DOS AGOS

INTELLECTUAL PROPERTY AND ARTIFICIAL INTELLIGENCE

EMPHASIS ON PATENTS

Intellectual property in the Age of Artificial Intelligence

Artificial Intelligence (AI) refers to the ability of computers and machines to perform tasks that typically require human intelligence, encompassing everything from natural language understanding and pattern recognition to complex problem-solving and decision-making. AI systems learn and improve over time through data and algorithms, and they have become an integral and ever-present aspect of our daily lives. From voice assistants like Siri and Alexa to personalised recommendations on streaming platforms like Netflix, AI is a core element of everyday technology. However, the pervasiveness of AI has grown significantly in recent years, particularly with the advent of Large Language Models (LLMs) such as ChatGPT, Google Gemini, and Microsoft CoPilot.

These AI tools are transforming industries through diverse applications. In healthcare, AI is being used to analyse medical images and assist in diagnosis. In finance, AI-powered algorithms are automating trading decisions and detecting fraudulent transactions. The creative industries are also being revolutionised, with AI being used to generate music, write scripts, and even create art. In short, these LLMs are just scratching the surface of what AI can do. While AI's role in our daily routines continues to expand, so do the questions surrounding its control and the legal ramifications of its creations, especially when it comes to AI making autonomous decisions.

For example, if a self-driving car causes an accident, who is liable – the owner, the manufacturer, or the AI system itself? Similarly, if an AI-powered medical device malfunctions and harms a patient, determining responsibility becomes a complex legal issue. Whether good or bad, time will show which direction AI takes us to, but the ultimate goal of AI is to create machines that can think and reason like humans, performing tasks beyond our capabilities.

Staying informed about AI advancements isn't just for tech enthusiasts anymore – it's becoming something everyone – should stay on top of.

Intellectual property (IP) rights are crucial for fostering innovation by protecting the rights of creators and inventors. However, as AI advances, the legal frameworks surrounding IP rights are being pushed to their limits. Patents and copyrights are designed to protect human inventiveness and creativity but the unique characteristics of AI-generated inventions raise new questions. One such challenge is determining who owns the IP for inventions created by AI.

For example, if an AI system develops a groundbreaking earthquake prediction technology, who should hold the patent? The AI system, the developers who created the AI, or the individual who prompted the AI? As AI-generated inventions become more sophisticated, IP protections are more crucial than ever.

IP rights have long been the backbone of innovation, especially in the United States. Since the introduction of the Patent Act in the 1790s, the US has nurtured creativity and progress through its robust IP framework. By rewarding inventors, patents play a vital role in encouraging the development of new ideas, staying true to the vision of the founding fathers, who sought to incentivise knowledge sharing for the greater public good.

International Treaties

International treaties, like the TRIPS Agreement, play an essential role in how countries approach patents, including those involving AI. As part of the World Trade Organization (WTO) framework, it sets minimum standards for IP protection among member states. This means that while countries have flexibility in implementing their own patent systems, they must adhere to certain baseline requirements established by the TRIPS Agreement. The basic requirements, as per Article 27.1 of TRIPS mandates that patents must be available for any invention, provided it is new, involves an inventive step, and is capable of industrial application. However, as AI continues to develop, the debate around its influence on inventorship will intensify.

Collision course: Patents and AI

Current patent laws require a human inventor, creating difficulties when AI is deeply involved in the creation process. Yet, as AI continues to drive innovation, companies are racing to secure their positions in the market by filing AI-related patents at record speed.

Take Neuralink, a neurotechnology company founded by Elon Musk, as an example. Neuralink has filed 61 patent applications globally, with 18 patents already granted as of 2024. These patents cover innovations like brain-machine interfaces, which could revolutionise how humans interact with technology.

Among their most intriguing patents is the 'implantable brain-machine interface,' a device enabling direct communication between the brain and computers. This unprecedented technology could transform how we interact with machines, with patents covering neural threads, robotic implantation systems, and wireless communication features.

Similarly, OpenAI, the company behind ChatGPT, has shifted its IP strategy, moving from trade secrets to filing patents. In 2023, OpenAI filed six active patents globally, underscoring the importance of protecting AI-driven innovations.

Patenting AI innovations is a rapidly evolving area within intellectual property law and it's anything but simple.

While the potential of AI is tremendous, the challenge lies in securing patents for these technologies. AI systems operate using complex algorithms and enormous amounts of data, which makes it difficult to pin down exactly what part of the technology is eligible for patent protection.

And then there's the issue of ownership. When an AI system creates something independently, who can claim that invention? For a patent to be issued, detailed disclosures are required. This means that inventors must clearly explain how the AI system works and how it developed the invention, which presents unique challenges due to the complex nature of AI. Ensuring transparency and clarity in these disclosures will be essential for obtaining patent protection.

It's good to bear in mind that different jurisdictions have slightly different approaches to AI patenting. Both the European Patent Office (EPO) and the US Patent and Trademark Office (USPTO) require human inventors, but their interpretations and enforcement of this requirement can vary.

Global Discrepancies: the DABUS Case

To be patentable, an AI-generated invention must meet the same criteria as any other invention: it must be new, non-obvious, and useful. But here's the catch—proving these criteria becomes a whole new challenge when the creation process isn't driven by human intellect.

A notable example is Dr Thaler or DABUS case. It can be said that this case represents one of the most significant legal debates in recent times concerning AI and IP. Dr Thaler filed for a patent where an AI system named DABUS was listed as the inventor of a claimed invention, acting autonomously and powered by AI, and that he acquired the right to the grant of the patents by his ownership of that machine.

Other applications were lodged across major patent offices in the US, UK, Europe, Australia, and beyond.

The global response was almost uniformly against the idea. Most patent offices rejected the applications, maintaining that under current law, AI cannot be considered an inventor. South Africa and Saudi Arabia stood as notable outliers, being the only countries to approve/accept Dr Thaler's application.

The UK's DABUS case went through multiple appeals where the High Court of England and Wales reaffirmed that under the UK patent law, only natural persons can be listed as inventors. The UK Supreme Court's December 2023 decision further reinforced this position, ruling that no matter how advanced, machines cannot be inventors within the current legal framework.

Germany faced a similar situation, with the DABUS application also listing the AI as the sole inventor. The German Patent and Trade Mark Office rejected the application on the basis that only natural persons can be inventors. However, the German Federal Patent Court took a more nuanced position, granting the patent as long as a human — someone who directed the AI — was named as the inventor, not the AI. This decision was subsequently upheld by the Federal Court of Justice, cementing the principle that while AI can play a significant role in the inventive process, the law still requires that a human must be attributed as the inventor in patent applications. This decision solidifies the longstanding principle in German patent law that patents are reserved for human inventors. The fact that the DABUS case even reached the courts highlights the growing momentum behind recognizing AI contributions in the innovation process.

And this is just the beginning.

Conclusion: Shaping the Future of AI & IP

The rapid pace of AI development often outpaces the legal system's ability to adapt. Without timely intervention, the ambiguity surrounding AI's role in inventorship could stifle innovation and create an uneven playing field for businesses operating globally. Moreover, the lack of international harmonisation on this issue further complicates the matter.

In the coming years, patent laws will need to adjust to the challenges posed by AI-generated inventions. Policymakers must find a proactive and nuanced approach that encourages innovation without compromising the core principles of IP law. For businesses, staying ahead of these changes and understanding the impact of AI on their innovation strategies will be crucial to remaining competitive in this rapidly evolving environment.

References

Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, Pub. L. No. Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 3; 33 I.L.M. 1197 (1994) (n.d.).

"Artificial Intelligence and Intellectual Property – Part I: Patents, Innovation, and Competition," June 7, 2023.

Bonadio, Enrico, McDonagh, Luke, and Arvidsson, Christopher. "Intellectual Property Aspects of Robotics." Journal of Risk Regulation 9, no. 4 (2018): 655–76.

Conlon, Ed. "DABUS: South Africa Issues First-Ever Patent with AI Inventor." Managing IP, July 29, 2021.

Insights by Grey B. "Neuralink Patents - Insights & Stats (Updated 2024)." Accessed September 13, 2024. https://insights.greyb.com/neuralink-patents/.

Insights by Grey B. "OpenAI Patents - Insights & Stats (Updated 2024)." Accessed August 20, 2024. https://insights.greyb.com/openai-patents/

Klos, Mathieu. Malte Köllner: "You can file a patent application on an AI-assisted invention," July 25, 2024. https://www.juve-patent.com/legal-commentary/malte-kollner-you-can-file-patent-applications-on-ai-assisted-inventions-dabus/.

Matulionyte, Rita, and Jyh-An Lee. "Copyright in AI-Generated Works: Lessons from Recent Developments in Patent Law." Journal of Law, Technology & Society 19, no. 1 (February 14, 2022): 5–35. https://doi.org/10.2966/scrip.190122.5.

Official Journal Special Edition 1/2007, art 79(1). Convention on the Grant of European Patents (European Patent Convention) of 5 Oct 1973 (2000). https://www.epo.org/en/legal/epc/2020/index.html.

Sir Geoffrey Vos Master of the Rolls and Head of Civil Justice. "Transforming the Work of Lawyers and Judges," 2024. https://www.bailii.org/uk/other/speeches/2024/CM3IN.html.

Thaler v Comptroller-General of Patents, Designs and Trademarks [2023] UKSC 49 (UKSC (2023) December 20, 2023).

US Patent Act of 1790, ch. 7, 1 Stat. 109 (repealed 1893).

Williams Powell. "UK Supreme Court Judgement on DABUS as an Inventor," December 20, 2023. https://www.williamspowell.com/news/uk-supreme-court-judgement-on-dabus-as-an-inventor.