When AI Invents

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The rapid advancement of artificial intelligence (AI) has led to unprecedented capabilities in creativity, innovation, and problem-solving. However, as generative AI becomes increasingly proficient at generating novel ideas and technological solutions that no human has conceived, the question becomes how to protect the intellectual property (IP) rights associated with AI-generated inventions. The answers may surprise you.

Protecting AI-generated inventions as patents. Consider the case of Stephen Thaler. In July 2019, he sought patent protection for two inventions with the U.S. Patent and Trademark Office (USPTO), listing his "Device for the Autonomous Bootstrapping of Unified Science" (DABUS) as the sole inventor on both applications. Thaler asserted that he did not contribute to the conception of these inventions and that any person having skill in the art could have taken the output of DABUS and reduced its ideas to practice. Instead of an inventor's last name, Thaler wrote on the applications that the invention was "generated by artificial intelligence."

Under U.S. law, an inventor must be named to obtain a patent. The USPTO thus responded to Thaler by notifying him that his applications were incomplete for failure to name a valid inventor. Thaler petitioned the director of the USPTO to accept the applications as is, but the petitions were denied. Thaler then pursued judicial review.

The district court sided with the USPTO, ruling that an "inventor" under the U.S. Patent Act must be an "individual," which meant a natural person. Thaler appealed, but the U.S. Court of Appeals for the Federal Circuit upheld the decision, stating that the term "individual" refers to human beings unless Congress indicates otherwise. As such, AI cannot be an inventor under current U.S. law.

However, all is not lost. In the U.S., humans may use AI as a tool, name themselves as the inventor, and still be entitled to patent protection for that invention — at

least according to a Feb. 13, 2024, guidance published by the USPTO entitled "Inventorship Guidance for AI-Assisted Inventions." The guidance provided a non-exhaustive list of principles to determine if the natural person significantly contributed to the invention:

• A natural person's use of AI does not negate the person's contributions.

• Merely recognizing a problem or having a general goal or research plan to pursue does not rise to the level of conception of an invention.

• Reducing an invention to practice alone does not qualify as a significant contribution.

• A natural person who develops an essential building block from which the claimed invention is derived may be considered an inventor, even if they are not present in each activity that led to the conception of the claimed invention.

• A person simply owning or overseeing an AI system that is used to create an invention, without more contribution, does not make that person an inventor.

At least one foreign jurisdiction — South Africa — has welcomed patent protection for AI-generated inventions. Indeed, it granted Thaler patent protection for the very same AI-generated inventions for which the USPTO would not.

Protecting AI-generated inventions as trade secrets. Trade secret protection may be a better way to protect AI-generated inventions that have no human inventor because trade secret law does not concern itself with how an invention is created, only with whether it has economic value from not being generally known. Moreover, trade secret law can protect information that would not even qualify for patent protection, even if it had a human inventor. For example, a purely abstract idea is not patent-eligible, even if a human conceived it. But an abstract idea is entitled to trade secret protection. A trade secret can be any type of information such as business, scientific, economic, or engineering information.

The owner of the AI system would own the trade secret information that the AI system generates, inventive or otherwise. And the owner could protect the AI-generated information by not publicly disclosing it and implementing reasonable protective measures.

While not all information is suitable for protection as a trade secret (*e.g.,* products that can be lawfully reverse-engineered), trade secret law provides an important tool for protecting AI-generated inventions that are otherwise not eligible for patent protection. **CEP**
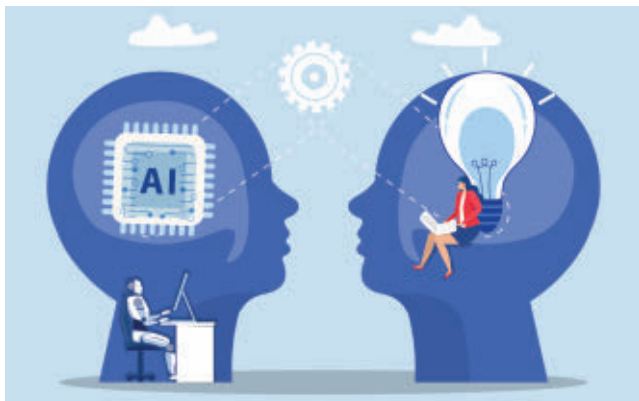
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