

[Trade Secrets May Offer The Best Protection For AI Innovation](#)

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Law360 (February 21, 2023, 3:08 PM EST) -- Protecting artificial intelligence as intellectual property raises interesting legal questions. The inability to patent abstract ideas may present a challenge to patenting aspects of AI-related innovations.

The breadth and flexibility found in trade secret law provides a viable, if not vital, way for a company to obtain intellectual property protection in this rapidly developing area of innovation.

What you need to know:

- AI is based on algorithms, which are sets of rules or instructions that an AI system uses to analyze data or solve problems.
- Algorithms can be protected as trade secrets, along with other data relating to AI, such as training sets, data compilations, and software code.
- Companies should understand the distinctions between trade secret law and what aspects of an AI system may be difficult to patent in formulating a robust intellectual property portfolio and strategy.

Applications that use AI continue to enter our daily lives at a rapidly increasing rate. Contrary to the depictions in science fiction of computer networks or robots becoming aware and determined to destroy humanity, AI's effect on our lives has been much more benign, and indeed, helpful.

Personal assistants that select songs for us, software that identifies the quickest routes to drivers, and applications that prevent financial fraud are examples of AI that provide benefits that we likely take for granted.

Innovation and the adoption of AI has been drastically increasing across industries. AI's effects on society are sure to be more impactful in the future than electronic personal assistants that pick music we like.

For example, the use of AI to develop medicines and assist with clinical treatment. A critical question has become, what type of intellectual property protection is the most suitable for AI-related innovations.

There is no one-size-fits-all approach, and this article examines the availability, pros and cons of maintaining AI-related innovations as trade secrets.

Inventions involving artificial intelligence can be patented under U.S. Patent and Trademark Office Class 706, for "Data Processing — Artificial Intelligence."

Class 706 generally covers AI-type "computers and digital data processing systems and corresponding data processing methods and products for emulation of intelligence," and specifically, adaptive systems, machine learning systems, and artificial neural networks.

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A computer is an integrated system that uses software and devices to perform a function. In a traditional computer system, data is entered, stored and processed, and the result of running the software — the output — is communicated to a user interface. By contrast, AI is the simulation of human intelligence by machines or systems.

AI is based on algorithms — rules or instructions written as software code — that are used by the AI to perform functions that a traditional computer system cannot, including using data to make predictions about what should happen next, or creating new algorithms and modifying existing ones.

The ability not only to respond to data, but to learn and adapt based on information is the intelligence aspect of AI.

One difficulty in patenting AI-based systems is that the USPTO will reject an application where the invention is an abstract idea.[1]

For example, mathematical formulas themselves are not patentable. In the 2012 *Mayo Collaborative Services v. Prometheus Laboratories Inc.* decision, the U.S. Supreme Court wrote:

Einstein could not patent his celebrated law that $E=mc^2$; nor could Newton have patented the law of gravity. Such discoveries are "manifestations of ... nature, free to all men and reserved exclusively to none." [2]

AI systems get smarter through the application of algorithms to analyze data. Patent applications where the claimed invention is expressed purely as an algorithm may be rejected as an abstract idea, but claims that lay out the sequence of steps in the algorithm or in the learning process the AI applied to solve a problem could be patentable.

Another issue is that the USPTO will not grant a patent where the sole inventor listed on the application is the AI system itself.[3]

In the 2022 *Thaler v. Vidal* decision, the U.S. Court of Appeals for Federal Circuit affirmed the rejection of two patent applications that named an AI system as the inventor, because the Patent Act defines that term to mean "the individual or, if a joint invention, the individuals collectively who invented or discovered the subject matter of the invention." Thus, an inventor on a patent application must be a human being.[4]

Given these challenges, companies and individuals should look to the protections afforded by trade secret law, and understand the obligations that come with it to maintain their AI innovations as trade secrets.

One advantage is that the definition of a trade secret is broader than a patentable invention. To be patented, an invention must be "useful" — that is, the invention must have an identifiable use and provide a present and demonstrable benefit under Title [35 of the U.S. Code, Section 101](#). An invention's utility must be disclosed in a patent application.

By contrast, a trade secret is broader than a patentable invention and lacks the utility requirement.

In particular, trade secret is defined by the Defend Trade Secrets Act to mean "all forms and types of financial, business, scientific, technical, economic, or engineering information," under Title 19 of the U.S.C. Section 1839(3).

Notably, the type of information specifically covered by the DTSA's definition of trade secret includes patterns, compilations, formulas and techniques.

Consequently, information that is not patentable but which is relevant to the development of a proprietary AI system, such as raw data and training sets may be trade secrets. Similarly, the output from an AI system's processes may be protected as a trade secret as well, even though it might not qualify for patent protection. For example, information that could be used to optimize a company's sales, analyze customer preferences or predict industry trends may be a trade secret while not qualifying for patent protection.

Also, it is important to note that, unlike an applicant for a patent, the DTSA does not require that the owner of a claimed trade secret demonstrate that the information currently is useful.

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Instead, the DTSA expressly states that the "independent economic value" provided by a trade secret can be "actual or potential," under Title [18 of the U.S. Code, section 1839\(3\)\(a\)](#).

Thus, even if a business has not finalized its algorithms or necessarily figured out how to put AI-generated data to use, that information may nevertheless be a trade secret if it can potentially provide a competitive advantage.

Another important distinction between patent and trade secret law is that the DTSA would appear to allow information created by an AI system to be protected as a trade secret.

Under that statute, the owner of a trade secret can be a person or entity and there is no requirement that the creator of a trade secret be an individual. This, as noted above, differs from patent law.

If a business determines that its AI-related innovation may be patentable, there are other distinctions between patent and trade secret law to consider in determining which type of protection might be most suitable.

First, patents expire and trade secret protection does not, so long as the information remains a secret. Companies that choose to maintain their AI innovations as trade secrets will have to protect that information through contracts and other means designed to prevent unintended access or disclosure.

That may be difficult from a practical perspective, given the required infrastructure and large amounts of data that must be processed and stored in the cloud. That, of course, creates the risk of an employee or a third-party improperly accessing the trade secret. Stated differently, patent protection remains even after a defendant is found to have infringed a patent, but the value in a trade secret would be lost if a bad actor gave the information to competitors or made it publicly available.

Another difference is that patent owners have a monopoly on the right to make, use, or sell the patented invention. Whereas, the owner of AI-based trade secrets runs the risk of a competitor reverse engineering the trade secret, which is expressly permitted by the DTSA under Title [18 of the U.S. Code, Section 1839\(6\)\(B\)](#).

Many companies use a hybrid approach to protect their technologies, patenting certain features of an invention and maintaining other aspects as a trade secret. Such an approach may benefit the owner of AI-related innovations as well.

In sum, trade secret law seems well-suited to protect AI systems and related innovations. Patents offer a level of protection as well, but the owner of AI-based innovations should understand the differences in these kinds of intellectual property protection, as each provides its own risks and benefits.

An approach in which innovations are maintained as trade secrets and patented is likely to provide robust protection for a company's AI-based intellectual property.

[1] <https://www.saul.com/insights/alert/recent-developments-and-challenges-protecting-intellectual-property-created>.

[2] [Mayo Collaborative Servs. v. Prometheus Labs., 566 U.S. 66, 71 \(2012\)](#).

[3] [Diamond v. Chakrabarty 447 U.S. 303, 309 \(1980\)](#) ("abstract ideas," the laws of nature, and physical phenomena are not patentable).

[4] [Thaler v. Vidal, 43 F.4th 1207 \(Fed. Cir. 2022\); 35 U.S.C. § 100\(f\)](#).

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