>>

increasing. Beyond only legal concerns, incorporating AI into trademark law raises ethical and regulatory concerns. Stakeholders need to address concerns about algorithmic bias, data privacy, and the ethics of using AI to manage intellectual property. With AI being used more and more in trademark management, questions are raised about how to maintain customer trust. Automating tasks like trademark monitoring and searching with AI algorithms carries the risk of errors or oversights that could reduce consumer confidence in the legitimacy of trademarks. These are the major issues concerned with the collaboration of AI with Trademarks.

The Indian legal landscape is evolving with regard to AI-generated trademarks. Since there aren't many recent cases or rules in this field, strong legal precedents and guidelines are essential. The examination of AI-generated trademarks is made more challenging by the absence of clear rules in India's trademark registration procedures. It requires tact to navigate and sort through these legal intricacies. As AI continues to push the frontiers of trademark development, clarity in trademark registration is becoming more and more critical. Given the dynamic nature of AI's involvement in trademark generation, legal frameworks must strike a balance between fostering innovation and upholding the fundamentals of trademark protection.

Regulations must be taken into account for policies to effectively regulate trademarks created by artificial intelligence. AI presents a paradigm change for the existing legal systems, which were often developed from a human-centric perspective. To determine ownership, distinctiveness, and protectability in this age of AI-driven trademarks, governments must venture into uncharted territory. Lawmakers must proactively establish comprehensive guidelines due to the complexity of AI-generated trademarks.

It is also crucial to encourage cooperation between legal professionals, technologists, and stakeholders in order to develop frameworks that strike a balance between innovation and protection. In essence, this marriage heralds both challenges and opportunities. The challenges are clear: the vague notion of distinctiveness in AI-generated trademarks; the intricate process of determining culpability in instances of autonomous system infringement; and the unsettling prospect of trademark dilution through the creation of AI-generated material. These difficulties breed uncertainty, calling for thoughtful analysis and original solutions.

But there are plenty of opportunities in the world outside these challenges. With its precision and efficiency, AI is transforming trademark searches and providing more effective ways to sift through the enormous sea of trademarks. Legal frameworks must change in response to the

ever-changing environment. They must adapt in order to preserve the integrity of trademark protection while embracing AI's unparalleled inventiveness.

To advance, one must navigate wisely, carefully striking a balance between tradition and innovation. Wise navigation is required to march forward, carefully balancing tradition and innovation. It calls for a careful equilibrium where the strength of trademark law and the dynamism of AI coexist peacefully. The evolution of trademarks in an AI-driven world beckons as we stand at this crossroads; it is a landscape full of opportunities and problems that require a careful, flexible, and cooperative approach.

CONCLUSION

This study emphasizes the profound impact artificial intelligence (AI) has had on the Indian economy and AI's potential to significantly increase productivity, increase job opportunities, and propel GDP growth in India. Undoubtedly, artificial intelligence (AI) can be a valuable tool in the field of intellectual property rights to some extent. It can perform a variety of innovations that would take a human age to complete and can aid in the development of economies. However, there are many uncertainties and gaps when it comes to the application of AI in intellectual property rights. Additionally, AI can also pose a threat because it can be difficult to assess the risk in the event of encroachment. To keep up with the rapidly developing field of artificial intelligence, the current IP regulations require significant modernization. If they are not updated, artificial intelligence will continue to advance to the point where the laws that are in place will no longer be able to meet the demands of people. Ethical AI deployment in tandem with talent development will be essential to optimizing the potential advantages of this game-changing technology while mitigating associated risks. Achieving a balance between opposing interests is crucial when navigating the intricate convergence of current legal frameworks with artificial intelligence (AI). Ensuring that the inventors of AI technologies may make money via their creations is one way that robust intellectual property rights (IPR) protection laws may promote investment in AI research and development. This may promote creativity and result in the creation of fresh, practical AI applications. However, excessively stringent IPR laws might hinder innovation and restrict those who can benefit from AI's potential. The reason for this is that artificial intelligence (AI) is highly dependent on data and algorithms, and restricting access to these resources may impede the creation of new applications and reduce AI's ability to address significant social issues. This equilibrium takes into account the necessity of optimizing AI's potential while tackling issues like liability,

safeguarding intellectual property, and ethical considerations. By analyzing the rulings and their ramifications, we can learn more about how legislators might preserve the values of justice, creativity, and public welfare while skillfully navigating the rapidly changing field of artificial intelligence. As AI technology develops, legislators and legal professionals must urgently review current legislation and create thorough frameworks that define liability and accountability in AI use to address this paramount issue and easily integrate AI and IPR, thus taking the country to new heights through unmatched levels of development and research.

