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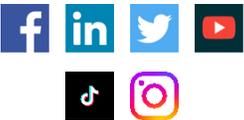


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An Industry Outlook Through the TOKEN2049 London Conference

Recently, our team attended TOKEN2049 London, a flagship crypto event that brings together entrepreneurs, investors, developers, and media in the crypto industry. The two-day conference featured engaging discussion from crypto-native and institutional speakers about the road ahead. Regardless of market conditions, crypto entrepreneurs and developers are here for the long term, and we expect innovation to continue. The avant-garde technology advancements on display at TOKEN2049 reinforced our conviction in digital assets' bright future.

Key Takeaways

- Recent events in the crypto industry highlight the advantages of decentralized finance (DeFi), particularly its transparency and ability to minimize counterparty risk. Institutional adoption is growing, with JP Morgan conducting its first blockchain trade using DeFi infrastructure and Goldman Sachs noting more institutional demand.
- Web3 gaming is expected to be one of the first areas to benefit from adopting distributed ledger technology and cryptocurrency. We anticipate a wave of high-quality games in the next 12 to 18 months.
- Infrastructure improvements, particularly scaling solutions, can accelerate crypto and Web3 adoption. Currently, ZK-rollups are the most prominent layer 2 technology, and we expect solutions with more powerful virtual machines to emerge as the use cases for blockchain expand.

Crypto's Value Proposition Remains Robust

Michael Lau, global head of sales at digital assets exchange Bullish, kickstarted the conference with a keynote about how new markets are formed.¹ Lau highlighted that frequently when a technological invention happens, its demand is not well-articulated. For breakthrough technologies, development comes from a supply push, with engineers and entrepreneurs creating novel products that they believe could succeed. Novel ideas gain traction among a few visionaries first, followed by the growth of research and development around the main innovation trajectory. As that happens, secondary branches serving particular use cases or nascent markets stem from the main path. These secondary branches act as accelerators for the main course of innovation.

When this concept is applied to crypto, blockchain networks are the main road of innovation, supported by countless teams and hundreds of thousands of hours of research and development. The branches that have emerged from a supply push include DeFi, DAOs, NFTs, gaming, and tokenization. During



market slowdowns, the applications with product-market fit endure. Ultimately, these select applications transition from an invention without a defined target customer to an innovation with durable demand.

Crypto-native venture capital investors share this vision, including Diana Biggs, Niraj Pant, and Richard Muirhead, who discussed the outlook, trends, and narratives of the crypto industry.² They agreed that current market conditions are testing the resilience of various companies, projects, and protocols but that the technological development in the space continues to move forward and present many attractive investment opportunities. The projects that they believe have the most potential are those that leverage community building and tokenization to create network effects. They emphasized infrastructure, Web3 gaming, and DeFi as areas with tremendous growth potential.

The panel also covered how recent events in the crypto industry reinforce the need for trustless systems without counterparty risk. The silver lining is that this is precisely what DeFi enables.

DeFi's Value Proposition Is Reinforced, and Institutions Are Coming

DeFi has evolved to be one of the most promising use cases of distributed ledger networks. In a keynote about the past, present, and future of DeFi, Stani Kulechov, CEO at Aave, described DeFi's rise as a transition from financial experimentations to an advanced global liquidity market accessible to anyone.³ Its exponential growth can be attributed to compounding effects between protocols and improvements in capital efficiency.

DeFi changes where the trust lies, moving it from third parties to open-source code where decisions are agreed upon by a large community instead of a small group or even a single person. DeFi's transparency and counterparty risk minimization are compelling qualities that make DeFi resilient to risk mismanagement-induced crises.

Increasing institutional adoption could serve as another catalyst for DeFi. Recently, JP Morgan conducted their first blockchain trade using DeFi infrastructure, swapping tokenized deposits.⁴ They **forked** a component of the Aave protocol and adapted it to comply with AML and KYC regulations. JP Morgan's trade was an important milestone for institutional adoption because it demonstrated how entities can use DeFi to leverage the speed, cost efficiencies, and automated smart contract execution of blockchain networks.

In a panel about the institutional appetite for crypto and digital assets, Max Boonen, founder of crypto market maker B2C2, discussed how the one-step back, two-steps forward pattern of crypto's institutional adoption is actually quite typical of nascent technologies.⁵ Institutional adoption started with retail brokers, followed by hedge funds, and now large asset managers such as BlackRock are coming into the space.

Andrei Kazantsev, global head of crypto trading at Goldman Sachs, mentioned that the firm is starting to venture into crypto due to growing demand from clients. He mentioned that every institution he speaks to has a digital assets strategy and a dedicated crypto representative on board. Institutional adoption is gearing up, but several upcoming developments targeted at individuals could bring the masses to crypto.

Web3 Gaming Is Set to Grow, Regardless of Market Conditions

Web3 gaming has significant potential as a catalyst to bring Web3 into the mainstream. Gamers are already accustomed to transacting with digital currencies, making them a natural fit to adopt distributed ledger technology and crypto. In discussing how Web3 may revolutionize the gaming industry, Matthew Howells-Barby, CMO at Decentral Games, pointed out that only 3% of gamers have ever owned an NFT, indicating the Web3 gaming industry is still at a very early stage.⁶ The global gaming market, a multi-billion dollar industry bigger than the music and film industries combined, creates a large total addressable market for Web3 gaming. Yat Siu, co-founder at game software company Animoca Brands, commented that gaming is resilient to market events. Historically, gaming activity increases during



recessions, suggesting that Web3 gaming could thrive regardless of the crypto market and macroeconomic conditions.

A-tier games and a seamless onboarding experience are the main requirements for Web3 gaming to transition from a niche to a mainstream industry, according to Sebastien Borget, co-founder at The Sandbox. The ownership component at the core of Web3 gaming is already an advantage over traditional gaming because it enables users to monetize their gaming time. Creating a successful game takes time, but given the significant investment in Web3 gaming that started in 2021, we could see a wave of high-quality games debut in the next 12 to 18 months.

Infrastructure Developments Can Enable Billions to Onboard Crypto

An accelerator for the adoption of Web3 and crypto could be infrastructure improvements, particularly scaling solutions that enable negligible transaction fees and high computational throughput. Early blockchains like Bitcoin and Ethereum are secure and decentralized but they lack the scalability to onboard billions of people in their current states. In an effort to make these highly secure networks viable for a truly global audience, layer 2 solutions have been a central point of focus for the industry as they enable scaling without compromising on security and decentralization.

A presentation that explored blockchain scaling solutions detailed the cutting-edge layer 2 developments on Ethereum.⁷ Jack O'Holleran, CEO at blockchain network SKALE, discussed how the scaling conundrum has changed over time. A few years ago, researchers and engineers pondered the best way to scale Ethereum. Today, it is clearer that there is no one-size-fits-all solution, but rather that the optimal solution depends on the application in question. Currently, ZK-rollups are at the forefront of layer 2 technology, as we discussed in [Scaling Blockchains](#). These scaling solutions exist in two main forms: EVM-compatible and those with a different native environment. EVM-compatible rollups, as the name suggest, use execution environments similar to the Ethereum virtual machine (EVM), which is where all smart contracts live in the Ethereum network. Today, the EVM is the leader execution environment in crypto, hosting around 90% of total volume locked (TVL).⁸ But the EVM may not remain the leader as it has limitations.

Uri Kolodny, CEO at cryptography software company StarkWare, stressed that the EVM is bottlenecked in the amount of computation it can perform, which is why the company developed "Starknet," a ZK-rollup on Ethereum, with an alternative software stack. He believes that, in five years, top applications will use the best tools for their specific purpose, not necessarily the EVM. Alex Gluchowski, CEO at Matter Labs, which is scaling Ethereum with zero-knowledge proofs, agreed with Kolodny that developers will seek maximum efficiency in the future, adding that we may see applications that are unimaginable today use an alternative environment. As blockchain use cases expand, solutions with a more powerful virtual machine will gain popularity.

However, Gluchowski believes that enabling the porting of popular dapps into ZK-rollup networks may be even more significant than pure performance, which is why Matter Labs developed zkSync, the first EVM-equivalent ZK-rollup. With EVM-equivalent rollups, anyone can compile existing Ethereum code in into the rollup virtual machine. Enabling porting Ethereum's standards to a scalable rollup network caters to a large majority of developers; therefore, EVM-equivalent solutions like zkSync may soon dominate. They may also withstand the test of time, as standards are sticky. For example, JavaScript, a language developed in 1995, still powers the back end of most of today's websites. The EVM's native language is Solidity, a language similar to JavaScript. Like JavaScript, Solidity could prevail as the standard choice for application development.

Conclusion: Technology and Application Development Are Relentless

TOKEN2049 was an exciting opportunity for developers, entrepreneurs, and investors to learn about all the significant advancements in DeFi, Web3, and infrastructure, among others. Despite short-term



setbacks, developments are happening at a breakneck pace. In our view, the recent setbacks in the crypto industry demonstrate the value proposition of DeFi's transparency, auditability, and trust assurances.

Through TOKEN2049, we could also feel the sense of community in crypto, which may be the industry's greatest asset. The sector combines technology and innovation with culture, bringing together a diverse group of individuals passionate about decentralization, open-source systems, and the potential for cryptocurrency to disrupt traditional financial systems. Everyone understands that an individual project's success can snowball and create strong network effects. In that sense, web3 is a unique environment where inter-company collaboration is just as common as competition. Paired with the exceptional minds and talent in the space, we do not doubt that the future of the crypto industry is bright, and emerging technologies will start to become embedded in our day-to-day lives.

Footnotes

1. TOKEN2049, (2022, November 13). *Michael Lau - Bullish @ TOKEN2049 London 2022* [Video]. YouTube.
2. TOKEN2049, (2022, November 13). *Crypto Investors Roundtable: Latest Outlook, Trends, and Narratives - TOKEN2049 London 2022* [Video]. YouTube.
3. TOKEN2049, (2022, November 13). *DeFi: Past, Present, and Future - TOKEN2049 London 2022* [Video]. YouTube.
4. Lobban, T. [@TyLobban]. (2022, November 2). *WORLD! J.P. Morgan has executed its 1st "LIVE" trade on public blockchain using DeFi, Tokenized Deposits & Verifiable Credentials* [Thumbnail with link attached] [Tweet]. Twitter.
5. TOKEN2049, (2022, November 13). *The Institutional Appetite for Crypto and Digital Assets - TOKEN2049 London 2022* [Video]. YouTube.
6. TOKEN2049, (2022, November 13). *How Web3 Will Revolutionize the Gaming Industry - TOKEN2049 London 2022* [Video]. YouTube.
7. TOKEN2049, (2022, November 13). *Exploring Blockchain Scaling Solutions - TOKEN2049 London 2022* [Video]. YouTube.
8. DefiLlama. (n.d.). Languages. Accessed on January 12, 2023.

Glossary

Fork: Creating a copy of a piece of software. For example, if someone is working on an open-source project and wants to make their own version separate from the original, they might "fork" the project.

Smart contract: Smart contracts are programs that automate the execution of an agreement so that all participants can be immediately sure of the outcome without any intermediary's involvement or time delay. Smart contracts remove trust concerns in transactions without needing third parties. Data feeds, conditions, and rules embedded in the contract trigger a pre-defined outcome executing the agreed-upon terms.

Layer 2: A protocol or technology that sits on top of a blockchain and provides additional functionality or scaling capabilities. These layer 2 protocols are designed to work with a specific blockchain and can help to increase the transaction speed, reduce fees, or add additional features to the underlying blockchain.

ZK-rollups: A layer 2 that uses "zero-knowledge or ZK-proofs" to increase throughput and reduce fees. They combine individual transactions into a single, larger transaction, which is then processed on the underlying blockchain. This single transaction includes a ZK-proof that the individual transactions included in the rollup are valid without revealing any sensitive information about the transactions themselves. This allows the rollup transaction to be verified by the blockchain without needing to process each individual transaction separately.

Ethereum Virtual Machine (EVM): The shared state in which all Ethereum accounts and smart contracts live. The EVM is a code execution environment that stores the network's data and keeps the state of the network up to date.

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