How the combination of AI and Web3 could reinvent business (PART 1)

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EY Building a better working world

AI and Web3 could address shortcomings in each other, potentially accelerating adoption and disrupting business and organizational models.

In brief

- Web3 could help AI tackle its trust issues, and AI could help overcome Web3's adoption challenges.

- The transformative potential of the intersection of AI and Web3 may lead to outcomes greater than their individual impacts.

- AI and Web3 could bring organizations closer to superfluidity, reducing operational friction and connecting disparate ideas and resources to drive growth.

In May and June 2023, EY convened "Innovation Realized in Focus", an invitation-only event series for senior executives, held across six cities: Chicago, London, Munich, New York, Palo Alto, and Singapore. This event, designed to complement EY's long-standing Innovation Realized global summits, was organized around a core theme: the intersection of artificial intelligence (AI) and Web3.

While the strategic implications of these technologies are extensively explored, relatively little attention has been given to their combined impact. What new implications does the combination of AI and Web3 generate? The discussions at the Innovation Realized in Focus events – along with subsequent analysis with EY experts – reveals that these two technologies could address key shortcomings in each other, potentially accelerating adoption and disrupting business and organizational models.

Technologies and trajectories

While neither AI nor Web3 are new, they have been on different trajectories in recent years.

AI has been around in various forms since the 1950s, but has attracted significant attention over the last year. This upsurge was catalyzed by the release of a series of large language models built using generative AI (GenAI). The surprising capabilities achieved by these models has prompted considerable excitement and interest. The number of mentions of "AI" or "GenAI" on analyst calls approximately doubled between the fourth quarter of 2022, when ChatGPT was launched, and the second quarter of 2023.1 By October 2023, EY's CEO Outlook

Pulse survey found that a remarkable 99% of companies are making or planning investments in GenAI.

Despite this excitement, most companies are still in early stages, experimenting with pilots, use cases and proofs of concept. Actual investment in GenAI is dwarfed by enterprise budgets for traditional AI and cloud software. A survey of more than 150 Innovation Realized in Focus attendees found that 90% are still in the earliest stages of AI maturity; only 4% are in the most advanced phase. One barrier to faster adoption is the low level of trust and considerable concerns about potential risks that AI might heighten.

Blockchain, the technology powering Web3, has been around since at least the 2009 launch of Bitcoin. In 2021, excitement around the metaverse boosted interest in NFTs and cryptocurrencies, based on speculation that these assets and instruments would be integral to the architecture of the metaverse. This speculation – and the adoption it fueled – have since waned. The bottom line is that, while Web3 has given rise to a range of specialized products and platforms, from NFT marketplaces to crypto exchanges and wallets, adoption remains confined to a relatively small cohort of enthusiasts; it has yet to achieve widespread mainstream adoption.

Technology and terminology: what are AI, GenAI and Web3?

AI is a broad term for a set of technologies that develop or simulate intelligence in machines, including by performing tasks that traditionally required human intelligence.

GenAI is a subset of AI capable of generating new and original content, including text, images, data, video and music.

Web3, also known as Web 3.0, refers to the next generation of the World Wide Web, building on Web 1.0 (the early web) and Web 2.0 (the era of social media and user-generated content). Web3 is built on blockchain technology, which is essentially a decentralized database (referred to as a "distributed ledger") that allows for secure peer-to-peer interactions without the need for a central authority.

Over time, the use of blockchain has expanded to a widening range of applications, which are included in this discussion as elements of Web3. These include:

- Cryptocurrencies, also known as 'crypto,' are decentralized digital currencies based on blockchain technology and are not managed by a central authority such as a government

- Decentralized finance (DeFi), the decentralized system of finance based on blockchain that provides cryptocurrency-based transactions, exchanges and financial services, without the need for traditional financial institutions

- Non-fungible tokens (NFTs), or unique identifiers recorded on a blockchain to certify ownership and authenticity of an underlying asset

- Decentralized autonomous organizations (DAOs), which are decentralized organizations in which management and decision making is done using blockchain

Accelerating adoption

The discussions at the Innovation Realized in Focus city series highlighted the potential for AI and Web3 to symbiotically address each other's shortcomings, leading to faster and more extensive adoption of both. In particular, Web3 could help AI address its trust deficit, while AI could help Web3 overcome its adoption challenge.

Trust had already become a challenge in the Web 2.0 era, which has seen an explosion in online misinformation. AI could supercharge the problem. Hallucinations – misinformation output by models that is often indistinguishable from accurate information – are a growing challenge and are finding their way into the larger internet, polluting the repository of information on which we collectively rely. Taking this further, GenAI could be weaponized by malicious actors to generate synthetic media – not just fake news articles, but also synthetic data injected into enterprise systems or videos and avatars spewing conspiracy theories – at lightning speed and tremendous scale.

Innovation Realized in Focus participants noted that Web3 could help with verification and confidence building. For instance, Web3

can help combat misinformation through blockchain notarization. Content developers can "hash" an article or video – essentially, creating a digital fingerprint that is unique to any piece of content – put the result on the blockchain, and sign it with a public key. Any reader or viewer can then use the public key to hash the content themselves and, if they get the same result as the one stored on the blockchain, be confident that the content has not been tampered with. Such techniques, in combination with methods such as digital watermarking, could go a long way to building trust in GenAI and its outputs.

A similar approach would be valuable for enabling the multi-organizational teaming that will be essential for extracting value from GenAI. GenAI's ability to work with unstructured data – and ultimately, to combine structured and unstructured data – will open the floodgates to new opportunities for companies to extract value from pooled data, including knowledge about processes and best practices, also known as knowledge graphs.

But such information pooling will have to contend with regulations and company policies that constrain the ability of data to move across jurisdictions, or otherwise limit data sharing to protect consumer privacy. ∎

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How the combination of AI and Web3 could reinvent business (PART 2)

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(CONTINUED FROM PREVIOUS EDITION)

To extract value from shared data while working within these limitations, companies will increasingly turn to protocols such as multi-party computation or zero-knowledge proofs, which allow them to conduct analysis or computation on data from multiple parties without any entity revealing its data to others. Blockchain can then be used to verify the validity of outputs generated.

In ways such as these, Web3 can boost trust and confidence, thereby helping accelerate the adoption of GenAI. By the same token, GenAI could boost adoption of Web3 in several ways.

One factor standing in the way of mass adoption of Web3 is the lack of user-friendly interfaces and experiences. Using Web3 can be technologically daunting, often requiring new users to learn abstruse terminology while navigating confusing interfaces and complex workflows. AI could help overcome this hurdle. Much as GenAI will become a copilot in many jobs and roles across the workplace, it could become a copilot for Web3, helping users navigate the complexity of the Web3 ecosystem by providing user-friendly interfaces and personalizing experiences for individual preferences.

More fundamentally, GenAI could create the ideal setting for Web3 applications. The elements of Web3 are digital-first constructs; as such, they may be more suited for machines than humans. The average person may not see a compelling reason to pay for purchases using a cryptocurrency. But for GenAI, it may well be easier and more efficient to store and exchange value using cryptocurrencies rather than fiat money, or to work with smart contracts instead of paper contracts. As GenAI becomes more prevalent, this could catalyze widespread adoption of Web3.

We don't want to overstate the case. Web3 and AI are not going to solve every challenge these emerging technologies face. Indeed, the participants across the six cities highlighted several challenges – from Web3's scalability problem to the carbon footprint of both technologies. But in specific ways, the combination of GenAI and Web3 could help mitigate some key risks and challenges, setting the stage for increased adoption.

Reinventing business

The combined impact of AI and Web3 has the potential to reinvent business models and the shape of the enterprise in fundamental ways.

This will start with rethinking business functions. Already, companies are exploring AI to streamline business functions by boosting productivity and efficiency. Over time, the focus will shift from performing existing functions more efficiently to rethinking these functions from the ground up – and this rethinking will work best when it combines the power of AI and Web3.

A prime candidate for such business function reinvention, referenced repeatedly in the IR 2023 sessions, is supply chain. A reinvented supply chain of the future could be built on the blockchain for security, integrity and inventory control. It could use smart contracts to deal with suppliers and other third parties. It could deploy AI to make the supply chain more predictive and dynamic in anticipating and responding to supply chain disruptions.

Over time, disruption will likely spread from individual business functions to entire business models. This will happen in at least a couple of ways. First, as AI and Web3 automate key skills – such as supply chain management, research and development, or sales and marketing – these value drivers will become increasingly commoditized. Companies with value propositions built on such competencies will find their competitive advantage shrinking, and will need to find new ways of creating, delivering and capturing value – pushing them to develop new business models to remain relevant.

Second, Web3 has tremendous potential to disrupt business models because it embraces decentralized and open-source architectures. The evolving GenAI space is currently comprised of both open-source and proprietary models, and some IR 2023 participants noted that Web3 could tip the balance toward open-source. Even more disruptive for business models is the decentralization that Web3 is built on. Web 2.0, the era of social media and user-created content, enabled tremendous market concentration by large platform companies because of the potency of network effects. Web3 has the potential to disintermediate such platforms, by creating truly peer-to-peer models – with huge implications for companies with business models dependent on network effects.

Lastly, AI and Web3 could transform the organizational structure of the company. Web3 has already given us the construct of the DAO, a collectively-owned and/or run organization without the need for centralized leadership. The addition of GenAI could take the DAO model to the next level, by making DAOs more adaptive and intelligent, and bringing the organization ever closer to a concept we have been exploring for some time: the superfluid enterprise.

Implications for business leaders

Track emerging technologies

The transformative potential of AI had been widely known for years. Yet, when ChatGPT launched, its breakthrough capabilities took almost everyone by surprise. Disruptive technologies famously follow an s-curve. When key inflection points are reached, they can accelerate rapidly, delivering huge improvements and market adoption.

What else is hiding in plain sight? Don't underestimate the pace of change. Businesses need to be vigilant and develop a scanning function to track evolving technologies.

Develop an "AI-plus" strategy

Companies across sectors and geographies are actively developing their response to GenAI. Many are starting by experimenting with use cases and developing proofs of concept. But to move from tactical and reactive to strategic and proactive will require developing a vision for how AI could transform your sector and disrupt your business model – the first step in future-back strategic planning.

As you develop your vision and strategy, evaluate not just AI, but AI in the context of other technologies that might emerge along the way – possibly ahead of schedule. In a world of accelerated tech disruption, businesses need an "AI-plus" strategy.

Explore intersections

This article – and the conversations at Innovation Realized in Focus city series upon which it is based – demonstrate how the intersection of AI and Web3 can yield outcomes that are greater than the sum of the parts. How might other intersections, across technologies and business functions, benefit your business? Your risk management teams have traditionally benefited from the expertise of analysts and

lawyers; what might they learn from Web3 experts?

Above all, continue the exploration. Join us at the 2024 Innovation Realized Summit in San Francisco to rethink your assumptions, reinvent your business and reframe your future.

Summary

One of the barriers to faster adoption of AI is the low level of trust and concerns about potential risks. For Web3, it's the lack of user-friendly interfaces and experiences. By addressing each other's shortcomings, adoption of these technologies could be accelerated, giving organizations the opportunity to reinvent business models and the shape of the enterprise in fundamental ways. The learning from this discovery is this: be vigilant about tracking evolving technologies, understand the intersections between them to extract more than the sum of their parts and, critically, move from tactical application to strategic vision to drive value and growth. ∎

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