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### REDEFINING BOUNDARIES: THE IMPACT OF ARTIFICIAL INTELLIGENCE ON TRADEMARK LAW

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#### Abstract

The rapid advancements in Artificial Intelligence (AI) have profoundly reshaped various sectors, including trademark law. While AI offers significant benefits in trademark search and clearance, filing assistance, infringement detection, and monitoring, leading to increased efficiency and reduced manual workload, it also presents complex challenges. This article explores the dual impact of AI, highlighting its positive contributions to streamlining trademark procedures while scrutinizing the emerging difficulties. Key issues addressed include concerns around the accuracy and bias of AI predictions, legal liability for AI-generated content, the complexity of non-traditional marks, data privacy, ethical considerations, and the unique challenges posed by cross-border AI trademark disputes. Through an analysis of relevant case laws and a comparative study of different jurisdictions, this article identifies the loopholes and lacunas in current trademark legislation. Ultimately, it recommends concrete solutions, including establishing robust legal and ethical frameworks, fostering continuous human oversight, and developing global standards to ensure AI functions as a complementary tool rather than a replacement for human intellect in the evolving landscape of trademark law.

**Keywords:** *Artificial Intelligence, AI, Trademark Law, Intellectual Property, Trademark Infringement, AI-Generated Content, Legal Liability, Ethical AI, Non-Traditional Trademarks, Cross-Border Disputes, Trademark Registration, IP Enforcement.*

## INTRODUCTION

**“Success in creating AI would be the biggest event in human history. Unfortunately, it might also be the last, unless we learn how to avoid the risks.”**

**Stephen Hawking, Theoretical Physicist, Cosmologist, and Author<sup>1</sup>**

Artificial intelligence has ruled the roost in all technologies, inventions, and innovations for the past few years. There is no segment left untouched by AI. The growing technology can be detected in many spheres of law including Trademark. A trademark that distinguishes the product and services of one enterprise from that of another, safeguards the goods from unauthorized use and also protects the reputation of the original producer due to counterfeiting of the product and services. AI can be traced in the trademark registration, filing, and application which was previously done by the authentic and original producer or anyone on behalf of the producer. This made the working and registration procedure more time and cost-effective and efficient.

However, with the advent of AI, the need to redefine, redesign, and evaluate the traditional and obsolete laws of Trademark is also generated. AI has reshaped the structure of the trademark and eased the manual workload of the procedure related to the trademark.

But this is not the entire story; there is one more side that is not ever happening. It has certain dangerous impacts and challenges and has its own difficulties and issues. Ownership, liability, obligation, and burden of error, these are some of the loopholes and lacunas which was not considered by anyone but yet the most important aspect as they pose the most difficult, unsolved, and unanswerable questions in front of the individual. This Article is going to scrutinize such problems and vital issues that pose challenges and sabotage the workings of Trademark Laws and also analyze and recommend apt solutions.

## AI AND TRADEMARK

AI has proved very useful in reducing the burden of workload and also provides relaxation in manual jobs regarding registering, filing, and applying trademarks. The essence of AI can be seen in various ways:

- Trademark Search & Clearance
- Trademark Filing Assistance
- Similarity Analysis

<sup>1</sup> <https://www.nisum.com/nisum-knows/top-10-thought-provoking-quotes-from-experts-that-redefine-the-future-of-ai-technology>

- Trademark Monitoring
- Automated Trademark Classification
- Trademark Infringement Detection
- Trademark Valuation
- Improved Consumer Insights
- Legal Research & Case Analysis

There were numerous steps involved in the registration of the Trademark such as filling application, the registrar checking whether there is any other similar trademark that exists or not which can deceive the public, checking whether the application is according to the provision or not, and many more.

Earlier all the above-mentioned work was done by human beings according to their calibre and wits but there were high chances of mistakes and errors, and there are many other numerous challenges and difficulties faced by them such as:

- It is a very time-consuming Procedure
- It involves a high Risk of Human Error
- Complex Classification System
- Sometimes it provides inconsistent Results
- Limited Data Analysis
- Difficulty in Monitoring Infringements
- Highly Resource-Intensive
- Difficulty in Detecting Non-Traditional Trademarks<sup>2</sup>

The introduction of AI in the Law sector, especially in trademark laws, proved very useful as time management and resource-saving technology which not only reduced the work burden but also extended the scope and boundaries of the trademark, redesigned the conservative ways of different procedures and provisions of the Act.

## CHALLENGES IMPOSED BY AI

Every coin has two sides, similarly, AI also has 2 sides one of which is positive and useful and has influenced a lot of people, businesses, and enterprises but the other side is negative and dark which is latent from the world and has its implications and issues. It poses a lot of challenges such as:

- Accuracy of AI Predictions that are not 100% reliable and accurate.
- Legal Liability Issues

<sup>2</sup> <https://www.lexology.com/library/detail.aspx?g=fa64ceba-09f8-47f3-adb8-50adfb334315>

- The complexity of Non-Traditional Marks like sound, taste, or smell marks, as they require human understanding.
- Limited Contextual Understanding
- High Initial Costs
- Data Privacy Concerns
- Ethical Concerns in AI Decision-Making
- Bias in AI Models
- Infringement by AI-Generated Content
- Easily hacked<sup>3</sup>

Not all glitters are gold, perfectly setting over here. AI which seems to be very useful and a saviour but in reality is a dangerous tool if not handled with care and precautions, can be proved disastrous for mankind just like the loaded gun in the hands of a child.

Even if the world is changing and moving toward novel technologies and adapting them in their daily life and work, still certain complexities will not allow this new technology to submerge human labor. Human understanding and clarification are always needed to complete the work efficiently, effectively, and properly no matter how advanced the technology is but it can't replace human efficiency.

#### **CROSS-BORDER AI TRADEMARK DISPUTES**

As the slowly and gradually market surges to expand globally, the problems related to trademark registration and similarity verification are also flexing, and on top of that, the use of AI has worsened the situation.

Jurisdiction was one of the most pertinent and complex problems as the use of AI-driven business includes the jurisdiction of many countries, so, at the time of the dispute, it became difficult to determine which country's jurisdiction should be invoked or what legal frameworks should be imposed on the trademark infringement. Each and Every country is different in providing protection and penalties to the different types of clashes that arise out of the use of technology, which ultimately leads to conflicts between different nations.

Another issue is the biases and impartiality of the countries in dealing with the infringement of trademarks arising in their own country as well as the one which is committed by them. For instance, 'x' Country sells counterfeit goods to other countries, and using AI makes it like original for the rest of the

world but when the same tactics are used by the other country against the former one, it will take action and penalize the country with penalties or there are chances that the programming of AI can be designed in such a way that it will lead to the impartial results. So, it is possible to use AI in a biased and impartial way.

#### **Essential Case Laws and Legal Structures**

**Google France SARL v. Louis Vuitton Malletier SA**<sup>4</sup> – Liability issues were handled regarding international cases related to trademark infringement online advertising in the EU region. 2010.

**Cadbury UK Ltd v. The Comptroller General of Patents, Designs, and Trade Marks**<sup>5</sup> – Jurisdiction concerns surrounding international trademark litigations were scrutinized in the UK. 2013.

**Delhi High Court in Christian Louboutin SAS v. Nakul Bajaj & Ors**<sup>6</sup> – The court in India decided the issue of liability in international e-commerce trademark disputes. 2018.

#### **THE FUTURE OF TRADEMARK LAW IN THE AI ERA**

The fusion of Trademark and AI is inevitable. However, it is necessary as well to have better results and efficiency. But at the same time, it is expedient to consider the legal and ethical concerns and frameworks to ensure that AI will work as a companion of human beings and not a competitor of them.

##### **(a) Legal Framework:**

- Ensure that there is continuous monitoring and surveillance of the activities of AI in the trademark by the Trademark experts so that if there are any modifications and adjustments needed it will be done accordingly.
- Define and limit the role of AI in trademark filing, registration, and other procedures.
- Ensure that the AI doesn't cross the threshold of its boundaries.
- Establishing accountability, ownership, and liability clauses for the AI-generated work.
- Ensuring transparency, impartial, and unbiased working of the AI.
- Enhancing the practices and working of AI.

##### **(b) Ethical Consideration:**

<sup>3</sup><https://legacypartners.in/insights-and-research/artificial-intelligence-and-trademarks-new-challenges-and-legal-perspectives>

<sup>4</sup> Case C-236/08

<sup>5</sup> [2016] EWHC 796 (Ch)

<sup>6</sup> CS (COMM) 344/2018

- It should make sure that the AI is used ethically by keeping it transparent and responsive to preserve justice and equity.
- Innovations and inventions should be adapted in the field of AI to mitigate the challenges.
- Continuous interaction for the execution of better practices.
- Avoid over-dependence on AI.
- Follow all the procedures and legal frameworks provided for it.<sup>7</sup>

## JUDICIAL PRONOUNCEMENTS

### 1. *Thaler v. Comptroller-General of Patents, Designs, and Trade Marks*<sup>8</sup>

**Issue:** Is it possible to identify an AI as an inventor? No, according to several patent cases, it does give rise to some fundamental principles on AI as a property owner and its impact on trademarks, logos, and slogans created by the AI.

**Relevance:** It also demonstrates how much mechanistic uncertainty is regarding AI-invented varieties of IP.

### 2. *Bookingcom B.V. v. The United States Patent and Trademark Office*<sup>9</sup>

**Issue:** Can a word with a hard descriptor of a term with .com at the end be a significant brand?

**Relevance:** Particularly in such matters the AI systems for similarity analysis are frequently employed to ascertain the existence of generic terms and distinguishability thereof.

### 3. *Lush Ltd v. Amazon.co.uk Ltd*<sup>10</sup>

**Issue:** Amazon was targeting advertisements for its competitor's products as 'Lush' a trademark, was searched for by users on the Amazon site.

**Outcome:** Calling for trademark infringement, the courts sided with Amazon, arguing that the AI education techniques were leading to trademark violation.

## COMPARATIVE ANALYSIS OF TRADEMARKS AND AI ACROSS DIFFERENT JURISDICTIONS<sup>11</sup>

<sup>7</sup><https://iiprd.wordpress.com/2024/03/06/impact-of-ai-on-trademark-law-recent-developments-and-future/>

<sup>8</sup> [2020] EWHC 2412 (Pat)

<sup>9</sup> 140 S. Ct. 2298

<sup>10</sup> [2014] EWHC 181 (Ch)

## WAY FORWARD

There is always a solution to every problem if there are certain challenges that AI is imposing on trademark laws then definitely there will be a certain way to overcome those challenges. Here are the way-forward headings for addressing the challenges of AI in trademarks:

- Improved AI Training with Diverse Datasets
- Establishing Clear Legal Liability for AI Errors
- Incorporating Human Oversight in AI Processes
- Developing Global Standards for AI in Trademarks
- Enhancing AI's Capability for Non-Traditional Marks
- Ensuring Transparency in AI Decision-Making
- Prioritizing Data Privacy and Security Measures
- Implementing Cost-Effective AI Solutions
- Promoting Ethical AI Practices in Trademark Use
- Regularly Updating Trademark Laws for AI Integration

Balancing Innovation with Trademark Rights Protection<sup>12</sup>

By following certain guidelines and introducing some reforms in the technologies, one can overcome the challenges and issues imposed by it. The blend of human labor and advanced technologies is always a better combination to overcome such problems.

Most importantly by reducing the dependence on and use of AI and being more inclined toward one own intellect, wits, and caliber, the risk of AI can be reduced to such an extent that it will be less destructive and detrimental.

<sup>11</sup><https://articles.manupatra.com/article-details/COMPARATIVE-ANALYSIS-OF-IPR-IN-DIFFERENT-COUNTRIES-FOR-AI-GENERATED-WORKS>

<sup>12</sup> <https://theamikusqrae.com/the-impact-of-artificial-intelligence-on-trademark-laws/>

Aspect	United States (USPTO)	European Union (EUIPO)	China (CNIPA)	India (IPINDIA)
<b>AI in Trademark Registration</b>	AI tools assist in trademark searches & examination.	AI-powered TMview for automated searches & classification.	AI detects conflicting trademarks & bad-faith registration.	AI is being explored for automating backlog & classification.
<b>AI in Trademark Enforcement</b>	AI helps detect online counterfeit goods (Amazon, eBay).	AI-driven image recognition to monitor infringements.	AI monitors Alibaba, Taobao & customs for counterfeit goods.	Limited use; courts are beginning to integrate AI for enforcement.
<b>AI-Generated Trademarks</b>	No explicit recognition; trademarks need human authorship.	AI-created marks must still meet distinctiveness criteria.	There are no legal provisions or strict rules against generic AI marks.	There is no clear recognition; AI-created marks need human ownership.
<b>AI in Likelihood of Confusion Analysis</b>	AI assists in similarity assessments for opposition cases.	AI predicts consumer confusion in trademark disputes.	AI identifies phonetic & visual similarities in trademarks.	AI is not widely used for the likelihood of confusion analysis.
<b>AI &amp; Digital Platform Infringement</b>	AI helps monitor social media & digital ad violations.	AI detects infringement across EU marketplaces.	AI-driven tools track misuse of trademarks on e-commerce.	AI's role in online infringement is emerging but limited.
<b>AI in Counterfeit Detection</b>	AI monitors supply chains & flags counterfeits at customs.	AI is used in cross-border enforcement within the EU.	AI enhances customs inspections & e-commerce monitoring.	AI-based counterfeit detection is in its early stages.
<b>Legal &amp; Ethical Challenges</b>	Bias in AI algorithms, privacy concerns in AI enforcement.	Debate on AI-created branding elements & human oversight.	AI-created counterfeits & enforcement challenges.	Lack of AI-specific laws in trademark enforcement.
<b>Future Trends</b>	AI-assisted predictive trademark filings & enforcement.	Greater reliance on AI for cross-border trademark protection.	Expansion of AI tools in IP enforcement & anti-counterfeit measures.	Adoption of AI-driven systems for registration & litigation.

## CONCLUSION

An example of this acceleration in technological advancement is artificial intelligence which has changed the entirety of trademarking processes and practices. Apart from the benefits, that AI technology brings along with it, such as search, classification, infringement detection, and enforcement, it also raises numerous challenges such as ethical concerns, opacity, bias and model generalization issues, and jurisdictional fragmentation. To harness the promise of AI and at the same time reduce its risks, a thoughtful plan is required. An example of this may be promoting AI developers, practicing lawyers and policymakers to come together and work on World-Wide standards, moral requirements in AI applications, and active human supervision. As the legal structures catch up with the dynamic capabilities of AI, it will be compulsory to protect trademarks as an essential provision of intellectual property in this fast-moving digital era.

Every technology has some positive and negative aspects. It is on the person to which extent he is using that technology, or how much his dependency is on the same. More reliance means more vulnerability

and more exploitation. By utilizing own's intellect and mind person can achieve anything and discover innovative solutions to their problems. Hence it is an individual's choice to either use the technology or let the technology to use him.

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