

Top 5 potential implications of AI-generated prior art on patent law

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The rapid rise of generative artificial intelligence (AI) over the past few years has profound implications for innovation, particularly with respect to intellectual property law. One phenomenon of concern is AI-generated prior art — documents created today by AI tools that may qualify as prior art against inventions for which patent protection is sought in the future.

AI-generated prior art is particularly relevant in patent-application preparation, prosecution, and litigation over incremental innovation. Services like IP.com and Google's Technical Disclosure (TD) Commons can generate numerous variations on a technical disclosure, flooding the patent space with publications that may lack experimental data or meaningful structure but still serve as obstacles in patent prosecution.

Similarly, AI tools like allpriorart.com use linguistic manipulation to generate millions of modified versions of published claims, with some inevitably hitting on meaningful disclosures that could be used to reject patent claims.

For example, in biotech and pharma, AI systems can autonomously generate vast numbers of molecular permutations or propose novel gene-editing techniques. This complicates the challenge of proving novelty and non-obviousness, as such AI-generated outputs may now qualify as prior art.

The same dynamic may emerge in the electronics and mechanical fields, where AI can produce a large variety of technical or aesthetic designs that might challenge the patentability of new inventions. This shift brings with it significant legal considerations, particularly around issues of enablement, public accessibility, authenticity, and obviousness in determining the validity of patent claims.

1. Enablement of AI-generated prior art

One of the first challenges patent practitioners may face when confronting AI-generated prior art is determining whether the prior art meets the enablement requirement of 35 U.S.C. § 112.

Under this provision, prior art must provide sufficient information to allow a person of ordinary skill in the relevant field to practice and replicate the claimed invention without engaging in undue experimentation. In sectors like biotech and pharma, AI-generated solutions, such as drug compounds or protein structures, may

lack crucial experimental data. While an AI-generated therapeutic molecule or its method of use might appear to be novel, without experimental data or demonstration of replicability, it may not fulfill the enablement requirement.

The challenge of enablement is also prevalent in electronics and mechanical sectors, where AI-generated designs such as circuit layouts or machine components might similarly fail to provide the operational instructions necessary for replication. Without clear guidance on how an AI-generated innovation functions, such prior art may not meet the enablement threshold.

Patent practitioners must carefully examine how AI-generated content is shared to determine whether it qualifies as publicly accessible prior art.

Patent practitioners will therefore need to evaluate whether these AI outputs, which often function as “black boxes,” provide sufficient technical detail to enable the prior art. They may argue that the absence of such detail diminishes the viability of the AI-generated art. Practitioners can leverage these gaps in defending against claims that rely on AI-generated prior art.

2. Public availability and accessibility of AI-generated prior art

The issue of public availability and accessibility of AI-generated prior art may present significant challenges during patent prosecution and litigation, especially when examiners cite these references or they are used to dispute a patent's validity.

Unlike conventional prior art, AI-generated references may come from private databases or proprietary AI systems. It is difficult to establish whether the art was truly accessible to the public at the relevant time. This raises questions about whether such references meet the requirements of public availability under 35 U.S.C. § 102, which mandates that prior art must be sufficiently accessible to those skilled in the field.

In litigation, defendants may seek to invalidate patents based on AI-generated prior art that was never widely disseminated. The lack of clarity regarding how AI-generated outputs are shared or made available to the public introduces uncertainty, requiring close examination of whether these references were truly accessible to skilled artisans in the relevant field when they were created.

Patent practitioners must carefully examine how AI-generated content is shared to determine whether it qualifies as publicly accessible prior art. If not disclosed through public channels, they may not be viable prior art, providing a defense path when AI-generated content is used to challenge the novelty or obviousness of a claimed invention.

3. Blocking patents and AI-generated prior art

Blocking patents, which cover broad foundational technologies and prevent competitors from innovating in related areas, are a key strategic tool, particularly in biotechnology and pharmaceuticals. However, AI-generated prior art could erode the effectiveness of these patents. The emergence of AI-generated prior art may reshape the strategy around blocking patents by expanding the available prior art and raising the chances of a patent's claims validity being contested.

The role of AI-generated prior art in obviousness determinations will likely require careful analysis of how AI systems operate and whether their outputs reflect new and inventive steps.

For example, AI systems may generate alternative formulations or gene-editing methods that bypass the protections offered by blocking patents. With AI's ability to generate alternative methods and formulations that can avoid existing patent claims, the effectiveness and duration of blocking patents may be reduced.

Similarly, in electronics and mechanical engineering, AI-generated designs could offer multiple variations that challenge the validity of a broad patent, such as one covering semiconductor technology. Patent practitioners must carefully assess the impact of AI-generated prior art on the strength and enforceability of blocking patents. The shift may prompt patent stakeholders to consider new strategies, such as broadening patent claims

4. Obviousness determinations

AI-generated prior art may also complicate obviousness determinations under 35 U.S.C. § 103. In biotechnology incremental modifications can lead to significant therapeutic breakthroughs. AI systems used in drug discovery can produce millions of molecular permutations, raising the bar for proving that a new therapy is non-obvious.

For instance, an AI model that suggests a novel therapeutic protein or molecule might make future innovations appear obvious, even if they represent significant advancements. In electronics and mechanical fields, AI-generated designs such as circuit boards or microchips can resemble future designs, making it easier to argue that new inventions lack sufficient inventive step.

Patent practitioners must scrutinize whether the AI output truly provides a teaching that would make the claimed invention obvious to a skilled artisan or whether the AI's results are not intuitive or sufficient to serve as a basis for an obviousness rejection. The role of AI-generated prior art in obviousness determinations will likely require careful analysis of how AI systems operate and whether their outputs reflect new and inventive steps.

5. Authenticity and admissibility of AI-generated prior art in litigation

In litigation, the authenticity of AI-generated prior art introduces additional challenges. Unlike traditional references authored by humans, AI-generated content may lack clear authorship, raising questions about its foundation. For example, an AI model might predict a new drug compound or gene-editing technique, but without human validation, its outputs may be challenged as unreliable.

Proponents of AI generated evidence will need expert testimony to explain how the AI system operates and to establish whether the AI-generated prior art is credible enough to impact patent validity. These issues extend beyond biotech and pharma to fields like electronics and design, where AI-generated schematics and product aesthetics may also lack human oversight.

In some cases, opposing parties may argue that AI-generated content lacks the necessary context or explanation to qualify as prior art. This issue may particularly become pronounced in design patent litigation, where AI-generated designs may be seen as simple variations rather than true creative output. Factfinders will need to evaluate whether AI-generated designs meet the novelty and distinctiveness required for prior art to be invalidating under design patent law.

Establishing standards for the authenticity, foundation, and reliability of AI-generated evidence will be critical to determining its role in patent litigation.

Conclusion

The emergence of AI-generated prior art is transforming the patent landscape across multiple industries. As patent law continues to evolve in response, practitioners will need to address new challenges surrounding enablement, public accessibility, authenticity, and obviousness to successfully navigate the complexities of AI-generated prior art in patent prosecution, litigation, and strategy.

Conducting thorough prior art searches that include AI-generated content may become essential, especially in industries like biotech,

pharma, and electronics, where AI tools are widely used in research and development. By leveraging AI search tools, companies may ensure their inventions remain novel and avoid costly legal challenges or post-grant proceedings.

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