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Blockchain and generative AI: A perfect pairing?

Blockchain's ability to decentralize identity and verification could prove invaluable as artificial intelligence carves out a bigger role in content generation.

Blockchain may finally have its first mainstream application. If so, it will have ChatGPT— the generative artificial intelligence (AI) chatbot taking the world by storm— to thank.

Companies around the world are scrambling to incorporate generative AI chatbots like ChatGPT into their business models. Beyond contending with issues around the accuracy of what those new-age chatbots pump out—what can sometimes be inaccurate 'hallucinations'—they're also bumping up against another worrisome problem: figuring out how to protect their intellectual property (IP) when it's being used to train the chatbots. Equally concerning is determining how to ensure they don't infringe on anybody else's IP when using the chatbots to create new content of their own.

The answer could be another widely hyped technology that some skeptics have recently begun to see as a solution in search of a problem: blockchain.

A blockchain is a distributed ledger maintained over a peer-to-peer computer network and used to create an immutable record of transactions. To date the technology has been used primarily to create cryptocurrencies like Bitcoin, smart contracts, and nonfungible tokens (NFTs) such as digital artworks. Blockchain's proponents, including KPMG LLP, have touted the technology's potential for a wide range of general business applications, from supply chain management to regulatory reporting.

We still believe strongly in blockchain's broad potential. But we also recognize that its most immediate and important application for many companies could be using it to protect their content (and in turn their IP) in a world where generative AI plays an increasingly important role. Blockchain could help ensure that companies get attribution for their IP when it's incorporated into generative AI output and perhaps even receive royalties for its reuse. And if blockchain technology were adopted widely for these kinds of purposes, it could help prevent companies from misappropriating the IP of others.

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Example: How blockchain could safeguard IP in an AI-enabled world

Consider this example for a hypothetical outsourcing vendor. This company has decades worth of contracts, statements of work, white papers, blog posts, and PowerPoint presentations that it has used to market to and engage with clients and potential clients. It wants to point ChatGPT at that content and then use the chatbot for a variety of purposes—to generate fast responses to requests for proposals, for example, or to summarize the firm's thinking on various topics when its executives are asked to make presentations at conferences. The company wants to know that once the chatbot has had access to this proprietary data it won't allow that data to be used unfairly by the company's competitors. Or, where reuse would be acceptable, the company may want to ensure that it is credited, or even compensated, for that reuse. It also wants to be sure it's not giving away any trade secrets or violating any confidentiality agreements it may have signed with clients.

If all of those pieces of IP were transformed into NFTs with embedded smart contracts and stored on a blockchain, the company could flag each with codes telling ChatGPT which bits could be used freely, which could be used only with attribution, which only with permission, and which only with the payment of royalties or some other form of compensation. ChatGPT would need only simple tweaks to recognize these codes.

Alternatively, imagine this same company decides to use a generative AI chatbot to create a proposal for a client, only to learn that a key component of the proposal largely mirrors concepts developed and perhaps copyrighted by one of its competitors—potentially inviting a lawsuit. If we were in a world where most organizations are storing and tagging their IP on a blockchain before making it available to generative AI chatbots, the potential for infringing on someone else's intellectual property would go down dramatically.

Companies are wrestling with these concerns right now. They want to be first movers and they want to create new value for their clients and customers. At the same time, they don't want to create risks they may not be able to manage. Some have already ended up in court. Early this year, for example, stock photo company Getty Images sued Stability AI, maker of the AI-based image generator Stable Diffusion, over alleged copyright violations. Getty argued in a statement to the press that Stability AI had "unlawfully copied and processed millions of images protected by copyright" to train its software for its own commercial benefit.[1] Getty is seeking up to $1.8 trillion in damages.[2]

How claims of copyright violations or misappropriation of IP might play out in court are largely unknown at this point given how new the field of generative AI is. Almost certainly, it will take years before the courts catch up to the technology.

[1] Getty Images, Getty Images Statement, January 17, 2023, https://newsroom.gettyimages.com/en/getty-images/getty-images-statement

[2] AI Business, "Getty Sues Stable Diffusion Parent in the U.S.," by Bed Wodecki, February 8, 2023, https://aibusiness.com/nlp/getty-sues-stable-diffusion-parent-in-the-u-s-

Generative AI's other challenges to IP

Protecting IP is just one of the challenges businesses face as they race to add generative AI to their technology stack. They also face great uncertainty as to the eligibility of newly generated content for copyright protection. Copyright laws vary from country to country, but there are widespread doubts about whether works that are not the result of human creativity should enjoy copyright protection. There also are questions around the legality of generative AI output. A number of European data protection agencies, for example, have already fined a U.S. company for what the agencies claimed were unlawful uses of AI-based facial recognition technology trained on images publicly available online.[3]

Also to be resolved are questions about ownership, especially given that generative AI output can be shaped in important ways by the natural language prompts humans input to produce that output. That output also can bear a striking resemblance to the data on which a generative AI platform was trained, as evidenced by the uncanny way image-generating platforms can create works in the style of famous artists. Finally, there are questions about which aspects of AI systems themselves, including their training sets, can be protected by patents, copyright, and trade secrets.

In addition to proceeding with caution to avoid creating inaccurate output from generative AI, businesses will want to proceed with caution to make sure they don't compromise their own IP or infringe on the rights of others.

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[3] MIT Technology Review, "The walls are closing in on Clearview AI," by Melissa Heikkilä, May 24, 2022, https://www.technologyreview.com/2022/05/24/1052653/clearview-ai-data-privacy-uk/

One of the best ways to avoid early missteps with generative AI is to forgo using publicly available platforms.

Getting going: Work with a vendor that can help you navigate the AI landscape

Generative AI is a game changer that can help companies reach new levels of efficiency and speed and can be useful in a wide range of applications. It will be important in the months and years ahead for your organization to implement a strategy around generative AI and its application. It also will be important to have an operating model in place with appropriate security controls and governance to help your organization protect its IP.

One of the best ways to avoid early missteps with generative AI is to forgo using publicly available platforms and work instead with a third-party provider who can offer extra layers of data security and provide guidance through potential pitfalls.

How KPMG can help

As an early and enthusiastic advocate for the power of blockchain and AI, KPMG is well positioned to help your organization leverage the power of these two cutting-edge technologies. Drawing on our extensive experience in both fields, we can help guide your organization through strategy, development, and implementation—and then provide ongoing support to help you optimize your investments in these areas. We understand both the promise of generative AI and the process and cultural changes that will be required to realize its full potential—as well as the security issues that need to be addressed to help minimize risks. One way to address the above challenges is to adopt the responsible AI practices we have helped other clients implement.

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