

PUBLICATION

Intellectual Property Legal Issues Impacting Artificial Intelligence

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Artificial intelligence (AI) is undoubtedly the hottest topic in technological innovation. The truth, however, is that conventional AI programs have long been applied as enterprise solutions for a variety of company services, including inventory management, customer-support management, search engine optimization, market research, and outbound email campaigns. Even the practice of law has employed forms of AI in managing an unwieldy universe of documents for production in eDiscovery and due diligence.

While AI has disrupted the competitive marketplace, what is creating friction with current business operations, and even the practice of law, is *generative* AI. Generative AI platforms, such as OpenAI's ChatGPT, are taking many to task on the fundamentals of intellectual property law, including authorship of copyrightable works and inventorship of patentable subject matter. But as legal practitioners look for answers to these legal issues, AI-based technology continues to rapidly evolve, leaving businesses, and their counsel, a step (or two) behind innovation.

While generative AI shows no present sign of ceasing to make its way into various business practices, such as the [digitization of human resource operations](#), the legal world has gained key insights from recent court decisions and/or administrative guidance. We address a few of these takeaways, with the intention to provide subsequent alerts as the law on AI continues to take shape.

The Basics – AI and its Applications

Depending upon whom you ask, you can receive a variety of definitions or explanations of AI. Some define AI as machine learning (ML), which focuses on learning and improvement from repetitious experiences, while others explain AI in the context of deep learning (DL), which focuses on algorithms or neural networks to train a model. The reality, however, is that AI is inclusive of both ML and DL, and it is a step beyond: it is the ability of a machine to *initiate* intelligent human-like cognitive thinking and behavior, based upon information learned on a rolling basis.

Effective AI deployment is often contingent upon the scale, breadth, and quality of data available to the program. For AI to mimic human thinking, an AI system is trained on a dataset and learns by identifying patterns that link inputs with outputs. The "learned" AI may then translate new inputs received into recommendations, classifications, and, in some cases, *predictions*. And, for generative AI programs, the AI may then produce external-facing content, such as source code, artwork, or narrative text.

Authorship and Inventorship – a Seemingly Settled Issue

While intellectual property law is continuing to take shape around AI, legal authorities have recently emphasized that AI cannot function as a "person" under copyright and patent law.

In November of 2018, computer scientist Dr. Steven Thaler filed a [copyright application](#) with the United States Copyright Office (USCO), aiming to register a two-dimensional visual work, as reproduced below:



A Recent Entrance to Paradise

Thaler identified the author of the work as "Creativity Machine" – a generic name for an AI system Thaler created, called Device Autonomous Bootstrapping of Unified Sentience (DABUS). The USCO denied the application, contending that the work was made "without any creative contribution from a human actor." After the USCO's Copyright Review Board affirmed the USCO's rejection, Thaler filed suit in the U.S. District Court for the District of Columbia, where Thaler seeks a holding that AI-generated works are copyrightable under federal law.¹ The case is proceeding along, with no expectation that the court will deviate from the USCO's current stance (as discussed more below).

Thaler has not only challenged issues of authorship in copyright law but also invoked questions of inventorship in patent law. In July 2019, Dr. Thaler filed two patent applications with the United States Patent and Trademark Office (USPTO), claiming DABUS as the sole inventor.² Like the USCO, the USPTO refused to allow the patent applications, stating that AI is not a "natural person" to which a patent may be granted.³ Dr. Thaler eventually appealed to the Federal Circuit, which affirmed the USPTO's conclusion that the Patent Act expressly contemplates that inventors must be "individuals."⁴ While Dr. Thaler's ongoing efforts are likely to be in vain, he has nevertheless filed a petition, on March 17, 2023, with the U.S. Supreme Court for further review.⁵

A day before this petition was filed, the USCO issued [a statement of policy](#) on works created with the assistance of AI, re-affirming its position on human authorship. The USPTO, on the other hand, has [requested public comments](#) regarding AI and inventorship. Comments are expected to close on May 15, 2023.

Works Created from Generative AI – a Not-So Settled Issue

While intellectual property law appears to be settled as to "who" may qualify as an author or inventor of intellectual property, the law is not so settled on the protection of AI-generated works.

In the context of copyrightable works of authorship and patentable inventions, certain software may be used to create the underlying work or the underlying invention. Of course, this begs the question – while an inventor or author must be a human, just how much technological intervention (i.e., "digital help") can be used to reach a copyrightable or patentable threshold?

Copyright law has historically been behind the ball on technological development. For example, in the 19th century, the Supreme Court was tasked with clarifying that photographs constitute copyrightable subject

matter, even if there was mechanical intervention by a camera.⁶ While it seems silly to think that photography was at one point not contemplated by copyright law, it could seem laughable at some point in the future, that AI-generated works were not protectable under copyright law. So, how much "intervention" is exercised by an AI-driven machine?

AI programs use a number of datasets. Many AI programs, such as OpenAI's ChatGPT and DALL-E, are driven by crawling (or "scraping") the internet and pulling information into its categorical and organized datasets, as this information is available in mass quantity, easily accessible, and "free." Of course, much of what resides on the internet is also protected by copyrights, trademarks, patents, or combinations thereof.

The power of generative AI technology was put on display before the USCO. In September of 2022, the USCO issued its first notice of registration to a partially AI-generated graphic novel, *Zarya of the Dawn*, excerpts of which are shown below:



Zarya of the Dawn, Cover Page and Second Page

A month later, after the USCO became aware of public statements and online articles on the author [Kristina Kashtanova's](#) use of generative AI, the USCO issued a notice to the author that the work may be cancelled, requesting details on the level of human involvement in creating the graphic novel. In this letter, the USCO asserted that the work could only be protected with respect to the selection, coordination, and arrangement of the work's written and visual elements, but that copyrightable protection could not extend to the visual elements themselves, each of which were generated by AI-program Midjourney.

While it remains to be seen whether Kashtanova or Midjourney, responds to the USCO's letter, the USCO has very recently issued [guidance](#) that it will "consider whether AI contributions are the result of 'mechanical reproduction' or instead of an author's 'own mental conception, to which [the author] gave visible form,'" which is "necessarily a case-by-case inquiry." So instead of shutting the door entirely, the USCO will undertake a

fact-intensive inquiry to see what does (and what does not) fall within the ambit of protectable expression in an AI-generated work.

Generative AI – The Thin Line Between Originality and Derivation

There is no doubt that AI programs, such as ChatGPT, wield incredible power, and individuals and companies will continue to leverage this power for personal or commercial gain. Of course, the issue is that AI programs often pull, into their datasets, certain protected intellectual property. This continues to keep businesses and content creators up at night, with the fear that their protectable intellectual property will be used by AI to generate "new" intellectual property.

Most companies are focused on AI's unauthorized or inappropriate use of their copyrighted works. Generally speaking, copyright-infringement determinations turn on (1) whether an alleged infringer had access to a copyrighted work, and (2) whether there was substantial similarity between the copyrighted work and accused work. For AI programs, if a copyrighted work is contained in the data set scraped from the public domain (e.g., the internet), then assuredly there is access to the copyrighted work for infringement purposes. So then, the analysis hinges on substantial similarity. Did the AI program employ a content-moderation module, wherein the information that is being provided as the answer is being scanned to make sure it does not include any inappropriate (or infringing) content? If not, the AI program may have unauthorizedly "borrowed" from the copyrighted works' expression.

With non-AI-generated works, individuals use copyright-protected works on the basis of fair use, or at the permission of the copyright owner. So, should AI-generated works differ in any way from traditional notions of permissible use? Does it matter, for infringement purposes, if AI-generated works themselves are not copyrightable? Or, does it matter if the author has used the AI program to create further derivations of the author's original, core expression of the work? Can Paramount use AI programs, such as DALL-E, to create protectable expressions of [SpongeBob](#), especially where SpongeBob was originally created by human intervention? Or Can Paramount use the AI programs to create entirely new characters in connection with its already existing intellectual property in SpongeBob? What and where is the line?

Present-Day Actions

Administrative bodies and courts have attempted to resolve early legal challenges presented by AI. But, as more answers are provided, so too are more questions offered. While it seems that there is no clear guidance from the "powers that be," this lack of guidance does not absolve individuals and companies from exercising sound intellectual property "hygiene."

Companies must continue to only copy, reproduce, distribute, or otherwise use intellectual property about which they know the source or origin. Additionally, companies need to affirmatively file for copyright protection for their outwardly facing works, so that they can take advantage of the benefits of copyright registration, including the right to sue in federal court. Likewise, attorneys' fees and statutory damages, often the "hammer" of these infringement litigations, can only be obtained if the copyright application was filed prior to the infringement or within three months of publication. Furthermore, companies need to educate their personnel on an Intellectual Property Protection Plan that includes copyright usage principles and policies on using generative AI programs in connection with their job responsibilities. And above all, companies must increase their policing efforts, ensuring that their registered (and non-registered) intellectual property is not exploited by third parties leveraging the power of AI.

As to patents, companies, on an early and often basis, must review their technological innovations and invention disclosures, clarifying how potentially patentable subject matter is being generated (e.g., through the use of AI programs or not), and filing patent applications in connection with this patentable subject matter. While the issue of AI programs has further complicated the question as to what qualifies as patentable subject

matter, too many companies still believe that software is outrightly not patentable. However, under the *Alice* decision from the Supreme Court, new and useful software applications and related inventions may be protectable or are likely protectable if they address a stated technical problem in a new way.⁷

If you have questions or would like assistance reviewing your agreements, reach out to [Ed Lanquist](#), [Dominic Rota](#), or any member of Baker Donelson's [Intellectual Property Team](#).

¹ *Thaler v. Perlmutter*, Case No. 1:22-cv-01564 (D.D.C.).

² U.S. Application Nos. 16/524,350 (teaching a "Neural Flame") and 16/524,532 (teaching a "Fractal Container").

³ *Thaler v. Vidal*, 43 F.4th 1207, 1210 (Fed. Cir. 2022).

⁴ *Thaler v. Vidal*, 43 F.4th 1207, 1212 (Fed. Cir. 2022).

⁵ *Thaler v. Vidal*, Petition for a Writ of Certiorari, UNITED STATES SUPREME COURT (Mar. 17, 2023).

⁶ *Burrow-Giles Lithographic Co. v. Sarony*, 111 U.S. 53, 58 (1884).

⁷ *Alice Corp. Pty. Ltd. v. Cls Bank Int'l*, 573 U.S. 208 (2014).