



2025 Industry Guide for Lawyers and Dev Teams, Part 1: **Ongoing Industry Trends and Challenges** *in Digital Assets, Blockchain, and Emerging Technologies*

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Even amid continued regulatory uncertainty and high barriers to entry in the U.S., digital assets and emerging technologies have been maturing at a rapid pace. Recent years have seen major institutional entrants, refinements in core technology, novel applications, and growing awareness of sustainability concerns. As businesses and consumers gain familiarity with blockchain-based tools, market confidence should keep rising, but continuing to pursue and refine industry-led standards and best practices will be critical to fostering trust, wider user adoption, and long-term viability.

This article offers an overview of key innovations and trends shaping the current environment, including (1) ongoing technological advances underpinning industry resilience, (2) developer trends and evolving use cases, (3) institutional adoption and market growth, and (4) emerging standards, principles, and efforts to foster greater global interoperability, sustainability, and security. Together, these dynamics will likely continue in 2025 to create both unprecedented opportunities and potentially persistent uncertainties for blockchain, digital assets, and other emerging technologies.

1. Continuing Advancements in Blockchain Technology

Recent advancements in blockchain technologies center on improvements in scalability, privacy, interoperability, and integration with adjacent technologies. As such, related innovations have been setting the groundwork for blockchain-based, decentralized infrastructures that offer significant advantages for implementations of other emerging technologies, including in AI and in the management of machines and other physical infrastructure.

Scaling solutions.

Some of the most transformative scalability developments have been made with layer-2 (“**L2**”) networks, which enable vastly improved transaction throughput and efficiency without altering the underlying security assumptions of the base protocol (the corresponding “**L1**”).¹ These systems typically achieve this using either ‘*optimistic*’ rollups or ‘*zero-knowledge*’ rollups (or “**zk-rollups**”), which offload certain critical tasks—namely, database transaction inclusion, ordering, and state computation—from the main chain onto specialized operators who subsequently batch and periodically submit summarized transaction data back to

¹ See Angela Angelovska-Wilson, et al., *Layer-2 Sequencing Demystified: A Lawyer’s Introduction*, DLX LAW PLLC FOR GLOBAL L. INSIGHTS (Oct. 2023), https://dlxlaw.com/leaderships_blog/layer-2-sequencing-demystified-a-lawyers-introduction-2/.

the L1 network for final settlement.² In doing so, they strive to reduce congestion, lower fees, and accelerate transaction confirmation times, ultimately improving user experience and enabling more complex decentralized applications (“**dApps**”) to flourish.³

Optimistic rollups typically assume all off-chain transactions are valid by default, only resorting to fraud proofs if discrepancies are challenged, thereby helping to assume efficiency at scale.⁴ By contrast, *zero-knowledge* rollups utilize zero-knowledge proofs (“**zk-proofs**”) to guarantee the correctness of database transactions without revealing underlying data, enhancing both scalability and privacy.⁵

Using various iterations of these rollup methods, L2 systems—including Arbitrum, Optimism, and Starknet—have driven substantial growth on their corresponding L1 network, Ethereum.⁶ Seen by many crypto enthusiasts as more decentralized and secure than Ethereum, however, the Bitcoin network has in recent years been a growing focus of blockchain scaling efforts, despite the inability of its core functionality to support programmability. This is because the most prominent L2 scaling solutions on Bitcoin, like Stacks,⁷ have focused on introducing this kind of functionality, allowing programmers to build systems and applications that at the same time inherit the security features of Bitcoin as the underlying L1. Although still not nearly as prominent as Ethereum is in attracting developers are seeking to build applications, about 42% of those who are building on Bitcoin are actively working on scaling solutions that hold the potential to propel the network’s popularity among project developers.⁸

Despite recent advances, implementing L2s and other scaling solutions has not been without its challenges. For example, decentralized governance of entities responsible for ordering and verifying transactions remains critical, along with preserving robust security to prevent collusion or censorship by a subset of actors.⁹ As these systems evolve: developers, policymakers, and industry participants alike likely must carefully balance efficiency with transparency and verification standards that safeguard the fundamental principles of blockchain networks.

Zero-knowledge proofs and privacy-oriented solutions.

Beyond their utility in bolstering scalability for L2 networks, zk-proofs have catalyzed a broader wave of innovation related to data security and privacy across blockchain ecosystems.¹⁰ By enabling parties to prove

² See *id.*; SDLC Corp., *The Future of Layer-2 Solutions: Trends and Innovations to Watch*, SDLC CORP.: POSTS (Aug. 27, 2024), <https://sdlccorp.com/post/the-future-of-layer-2-solutions-trends-and-innovations-to-watch/>.

³ See ALCHEMY, *List of Layer 2 Blockchains*, <https://www.alchemy.com/best/layer-2-blockchains> (last visited Jan. 3, 2025).

⁴ See Angela Angelovska-Wilson, et al., *supra* note 1; Blockchain Reporter, *Uniswap’s Impact on Layer 2 Solutions*, BINANCE SQ.: POSTS (Dec. 11, 2024), <https://www.binance.com/en/square/post/17437688848170>.

⁵ See *Blockchain Scalability Guide: Layer 2 Solutions and Future Innovations*, RAPID INNOVATION: POSTS, <https://www.rapidinnovation.io/post/blockchain-scalability-solutions-layer-2-and-beyond> (last visited Jan. 3, 2025).

⁶ See Electric Capital, *2024 Crypto Developer Report*, at 79-87 (Nov. 2024), <https://www.developerreport.com/developer-report?s=developer-report> [hereinafter Electric Capital 2024 Developer Report].

⁷ See Stacks, <https://www.stacks.co/>.

⁸ See Electric Capital 2024 Developer Report, *supra* note 6, at 95; Gabe Parker, *Bitcoin L2s: A Modular Future*, Galaxy.com: Insights: Research (Nov. 20, 2024), <https://www.galaxy.com/insights/research/bitcoin-layer-2-modular-future/>.

⁹ See Web3 News Wire, *The Layer 2 Solution: How Content Marketing Distribution is Transforming Blockchain’s Layer 2 Adoption*, WEB3NEWSWIRE: BLOGS: NEWS (Oct. 26, 2024), <https://web3news.wire.com/blogs/news/the-layer-2-solution-how-content-marketing-distribution-is-transforming-blockchains-layer2-s-adoption>.

¹⁰ As of year-end 2024, 2,054 active developers are building on and supporting zero-knowledge proof chains or ‘ecosystems’; onchain developer activity using zk-proof contracts is nascent but growing quickly, with deployments increasing from 40 in 2020 to 639 in 2024. See Electric

the validity of certain information without revealing any underlying details, zk-proofs facilitate confidential database transactions that nonetheless maintain the verifiability essential to decentralized networks.¹¹ These privacy-preserving capabilities have led to more sensitive financial and corporate applications coming onto the blockchain, as firms now can verify key metrics, credentials, or compliance conditions without exposing proprietary data or client information.¹²

Other advancements in blockchain privacy—like decentralized identifiers (“DIDs”) and selective disclosure mechanisms—are increasingly being layered atop these technologies, further protecting user data and corporate secrets while preserving the transparency and auditability at the core of public ledgers.¹³ As the interplay of zk-proofs and related privacy enhancements becomes more sophisticated, blockchain networks will likely become more amenable to regulated activities, cross-border commerce, and enterprise-level use cases where confidentiality is paramount.

Interoperability protocols.

In parallel, interoperability protocols have emerged to bridge previously isolated blockchain networks, transforming a siloed landscape into a rich, interconnected ecosystem. The Cosmos network,¹⁴ for example, facilitates communication between sovereign chains through its Inter-Blockchain Communication (IBC) protocol, enabling asset transfers and data sharing that expand the utility and liquidity of independent networks.¹⁵ The Polkadot network¹⁶ employs a relay chain architecture and ‘parachains’ designed to allow specialized blockchains to operate in parallel, communicating efficiently and securely with one another.¹⁷

Other interoperability frameworks—like Wormhole,¹⁸ Connex,¹⁹ and LayerZero²⁰—have further diversified the options available to developers and enterprises that increasingly need to perform multi-chain operations. With progress being made on these kinds of platforms, blockchain and digital assets industries are transitioning to be able to support a multipolar digital economy in which previously isolated infrastructures of various forms and functionalities can interact in dynamic ways that ultimately increase user choice and foster more robust, resilient systems.

Capital 2024 Developer Report, *supra* note 6, at 113-14. Furthermore, monthly unique deployments of zk-proof contracts onchain grew from 16 in 2020 to roughly 185 in 2024. *See id.*

¹¹ *See* Web3 News Wire, *supra* note 9.

¹² *See id.*

¹³ *See* World Wide Web Consortium, *Working Group Note: Use Cases and Requirements for Decentralized Identifiers*, W3.ORG: TR (Mar. 17, 2021), <https://www.w3.org/TR/did-use-cases/>.

¹⁴ Cosmos, <https://cosmos.network/>.

¹⁵ *See* *What is the Inter-Blockchain Communication Protocol (IBC)?*, COINBASE: DEVELOPER PLATFORM: DISCOVER: DEV FOUND. (Jan. 26, 2022), <https://www.coinbase.com/developer-platform/discover/dev-foundations/ibc-protocol>; *The Inter-Blockchain Communication Protocol*, COSMOS: IBC, <https://cosmos.network/ibc/> (last visited Jan. 3, 2025).

¹⁶ Polkadot, <https://polkadot.com/>.

¹⁷ *See* *Polkadot Architecture*, POLKADOT NET. WIKI: DOCS.: LEARN ARCHITECTURE, <https://wiki.polkadot.network/docs/learn-architecture> (last visited Jan. 3, 2025).

¹⁸ Wormhole, <https://wormhole.com/>.

¹⁹ Connex, <https://www.connex.network/>.

²⁰ LayerZero, <https://layerzero.network/>.

The synthesis of different emerging technologies.

Just as the increasing interoperability of blockchain networks supports the integration of digital assets and blockchain-based operations across distinct systems, blockchain technology and decentralized systems are increasingly being integrated with other emerging technologies, potentially substantially expanding the value propositions of these systems. For example, projects that have sought to combine decentralized systems with artificial intelligence (‘AI’) are exploring ways to ensure the trustworthiness and verifiability of algorithmic decision-making while simultaneously leveraging a blockchain or distributed ledger to maintain immutable records and data provenance.²¹ For instance, AI-driven smart contracts might govern complex supply chain processes, utilizing machine learning to predict demand while relying on blockchain timestamps and transaction histories to validate sourcing and manufacturing claims.²²

The Internet of Things can similarly benefit from a decentralized trust model. The Internet of Things (or ‘IoT’) refers to networks of devices that collect sensor data and share measurements with gateways or servers in a way that allows for the automation and management of multiple systems or processes.²³ A blockchain or distributed ledger can be integrated with IoT as a cryptographically secure means to authenticate, store, and share data generated by connected devices, helping to prevent data from being changed, corrupted, or forged.²⁴ By registering devices and their interactions on a tamper-resistant ledger, networks can authenticate sensor readings, verify machine-to-machine communications, and coordinate automated transactions without reliance on an intermediary.²⁵

These convergences could potentially allow anything from energy grids and transportation systems to logistics networks and smart cities to operate more efficiently, with data integrity assured at scale.²⁶ With the rate of these advancements, potentially one day soon, developers might even be able to establish reliable automated systems that dynamically adapt to real-world conditions.²⁷

²¹ See Simrit Dhinsa et al., *Report: Bitcoin Miners Powering the AI Revolution*, GALAXY.COM: INSIGHTS: RESEARCH (Dec. 18, 2024), <https://www.galaxy.com/insights/research/bitcoin-mining-ai-revolution/>; Hedera Team, *EQTY Lab’s Verifiable Compute Brings Trust to AI with Hedera*, HEDERA: BLOG (Dec. 18, 2024), <https://hedera.com/blog/eqty-labs-verifiable-compute-brings-trust-to-ai-with-hedera>; Rob Behnke, *AI Crypto Projects and AI Coins: A Comprehensive Guide*, HALBORN: BLOG: POSTS (May 7, 2024), <https://www.halborn.com/blog/post/ai-crypto-projects-and-ai-coins-a-comprehensive-guide>; Flagship, *10 Crypto Projects Enabling the Data Economy for Artificial Intelligence*, FLAGSHIP.FYI: OUTPOSTS (Mar. 28, 2024), <https://flagship.fyi/outposts/ai-crypto/10-crypto-projects-enabling-the-data-economy-for-artificial-intelligence/>; see generally Dramane Meite, *Trust, but Verify: Can Crypto Help Keep AI in Check?*, HASHDEX: U.S.: INSIGHTS (Sep. 16, 2024), <https://hashdex.com/en-US/insights/trust-but-verify-can-crypto-help-keep-ai-in-check> (discussing practical use cases for blockchain to support trust and verification in support of stronger AI and machine learning models).

²² See Simrit Dhinsa et al., *supra* note 21; Ohm Patel, *AI-Driven Smart Contracts*, J. ARTIFICIAL INTELLIGENCE & CLOUD COMPUTING (Aug. 2, 2024), available at https://www.researchgate.net/publication/383605866_AI-Driven_Smart_Contracts; Satish Kumar, et al., *Artificial Intelligence and Blockchain Integration in Business: Trends from a Bibliometric-Content Analysis*, PUBMED CENTRAL: INFO. SYSTEMS (Apr. 12, 2022), available at <https://pmc.ncbi.nlm.nih.gov/articles/PMC9005027/>.

²³ See Kinza Yasar & Alexander Gillis, *Definition: Internet of Things (IoT)*, TECHTARGET: IOT AGENDA: DEFINITION, <https://www.techtarget.com/iotagenda/definition/Internet-of-Things-IoT> (last visited Jan. 3, 2025).

²⁴ See *id.*; Derrick Wolbert, *Everything you need to know about IoT and blockchain*, HOLOGRAM: BLOG (Apr. 14, 2022), <https://www.hologram.io/blog/blockchain-iot/>.

²⁵ See Derrick Wolbert, *supra* note 24.

²⁶ See Muhammad Zulhusni, *How Blockchain, IOT, and AI are Shaping the Future of Digital Transformation*, AI NEWS (Dec. 23, 2024), <https://www.artificialintelligence-news.com/news/how-blockchain-iot-and-ai-are-shaping-the-future-of-digital-transformation/>; David Treat & Michael Klein, *Immersive Technology, Blockchain, and AI are Converging and Reshaping Our World*, WORLD ECON. FORUM: STORIES (Jun. 21, 2024), <https://www.weforum.org/stories/2024/06/the-technology-trio-of-immersive-technology-blockchain-and-ai-are-converging-and-reshaping-our-world/>.

²⁷ See Muhammad Zulhusni, *supra* note 26.

2. Developer Trends & Evolving Use Cases

Recent innovations in digital assets, decentralized systems, and related emerging technologies are largely driven by vibrant developer communities. Recent industry reports tend to demonstrate overwhelming focus and growth not just in decentralized finance (“**DeFi**”) but also in non-fungible tokens (“**NFTs**”), real-world asset (“**RWA**”) tokenization, and decentralized physical infrastructure networks (“**DePINs**”).

Even amid regulatory uncertainty in the U.S., builders have continued to advance meaningful innovations in each of these areas, drastically expanding the potential variety of use cases these kinds of technologies can support. This is because developer engagement has been, and remains, the lifeblood driving these innovations. Vivacious open-source communities, global developer meetups, and hackathons are key engines of growth and will likely continue to assist developers in forging new paths for both on-chain and off-chain applications. Nevertheless, the ability of projects to successfully navigate these continuing evolutions will likely hinge on regulatory clarity and ongoing institutional acceptance.

Decentralized finance.

DeFi applications use blockchain-based smart contracts to facilitate lending, borrowing, trading, and derivatives creation without relying on centralized intermediaries. Although DeFi reduces barriers to entry across the globe and throughout communities that traditionally lack access to banking and other services, the concerns of critics continue to persist in connection with security vulnerabilities, available avenues for market manipulation, and difficulties in complying with existing law.

DeFi is not new and has long been recognized as a threat to conventional banking and financial services industries, but development and usage of DeFi platforms has continued to grow, even in challenging regulatory and market conditions. Consistent with the overall drop in developers working with cryptocurrency and blockchain, the total number of developers building out DeFi protocols in 2024 fell by 5%.²⁸ Nevertheless, the number of established developers who have been working in DeFi for two or more years grew by 25% over the same period,²⁹ suggesting that the sector is beginning to mature.

Another measure of blockchain activity, total value locked (“**TVL**”), also signals significant maturation in DeFi. The total worth of onchain capital that is locked as TVL in DeFi grew by 89% in 2024, surpassing the overall rate of growth of total digital asset market capitalization.³⁰ Even though fluctuations in digital asset prices can skew perceptions of their stability, TVL across DeFi protocols remains a significant gauge of market confidence, and this gauge reveals that confidence remains strong.³¹

By far the most common place where DeFi developers are building out applications is Ethereum, with 53% of them working on the Ethereum network (as an L1) and various Ethereum L2s.³² Although the number of DeFi developers working across the other major L1 network ‘*ecosystems*’ (besides Ethereum) expanded

²⁸ Electric Capital 2024 Developer Report, *supra* note 6, at 144.

²⁹ Between November 2023 and November 2024, the number of ‘established developers’ (those working in blockchain or digital assets for 2 or more years) has grown by 25%, whereas the number of ‘emerging developers’ (between 1 and 2 years) and of ‘newcomers’ (less than 1 year) have decreased by 53% and 5%, respectively, over the same one-year period. Electric Capital 2024 Developer Report, *supra* note 6, at 145.

³⁰ Electric Capital 2024 Developer Report, *supra* note 6, at 150.

³¹ See Electric Capital 2024 Developer Report, *supra* note 6, at 149-163.

³² See Electric Capital 2024 Developer Report, *supra* note 6, at 148.

significantly between 2018 and 2022, trends are beginning to reverse, with Ethereum’s share of DeFi development growing significantly over other networks between 2023 and 2024.³³ Ethereum’s domination is also demonstrated by its \$116 billion in TVL as of November 2024, an amount seven times greater than the TVL of the Solana network, the next biggest blockchain ecosystem.³⁴ Furthermore, promising advancements in ‘*re-staking*’ tools on the blockchain trust network EigenLayer³⁵ have boosted, and could continue to boost, TVL not just on its home network of Ethereum but also more broadly, with the composability of these tools able to reach across multiple chains and applications.³⁶

Although much of the DeFi sector can be accurately measured in terms of TVL, decentralized exchanges (“**DEXs**”) often rely on alternate metrics, like unique addresses, transaction volume, and regional participation.³⁷ As advancements in automated market makers (“**AMMs**”) and cross-chain bridges continue, DEXs are continuously refining their liquidity models to attract and retain both retail and institutional market participants. With these advancements, and even despite ongoing regulatory enforcement and legal ambiguity, DEX activity remains strong in the U.S. compared to other parts of the world.³⁸

Non-fungible tokens.

Recent innovations³⁹ have allowed NFTs to evolve to support use cases that go well beyond simple digital collectibles, now able to power in-game economies, ticketing systems, and even some identity solutions. Even as overall development in blockchain and digital assets saw a slight decline in 2024, new monthly NFT-related deployments have more than tripled, from about 38,000 to roughly 130,000, within that same time.⁴⁰

Overall, developer activity around NFTs remains significantly robust, with many teams focusing on specialized marketplaces, play-to-earn gaming integrations, and novel use cases for tokenized digital content. The vast majority of NFT developers (at 87%)⁴¹ are building out deployments on the Zora network⁴² or Base,⁴³ with the Base network seeing 97% of sector-wide NFT minting volume in 2024.⁴⁴ Adding to this momentum is a recent expansion of NFT-related capabilities in the Bitcoin ‘*ecosystem*,’ made possible by Ordinals,⁴⁵ which enables data inscription directly on ‘*satoshis*’ (the smallest unit of

³³ See *id.*

³⁴ See Electric Capital 2024 Developer Report, *supra* note 6, at 151.

³⁵ EigenLayer, <https://www.eigenlayer.xyz/>.

³⁶ See Electric Capital 2024 Developer Report, *supra* note 6, at 164-169.

³⁷ See Electric Capital 2024 Developer Report, *supra* note 6, at 169-179.

³⁸ See Electric Capital 2024 Developer Report, *supra* note 6, at 180-181.

³⁹ Among other notable advancements, developers are increasingly using ‘*soulbound*’ NFTs to support applications requiring ineligibility of a nonfungible asset to be transferred once it is assigned to a particular wallet address. See Vitalik Buterin, et al., *Decentralized Society: Finding Web3’s Soul* (2022), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4105763.

⁴⁰ See Electric Capital 2024 Developer Report, *supra* note 6, at 125-126.

⁴¹ See Electric Capital 2024 Developer Report, *supra* note 6, at 128.

⁴² Zora, <https://zora.co/>.

⁴³ Base, <https://www.base.org/>.

⁴⁴ See Electric Capital 2024 Developer Report, *supra* note 6, at 130.

⁴⁵ Ordinals, <https://ordinals.com/>.

BTC). Although still nascent, Ordinals functionality unleashes a broad spectrum of opportunities as Bitcoin L2s become more popular places for developers to build.

Stablecoins and tokenization of real-world assets.

Beyond cryptocurrencies and other strictly digital assets, tokenization of RWAs—like physical art, real estate, precious metals, and other commodities—continued to gain substantial traction in 2024. By increasing liquidity and enabling fractional ownership in the underlying tangible assets, RWA tokenization offers the means for more broadly democratizing access to markets once reserved only for large institutions and high-net-worth individuals.⁴⁶

Overall TVL associated with RWA protocols (excluding stablecoins, for reasons explained below) has seen a significant increase, from about \$2 billion at the start of 2023 to roughly \$9 billion in December 2024.⁴⁷ Most growth in this area is attributable to tokenized U.S. Treasury bonds, now accounting for approximately 35% of the entire tokenization market.⁴⁸ Growth in tokenized treasuries is anticipated to face major setbacks if and as market interest rates decline, driving greater competition in onchain yields,⁴⁹ but the impact of RWAs and the amount of capital they attract are still likely to see significant expansion with treasuries and other assets in 2025 and beyond. This is because blockchain-based treasury management solutions will likely see greater adoption as they mature,⁵⁰ and because platforms like Bybit⁵¹ are integrating tokenized treasuries as yield-bearing collateral, including functionality offering use case alternatives to stablecoins.⁵²

Although some RWA pilots remain siloed under private blockchain-based systems or controlled test environments, many proponents of emerging blockchain technologies and industries envision an on-chain future where these assets seamlessly interoperate with DeFi protocols and other applications. If realized, this could allow for more diverse collateralization options, unlocking new financing opportunities that potentially lower barriers to entry for both entrepreneurs and everyday consumers and investors.

‘Stablecoins’ are often considered to be a kind of tokenized RWA, particularly if pegged to fiat currency like the U.S. dollar or secured by a basket of treasuries or other conventionally market-stable assets. Nevertheless, the market capitalization of stablecoins is typically excluded from TVL measures in relation to RWAs, because they generally serve a different purpose. In the last year, stablecoins have continued to represent a substantial portion of all on-chain activity, acting as a reliable medium of exchange in DeFi, NFT marketplaces, cross-border payments, and more. In fact, by November 2024, the total value of all

⁴⁶ See Harsh Notarlya, *MANTRA Cofounder Explains How RWA Tokenization Unlocks Wealth for Everyone*, BEINCRYPTO: MARKETS (Oct. 14, 2024), <https://beincrypto.com/rwa-tokenization-democratize-wealth/>; Dott. Della Fornace, *The Tokenization of RWAs: How Traditional Finance is Being Reshaped*, AFFIDATY: BLOG (Sep. 4, 2024), <https://affidaty.io/blog/en/2024/09/rwa-tokenization-traditional-finance/>.

⁴⁷ See Messari, Inc., *Crypto Theses 2025*, MESSARLIO, at 89 (Dec. 16, 2024), <https://messari.io/report-pdf/a929cd003f5eec790275e05ae8ef28cf4a6b4bfc.pdf> [hereinafter Messari 2025 Crypto Theses Report].

⁴⁸ See Messari 2025 Crypto Theses Report, *supra* note 47, at 89-90.

⁴⁹ See Messari 2025 Crypto Theses Report, *supra* note 47, at 90.

⁵⁰ See Messari 2025 Crypto Theses Report, *supra* note 47, at 90-91.

⁵¹ Bybit, <https://www.bybit.com/en/>.

⁵² See Messari 2025 Crypto Theses Report, *supra* note 47, at 91.

stablecoins in circulation reached an all-time high at \$196 billion, with roughly 59% of their issuances being native to Ethereum-supported environments.⁵³

Fiat-backed stablecoins still dominate overall market capitalization, but developer experimentation in cryptocurrency-collateralized and algorithmic stablecoins continues, though often under increased regulatory scrutiny. Going forward, successful and more sophisticated stablecoin models will likely integrate more robust governance and transparency features to meet the demands of legal and regulatory compliance.

Decentralized physical infrastructure networks.

Like with RWAs, recent developments around DePINs also help to showcase how blockchain and distributed ledger technologies are being extended beyond the digital realm. Specifically, DePINs utilize these technologies to coordinate deployment and maintenance of tangible income-generating assets, from telecommunications and service equipment to distributed sensor arrays that can improve oracle accuracy.⁵⁴

By incentivizing community-driven infrastructure developments, DePIN models typically aim to foster more equitable, accurate, and resilient growth in areas like data delivery, energy grid maintenance, and IoT sensor networks. Certain telecommunications carriers (incumbents and new entrants alike) have piloted DePIN token-based incentives for community-owned relay nodes.⁵⁵ These systems typically reward users with digital tokens for maintaining local network hardware, effectively broadening mobile coverage and improving service reliability.⁵⁶ In another example, some service providers in the logistics sector have experimented with on-chain tracking for container shipments, allowing for real-time auditing and transparent cost management.⁵⁷ These and a variety of other use cases demonstrate how DePIN initiatives can reorient supply chains, utilities, and public services around decentralized, user-centric frameworks.

DePIN was actually one of the highest-performing digital asset sectors in 2024, with total market capitalization exceeding \$40 billion—a 132% year-over-year increase.⁵⁸ Most of this growth is attributable to early-stage company fundraising, which reached \$610.41 million in 2024—a 326% year-over-year increase.⁵⁹ As this growing sector is poised to capture institutional adoption across a variety of industries in the coming years, investment will likely continue to pour into DePINs. With the potential to improve an

⁵³ See Electric Capital 2024 Developer Report, *supra* note 6, at 184-185, 187.

⁵⁴ DePINs broadly fall into either one of two categories, physical resource networks (PRNs), which support the provision of location-dependent resources, and digital resource networks (DRNs), which support the provision of location-independent resources.

⁵⁵ See IOT BUSINESS NEWS, *Hiber and Inmarsat to Develop Connectivity Backbone for Global IoT-as-a-Service Ecosystem* (Oct. 14, 2021), <https://iotbusinessnews.com/2021/10/14/47523-hiber-and-inmarsat-to-develop-connectivity-backbone-for-global-iot-as-a-service-ecosystem/>; IOT BUSINESS NEWS, *ORBCOMM and Inmarsat to Provide Next-Generation, Global IoT Service* (Oct. 27, 2020), <https://iotbusinessnews.com/2020/10/27/90101-orbcomm-and-inmarsat-to-provide-next-generation-global-iot-service/amp/>.

⁵⁶ PANews, *The Rising Narrative: A Glimpse Into the Present and Future of DePIN*, AICOIN: ARTS. (Dec. 26, 2024), <https://www.aicoin.com/en/article/436433>; Swyftx, *DePIN: Decentralized Physical Infrastructure Networks*, SWYFTX: LEARN (Sep. 19, 2024), <https://learn.swyftx.com/analysis/archive/depin-decentralised-physical-infrastructure-networks/>; Anam Ansari, *A Short Introduction to DePIN*, HELIUS: DEV. BLOG (Aug. 12, 2024), <https://www.helius.dev/blog/a-short-introduction-to-depin>.

⁵⁷ Acropolium, *Why and How to Employ Blockchain in Supply Chain Management (Tips & Success Stories)*, ACROPOLIUM: BLOG: LOGISTICS (Jul. 3, 2024), <https://acropolium.com/blog/why-and-how-to-employ-blockchain-in-supply-chain-management-tips-and-success-stories/>; Nick Lambert, *All the Benefits of Blockchain in Logistics*, SDC EXECUTIVE: SOFTWARE & TECH. (Mar. 28, 2023), <https://www.sdexec.com/software-technology/emerging-technologies/article/22780311/dock-all-the-benefits-of-blockchain-in-logistics>.

⁵⁸ See Messari 2025 Crypto Theses Report, *supra* 47, at 113.

⁵⁹ See *id.*

array of different services, DePINs will likely have a greater effect on the lives of every-day consumers in the next one or two years than digital asset industries have had as a whole over the last 20 years.

3. Institutional Adoption & Market Growth

In recent years, and even despite some federal policy efforts to curb the exposure of conventional financial institutions to digital assets and related industries, many large banks and multinational corporations have increasingly integrated digital assets and certain blockchain and distributed ledger solutions into their operations. These developments could potentially offer a robust path for more mainstream acceptance of these assets and technologies.

What began as an experimental, fringe asset class has gradually become a trusted tool for global enterprises, with JPMorgan Chase & Co.—the world’s largest banking conglomerate by market capitalization—leading in implementing digital assets and blockchain components. For instance, JPMorgan’s JPM Coin⁶⁰ enables interbank payment transfers and tokenized deposit accounts, and its Kinexys platform (formerly ‘Onyx’)⁶¹ allows third-party applications to tokenize and facilitate secure transfers of just about any kind of asset, including RWAs, illustrating the promising outlook of these kinds of blockchain-based systems at scale. Even outside of banking: Siemens—the German-based technology, energy, and industrial automation conglomerate—has been leveraging distributed ledger technology to streamline supply chain processes and improve transparency, efficiency, and automation across complex networks in industry and trade.⁶²

Many major industries (from finance to logistics and healthcare) have increased their spending on blockchain solutions to improve data management, reduce costs, and mitigate counterparty risks.⁶³ Some industries more broadly are piloting DePINs and other blockchain-based infrastructure for decentralized energy grids, supply chain optimization, and secure data sharing. By enabling large companies to tap into crowdsourced or community-run infrastructure, DePIN-related initiatives, especially, can introduce significant efficiencies and cost savings to businesses and services in more conventional industries. As this transition continues, institutional adoption—especially across finance, telecommunications, and manufacturing—is set to reshape how much of society’s core infrastructure is built and maintained.

These and other recent institutional embraces of blockchain and distributed ledger technologies have helped to catalyze some market growth for digital assets more broadly. The promise of more significant and wide-reaching adoption is also on the rise following approvals of BTC- and ETH-backed ETFs earlier in 2024.⁶⁴

⁶⁰ *Introducing Kinexys*, JPMORGAN: INSIGHTS: PAYMENT TRENDS, <https://www.jpmorgan.com/insights/payments/payment-trends/introducing-kinexys> (last visited Jan. 3, 2025).

⁶¹ *See JP Morgan Rebrands Blockchain Unit to Kinexys*, LEDGER INSIGHTS (Nov. 6, 2024), <https://www.ledgerinsights.com/jp-morgan-rebrands-blockchain-unit-to-kinexys/>.

⁶² Siemens AG, *Press Release: Siemens Remains a Pioneer, Another Digital Bond Successfully Issued on Blockchain*, SIEMENS: GLOBAL (Sep. 4, 2024), <https://press.siemens.com/global/en/pressrelease/siemens-remains-pioneer-another-digital-bond-successfully-issued-blockchain>; Oluwapelumi Adejumo, *Siemens and Samsung Ramp Up Web3 Moves with Digital Bonds and Startup Investments*, CRYPTOSLATE: NEWS: ADOPTION (Sep. 4, 2024), <https://cryptoslate.com/siemens-and-samsung-make-moves-web3-with-digital-bonds-and-startup-investments/>.

⁶³ *See generally* IDC 2024 Worldwide Digital Transformation Spending Guide Taxonomy, Doc. US50098623, v.2, IDC.COM (Dec. 2024), available at <https://www.idc.com/getdoc.jsp?containerId=US50098623> (outlining global spending in blockchain and other emerging technologies across various industries).

⁶⁴ U.S. courts pushed back on many of the Securities and Exchange Commission’s (SEC) challenges involving spot exchange-traded funds (ETFs), starting in 2023 with bitcoin (BTC) and Ether (ETH), leading to their ultimate approvals beginning early in 2024. *See Grayscale Invs., LLC v. SEC*, 2023 WL 5708244 (D.C. Cir. 2023) (vacating the SEC’s denial of the Grayscale spot bitcoin ETF proposal); Amelia Matthewson,

Since then, opportunities to gain exposure to digital assets as an asset class (now accessible through the use of familiar, regulated investment vehicles) have grown significantly for both retail and institutional investors.⁶⁵ With the entrance of this new capital, the availability of on-chain liquidity has been significantly enhanced, which will likely incentivize a new wave of more robust applications and protocols that potentially reinforce the role of institutional participation in legitimizing and elevating digital asset markets. Nevertheless, likely many roadblocks remain before cryptocurrencies or decentralized systems will see more meaningful adoption given their potential to revolutionize (or displace) whole industries, institutions, or socioeconomic structures.

Impediments to broader and more meaningful institutional adoption.

As capital markets grow more comfortable with digital assets and emerging technologies, institutional trust will solidify the foundations of at least certain components of these systems. Importantly, however, the interests of the conventional banking and financial industries and many other large private institutions are by their very nature anti-competitive and deeply misaligned with broader interests of many of the principles underlying decentralized systems.⁶⁶

Even at a time when these technologies are becoming increasingly efficient and scalable, offering advantages to an ever-greater variety of both conventional and emerging industries, the struggle between entrenched societal power and wealth and the stakeholders and advocates behind these potentially revolutionary technologies remains staggering. The trajectories of digital assets and decentralized systems, including the underlying principles that make them secure and their value proposition credible, will likely continue to be threatened by the objects and goals of large financial institutions and existing U.S. and global power structures, because the interests of each of the two are fundamentally incompatible.⁶⁷

Conflicting interests between the existing paradigm and the potential for disruption possessed by decentralized systems and emerging technologies are inherently so significant that they ought not to be disregarded by either direct stakeholders or interested observers. This could even offer an explanation, at least in part, for why the anti-crypto sentiment among many current and former federal regulators echoes

SEC Approves Ether ETFs, FINTECH MAGAZINE: CRYPTO (Jul. 25, 2024), <https://fintechmagazine.com/articles/sec-approves-ether-etfs>; Lucy Brewster, *Grayscale Ethereum ETF Rule Change Pulled*, ETF.COM: NEWS (May 9, 2024), <https://www.etf.com/sections/news/application-grayscale-ethereum-futures-etf-withdrawn>; Vicky Ge Huang & Paul Kiernan, *SEC Approves Bitcoin ETFs for Everyday Investors*, WALL ST. J.: FIN.: REG. (Jan. 10, 2024), <https://www.wsj.com/finance/regulation/sec-approves-bitcoin-etfs-for-everyday-investors-dc3125ef>; Paul Kiernan, *Grayscale's Court Win Over SEC Lifts Hopes for Bitcoin ETF Approval*, WALL ST. J.: FIN.: REG. (Aug. 29, 2023), <https://www.wsj.com/finance/regulation/grayscale-wins-lawsuit-against-sec-over-bitcoin-etf-1b305cfa>. These ETFs have opened some of the first institutional pathways for cryptocurrency-based investment products, and it has allowed for significant capital inflows into the asset class. Messari 2025 Crypto Theses Report, *supra* note 47, at 14-15.

⁶⁵ ETF-based exposure to Bitcoin, Ethereum, and other digital assets could lead to substantial capital inflows over time, prompting a new wave of developer interest and additional on-chain liquidity. See Electric Capital 2024 Developer Report, *supra* note 6, at 197-212 (indicating that easier access to digital assets through regulated instruments helps to broaden the investor base, thus expanding capital resources for blockchain projects and attracting global attention to the ecosystem).

⁶⁶ See generally Anshu Siripurapu & Noah Berman, *The Crypto Question: Bitcoin, Digital Dollars, and the Future of Money*, COUNCIL ON FOREIGN RELATIONS: BACKGROUNDER (Jan. 17, 2024), <https://www.cfr.org/backgrounder/crypto-question-bitcoin-digital-dollars-and-future-money> (discussing potential implications of the inherent conflict of interest between power, wealth, and incumbent financial infrastructure and the interests and principles underlying distributed ledger technologies); Victor Murinde, et al., *The Impact of the FinTech Revolution on the Future of Banking: Opportunities and Risks*, 81 INT'L REV. FIN. ANALYSIS 102103, ISSN 1057-5219 (May 2022), available at <https://www.sciencedirect.com/science/article/pii/S1057521922000734> (suggesting that, with disruptions or replacements to incumbent services providers, existing power structures and geopolitical frictions are set to shape the future of banking and economic infrastructure globally).

⁶⁷ See Anshu Siripurapu & Noah Berman, *supra* note 66.

many of the same talking points and criticisms that conventional industries have had against digital assets that run on decentralized systems.

For example, some policymakers at the SEC—including now likely outgoing Commissioner Caroline Crenshaw⁶⁸ and former Commissioner John Reed Stark⁶⁹—have taken their disdain even further than current SEC Chair Gary Gensler, wary of decentralized digital assets as a whole and asserting that the industries they support consist of nothing except outright fraud and abuse. These attitudes mirror those of the some of the most prominent leaders in institutional wealth, including Warren Buffet,⁷⁰ Charlie Munger,⁷¹ and Peter Schiff.⁷²

Infamously, JPMorgan CEO Jamie Dimon has also for many years ardently denounced permissionless blockchain networks,⁷³ alleging that even bitcoin has as much value and utility as a “pet rock,”⁷⁴ even as he has turned the banking giant that he governs into the preeminent world leader of institutional adoption of *centralized* blockchain technology applications.⁷⁵ Despite President-elect Donald Trump’s claims in July 2024 that the CEO had recently changed his stance on digital assets,⁷⁶ Dimon’s stance against decentralized

⁶⁸ See Ronaldo Marquez, *Anti-Crypto SEC Commissioner Caroline Crenshaw to Depart, No Plans for Reappointment*, BITCOINIST: CRYPTO NEWS (Dec. 20, 2024), <https://bitcoinist.com/anti-crypto-sec-caroline-crenshaw-to-depart/>.

⁶⁹ See Anjali Belgaumkar, *XRP Lawsuit: John Reed Stark Says Judge Torres Was ‘Mistaken,’ Slams Ripple Decision*, COINPEDIA: NEWS (Dec. 19, 2024), <https://coinpedia.org/news/xrp-lawsuit-john-reed-stark-says-judge-torres-was-mistaken-slams-ripple-decision/>; Kyle Baird, *Former SEC Official Says Agency Should Halt All Crypto Probes to ‘Respect’ Trump Win*, DLNEWS: ARTS.: MARKETS (Dec. 9, 2024), <https://www.dlnews.com/articles/markets/ex-sec-official-john-reed-stark-says-to-halt-crypto-probes/>.

⁷⁰ See Aliss Higham, *What Warren Buffet Has Said About Crypto*, NEWSWEEK: NEWS (Nov. 18, 2024), <https://www.newsweek.com/what-warren-buffett-has-said-about-crypto-nubank-rat-poison-1987410>; David Nadel, *Warren Buffett Predicts ‘Bad Ending’ for Bitcoin: Is It a Doomed Investment?*, NASDAQ: NEWS & INSIGHTS: CRYPTOCURRENCIES (Apr. 23, 2024), <https://www.nasdaq.com/articles/warren-buffett-predicts-bad-ending-bitcoin-it-doomed-investment>.

⁷¹ See Jeannine Mancini, *Charlie Munger Was Disgusted By Cryptocurrency, Deeming It Immoral And Worthless: ‘It’s Like Somebody Else Is Trading Turds And You Decide, I Can’t Be Left Out’*, YAHOO FIN.: NEWS (Dec. 13, 2023), <https://finance.yahoo.com/news/charlie-munger-disgusted-cryptocurrency-deeming-183817664.html>.

⁷² See Khyathi Dalal, *Peter Schiff: Bitcoin is a Threat to the U.S. and ‘Public Enemy Number One’*, BENZINGA: MARKETS: CRYPTOCURRENCY (Dec. 9, 2024), <https://www.benzinga.com/markets/cryptocurrency/24/12/42392610/peter-schiff-bitcoin-is-a-threat-to-the-us-and-public-enemy-number-one>.

⁷³ See Theron Mohamed, *Jamie Dimon Calls Bitcoin a ‘Fraud’ and a ‘Ponzi Scheme,’ and Says the Crypto is Hopeless as a Currency*, YAHOO FIN.: NEWS: BUS. INSIDER (Apr. 18, 2024), <https://finance.yahoo.com/news/jamie-dimon-calls-bitcoin-fraud-131026597.html>.

⁷⁴ See Benzinga Neuro, *Jamie Dimon Says JPMorgan Is Likely ‘One Of The Bigger Users’ Of Blockchain Technology, But Calls Cryptocurrencies A ‘Pet Rock’*, BENZINGA: MARKETS: CRYPTOCURRENCY (Sep. 18, 2024), <https://www.benzinga.com/markets/cryptocurrency/24/09/40913998/jamie-dimon-says-jpmorgan-is-likely-one-of-the-bigger-users-of-blockchain-technology-but-c>.

⁷⁵ See Mat Di Salvo, *Bitcoin Hater Jamie Dimon Brags that JPMorgan is a ‘Real’ Blockchain User*, DECRYPT: NEWS: TECH. (Sep. 18, 2024), <https://decrypt.co/250191/bitcoin-hater-jamie-dimon-jpmorgan-real-blockchain-user>.

⁷⁶ Although Donald Trump said in July that Jamie Dimon had “all of a sudden changed his tune” on bitcoin and decentralized digital assets, no available information from the public domain supports the now-President-elect’s claims. See Mike Dalton, *Trump Says JPMorgan’s Jamie Dimon No Longer Bitcoin Critic, Considers Him For Treasury*, CRYPTOSLATE: NEWS: U.S.: POLITICS (Jul. 18, 2024), <https://cryptoslate.com/trump-says-jpmorgans-jamie-dimon-no-longer-bitcoin-critic-considers-him-for-treasury/> (Jul. 18, 2024); Billy Bambrough, *‘He’s Changed His Tune’: Trump Reveals JPMorgan CEO’s ‘Sudden’ Bitcoin And Crypto Flip Amid Huge Price Surge*, FORBES: DIGITAL ASSETS (Jul. 17, 2024), <https://www.forbes.com/sites/digital-assets/2024/07/17/hes-changed-his-tune-trump-reveals-jpmorgan-crypto-sudden-bitcoin-and-crypto-flip-amid-huge-price-surge/>. In light of this and given the President-elect’s reputation for statements that do not accord with reality, Trump’s claim—made in the same month as Trump’s mid-election pro-crypto announcement—might have been mere rhetoric meant to affect the perceptions of voters who care about digital asset issues in an attempt to win their votes. See, e.g., Peter Baker, *News Analysis: Trump’s Wild Claims, Conspiracies, and Falsehoods Redefine Presidential Bounds*, N.Y. TIMES (Nov. 3, 2024), <https://www.nytimes.com/2024/11/03/us/politics/trump-falsehoods-claims-election.html> (reviewing Trump’s long history of false and misleading claims to assess how the man was able to convince a considerable measure of the U.S. electorate to believe in the fabricated alternatives painted by Trump and to reject the otherwise undisputed realities of certain events); Glenn Kessler, et al., *Trump’s False or Misleading Claims Total 30,573 Over 4 Years*, WASH. POST (Jan. 24, 2021), <https://www.washingtonpost.com/politics/2021/01/24/trumps-false-or-misleading-claims-total-30573-over-four-years/> (evaluating claims made by Donald Trump during his first term in office to determine that they consisted of at least 30,573 claims that were false or misleading at the time the claims were made); see generally Kyle Mattes, et al., *Deception Detection in Politics: Can Voters Tell When Politicians are Lying?*, PUBMED CENTRAL (Aug. 20, 2021), <https://pmc.ncbi.nlm.nih.gov/articles/PMC8378529/>

digital assets has remained negative.⁷⁷ Even after the approvals of certain crypto-backed ETFs, JPMorgan's commercial banking arm has had minimal involvement with these assets under Dimon's leadership.⁷⁸

Importantly, this resistance from the traditional banking sector continues to hold significant sway over public perception and market behavior in connection with digital assets just as well as it does in any other asset class. Even though President-elect Donald Trump also previously consistently publicly professed distrust of bitcoin and other decentralized digital assets, having called the Bitcoin network "a scam against the dollar" shortly after leaving office in 2021,⁷⁹ he reportedly had a change of heart in July 2024 after accepting \$25 million in digital asset-based donations to his presidential campaign.⁸⁰ After his change of tune on the campaign trail in his third bid for President, Trump vowed to make the U.S. the "crypto capital of the planet and the Bitcoin superpower of the world" if elected President.⁸¹

The likely role of money and influence in shaping policy.

Individuals and leading super PACs tied to the digital asset industry ultimately raised more than \$245 million to finance Trump and other 'pro-crypto' candidates in U.S. general election in November,⁸² including \$131 million for congressional races.⁸³ Although not clear the exact extent of their influence on incoming President-elect's positions related to digital assets before those positions changed: In July and August of 2024, significant monetary and publicly vocal support for Trump's campaign started to emerge from tech billionaires like billionaires Elon Musk and Peter Thiel.⁸⁴ According to Thiel (the bitcoin advocate and former PayPal CEO who has significantly grown his network in the nation's capital in recent

(reasoning that lying to voters is effective and that therefore politicians have an incentive to lie to convince the electorate to vote for them, because the people that make up the electorate have a difficulty detecting lies where cues distinguishing between truths and lies are consistently quite weak).

⁷⁷ In an interview at the Georgetown Psaros Center for Financial Markets and Policy in September 2024, Jamie Dimon reconfirmed his consistent opposition to bitcoin and other decentralized digital assets, reiterating that he is "not a fan of cryptocurrency," just two months after Donald Trump touted to his electorate that Dimon had come to take the very opposite position. See Mat Di Salvo, *supra* note 75. No credible evidence suggests Dimon's perspective has changed since he asserted that decentralized digital assets are fraudulent schemes whose creators can always modify transaction records and manipulate markets. Benzinga Neuro, *supra* note 74; Mike Dalton, *JPM's Jamie Dimon Believes Satoshi Nakamoto Will Either Increase or "Erase" Bitcoin Supply* CRYPTOSLATE: NEWS: BITCOIN: CULTURE (Jan. 17, 2024), <https://cryptoslate.com/jpms-jamie-dimon-believes-satoshi-nakamoto-will-either-increase-or-erase-bitcoin-supply/>.

⁷⁸ See Aniket Verma, *Wall Street's Banking Giants Load Up On Bitcoin, Ethereum ETFs: Here's What JPMorgan, Goldman Sachs And Morgan Stanley Hold*, BENZINGA (Nov. 18, 2024), <https://www.benzinga.com/24/11/42029764/global-banks-jp-morgan-goldman-sachs-add-to-bitcoin-ethere-etf-positions-in-q3-morgan-stanley-increases-microstrategy-stake-to-16b> (reporting that, in Q3 of 2024, JPMorgan had offloaded all of the few shares it had obtained in bitcoin ETFs in Q2 following their approval taken, and that the banking giant had in Q4 taken on only less than \$100,000 of exposure on bitcoin- and Ether-based ETFs).

⁷⁹ Suzanne O'Halloran, *Trump: Bitcoin's a Scam, U.S. Dollar Should Dominate*, FOX BUS.: BITCOIN (Jun. 7, 2021), <https://www.foxbusiness.com/markets/trump-bitcoin-a-scam-us-dollar-should-reign>.

⁸⁰ Chris Cameron, *Trump, Appealing to Bitcoin Fans, Vows U.S. Will Be 'Crypto Capital of the Planet'*, N.Y. TIMES (Jul. 27, 2024, rev. Nov. 6, 2024), <https://www.nytimes.com/2024/07/27/us/politics/trump-bitcoin-crypto.html>.

⁸¹ From that point forward, Trump started to consistently criticize President Joe Biden and his successor as the Democratic Presidential nominee, Vice President Kamala Harris, for their positions on digital assets, framing these technologies as a partisan matter that it previously had not been. See *Id.*

⁸² See MacKenzie Sigalos, *Crypto's \$245 Million Campaign Finance Operation Filled Airwaves with Ads Not About Crypto*, CNBC: TECH (Nov. 5, 2024), <https://www.cnbc.com/2024/11/05/cryptos-245-million-campaign-finance-operation-funded-non-crypto-ads.html>.

⁸³ See Fredreka Schouten, *The Crypto Industry Plowed Tens of Millions into the Election; Now, It Is Looking For a Return on That Investment*, CNN: POLITICS (Nov. 17, 2024), <https://www.cnn.com/2024/11/17/politics/crypto-industry-donald-trump-reelection/index.html>.

⁸⁴ See Kate Conger & Ryan Mac, *Elon Musk Enters Uncharted Territory with Trump Endorsement*, N.Y. TIMES (Jul. 16, 2024), <https://www.nytimes.com/2024/07/16/technology/elon-musk-trump.html>; Hyunjoo Jin & Alexandra Ulmer, *Elon Musk Endorses Trump in Presidential Race, Calls Him 'Tough'*, REUTERS: WORLD: U.S. (Jul. 13, 2024), <https://www.reuters.com/world/us/elon-musk-says-he-fully-endorses-tough-trump-posts-photo-2024-07-13/>.

years),⁸⁵ Musk throwing his weight behind Trump in July was encouragement to Thiel and other U.S. tech industry leaders to lend their support to Trump’s campaign.⁸⁶

Then, in October, just about a month before the election, Donald Trump promoted a token sale in connection with new digital asset company recently founded and controlled by Trump and his family.⁸⁷ Although very few details of the purpose of the project or tokens (or their legitimacy) had been released before the election, Trump was urging his political supporters to buy the tokens, and digital asset markets surged, along with support for Trump.⁸⁸

Additionally: In working with Musk post-election, Trump announced he would create the ‘Department of Government Efficiency,’ or “DOGE,”⁸⁹ which is perhaps not coincidentally also the ticker symbol for the meme cryptocurrency Dogecoin (though a federal ‘department’ cannot be established without congressional approval). Correspondingly, the value of Dogecoin tokens skyrocketed, and its total market capitalization rose up to \$69 billion—that is, by over 165%—in the one month following the announcement.⁹⁰ Interestingly, Musk is one of Dogecoin’s top investors and was selected to co-lead the yet-to-be-formed government office, and he is likely set to reap the rewards of this increase to the value of this digital asset that offers no underlying utility to its holders, all while a two-year-long court battle comes to an end over securities fraud claims previously made against Musk for allegedly manipulating the price.⁹¹

Between the tech billionaires that helped get Trump elected and Trump, his family, and those in his inner circle: It might be safe to assume these interests are likely to shape political influence under the incoming administration, but how that shaping will ultimately play out is difficult to predict. The concentration of this influence does, however, pose potentially significant challenges to digital assets and emerging

⁸⁵ See Alice Tecotzky, *A Guide to Tech Billionaire Peter Thiel’s Washington Web*, BUSINESS INSIDER: POLITICS (Dec. 10, 2024), <https://www.businessinsider.com/peter-thiel-washington-vance-musk-trump-ramaswamy-altman-palantir-2024-11>.

⁸⁶ See Miranda Nazzaro, *Trump Promotes Family’s Cryptocurrency Tokens*, HILL: POLICY: TECH. (Oct. 16, 2024), <https://thehill.com/policy/technology/4936114-trump-launches-cryptocurrency-tokens/>.

⁸⁷ See Jasmine Laws, *Trump Tells Followers to Buy Family-Backed Cryptocurrency*, NEWSWEEK: NEWS (Oct. 16, 2024), <https://www.newsweek.com/trump-tells-followers-buy-family-backed-cryptocurrency-1969753>.

⁸⁸ See Erin Snodgrass, *Peter Thiel Says Elon Musks’s Embrace of Donald Trump Helped Other Silicon Valley Leaders Feel Safe Supporting Him*, BUS. INSIDER (Nov. 15, 2024), <https://www.businessinsider.nl/peter-thiel-says-elon-musks-embrace-of-donald-trump-helped-other-silicon-valley-leaders-feel-safe-supporting-him/>.

⁸⁹ See Zubair Amin, *Trump DOGE Announcement Fuels 20% Rise in Dogecoin*, NEWSX: WORLD (Nov. 13, 2024), https://www.newsx.com/world/trump-doge-announcement-fuels-20-rise-in-dogecoin/#google_vignette; Jason Shubnell, *How Elon Musk, Vivek Ramaswamy, and Dogecoin Co-Creator Billy Markus Reacted to Trump’s ‘DOGE’ Announcement*, THEBLOCK: NEWS (Nov. 13, 2024), https://www.newsx.com/world/trump-doge-announcement-fuels-20-rise-in-dogecoin/#google_vignette.

⁹⁰ See Stefania Stimolo, *Dogecoin: The Market Cap of the Memecoin Surpasses that of the Luxury Car Manufacturer Porsche*, CRYPTONOMIST: CRYPTO (Dec. 2, 2024), <https://en.cryptonist.ch/2024/12/02/dogecoin-the-market-cap-of-the-memecoin-surpasses-that-of-the-luxury-car-manufacturer-porsche/>.

⁹¹ Investors in DOGE (the token) sued Elon Musk in 2022 over allegations that the billionaire operated or exerted influence over Dogecoin as a Ponzi scheme, asserting securities fraud claims under New York state law, civil RICO claims of wire fraud and gambling, and common law claims of fraud, negligence, false advertising, deceptive practices, failure to warn (products liability), and unjust enrichment. *Keith Johnson v. Elon Musk*, et al., Case 1:22-cv-05037-AKH, Doc. 1 (Class-Action Complaint), at ¶¶ 146-210 (S.D.N.Y., Jun. 16, 2022), available at <https://www.courtlistener.com/docket/63388702/1/johnson-v-musk/>; see Jonathan Stempel, *Elon Musk Sued for \$258 Billion over Alleged Dogecoin Pyramid Scheme*, REUTERS: LEGAL: TRANSACTIONAL (Jun. 17, 2022), <https://www.reuters.com/legal/transactional/elon-musk-sued-258-billion-over-alleged-dogecoin-pyramid-scheme-2022-06-16/>. The investors had their case against Musk dismissed by Judge Alvin Hellerstein for the U.S. District Court for the Southern District of New York in August of 2024 where, as he concluded, reasonable investors cannot base a securities fraud claim on Musk’s tweets (on <https://x.com>) declaring that the token could be the future currency of earth, and the claimants immediately appealed; however, the investors withdrew their appeal about a week following the November election. *Colby Gorog, et al. v. Elon Musk & Tesla, Inc.*, Case 1:22-cv-05037-AKH, Doc. 146 (Stipulation Resolving Plaintiffs’ Notice of Appeal & the Parties’ Post-Judgment Motions) (Nov. 14, 2024), available at <https://www.courtlistener.com/docket/63388702/146/johnson-v-musk/>.

industries more broadly. Hostility toward certain aspects of these technologies from career lawmakers and conventional financial and wealth industries (including those that also in large part helped get Trump elected) is unlikely to cease or subdue. The likelihood of continued animosity stems from these folks' interests in maintaining conventional market structures and influence, which can often starkly conflict with the foundational principles of blockchain systems—openness, democratized access, and the reduction of centralized control.⁹²

Many large financial intermediaries and asset management firms are starting to get involved in this asset class (such as through new ETFs backed by BTC, ETH, or other popular digital asset tokens).⁹³ Nevertheless, the interests of these entrenched players (perhaps as well as others, including certain proponents and participants in emerging industries and Trump and Musk themselves) could potentially be only in capitalizing on this asset class's growth while at the same time shaping their policy advocacy, infrastructure, and operational models in a way that does not threaten existing power structures in society.⁹⁴ If this is the posture that most power players are taking, then a divergence of policy approaches (on Capitol Hill and in the White House) from the values of permissionlessness and trust-minimized governance inherent in permissionless blockchain systems is likely imminent.

The need to overcome perceptions of fraud and manipulation.

The prevalence of fraud and price manipulation in certain limited corners of digital asset markets⁹⁵ are something many industry opponents point to as a reason to shut them down and ban crypto,⁹⁶ but,

⁹² This likely is at least partially attributable to risks that wealthy and powerful persons and institutions likely perceive with the potential of any truly egalitarian economic structures that could threaten their ability to exert influence and maintain their own economic superiority. See Tonantzin Carmona, *Debunking the Narratives About Cryptocurrency and Financial Inclusion*, BROOKINGS INST.: RESEARCH: ARTS. (Oct. 26, 2022), <https://www.brookings.edu/articles/debunking-the-narratives-about-cryptocurrency-and-financial-inclusion/>; Mouza Almarzooqi, *Decentralized and Destabilizing? The Perceived Threat of Cryptocurrencies*, TRENDS RESEARCH & ADVISORY: INSIGHTS (Jun. 22, 2022), <https://trendsresearch.org/insight/decentralized-and-destabilizing-the-perceived-threat-of-cryptocurrencies/>; Emily Flitter, *Banks Tried to Kill Crypto and Failed. Now They're Embracing It (Slowly)*, N.Y. TIMES (Nov. 1, 2021), <https://www.nytimes.com/2021/11/01/business/banks-crypto-bitcoin.html>; Marc Chandler, *Bitcoin: A Solution to Excess Wealth?*, BARRON'S: ARTICLES: COMMENTARY (Jun. 25, 2021), <https://www.barrons.com/articles/bitcoin-wont-solve-the-problems-of-a-society-that-is-overproducing-capital-51624635651>; Armin Krishnan, *Blockchain Empowers Social Resistance and Terrorism Through Decentralized Autonomous Organizations*, 13 J. STRATEGIC SEC. 1, at 41-58 (2020), available at <https://www.jstor.org/stable/26907412?seq=1>.

⁹³ See generally *supra* note 64 (summarizing the regulatory approvals of BTC- and ETH-backed ETFs in the United States).

⁹⁴ See Emily Flitter, *supra* note 92; Casia Thompson, *A Crypto Coup? How Billionaires Are Threatening Democracy & Rewriting the Rulebook of American Politics*, AMERICANS FOR FIN. REFORM: BLOG POSTS (Oct. 31, 2024), <https://ourfinancialsecurity.org/2024/10/blog-a-crypto-coup-how-billionaires-are-threatening-democracy-rewriting-the-rulebook-of-american-politics/>; Mahnoor Khan, *5 Billionaires Who Publicly Hated Crypto Then Changed Their Minds*, FORTUNE: CRYPTOCURRENCY (Feb. 25, 2022), <https://fortune.com/crypto/2022/02/25/billionaires-who-publicly-hated-crypto-then-changed-their-minds/>; Hamilton Nolan, *The Ticking Bomb of Crypto Fascism*, INTHESETIMES: ARTS.: OPINION (Jan. 4, 2022), <https://inthesetimes.com/article/the-ticking-bomb-of-crypto-fascism>.

⁹⁵ See Chainalysis Team, *2024 Crypto Crime Mid-Year Update Part 2: China-Based CSAM and Cybercrime Networks on the Rise, Pig Butchering Scams Remain Lucrative*, CHAINALYSIS: BLOG: CRIME (Aug. 29, 2024), <https://www.chainalysis.com/blog/2024-crypto-crime-mid-year-update-part-2/>; Chainalysis Team, *2024 Crypto Crime Trends: Illicit Activity Down as Scamming and Stolen Funds Fall, but Ransomware and Darknet Markets See Growth*, CHAINALYSIS: BLOG: CRIME (Jan. 18, 2024), <https://www.chainalysis.com/blog/2024-crypto-crime-report-introduction/>; Alma Angotti, *The Rapid Rise of Digital Asset Fraud*, GUIDEHOUSE: INSIGHTS: FIN. CRIME (Mar. 2, 2023), <https://guidehouse.com/insights/financial-crimes/2023/rapid-rise-of-digital-asset-fraud/>; FIN. STABILITY OVERSIGHT COUNCIL, Report on Digital Asset Financial Stability Risks and Regulation, Treasury Report No. 261 (2022), <https://home.treasury.gov/system/files/261/FSOC-Digital-Assets-Report-2022.pdf> [hereinafter FSOC 2022 Digital Assets Report].

⁹⁶ See Nikolaus Hoffman, *U.S. Sen. Elizabeth Warren Introduces Bill to 'Crack Down' on Bitcoin and Crypto*, BITCOIN MAG.: NEWS: MARKETS (Dec. 11, 2023), <https://bitcoinmagazine.com/markets/us-senator-elizabeth-warren-introduces-bill-to-crack-down-on-bitcoin-and-crypto/>; Jeff Cox, *Jamie Dimon Lashes Out Against Crypto: 'If I Was the Government, I'd Close it Down'*, CNBC: CRYPTO WORLD (Dec. 6, 2023), <https://www.cnbc.com/2023/12/06/jamie-dimon-lashes-out-on-crypto-if-i-was-the-government-id-close-it-down.html>; Mehron Rokhy, *Elizabeth Warren is Pushing De Facto Ban on Crypto in the U.S., Says Blockchain Association's Jake Chervinsky*, DAILYHODL: BLOCKCHAIN: REGULATORS (Apr. 30, 2023), <https://dailyhodl.com/2023/04/30/elizabeth-warren-is-pushing-de-facto-ban-on-crypto-in-the-us-says-blockchain-associations-jake-chervinsky/>; Hilary Allen, *The Case for Banning Crypto*, FOREIGN AFFAIRS: U.S. (Apr. 5, 2023), <https://www.foreignaffairs.com/united-states/crypto-currency-finance-blockchain-case-banning-rewards>; Kayleena Makortoff, *Global Banking*

importantly, these aspects ought not to be conflated with the variable or intrinsic attributes of an entire asset class. The technologies underlying most digital asset projects remain fundamentally distinct from the potential for misconduct. Fraud and manipulation, although serious and in need of resolute intervention, have long plagued conventional financial markets just as well as markets in this emerging asset class. These kinds of issues generally tend to reflect the shortcomings of applicable regulatory and enforcement frameworks rather than the failings of any particular technological medium. The greater attention these issues receive in connection with digital assets can likely be traced to a fractured and ambiguous regulatory perimeter that grants disproportionate advantages to entrenched incumbents, leaving true innovators scrambling for workable compliance pathways.

By addressing looming regulatory uncertainty, policymakers and industry leaders alike might be able to foster a more balanced environment in which legitimate projects can thrive while also imposing swift and meaningful consequences on bad actors. Strong enforcement, supported by transparent and stable rules, will remain essential to curbing the most nefarious activities in digital asset markets—such as Ponzi schemes, pump-and-dump operations, and other manipulative practices—just as it is in traditional financial markets. These reforms could be especially vital as the emerging technologies continue evolving and certain projects gain momentum.

Although some networks will likely still struggle with structural vulnerabilities or founders exerting undue influence, most reputable projects are advancing beyond these pitfalls, forging resilient networks and diverse ecosystems that will shape the next era of financial and technological innovation. Industries involved in digital assets, blockchain, and other emerging technologies will need to push back against public perception as long as so many mainstream opponents work against their very interests. Even as this area is starting to see some institutional support, the prevalence of misconduct could swell if it does not receive proper care from industry and regulators, which could otherwise continue to inhibit broader and more material adoption of digital assets and supported technologies.

4. Emerging Industry Standards

As digital assets and related technologies proliferate, their proponents are generally starting to recognize the need to coalesce around some set of widely accepted standards in connection with their development and use. Many stakeholders and industry groups have thus gravitated toward principles-based standards meant to be flexible enough to spur innovation and further adoption while at the same time seeking to address concerns about things like governance, consumer protections, sustainability, and energy consumption.

Regulators Call for Toughest Rules for Cryptocurrencies, GUARDIAN: NEWS: BANKING: TECH. (Jun. 10, 2021), <https://www.theguardian.com/technology/2021/jun/10/global-banking-regulators-cryptocurrencies-bitcoin>.

Efforts to standardize principles.

The International Organization for Standardization (ISO)⁹⁷ and Internet Engineering Task Force (IETF)⁹⁸ are among the most prominent bodies working to formalize guidelines around blockchain security, interoperability, and data formats, helping ensure consistency and reducing systemic vulnerabilities. In parallel, certain industry groups like the Proof of Stake Alliance (POSA)⁹⁹ have promoted the adoption of principles to govern, for example, fair market practices for permissionless networks in connection with MEV (often called ‘*miner extractable value*’ or ‘*maximum extractable value*’ by certain communities or in certain contexts),¹⁰⁰ as well as staking practices and models involved in proof-of-stake (“**PoS**”) networks.¹⁰¹ As they mature, these standardization efforts will likely not only enhance technical robustness but also aid compliance, boost market confidence, and encourage broader adoption.

Disclosure frameworks and related policy work.

Another key industry-led initiative in this same vein is the draft token disclosure framework (called the “**Information Guidelines**”),¹⁰² which were proposed in collaboration by POSA, the Digital Chamber (TDC),¹⁰³ the Global Digital Asset and Cryptocurrency Association (Global DCA),¹⁰⁴ and the Global Blockchain Business Council (GBBC).¹⁰⁵ The Information Guidelines aim to bring transparency to token offerings by encouraging projects and exchanges to specify critical information about a token’s design, underlying technology, economic structure, and governance mechanisms.¹⁰⁶ By working toward a set of detailed guidelines that can help guide developers and industry players through the various informational elements of which token users and investors ought to be aware, this framework could help to substantially curb related risks and promote an informed regulatory perimeter at large.¹⁰⁷ The measures contemplated

⁹⁷ INT’L ORG. FOR STANDARDIZATION, ISO Technical Committee 307: Blockchain and Distributed Ledger Technologies, <https://www.iso.org/committee/6266604.html> (last visited Jan. 3, 2024).

⁹⁸ See, e.g., Jingfu Yan, et al., Network Working Group Internet Draft: A Blockchain Trusted Protocol for Intelligent Communication Network, INTERNET ENGIN. TASK FORCE: DATATRACKER: DOCS. (rev. Oct. 7, 2024), <https://datatracker.ietf.org/doc/draft-tu-nmrg-blockchain-trusted-protocol/>; Mike McBride, et al., Network Working Group Internet Draft: BGP Blockchain, INTERNET ENGIN. TASK FORCE: DATATRACKER: DOCS. (rev. Sep. 22, 2024), <https://datatracker.ietf.org/doc/draft-mcbride-rtwg-bgp-blockchain/>.

⁹⁹ The Proof of Stake Alliance, <https://www.proofofstakealliance.org/>.

¹⁰⁰ POSA MEV Definitions and Fair Market Principles, PROOF OF STAKE ALLIANCE (Jun. 2024), <https://static1.squarespace.com/static/62f147feb8108a08e666aea5/t/667a11a9f073b12621fa11f2/1719275946573/POSA+MEV+Fair+Market+Principles.pdf>; see POSA, *Press Release: POSA Introduces MEV Fair Market Principles, Calls for Public Review*, PROOF OF STAKE ALLIANCE (Jun. 24, 2024), <https://www.proofofstakealliance.org/posa-mev-principles>.

¹⁰¹ POSA Staking Industry Principles, PROOF OF STAKE ALLIANCE (Nov. 2023), <https://static1.squarespace.com/static/62f147feb8108a08e666aea5/t/654cef598b8f5853acc57071/1699540825149/POSA+Staking+Industry+Principles.pdf>; see POSA, *Press Release: Proof of Stake Alliance Releases Industry Principles for Staking*, PROOF OF STAKE ALLIANCE (Nov. 9, 2023), <https://www.proofofstakealliance.org/staking-industry-principles>.

¹⁰² Proposed Information Guidelines for Certain Tokens Made Available in the United States, GLOBAL DCA (Oct. 20, 2024), <https://global-dca.org/wp-content/uploads/2024/10/Information-Guidelines-for-Tokens-Available-in-US-FINAL-Oct-20-2024-1.pdf> [hereinafter The Information Guidelines]; see Global DCA, *Press Release: Proposed Information Guidelines for Certain Tokens Made Available in the United States*, GLOBAL DCA: PROPOSALS, <https://global-dca.org/proposed-u-s-disclosure-guidelines/> (last visited Jan. 3, 2024).

¹⁰³ The Digital Chamber, <https://digitalchamber.org/>.

¹⁰⁴ The Global Digital Asset and Cryptocurrency Association, <https://global-dca.org/>.

¹⁰⁵ The Global Blockchain Business Council, <https://www.gbcb.io/>.

¹⁰⁶ See The Information Guidelines, *supra* note 102. The Information Guidelines are silent as to any potential imposition of affirmative disclosure obligations on any particular person or group, likely because circumstances in the development and release of any given project or token can look substantially different from one to the next. See *id.*

¹⁰⁷ See *id.*

under this framework could aid compliance, boost market confidence, and help level the playing field for newer projects that lack the resources to navigate unclear regulatory environments on their own.

Where other emerging technologies like AI and IoT intersect with blockchain, similar disclosure standardization efforts could mitigate concerns around algorithmic opacity, data privacy, and bias.¹⁰⁸ For example, AI-driven smart contracts or automated market makers might benefit from frameworks that incentivize developers to explain how machine-learning models operate or how on-chain data is used.¹⁰⁹ By proactively disclosing these technical and governance details, projects can foster trust while allowing policymakers and the public to better assess the potential for market manipulation, unethical data practices, and other risks.

Energy consumption and sustainability.

Environmental impact has also remained at the center of debates on the future of blockchain technology, though it has steadily improved in recent years. Ethereum’s transition from its former Proof-of-Work (“PoW”) consensus mechanism to PoS in 2022 reportedly reduced the network’s energy consumption by over 99%,¹¹⁰ offering a potential template for other networks seeking to operate more sustainably. Pressing challenges and questions have continued to linger, however, especially in connection with decentralization and validator distribution in PoS systems; the concentration of validator power among a few large participants could undermine the very resilience these networks promise.

In addition to rethinking consensus models, blockchain and distributed ledger technologies increasingly track carbon credits and verify environmental claims,¹¹¹ promoting greater transparency in sustainability initiatives. Nevertheless, authenticity and oversight remain significant challenges, often requiring robust governance structures and reliable data sources to ensure that green claims reflect genuine reductions in environmental impact. Under Donald Trump’s incoming executive administration, federal policymakers are likely to adopt a less active stance on environmental standards,¹¹² thereby placing greater responsibility on industry-led initiatives to propel sustainable practices. Firms and consortia must therefore cooperate to

¹⁰⁸ See Moses Alabi, *Ethical Implications of AI: Bias, Fairness, and Transparency*, LADOKE AKINTOLA UNIVERSITY OF TECH. (Nov. 2024), available at https://www.researchgate.net/publication/385782076_Ethical_Implications_of_AI_Bias_Fairness_and_Transparency; Christopher Yoo, *Beyond Algorithmic Disclosure for AI*, 25 COLUM. SCI. & TECH. L. REV. 314 (Jun. 2024), available at https://scholarship.law.upenn.edu/faculty_articles/426/; HAKIA, *Regulatory Challenges for Emerging Technologies: AI, IoT, and Blockchain*, HAKIA: TECH. IND.: LEGAL & REG. NEWS (May 4, 2023), <https://hakia.com/regulatory-challenges-for-emerging-technologies-ai-iot-and-blockchain/>; Elisa Bertino, et al., *Data Transparency with Blockchain and AI Ethics*, J. DATA & INFO. QUALITY 11(4), at 1-8 (Aug. 2019), available at https://www.researchgate.net/publication/335312681_Data_Transparency_with_Blockchain_and_AI_Ethics.

¹⁰⁹ See HAKIA, *supra* note 108.

¹¹⁰ See Ethereum Foundation, *Ethereum’s Energy Expenditure*, Ethereum.org (rev. Oct. 24, 2023), <https://ethereum.org/en/energy-consumption/>.

¹¹¹ See Infy, *Green Ledgers: How Blockchain Technology is Paving the Way for Environmental Sustainability*, INFUY.COM: BLOG (May 2, 2024), <https://www.infuy.com/blog/green-ledgers-how-blockchain-technology-is-paving-the-way-for-environmental-sustainability/>; World Economic Forum, *White Paper: Blockchain for Scaling Climate Action*, WORLD ECON. FORUM: DOCS. (Apr. 2023), https://www3.weforum.org/docs/WEF_Blockchain_for_Scaling_Climate_Action_2023.pdf; Annete Nazareth, *The Role for Distributed Ledgers in Voluntary Carbon Markets*, REG. REV.: OPINION: BUS. (May 12, 2021), <https://www.theregreview.org/2021/05/12/nazareth-role-for-distributed-ledgers-voluntary-carbon-markets/>.

¹¹² See Henry Engler, *ESG in the Post-Election U.S.: Regulation Shifts to States & International Regulators as Federal Policies Withers*, THOMSON REUTERS: REG. INTELLIGENCE: GOVERNANCE (Nov. 26, 2024), <https://www.thomsonreuters.com/en-us/posts/esg/post-election-regulation/>; John Cruden, et al., *Key Environmental Law and Policy Issues to Watch in President Trump’s Second Administration*, BEVERIDGE & DIAMOND: PUBS.: NEWS ALERTS (Nov. 6, 2024), <https://www.bdlaw.com/publications/key-environmental-law-and-policy-issues-to-watch-in-president-trumps-second-administration/>; Anita Mosner, et al., *A Look at the Upcoming Trump Administration’s Policy Priorities*: HOLLAND & KNIGHT: INSIGHTS: PUBS. (Nov. 6, 2024), <https://www.hklaw.com/en/insights/publications/2024/11/a-look-at-the-upcoming-trump-administrations-policy-priorities>.

reinforce blockchain’s energy efficiency and environmental benefits—for instance, by integrating carbon offset verifications on-chain or using decentralized ledgers to monitor resource usage across AI-driven data centers.

Go on to read [Part 2](#) of DLx Law’s [2025 Industry Guide for Lawyers & Dev Teams](#). [Part 2](#) surveys key recent legal and regulatory events at the federal and state levels, revealing how fragmented oversight and aggressive enforcement have intensified regulatory burdens without clear guidance on the path to compliance for digital assets and emerging technologies and industries questions or want to chat? Feel free to [get in touch](#).

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