

Inventing with AI:
**Who's the Real Genius,
You or the Robot?**

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Artificial intelligence (AI) is transforming the world of innovation, offering exciting new possibilities for startups and entrepreneurs. Nevertheless, with these advancements, come significant challenges, especially in protecting intellectual property (IP). This article explores the hurdles faced by new ventures when dealing with AI-assisted inventions and what can be done to address them.

The Rise of AI in Innovation

AI is now widely used in the invention process, ranging from designing products to discovering innovative solutions. However, a major issue arises when it comes to recognizing who—or what—gets credit for these inventions. Current patent laws only recognize humans as inventors, even if AI plays a crucial role in the invention. This legal gap makes it harder for startups to protect their AI-generated ideas.

One well-known example is DABUS, an AI system that created novel designs like a fractal container* and a neural flame*. When patents were filed for these inventions, they were rejected because DABUS is not a human. This case highlights the limitations of existing IP laws and emphasizes the need for updates that reflect AI's growing role in innovation.

The Legal Hurdles

Securing patents for AI-assisted inventions is a



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complex process for startups. One of the biggest challenges is determining inventorship. Patent laws in countries like the U.S., Europe, and Japan require that a human be named as the inventor, which can be difficult when AI systems are heavily involved in the creation. Navigating these legal systems requires significant resources, which many new ventures lack.

Startups must also deal with varying regulations across jurisdictions. While the U.S. and European Union maintain that only natural persons can be inventors, China is more open to exploring AI's contributions. This inconsistency makes global patent strategies more challenging for startups trying to protect their inventions internationally.

Novelty and Non-Obviousness Challenges

Patents are granted only if an invention is both novel and non-obvious. Novelty means the invention must be new and not publicly known before the patent application, while non-obviousness requires that the invention isn't an obvious improvement on something already existing. These standards become tricky when dealing with AI-generated inventions.

Since AI often works with massive amounts of pre-existing data, courts may argue that AI systems are not capable of producing truly novel ideas. Critics might view AI inventions as simply new applications or reconfigurations of existing knowledge. This raises the bar for proving that an AI-assisted invention is genuinely new. Furthermore, AI can generate solutions that are not obvious to human inventors, complicating the evaluation of whether these inventions meet the non-obviousness requirement. This leads to greater uncertainty for startups when it comes to securing patent protection.

Ethical and Social Implications

The ethical issues surrounding AI in invention are also significant. AI systems may reflect biases in their training data, leading to biased outcomes in fields like pharmaceuticals or finance. There is also concern that AI-driven automation could displace human workers. On the other hand, AI creates new employment opportunities in areas like AI development and oversight, necessitating a shift in education and workforce training.

Moving Forward

Addressing these challenges requires updating legal frameworks to better accommodate AI's role in the invention process. New rules are needed to define how AI contributions should be recognized while still preserving human inventorship. Startups can manage this uncertainty by documenting the role of human inventors in guiding AI-assisted inventions and staying informed about ongoing legal changes.

In the short term, startups should focus on filing patents early, tailoring applications to specific jurisdictions, and maintaining thorough documentation of human contributions. As legal standards evolve, these steps can help new ventures protect their innovations. It's also crucial for new ventures to engage in industry discussions and policy advocacy to help shape the future of IP law for AI inventions.

Conclusion

AI-assisted inventions present both exciting opportunities and substantial challenges for startups. While AI can drive innovation, securing and enforcing IP protection for these inventions requires navigating a complex and even bewildering landscape involving technical, business and legal challenges and considerations. By continuing to explore these issues and push for updated legal frameworks, we can ensure that AI continues to drive innovation and economic growth, while offering fair and motivating protection to inventors.

This is a relatively new and exciting area of research, and a more detailed working paper will be presented at the 7th edition of the Entrepreneurship for Sustainability & Impact (ESI) Conference, organized by Qatar University's College of Business & Economics, from November 23-26 in Doha, Qatar. You can find out more about the event via the QR code below:



***Fractal Container:** The fractal container is a novel type of food container designed with fractal geometry. Its structure maximizes efficiency by enhancing the grip and insulation properties of the container.

***Neural Flame:** The neural flame is an innovative warning light or visual device inspired by a combination of fractal patterns and dynamic visual signals.