SUMMARY			
Document Title	Summary of the Webinar “Inventorship and AI: Defining the Human Role in Patent Law” Prof. Noam Shemtov Heli Pihlajamaa		
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Abstract

This summary outlines key discussions from a webinar hosted by 4iP Council, which explored the role of Artificial Intelligence (AI) in determining patent inventorship. The webinar featured leading experts, such as Professor Noam Shemtov (Queen Mary University of London) and Heli Pihlajamaa (European Patent Office). The panel explored the evolving dynamic between AI and the patent application process, and the necessity of having human inventors. It examined the different approaches adopted across various jurisdictions, such as the United States, Europe, and the United Kingdom, as well as at the European Patent Office.

Notably, the central question is how much human involvement is needed for someone to be recognized as an inventor when AI plays a role in the inventive process. Patent laws have traditionally been crafted with humans in mind. However, as AI's abilities increase, jurisdictions face the challenge of determining where to draw the line between human and AI contributions.

In this regard, the discussion highlighted the implications of the U.S. Patent and Trademark Office's "significant human contribution" criterion. To contrast, it also examined the approach taken by the German Federal Court of Justice and the United Kingdom. Meanwhile, the European Patent Office maintains its requirement for human inventors while delegating the resolution of inventorship disputes to national courts. The overall discussion suggests that a balanced approach is necessary to ensure legal certainty while fostering innovation in AI-assisted inventions.

Keywords

1. AI-assisted invention
2. Patent inventorship
3. DABUS litigation
4. USPTO guidelines
5. German Federal Court ruling
6. European Patent Office

Summary

Professor Noam Shemtov opened by explaining that most patent systems (e.g., US, UK, Australia, Germany) require patent applications to designate an inventor, who must be a natural person. In this sense, the DABUS litigation has confirmed that AI cannot be recognized as an inventor. But what must a human show to qualify as an inventor in the context of AI-assisted inventions? Prof. Shemtov proceeded to explain different approaches in the US, Germany, and the UK.

United States approach

In the US, an invention can be patented if a natural person has made a "significant human contribution" to each claim in the application. Originally, this requirement was developed to decide the rightful inventor between two human inventors. Since then, the USPTO has since issued Guiding Principles to explain this requirement in the context of AI-assisted inventions. Two of these in particular are pointed out by Professor Shemtov as somewhat "problematic".

First, the USPTO states that reducing an invention to practice is not considered a "significant contribution" by itself. Merely recognizing and appreciating an AI-assisted output does not necessarily make the person the inventor. It must rise to the level of being non-obvious to the ordinary skilled person. Second, maintaining "intellectual domination" over AI is similarly insufficient. This means that simply owning, overseeing, or prompting an AI system is not enough to qualify one as an inventor. The natural person must still make a "significant contribution" to the conception of the invention in question.

According to Prof. Shemtov, the USPTO Guiding Principles imply that inventorship is not met if the significance and utility of an AI-assisted output is apparent to a person of ordinary skill. In practical terms, the exercise of normal skill in inputting AI prompts would not be enough. The broader implication is that if the natural person has not "done enough" for the AI-assisted invention, there is no inventor. Accordingly, since no inventor can be identified, the patent cannot be granted.

Prof. Shemtov points out that this UPSTO approach appears to conflate non-obviousness with inventorship. As a result, there is a potential to deny patent protection for useful AI-assisted inventions if the human contribution is deemed insufficient. Additionally, the US approach may encourage "unnecessary" validity challenges based on human involvement in the invention process.

German approach

On the other hand, the German approach is clear that the inventor must be a natural person who “significantly influenced” the AI system. The German Federal Court of Justice has clarified that there will always be a human inventor, as there is no system that reaches a conclusion without any human preparation or interference. This appears to have a lower threshold than the USPTO approach.

UK approach

Lastly, while the UK has not issued explicit rulings on inventorship in AI-assisted inventions, we can infer certain findings from the UK patent system. The UK Patent Act states that the inventor must be the "deviser" of the inventive concept, i.e., he must “plan” the inventive process. Prof. Shemtov says, however, that from a practical perspective, this is of little significance. Why? Because Section 13 of the UK Patent Act only requires the patent applicant to nominate who they believe to be the inventor. Moreover, the only person who can challenge this nomination is a person who believes themselves entitled to the patent. In reality, Prof. Shemtov believes that it is unlikely for this inventor nomination to become an significant issue in AI-assisted inventions.

In sum, Prof. Shemtov argued that the USPTO's approach confuses the requirements for inventorship and inventive step/non-obviousness, potentially denying patent protection to AI-assisted innovations that are novel and non-obvious. In German law, and to an extent UK law, as long as a natural person has been involved, he is likely to be the inventor. This is more aligned with the general objectives of patent law.

EPO Approach

To complement the discussion, Heli Pihlajamaa discussed the European Patent Office (EPO) approach to AI and Inventorship. The EPO Legal Board of Appeals maintains the requirement that an inventor must be a “human being”, given that AI systems are not recognized to possess any rights. However, it does not evaluate the extent of human contribution. Instead, disputes over inventorship are referred to national courts. The EPO's primary focus is on ensuring procedural compliance and assessing the technical merits of the invention, rather than making determinations about the inventorship process.

Moving forward, Heli explained the EPO's two-step framework for assessing AI-related inventions: (i) AI-assisted inventions must be implemented on a technical device, and (ii) Only technical contributions are considered in the inventive step assessment. This approach aims to ensure that patents are granted for genuine human-driven technical inventions, even if AI

played a supporting role.

In addition, AI is often used as a tool for inventors and patent examiners to aid in prior art searches and patent classification. In fact, patent offices, including the EPO, widely utilize AI to improve their examination processes. Nonetheless, this does not change the requirement that there must always be a human being behind every submission. As a closing note, Heli encouraged participants to check out the latest version of the EPO Guidelines for Examination, which includes a dedicated section on AI and updated guidelines for drafting submissions.

Q&A Session

In the Q&A session, Heli indicates that our understanding of a "person skilled in the art" develops as technology develops over the years. Thus, even as applied to AI-assisted inventions, this concept is sufficiently flexible.

On the question of whether AI will eventually be granted legal personality, both speakers agree that the issue needs to be examined in a larger context. Patent law operates within a broader legal framework where only humans and recognized legal entities can possess legal rights. It remains to be seen if the legal system as a whole will recognize AI as having legal personality.

What if an invention fails to disclose AI's involvement in the inventive process? Heli explained that in any case, the EPO requires the designation of a human being as an inventor. If somebody disputes the inventor's right, it is a matter for national courts to decide.

Regarding harmonization on the issue of AI and Inventorship, Prof. Shemtov points out that there is disparity among national approaches. In the EPO context, the issue of inventorship is determined at the national level. Thus, having conversations between EPC member states would be very valuable in this context. Heli complemented this by pointing out that EPO has indeed initiated discussions with other national patent offices and contracting states to raise awareness about the matter.