

2025 Nervos Foundation
Year-end Report



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The Elevator Pitch

Defining the Nervos Network and CKB in a way that is both accurate and succinct has proven deceptively difficult. Succinct definitions are inherently reductive, while truly accurate ones tend to be too broad to be meaningfully definitive. Moreover, Nervos often carries different meanings for different audiences, both within and beyond the ecosystem. That considered, we often default to the following elevator pitch:

Nervos is a suite of scalable, interoperable protocols and an open blockchain trustware platform for decentralized applications.

Trustware is a novel decentralized computing paradigm that goes beyond distributed ledgers and smart contracts, enabling the general expression and enforcement of trust to meet the demands of tomorrow's real-world applications.

In contrast to smart contract platforms, Nervos uses the *Common Knowledge Base*, a simpler state machine with uniform state-transition semantics. This design choice enables superior scalability and interoperability while aligning incentives more effectively across all network participants.

If constrained to a single-sentence definition, we'd define CKB as a UTXO-based blockchain built on RISC-V and secured by Proof-of-Work, designed to maximize cryptographic flexibility and programmability.

More than any formal definition, Nervos is best understood through the values shared by its community. It is a project born of and continually shaped by those willing to operate at the edges of prevailing norms: builders, researchers, and misfits bound by an unwavering commitment to the cypherpunk ethos.

At its core, Nervos reflects a shared belief in a future grounded in decentralization, openness, and permissionless systems—where trust is minimized, power is diffuse, and individuals retain sovereignty over the digital infrastructure they depend on.

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What is the Nervos Network?

From [Wikipedia](#):

*Nervos Network is a blockchain platform consisting of multiple layers designed for different functions. The foundational layer is known as the “**Common Knowledge Base**,” and its native cryptocurrency is called CKB.*

While almost all smart contract platforms have been designed to be all-in-one application platforms, the Nervos Network represents a markedly different approach.

Inspired by Bitcoin’s layered scaling approach, the network has been designed to separate concerns, enabling the customization of blockchain-based systems in ways no other platform can compare.

In 2024, this power was used to create RGB++, a novel scaling solution that provides Bitcoin with Turing-complete programmability without compromise, and the Fiber Network, an advanced, multi-asset payment channel network interoperable with Bitcoin’s Lightning Network.

It has also been used quickly implement support for Bitcoin’s [Taproot](#) & [quantum-resistant cryptography](#).

The opportunities are limitless, and we know that developers have only started to explore the possibilities unlocked by the unique blockchain underlying the Nervos Network: [CKB](#).

What is CKB?

CKB is a Layer 1 blockchain secured by Proof-of-Work and crafted for enduring robustness and versatility.

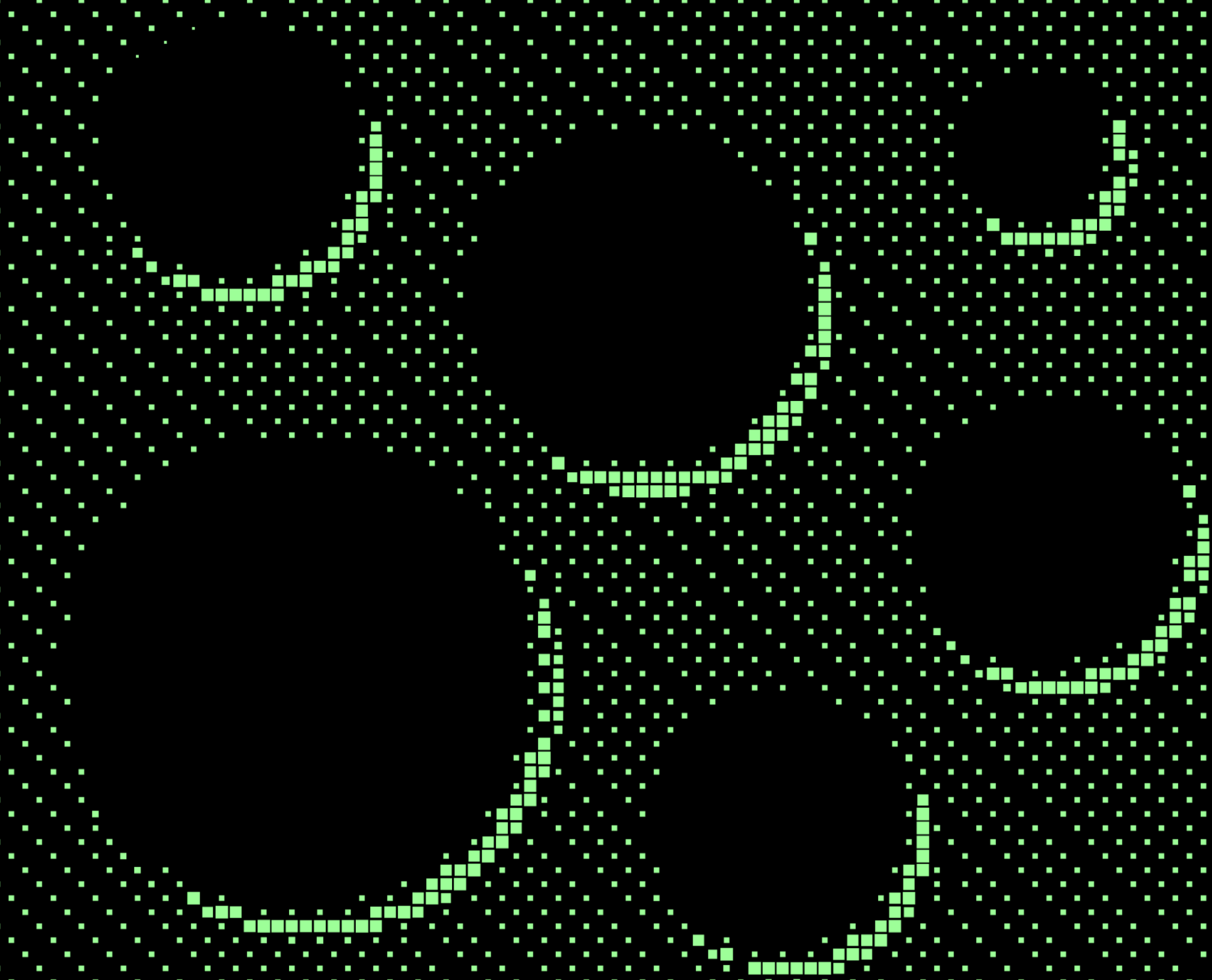
It is built from the ground up, charting its own course in alignment with the foundational principles that have enabled Bitcoin's resilience, while striving to take a step further.

To do so, CKB employs a [RISC-V](#) virtual machine, capable of supporting any cryptography, as well as any programming language. Like Bitcoin, CKB is a [UTXO](#)-based blockchain, enabling parallel transaction verification, [intents](#), and [native account abstraction](#).

Like Bitcoin, CKB prioritizes the blockchain’s sustainability and the ability for end users to run nodes. One \$CKB entitles a holder to one byte of on-chain storage, [State rent](#) is collected as users store data on-chain, and an in-protocol DAO is implemented for eventual on-chain [protocol treasury](#) management.

[CKB](#) stands on the shoulders of giants, pursuing a goal of security, decentralization, and verifiability comparable to Bitcoin, while surpassing Ethereum, Solana, and other smart contract platforms in terms of flexibility.

Ecosystem



Ecosystem Projects



UTXO Global

Infrastructure & Product Development

In 2025, UTXO Global focused on expanding the CKB utility through open-source infrastructure and enhanced user accessibility. Key milestones include:

- **UTXO Global Wallet:** Launched an open-source Chrome extension wallet featuring native xUDT protocol support and seamless dApp connectivity.
- **Enterprise Security:** Deployed a MultiSig functionality for secure, multi-party CKB asset management, currently utilized by 50 active users.
- **VeriX:** Developed an open-source on-chain verification and token/DOB-gating system tailored for decentralized community governance.
- **Telegram Integration:** Expanded the ecosystem’s reach via **CKCat** and **CKCat Fusion**, demonstrating efficient user onboarding through Telegram Mini-App flows.

Usage Metrics

- Weekly Active Users: ~600 across product suite
- Telegram Ecosystem Total Users: 5,700
- MultiSig Adoption: 50 Active Users

Builder & Education Initiatives

To bolster the long-term sustainability of the Nervos ecosystem, UTXO Global executed two blockchain training cohorts for junior developers. The initiative drew 100+ registrants, with 40 graduates completing the curriculum. To drive immediate ecosystem value, all capstone projects were open-sourced on GitHub, providing the community with new codebases and functional templates for future CKB development.



Ecosystem Projects



Polycrypt

Strategic Overview

Since 2023, PolyCrypt has collaborated with the Nervos Foundation, Cryptape, and Magickbase to integrate the Perun framework into the Nervos ecosystem.

Perun is a blockchain-agnostic state channel solution that enhances scalability and interoperability by migrating incremental transactions off-chain, significantly reducing costs while increasing throughput. It currently supports nine blockchains, including Ethereum, Polkadot, Cardano, Cosmos, Dfinity, Stellar, Fabric, and CKB.

Key Achievements

Building on the 2024 development of Lightning-compatible protocols and virtual channels, PolyCrypt successfully executed three primary workstreams in 2025:

- **CKB–ETH Cross-Chain Swaps:** Completed the implementation of channel-based swaps between CKB and Ethereum. This included a successful testnet deployment and a public [end-to-end demo](#), supported by a [reference implementation](#) on GitHub.
- **Virtual Channels on CKB:** Finalized the development of virtual channels, a critical step toward hub-based connectivity that enables users to transact without direct channel links.
- **Neuron Wallet Integration:** Advanced the integration of Perun channels directly into the Neuron wallet, moving closer to a native, user-friendly channel experience.

Strategic Roadmap

PolyCrypt’s upcoming objectives focus on mainnet readiness and liquidity optimization:

- Transition CKB–ETH Swaps from testnet to mainnet production.
- Finalize the Neuron Wallet native integration.
- Introduce yield-generating initiatives to incentivize liquidity providers and enhance the utility of cross-chain swaps.



Ecosystem Projects



Bitcoin Light (Formerly CKBull)

Strategic Rebranding & Evolution

In 2025, the CKBull wallet underwent its most significant transformation to date, re-architecting into Bitcoin Light. This evolution shifts the platform from a CKB-centric tool to a more sophisticated multichain wallet.

By integrating native Bitcoin capabilities alongside full CKB support, Bitcoin Light serves as a strategic bridge, introducing Bitcoin users to the UTXO-based advantages of CKB while expanding utility for existing Nervos stakeholders.

Key Achievements

- **Complete Platform Redesign:** Executed a comprehensive rebranding and technical overhaul to support multichain architecture.
- **Mobile Deployment:** Finalized production-ready Android and iOS applications. Both versions were submitted to global app stores at year-end, with a public launch scheduled for early 2026.
- **Ecosystem Alignment:** Established a dual-growth strategy that positions CKB as a complementary layer to Bitcoin, leveraging their shared philosophical and architectural similarities.

Product Roadmap & Transition

Following launch, both CKBull and Bitcoin Light will coexist for a transition period. However, Bitcoin Light is positioned as the long-term successor, and users will be encouraged to migrate to it over time. Support for CKBull will slowly be phased out over time, once migration paths and timelines are clearly defined.

The 2026 roadmap includes:

- Support for UTXO-based assets and swaps
- Lightning Network integration
- Support for multiple Bitcoin-native protocols
- Continued expansion of CKB-specific features

Most importantly, the expansion to Bitcoin does not reduce commitment to Nervos. On the contrary, Bitcoin Light strives to remain the primary entry point to the Nervos ecosystem. Bitcoin and Nervos are treated as closely related ecosystems, and the wallet’s evolution reflects this long-term, complementary vision.



Ecosystem Projects



Strategic Overview

Launched on April 29, 2025, the [Spark Program](#) is a high-velocity micro-grant channel (\$1,000–\$2,000) designed to bypass the complexities of large-scale DAO funding. The program targets "small but brilliant" developer-centric ideas, fostering resilience and rapid innovation within the CKB ecosystem.

The Spark Program

The Spark Program operates under a semi-centralized model (Committee Review + Community Display). It operates under the following principles:

- **Full Disclosure:** All relevant documentation, including decision rationales, completion reports, and multi-sig transaction hashes are publicly accessible via the [Spark Dashboard](#).
- **Knowledge Accumulation:** All completed projects are forked into a [unified GitHub organization](#) to create a "Common Knowledge Base" for future developers.

Performance Data

Over its first eight months, the program maintained a disciplined approval process and efficient fund distribution:

- **Applications:** 19 formal proposals received.
- **Approvals:** 7 projects sanctioned (36.8% approval rate) across DeFi, GameFi, hardware terminals, and tools.
- **Project Pipeline:** 3 successfully completed; 4 currently ongoing.
- **Financials:** Disbursed 1,760,155 CKB and 1,360 USDI, maintaining a healthy reserve of 126,637 CKB and 8,640 USD for 2026.

Portfolio Highlights & Operational Lessons

- **Quantum Purse (Benchmark Case):** The developer [@Tung_Pham](#) delivered a quantum-resistant wallet with Nervos DAO integration, setting a high standard for technical delivery.
- **Project Progress Tracking Platform:** Developer [@BuildUnion](#) and his team, Build Union, targeted a pain point: the opacity of ecosystem project progress. By aggregating GitHub and Discord data, they delivered a visual progress-tracking dashboard.
- **SoMo - Pixel Territory:** While the project successfully delivered its technical MVP—integrating the Spore protocol with Pixel Territory—it failed to meet its commitments regarding seed user testing and community operations. Consequently, the committee exercised its oversight mandate, disbursing only the technical portion of the grant and applying a 10% penalty to the total funding. This action underscores Spark’s commitment to ensuring that technical delivery is matched by practical, community-facing validation.



Ecosystem Projects



Spark

Several high-potential projects funded in late 2025 continue to advance toward delivery, showcasing the diverse utility of the CKB architecture:

- **Blackbox:** A hardware-focused initiative exploring PoS terminal integration for Fiber/CKB Layer 2 payments. This project is critical for driving real-world, offline adoption by testing Human-Computer Interaction (HCI) on physical devices.
- **AirFi:** A CKB-based decentralized WiFi-sharing platform verifying the application potential of payment channel technology.
- **WarSpore – Saga:** A pioneering full-chain GameFi project. It deeply integrates the Spore protocol to explore gamified applications of native CKB features.
- **HashThis:** A specialized tool designed for on-chain data attestation, providing immutable proof of existence and data integrity for a specific point in time.

Looking Ahead

Refining the program based on 2025 feedback, Spark will implement several key upgrades this year:

- **Payment Flexibility:** Migrating from "mixed payments," or 50% CKB and 50% USDI, to a choice of 100% CKB or 100% USDI.
- **Platform Migration:** Moving application discussions from Discord to the Nervos Talk forum to streamline ecosystem coordination.
- **Technical Focus:** Prioritizing proposals leveraging the CCC (CKBer’s Codebase), Web5 (DID/Data Sovereignty), Spore DOBs, and the Fiber Network.
- **Post-Spark Support:** Transitioning from a pure funding source to an “incubator” model, providing technical guidance and resource matchmaking to help micro-projects scale into core ecosystem pillars.

Spark thanks all the developers and the community for their continued attention and support.



Ecosystem Projects



App5 Labs

APP5LABS

In 2025, App5 focused on upgrading the Nervos CKB core infrastructure, specifically targeting the CKB Explorer, Neuron Wallet, and JoyID. These initiatives resolved critical technical bottlenecks, providing a high-performance foundation for the ecosystem’s large-scale growth.

CKB Explorer

With the CKB Explorer, App5 executed a dual-track strategy: stabilizing the legacy system while simultaneously building a next-generation, high-performance architecture.

Legacy Explorer Optimization:

- **Performance:** Achieved a **10x speed increase** for RGB++ BTC address transaction lists and eliminated 100% of core page timeouts via index and cache upgrades.
- **Efficiency:** Reduced daily statistical task durations from 20 minutes to 2 minutes and improved block synchronization efficiency by 35%, ensuring real-time data accuracy.
- **System Reliability & Maintenance:** Resolved over 10 critical foundational issues, including the restoration of missing iCKB transactions and NFT image rendering. Long-term stability was further bolstered by upgrading dependency libraries, optimizing K8S configurations, and resolving memory management bottlenecks to eliminate task backlogs.

New Explorer Reconstruction:

- **Modernized Tech Stack:** Rebuilt the data foundation using a high-performance **Rust-based indexer** (secondary development of CKB Rich-Indexer). The system implements real-time stream processing using **PostgreSQL CDC and RisingWave**, with a unified Java API layer.
- **Intuitive User Experience:** Executed a comprehensive UI/UX redesign that prioritizes high-frequency data and consolidates duplicate modules. This streamlined layout eliminates cognitive clutter, providing a more focused and intuitive interface for both developers and casual users.
- **Standardized Data Modeling:** Migrated to a normalized database structure categorized into basic, state, and statistical data. This standardized approach resolves legacy redundancy issues and significantly reduces the complexity of cross-table queries.
- **Decoupled API Architecture:** Restructured the system into distinct internal backend APIs and external data service APIs. This separation mitigates compatibility risks and enables the Explorer to serve as a reliable data provider for third-party tools, including specialized RGB++ explorers and ad hoc analysis platforms.
- **Scalable Stream Processing:** Introduced advanced stream processing to distribute the computational load of complex state statistics. This architectural upgrade ensures the platform remains responsive even as the volume of on-chain state data grows.

Ecosystem Projects



App5 Labs

CKB Explorer (continued)

Future Plans:

- Promote the official launch of the new explorer and API migration, continuously gather community feedback, and optimize page details and the functional experience.
- Enhance the browser's data service capabilities, expand the range of API interface types, and support the diverse data needs of the ecosystem.
- Continuously monitor product operation status, establish a regular performance optimization mechanism, and address new challenges arising from ecological scale expansion.

All code has been open-sourced, with repositories available at:

Node: <https://github.com/appfi5/ckb/tree/explorer-indexer>
Frontend: <https://github.com/appfi5/ckb-explorer-frontend-next>
Task Processing: <https://github.com/appfi5/ckb-explorer-worker>
API: <https://github.com/appfi5/ckb-explorer-web>

Neuron Wallet

In 2025, Neuron Wallet focused on strengthening its core infrastructure while pioneering new Layer 2 capabilities to enhance the Nervos transaction experience.

- **Infrastructure & Security:** Completed critical adaptations for the latest CKB node versions and refreshed the wallet certificate to ensure continued security, compliance, and network compatibility.
- **Perun State Channels:** Successfully verified the feasibility of the offline Perun payment channels. This included delivering a new user interface and seamless integration with the Channel-Service-Runner.
- **Technical Milestone:** Conducted successful end-to-end testing of CKB asset exchanges between users using offline Perun payment channels, establishing the technical framework for instant, low-cost transaction scenarios within the wallet.



Ecosystem Projects

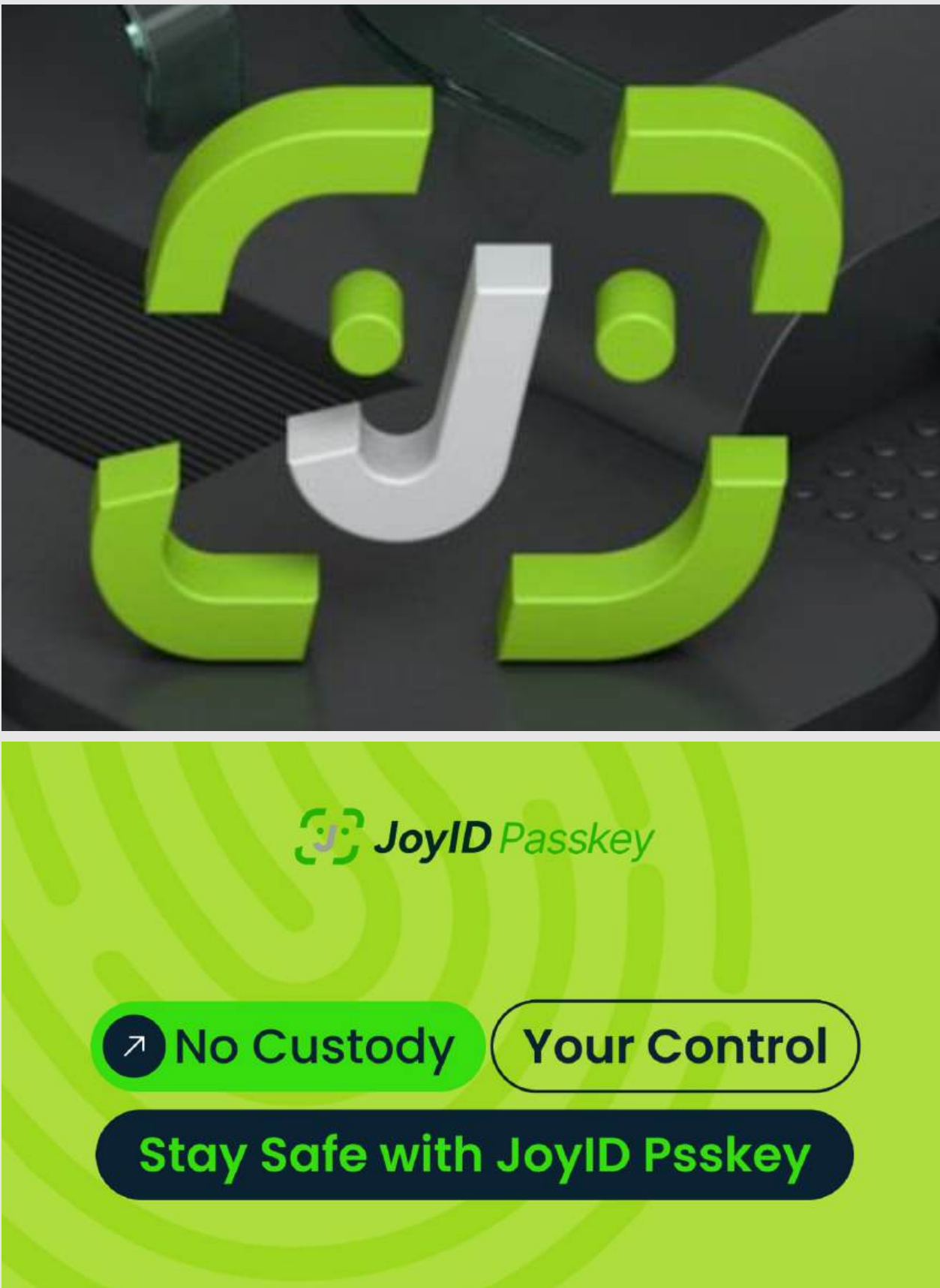


App5 Labs

JoyID

2025 was a year of exponential growth for JoyID, with its user base reaching 887,302. The wallet evolved into a premier multichain gateway, bridging the Bitcoin and CKB ecosystems through sophisticated interoperability solutions.

- **Bitcoin Lightning Network:** Completely integrated the Lightning Network, supporting fast, low-cost Bitcoin payments with offline payment support and LNURL protocol compatibility.
- **Fiber Network:** Initiated the CKB’s Fiber Network integration on testnet, laying the groundwork for bringing low-cost multi-asset payments to the CKB ecosystem.
- **RGB++:** Upgraded to SDK version 0.7.4, enabling sophisticated cross-chain asset management. Users can now perform Leap, Merge, and Burn operations between Bitcoin and CKB seamlessly.
- **Stablecoin Converter:** Introduced a native USDI stablecoin converter and enhanced xUDT token handling to improve liquidity and portfolio tracking.
- **Universal Accessibility:** Transitioned to a web-first approach, optimizing the user experience across all devices while integrating 1Password and BIP21 URI standards for enhanced security and usability.



BesCARD Annual Report

In 2025, BesCARD successfully transitioned from a specialized "Digital Souvenir Card" issuance platform into a dynamic, gamified NFT ecosystem. It undertook a comprehensive iteration spanning both product and brand, moving beyond static “sales” to dynamic experiences such as “airdrops,” “gacha draws,” and “puzzle-based gameplay,” and from a single purchase action to composite mechanics integrating chance, collection, and strategy.

Accordingly, BesCARD’s slogan evolved from “Digital Souvenir Card within Stablecoins & NFTs” to “The Best NFT for Games, Inspired by Your Passion for Fun.”



Ecosystem Projects



Magickbase

In 2025, Magickbase focused on three strategic pillars: the development and improvement of CKB and Fiber explorers, the enhancement of Neuron Wallet functionalities, and the decommissioning of the Force Bridge.

Blockchain Explorer Infrastructure

- **CKB Explorer:** Improved the stability, cross-platform compatibility, and the accuracy of on-chain data presentation, fixing displays that could be confusing or misleading for developers.
- **Fiber Network Support:** During the early stages of the Fiber Network, Magickbase launched a dedicated tracking service integrated into the CKB Explorer. As the network matured, these capabilities were migrated into a standalone Fiber Explorer to better serve the specialized needs of Layer 2 developers.
- **Magickbase Platform:** Successfully launched on both Mainnet and Testnet. Unlike general-purpose explorers, this platform acts as an asset-centric data foundation, specifically optimized for multi-chain tracking and the asset abstraction required by the RGB++ protocol.

Neuron Wallet: Advanced Functionality

Development for Neuron in 2025 targeted high-level operational requirements for institutional and professional users:

- **Automation & Key Management:** Introduced access to sub-private keys, allowing users to integrate Neuron into automated workflows and sophisticated asset management systems.
- **Governance & MultiSig:** Added support for managing Nervos DAO assets via MultiSig addresses, unlocking advanced operational capabilities for more sophisticated users.

Force Bridge Sunset & Security Incident Resolution

In 2025, Magickbase initiated the planned sunseting of Force Bridge and Godwoken. This process was impacted by a security exploit affecting Force Bridge assets, resulting in a loss of approximately **\$3.76 million**.

Following a rigorous forensic investigation, it was determined that the breach was an internal exploit involving compromised private keys rather than a smart contract vulnerability. Magickbase has since shifted to a two-track resolution strategy:

- 1. **Legal Action:** Formal legal proceedings have been initiated against the identified individual in coordination with law enforcement.
- 2. **User Compensation:** A comprehensive reimbursement program was launched to restore affected assets.

Compensation Progress (as of Jan 10, 2026): Magickbase has processed over 70 claims and disbursed significant assets to impacted users. The remaining unclaimed funds are held in reserve for eligible participants who have not yet applied for compensation. The table below shows the complete breakdown of the compensation status.

Asset Type	Amount Compensated	Amount Remaining in Reserve
Ethereum (ETH)	~137 ETH	~392 ETH
Stablecoins (USD Value)	~\$191,835	~\$1,004,160
Bitcoin (BTC)	0.16 BTC	4.92 BTC
BNB Chain (BNB)	46 BNB	786 BNB

Ecosystem Projects



CKB DevRel

The CKB DevRel team, established in April 2024, is dedicated to optimizing the developer experience and providing high-touch support for projects building on CKB. In 2025, its efforts prioritized the expansion of the TypeScript toolchain and the integration of Bitcoin-native protocols.

The CCC Toolchain

The **CKBer’s Codebase (CCC)** has evolved into the definitive one-stop solution for TypeScript-based application development on CKB. The DevRel team added several tools to CCC in 2025, significantly boosting its utility across different use cases. The new tools include:

- **DOB Cookbook:** Launched a comprehensive [resource hub](#) featuring implementation patterns and rendering best practices for Digital Object (DOB) issuers.
- **Expanded Protocol Support:** Spearheaded the formal implementation of key CKB protocols, providing the community with production-ready codebases and standardized scripts:
 - **MultiSig Script:** Enables collective management of shared assets.
 - **DID-CKB:** Grants users unique, on-chain identities.
 - **UDT Standard:** The standard for issuing fungible tokens on CKB.
- **Nostr Integration:** Facilitated broader user reach by enabling asset control via Nostr wallets. We also introduced a Nostr-based pastebin within the [CCC Playground](#) for frictionless code sharing across the network.

Bitcoin & RGB++ Interoperability

A key strategic focus in 2025 was the support of the RGB++ protocol, which enables bridgeless asset bindings between CKB and Bitcoin.

- **SDK Redesign:** Overhauled the [RGB++ SDK](#) to feature a streamlined transaction composition workflow, making it more straightforward, robust, and secure.
- **Developer Resources:** Launched [RGBPP.com](#) as a centralized information hub and took over core RGB++ infrastructure management to ensure service reliability for all ecosystem participants.

Technical Support & Ecosystem Consulting

Beyond internal tool development, the DevRel team continually provided technical consulting to numerous ecosystem teams:

- **The Spark Program:** Acted as a technical auditor for the grant program, reviewing open-source code to validate project progress and technical integrity.
- **Omiga (NFT Marketplace):** Assisted in the integration of RGB++ trading support, successfully merging traditional NFT trading workflows with bridgeless BTC-to-CKB asset scenarios.
- **UTXO Global:** Partnered with the team to design technical solutions for their MultiSig wallet and Telegram-native asset-gating bot, ensuring full compatibility with the broader CKB toolset.

Ecosystem Projects



Nervos Community Catalyst 2025 Summary

[Launched](#) in May 2025, the Nervos Community Catalyst is designed to empower CKB supporters and enthusiasts to help spearhead the growth of our community and ecosystem.

Three main initiatives were established:

- **Community Keeps Building:** A structured track designed to help developers, content creators, and advocates contribute in a more focused way while preparing them for greater responsibilities within the ecosystem.
- **CKB Off-Chain:** An initiative to build regional CKB chapters that host meetups and events, strengthening offline community ties and expanding local awareness.
- **CKBoost:** A quest-based platform that rewards the community for small but meaningful actions, from social engagement to on-chain activity, helping drive attention, fill gaps in participation, and support time-sensitive campaigns.

Over the course of the year, these are our main achievements:

Community Keeps Building

Community participants on this programme included:

- **23** developers
- **5** content creators
- **2** advocates

Key developments included:

- Establishment of the **CKBuilders**, a supportive group for programme participants for peer-learning and mentorship. Builders progressed from learning and tooling familiarity into active application development.
- Establishment of multiple CKB projects from these developers:
 - **Blackbox:** A hardware + software point-of-sale terminal that integrates fiat workflows with emerging crypto payment rails like Fiber Network. Built to bridge today’s payment conventions with on-chain settlement as it becomes viable.
 - **Verdict:** An on-chain prediction market MVP with YES/NO asset mechanics and end-of-round settlement.
 - **Eterna Registry:** A land registry and digital marketplace concept anchored on CKB for transparent ownership and verification.
 - **PocketNode:** A lightweight mobile-node concept aimed at lowering the barrier for individuals to participate in the network.



Ecosystem Projects



Nervos Community Catalyst 2025 Summary

Community Keeps Building (continued)

- Crowdfunding, lottery games, credential portals, lending, and blog sites are all applications in development.
- Establishment of the [CKB Bounty Board](#): A jobs board with in-demand activities and roles that anyone can complete. This has yielded:
 - Three articles about iCKB, CKB, quantum resistance, and CKBuilders.
 - Referrals of community members and developers.
 - Memes and promotional graphics.
- A small but consistent group of content creators produced educational and narrative-driven content across social and video formats.



CKB Off-Chain

In August, CKB India hosted the first CKB Off-Chain meetup, bringing together established community members and people new to CKB. In November, the CKB community returned to the US for the first region-level meetup in years at Mining Disrupt. With a booth, panel participation, a happy hour event, and on-the-ground networking and outreach, the CKB community delivered a strong showing, generating new contacts and discussions around CKB’s quantum-resistant capabilities.



CKBoost

CKBoost progressed from early development into a functional testnet platform, with the following features:

- Functional testnet platform with end-to-end campaign and quest creation.
- Contributor profiles, dashboards, and submission handling.
- Reward distribution in CKB and UDTs, including community tipping.
- Leaderboard tracking for participation and campaign performance.
- Identity verification integrations (Telegram).



Milestone 3 is now focused on documentation, testing, and UI refinement.

Ecosystem Projects



CKB Eco Fund

Strategic Focus

The year 2025 represented a pivotal strategic realignment for the CKB Eco Fund. Following a period of expansion in 2024, the Fund entered a phase of resource consolidation and a sharper operational focus. Regional initiatives in Korea and Taiwan, along with other local community programs, were phased out, enabling the organization to focus resources on developer empowerment and internal ecosystem strengthening.

This shift was a calculated recalibration designed to prioritize core growth. Key milestones included the launch of the **Spark Program** to catalyze grassroots developer initiatives and the advancement of **DAO 1.1** to refine community governance. Central to this strategy was the crystallization of the **Web5 vision**—a guiding philosophy that merges Web2 usability with Web3 decentralization to address practical, real-world applications.

In tandem, the **DevRel team** worked to lower technical barriers for builders. By developing the **CCC TypeScript toolchain**, integrating key protocols (MultiSig, DID-CKB, Nostr, RGB++), and providing direct technical consulting, DevRel ensured developers could efficiently utilize the full scope of the CKB architecture.

DAO 1.1: Governance Evolution

Background

The Community Fund DAO v1.0 had served the ecosystem since its inception, but operational friction and information asymmetry hindered its effectiveness. The CKB Eco Fund incubated the proposal team and proposed the [Community Fund DAO v1.1 Web5 Optimization Proposal](#) as a pragmatic path forward to build tools and services that empower the current governance structure. The proposal improved the deliberation period, introduced milestone-based voting, and established a Steward Team role, along with a governance platform to facilitate information flow and coordinate actions. This initiative aims to advance DAO reform and optimization.

The Vote and Governance Attack

The initial vote appeared to fail. However, community members raised concerns about voting irregularities. The investigation revealed a critical vulnerability in the Metaforo voting platform: users could bind a NervosDAO address, vote, unbind it, then rebind the same address to a different account and vote again.

Following a thorough investigation with support from the App5 team, Metaforo, and community member Yixiu, the DAO Committee issued an [arbitration decision](#): By removing the duplicated 71,247,257 weight and recalculating the results, the v1.1 proposal passes with 75.2% in favor. This incident, while challenging, demonstrated the community's capacity for self-correction and the importance of transparent governance processes.

Ecosystem Projects



CKB Eco Fund

DAO 1.1: Governance Evolution (continued)

Current Status

DAO 1.1 development is underway, with the on-chain voting contract completed and the first Steward Team member onboarded. The mainnet launch is targeted for mid-February 2026. The inaugural Stewards Team will be assembled under the leadership of the DAO v1.1 proposal team, with comprehensive consideration of applicants’ capabilities, experience, and team composition. The Steward Team's role is clear: It serves, not decides. No proposal-approval authority; no privileged voting power. Steward members retain their individual voting rights as community members, but the team itself has no special authority. All work aims to ensure fair, transparent, and efficient governance processes.

CKB Community Fund DAO

v1.1

Home

Treasury

Steward

Rules

EN

Proposal

hongzhou

CKB COMMUNITY FUND DAO

TO SUPPORT COMMUNITY MEMBERS IN BUILDING AND EXPLORING THE CKB ECOSYSTEM. |

Ongoing Projects

14

Ongoing Budget

100,000,000,001,190,099 CKB

Proposal List

Search Proposals

All

测试全流程

jack

did:ckb:qgdijmd7rxlx5cimxulhxdn3cdqdrhqw

Budget Application

Progress: Milestone 3/3

In Progress

1/16/2026

30,000 CKB

My Governance

Wallet Address/DID

did:ckb:fzdw3gwjh4a4he7xmreyt6fb3ivdxhd

My Voting Power

100,000.00 votes CKB

Stake CKB

DAO 1.1 Repositories:

- Live platform: ccfdao.dev (Mainnet), cfdao.dev (Testnet)
- Frontend: github.com/CCF-DAO1-1/ckb-fund-dao-ui
- Backend: github.com/CCF-DAO1-1/app_view
- Documentation: github.com/CCF-DAO1-1/ccfdao-v1.1-docs
- Voting Contract: github.com/CCF-DAO1-1/ckb-dao-vote
- Address Binding & Voting Examples: github.com/CCF-DAO1-1/web5-components

Ecosystem Projects



CKB Eco Fund

Infrastructure & Ecosystem Projects

Web5 Tech Stack Development

A core focus of 2025 was the construction of the foundational infrastructure for Web5. In collaboration with ecosystem developers, the Eco Fund established a comprehensive tech stack across three primary layers:

- **AT Protocol Integration:** Implementation included the [Personal Data Server](#) (PDS), the [Relayer](#), and a dedicated [Web5 SDK](#).
- **Web5 DID Infrastructure:** Development finalized the Web5 [DID Contract](#) and [Indexer](#), alongside a centralized [pre-registration cache](#) and a comprehensive [DID Toolbox](#).
- **Functional Components:** Critical utilities were delivered, including a [micro-tipping system](#), a [DAO voting contract](#), and an [address-binding indexer](#).

Ecosystem Projects

The 2025 roadmap saw the emergence of several Web5 applications:

- **[DAO v1.1 Platform](#):** Beyond a simple governance proposal, this project delivered a complete on-chain voting and governance platform. Developed as an in-house solution to ensure security and data sovereignty, it serves as a Category-A Web5 application that generates structured governance data via the AT protocol.
- **[BBS \(Byte Builders Society\)](#):** Launched as the first Category-A community forum with native Web5 features. It integrates decentralized identity, on-chain tipping, and personal financial ledgers, serving as a proving ground for the Web5 tech stack.
- **[Xiangjian DAO \(XJDAO\)](#):** As the first live Category-C application, XJDAO empowers rural cooperatives with tools for collective organization and labor credit exchange. Its launch at a major Digital Nomad conference proved Web5's ability to serve grassroots communities independently of mainstream tech platforms.
- **[SilentBerry](#) & [Omiga](#):** SilentBerry demonstrated CKB's value for cultural preservation through successful NFT publishing experiments on the RGB++ protocol. Meanwhile, Omiga launched trading for RGB++ DOBs on Bitcoin Layer 1 and upgraded its DEX to support **USDI** payments.

Industry Recognition

The Web5 vision articulated by the CKB ecosystem gained notable recognition in 2025. Michel Bauwens, founder of the P2P Foundation, featured Web5 on the foundation's wiki and promoted it, writing:

"This is important for anyone into 'appropriate technology' which is 'techno-social' in its basic philosophy, and not just techno-optimist or techno-solutionist. Everyone who is aware of the limitations of crypto and the blockchain should pay attention to this."

Bauwens quoted from our Knowledge Base and Nervos Talk publications: "Web5, as a new paradigm that integrates the usability of Web2 with the decentralized values of Web3, attempts to reconstruct the relationship between technology and society... This pragmatic path avoids the trap of technological utopianism, focusing on how technology can truly integrate into social life and serve human needs."

This recognition from a leading voice in peer-to-peer and commons-based movements validates the philosophical direction Nervos has charted.

Ecosystem Projects



Nervape

2025 marked a major transition year for Nervape, as the project expanded from its digital-native roots into deploying large-scale production of its physical collectibles, while at the same time maintaining and expanding its [composable Digital Objects \(DOBs\)](#) on CKB.

Throughout the year, Nervape advanced its [Nervape 3x](#), Original, and Dot product lines from pre-production to full [global shipment](#), integrating a [custom NFC chip system](#) (Nervape ACDC) to enable secure, scan-based on-chain interactions. This web2 + web3 progression reinforced Nervape's core thesis: bridging physical collectibles with programmable digital identity anchored to CKB's infrastructure.



On the technical front, Nervape continued to invest in ecosystem tooling and long-term continuity. Key developments included the launch of the [Godwoken Reclaim Tool](#) and the [completion of an airdrop](#) of over 500 DOBs to our Nervape 3D NFT holders affected by the Godwoken sunset. This ensured ongoing usability of their NFTs as Digital Objects on CKB and shows the team's commitment to supporting loyal holders through the dynamic changes of the web3 market.

Nervape also focused on publishing [open-source repositories](#), onboarding solutions to reduce user friction, and enhanced NFC security with dynamic encryption, and the introduction of [Devlogs](#) from the Nervape Dev Team to maintain transparency and clear communication around the development progress.

Ecosystem Projects



Nervape

Community engagement and ecosystem presence expanded significantly through offline events around the world. Nervape organized a multi-city [global tour](#) spanning [Shanghai](#), [Lugano](#), [Beijing](#), [Taipei](#), and [Chiang Mai](#). Among these, the [Taipei Nervape Bathhouse pop-up](#) stood out as a flagship experiential event, combining physical collectibles, artistic presentation, and in-person community interaction, demonstrating how Nervape and Digital Objects can extend into the real-world as a cross-cultural experience.

Co-creation remained a central pillar of the project in 2025. Nervape launched its [Global Artist Collaboration Series](#), inviting international creators to reinterpret Nervape 3x across diverse cultural and artistic styles. Overall, 2025 represented a pivotal year for Nervape. The project showcased innovative ways to build on the blockchain to connect with tangible products, global cultural experiences, and sustained community participation—while continuing to support the ecosystem through open source code, user ownership, and CKB-native infrastructure.

NERVAPE
IS GOING ON
TOOOOOOUR!

SHANGHAI⁰¹

10.16 — 19 Common Gathering

LUGANO⁰²

10.24 — 25 Plan B Forum

BEIJING⁰³

10.31 — 11.02 Amazing Toy Show

TAIPEI⁰⁴

11.07 — 16 Nervape Ape's Bathhouse Pop-up

CHIANG MAI⁰⁵

12.01 — 07 TBD

APE IN.
BUILD OUT.



Quantum Purse

While the potential threat of quantum computers is trending in other communities, addressing it is already underway in the Nervos community.

Quantum Purse is a lightweight, quantum-safe desktop wallet which connects directly to the network of CKB nodes and utilizes SPHINCS+ cryptography.

CKB addresses generated by Quantum Purse are quantum-safe, so assets transferred to these addresses remain secure against quantum threats.

Quantum Purse launched on mainnet in January 2026. Learn more about [Quantum Purse on X](#) or [Github](#).



Content



Common Knowledge of Blockchains

X Account: Common Knowledge of Blockchains

Last year, we launched a new X account called [Common Knowledge of Blockchains](#). The objective was to establish long-term authority as a go-to educational resource on X for blockchain-related topics, while subtly introducing and reinforcing familiarity with CKB’s unique value proposition.

The broader goal was to build a durable media asset—one that could be leveraged over time to consistently expand awareness and understanding of CKB.

The primary challenge we encountered was timing. We began growing a crypto-focused account from zero when X’s recommendation algorithm had shifted away from niche, interest-driven communities. Crypto-related content was deprioritized in favor of broad, engagement-maximizing topics—most notably political discourse—disrupting our industry’s communal and informational bubble also known as “Crypto Twitter.”

As a result, the “For you” feed no longer reliably surfaced content from accounts users had explicitly chosen to follow, particularly smaller or newer crypto-native accounts. This materially altered post discovery dynamics, making organic growth, community formation, and consistent reach significantly more difficult than in previous market cycles.

Despite these structural headwinds, the initiative delivered meaningful results. Over several months, we published 11 threads (124 tweets), 45 long posts, and 2 infographics, generating 43,647 impressions and 3,715 engagements. Engagement was driven primarily by Likes (2,058) and Reposts (1,061), with additional contributions from Bookmarks (392) and Replies (204).

Encouragingly, recent platform changes suggest a more favorable environment going forward. In response to sustained feedback from the crypto community, X has begun adjusting its recommendation algorithm to better surface crypto-native content and re-enable interest-based discovery. Early indications point to a partial restoration of the “Crypto Twitter” content bubble, which should, in theory, significantly improve the growth and reach prospects for niche educational accounts like Common Knowledge of Blockchains.

Taken together, this positions the account well for more efficient growth and deeper community engagement in future iterations of the effort.



Knowledge Base

Over the past year, we expanded the Knowledge Base with three long-form articles and 30 short-form pieces, representing a deliberate reduction in overall content output compared to 2024. This was a deliberate optimization decision. After evaluating project-specific priorities alongside evolving industry conditions, we concluded that allocating additional content resources to the Knowledge Base would yield diminishing returns in the near term.

Accordingly, content resources were reallocated toward higher-impact initiatives, primarily the growth of the Common Knowledge of Blockchains X account—where educational content benefits from broader reach, faster distribution, and stronger audience compounding—and the upcoming overhaul of the [Nervos.org](https://nervos.org) website.

Highlight Articles:



[Becoming Money: Stablecoins as the Next Necessary Step in Bitcoin's Journey](#)



[CKBuilders: A new generation of blockchain creatives on CKB](#)



[Unlocking CKB Liquidity: A Deep Dive into the iCKB Protocol](#)

Events – CKB DevRel

With support from the CKB Eco Fund, we explored new initiatives this year to advocate for CKB among developers.

Nantang Code Camp

We hosted a one-week code camp in Nantang, Anhui, China, aimed at introducing CKB’s vision to Chinese developers unfamiliar with the ecosystem. Guided by the principle of bringing decentralized tech into real-life scenarios, the event resulted in 5 unique projects, such as a Nostr-based AI-powered tipping bot and a communication tool designed to promote mutual understanding.



Events – CKB DevRel

CKB Tea Hour

This online event features conversations between our team and community members. In the last 5 episodes, we engaged with developers, miners, and researchers.



03月20日 20:00 (UTC+8)
CKB 中文 & CKB Eco Fund @CKB_CN



Telegram

CKB茶话会#1

与Devrel团队共话Web5实践之路



Hongzhou
@tovarishch.bir
CKB Eco Fund Research Lead



Hansen
@HanssenO
CKB Eco Fund Devrel Lead



04月04日 20:00 (UTC+8)
CKB 中文 & CKB Eco Fund @CKB_CN



Telegram

CKB 茶话会 Tea Hour #2:

挖矿的笑傲江湖 – 从硬核技术到行业逸闻



Hanssen
@HanssenO
CKB Devrel Lead



Dr. Hongzhou Chen
@tovarishch.bir
CKB Eco Fund Research Lead CKB



David
@f5box
F5box 技术负责人



Jimmie
@jimmie00
Bitmain PoW 生态经理



Jacob
Metahashglobal 矿场负责人



Luo
HL Group

Events – CKB DevRel

Campus Tour

We visited two universities to present to college students, discussing the value of blockchain from both technical and social perspectives to inspire the next generation.



Events – CKB Eco Fund

Rock Web5 Hackathon: Nantang CodeCamp

In March 2025, the Eco Fund hosted the [Rock Web5 Hackathon](#) at Nantang, bringing together developers to build practical Web5 applications. The event produced five notable projects:

- [Neural Er Gou](#): An AI-powered community companion that curates quality content across Nostr-based platforms, distributes tokenized tips, and engages users on Discord and Telegram
- [Constellar](#): A DAO governance interface visualizing consensus through a Values Star Map, enabling transparent onboarding through sentiment mapping
- [Proof of Understanding](#): A verification system ensuring users comprehend critical information before taking actions like DAO voting or DeFi participation
- [Anti Hero](#): A DAO onboarding application built by a non-technical team using AI tools, demonstrating lowered barriers to prototype development
- [Liangwa Room](#): An education initiative recording students' creative work as dynamic NFTs with a gamified star-based rewards system



Shenzhen Campus Tour & Meetup

The CKB Eco Fund conducted [campus visits](#) to the **Chinese University of Hong Kong (Shenzhen)** and **Shenzhen MSU-BIT University**, engaging 10-20 interdisciplinary students at each session. This was followed by a [community Meetup](#) at the Nanshan District Taoyuan Sub-district Party-Mass Service Center, drawing approximately 50 participants from the local developer and blockchain community.

Events – CKB Eco Fund

Lightning Connect

Co-hosted with Breez during Consensus Hong Kong, this [side event](#) brought together developers, entrepreneurs, and investors to examine the Bitcoin Lightning Network's potential for global payments. The program included technical showcases, investor roundtables, and keynote discussions.



Hong Kong Web3 Festival

The CKB Eco Fund served as Platinum Sponsor at the 2025 Hong Kong Web3 Festival. It hosted the [Bitcoin Stage](#), showcasing ecosystem projects including Fiber Network and Nervape, featuring discussions with Bitcoin OGs, academics, developers, policymakers, and listed companies, on Bitcoin scalability, interoperability, and innovation.



CKCON 2025 Chiang Mai

CKCON 2025 Chiang Mai

The CKB Eco Fund team supported agenda design, hosting, and on-site logistics for CKCON 2025, held in Chiang Mai, Thailand. This annual event brought together the community and core teams to discuss the future direction of the CKB ecosystem.



Community Management

The Eco Fund managed and strengthened the Chinese-language community throughout 2025. Key efforts included:

- Establishing formal community management rules and guidelines.
- Enhanced moderation and engagement across Chinese community channels.
- Align with the whole Nervos community development.
- Supported the [operation and management](#) of the Nervos Talk forum.

Events – Community

Barcelona Meetup

The Barcelona meetup was a fantastic three-day gathering for the CKB community, filled with connection, exploration, and shared experiences. Attendees explored the city’s iconic Antoni Gaudí architecture, enjoyed meals together, received swag giveaways, and were even surprised with a special CKB cake presented by the Cartesi CMO.

The event brought together builders from Morocco involved in the Community Catalyst program, members of the Nervos Foundation, the CKBull wallet team, and community members from across Europe – making it a memorable and collaborative meetup.



Quantum Purse Token 2049

Nervos Network (CKB) introduced its "Quantum Purse" at the Token2049 event in Singapore (around September/October 2025), positioning itself as a leader in post-quantum cryptography. The initiative showcased a functional, quantum-resistant desktop wallet designed to protect user assets from potential threats posed by future quantum computing, featuring SPHINCS+ cryptography and Nervos DAO integration.



Mining Disrupt

Mining Disrupt 2025 brought together the US Bitcoin mining industry in Irving, Texas, gathering ASIC manufacturers, miners, investors, and service providers for one of the year’s largest mining-focused conferences. The event featured major debates on the future of Bitcoin, a busy exhibition floor, and extensive networking opportunities. This year also marked the return of CKB meetups to the US, with the community hosting its first CKB Off-Chain meetup in the region in many years, highlighting CKB’s flexibility and quantum-resistant capabilities.

Supported by the Nervos Community Catalyst and the Nervos Foundation, CKB maintained a strong presence through a booth, on-stage engagement, networking events, and a community happy hour. Creative outreach efforts and strategic networking helped spark new conversations, strengthen US visibility, and lay the groundwork for future collaborations and continued momentum into 2026.



AMA

AMA 2025

To foster transparency & collaboration, the Nervos Foundation organizes AMAs with leading ecosystem builders to engage with the Nervos community.

Perun



Yun Wen



AMA

Baiyu



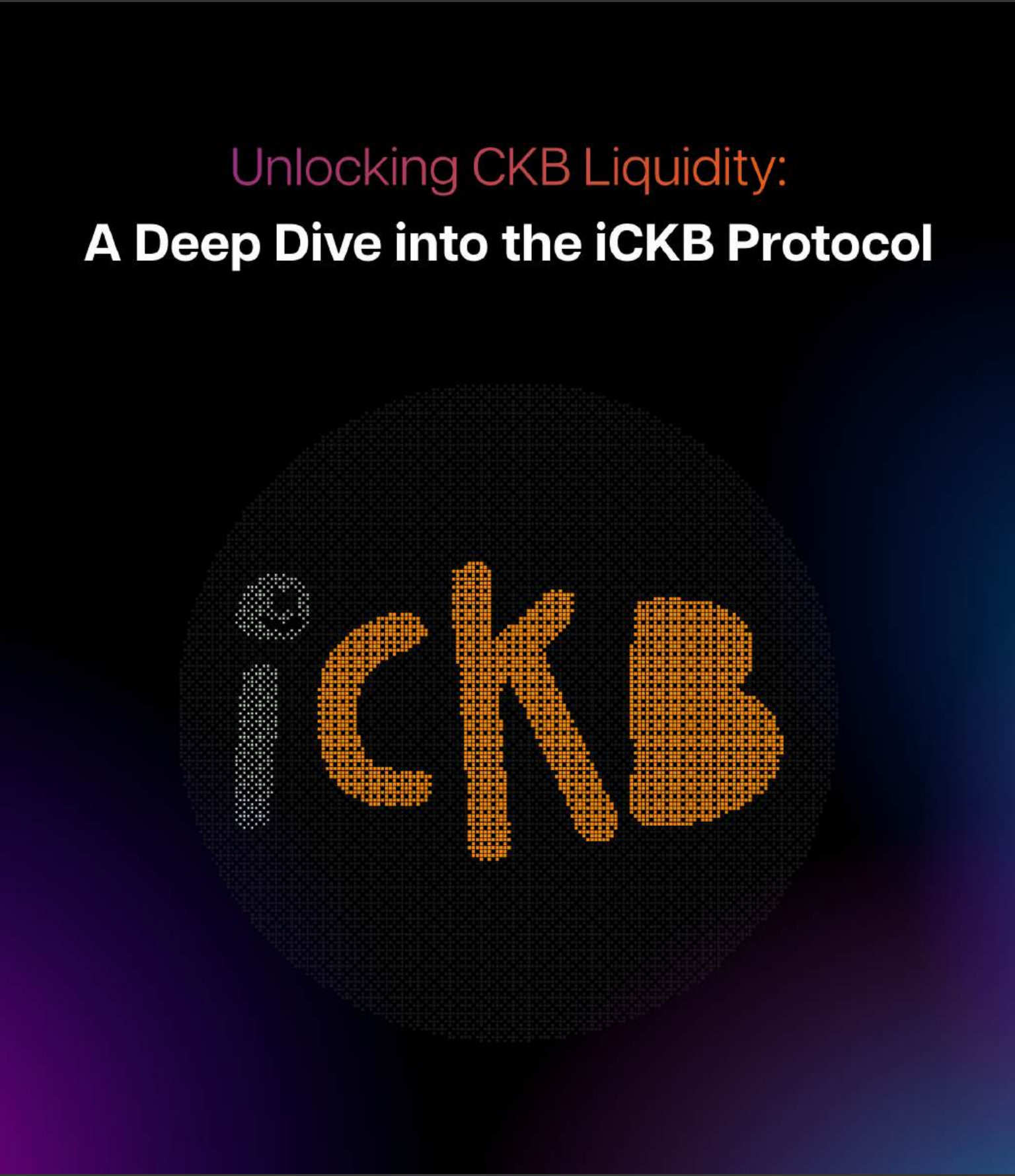
Cryptape Dev Team



Matt Quinn

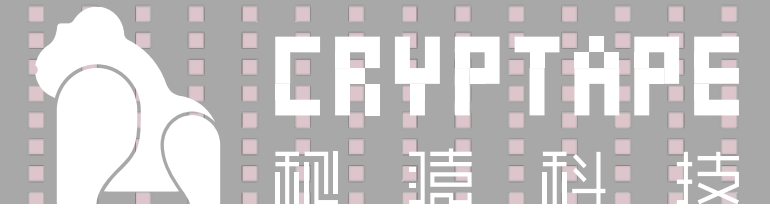


iCKB



Technical Development

Cryptape



In 2025, Cryptape's engineering focus shifted from foundational protocol design to ecosystem maturity and multichain interoperability. The pivotal milestone of the year was the successful activation of the Meepo Hardfork, which significantly enhanced the network's modularity and flexibility. There were no fundamental changes to the CKB core protocol, and most engineering efforts concentrated on the hard fork and on strengthening network connectivity, privacy, and system robustness under extreme conditions.

Meepo Hardfork Activation

On July 1, 2025 (Epoch 12,293), the Nervos Mainnet successfully activated the [Meepo](#) consensus upgrade. This hardfork introduced fundamental changes to the CKB-VM and network topology without compromising backward compatibility.

- **Spawn Syscall & Modularity:** Introduced the spawn system call, allowing scripts to instantiate sub-processes. This enables a modular "LEGO-like" architecture where developers can reuse independent scripts for tasks like signature verification, reducing code bloat and security risks.
- **VM Versioning (Data2):** Added the data2 variant to hash_type, empowering developers to opt-in to new VM features while allowing users to retain existing security models for locked assets.
- **Performance Optimizations:** Improved memory operations, cycle counting, and testing coverage.

Network Infrastructure & Connectivity

In 2025, engineering efforts for the Nervos Network were strategically focused on enhancing the robustness, accessibility, and privacy of the underlying network stack. These upgrades ensure the CKB ecosystem remains resilient against censorship while lowering the barrier to entry for decentralized participation.

Privacy & Anti-Censorship

To address a shifting global network landscape, the network stack was re-architected to support mixed-privacy topologies.

Native [support](#) for SOCKS5 proxies and Tor Onion services was implemented, allowing node operators to route traffic through anonymous networks. This effectively masks physical IP addresses, protecting node operators from targeted attacks and enhancing overall network security.

Democratizing Connectivity

A major technical hurdle for decentralization—running nodes at home—was addressed through a new "[Hole Punching](#)" protocol.

This allows nodes behind home routers and firewalls to automatically establish direct peer-to-peer connections without the need for complex manual router configurations (such as Port Forwarding). This significantly increases the network's diversity and decentralization.

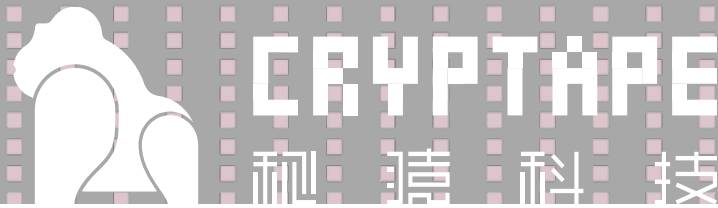
Network Resilience

To stabilize node performance during periods of extreme network activity, the transaction relay mechanism was refactored for **asynchronous operation**.

Asynchronous relaying ensures that a surge in incoming transactions does not obstruct the processing of new blocks. In addition, dedicated outbound connections were introduced exclusively for block relaying. This creates a high-priority lane for consensus data, ensuring the network stays synchronized even during heavy congestion. Related PRs: (i) [Asynchronous Message Relay](#); (ii) [Dual Outbound Block-Relay-Only Connections](#).

Browser-Native Nodes (WASM)

Successfully [ported](#) the CKB Light Client networking stack to WebAssembly (WASM) and added support for [WebSocket Secure \(WSS\)](#). This engineering breakthrough allows a full light node to run inside a user's web browser. Wallets and dApps can now verify transactions locally, eliminating reliance on trusted third-party APIs, significantly enhancing user sovereignty.



CKB-VM

The 2025 activation of CKB-VM v2 via the Meepo hardfork represents a transformative shift for the Nervos Network. By transitioning from foundational execution to a highly modular and developer-friendly environment, CKB-VM v2 significantly strengthens the execution layer and reduces the complexity of building sophisticated smart contracts.

Advanced Debugging & Tracing

To accelerate the development lifecycle, the engineering team delivered a flagship [Syscall Tracer](#) integrated directly into the debugger infrastructure.

- **Auditing Efficiency:** Developers can now save and replay specific VM-script interactions. This "time-traveling" capability allows for deterministic debugging, enabling auditors to pinpoint vulnerabilities in intricate smart contracts with unprecedented precision.
- **Lowered Entry Barrier:** By simplifying the observation of low-level system calls, the tracer makes the CKB-VM’s RISC-V environment more accessible to a broader range of developers.

Security Hardening & Protocol Resilience

- **Nervos DAO Vulnerability Fix:** Resolved a high-priority logic error in the on-chain script. Previously, a [discrepancy](#) in how Occupied Capacity was handled during the withdrawal phase could have allowed for capital interest attacks. This fix ensures the long-term economic integrity of the DAO.
- **Memory Protection & Error Handling:** Resolved an issue where memory protection logic returned incorrect error codes, potentially obfuscating malicious attempts to bypass the W^X (Write XOR Execute) security policy.
- **Low-Level VM Fixes:**
 - **Macro-Operation Fusion (MOP):** Resolved a rare corner case where the x0 register (which must always read as zero per RISC-V spec) could be overwritten during hardware-optimized fusion, preventing downstream execution errors.
 - **ELF Loading & Integrity:** Fixed a rare crash condition during the loading of ELF binaries, further stabilizing node performance under extreme or malicious script conditions.

For more details on these bug fixes, please refer to: [CKB-VM Changes Under the Meepo Hardfork](#).

Fiber Network

2025 saw the Fiber Network graduate from an experimental protocol to a robust, multi-asset Layer 2 infrastructure. Cryptape allocated significant engineering resources to Fiber, with its efforts focused on three main pillars: core architecture refactoring, multi-path payments, and cross-chain interoperability.

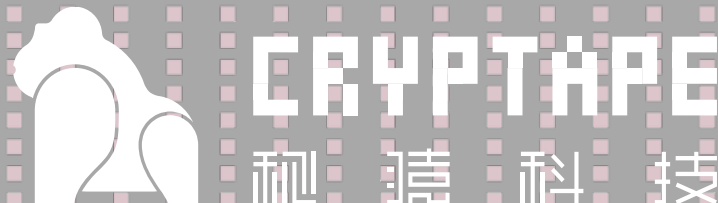
Core Protocol & Architecture

- **Actor-Based Architecture:** The core node architecture was refactored into a modular Actor-based system. By decoupling the payment flow into an independent "Payment Actor" and implementing a Finite State Machine for cross-chain orders, the system achieved superior stability and maintainability.
- **Routing & Connectivity:** Overhauled the Gossip Protocol to ensure accurate network topology propagation. The introduction of Trampoline Routing allows mobile and lightweight nodes to delegate complex pathfinding tasks to more powerful nodes, enabling a seamless experience on low-power devices.
- **Security Infrastructure:** Deployed a standalone Watchtower Service that monitors off-chain payment channels in real-time. This protects offline users by ensuring that malicious channel closures are detected and addressed automatically.
- **Bug Fix in Fiber Contracts:** Revisited the Fiber contracts to fix the settlement-delay epoch [bug](#) and support batch unlock.

Multi-Path Payment Capabilities

The Fiber Network significantly enhanced liquidity utilization and payment reliability by implementing sophisticated routing and splitting mechanisms.

- **Liquidity Aggregation ([Basic MPP](#)):** Users can now split large payments into multiple "shards" routed through different paths. This allows transactions to exceed the capacity of any single channel by leveraging the aggregate liquidity of the entire network.
- **Atomic Settlement ([AMP](#)):** To mitigate partial payment risks, Fiber introduced Atomic Multi-Path Payments. This "all-or-nothing" mechanism ensures the recipient can only claim funds once all constituent shards have arrived, bolstering both security and transaction privacy.



Privacy & Security

- **Security:** Completed a comprehensive initial security audit with ScaleBit, and conducted extensive stress testing across 200+ nodes and 2,000+ channels. This intensive testing helped fix many bugs in the code.
- **Watchtower Support:** Added support for Watchtowers and enforced strict invoice status checks before settlement. This protects offline users from fraud by allowing third-party services to monitor the chain for malicious channel closures.
- **Research on PTLC Migration(ongoing):** Working on migrating from Hash Time-Locked Contracts (HTLCs) to Point Time-Locked Contracts (PTLCs) to enhance payment privacy. This upgrade will prevent payment correlation attacks, ensuring that intermediary nodes cannot link the sender and receiver of a transaction.

Interoperability & Multi-Assets

- **Cross-Chain Hub:** Users can now seamlessly swap between BTC and CKB without needing a direct channel to the Hub, effectively connecting the entire Fiber Network with the Bitcoin Lightning Network.
- **Multi-Asset Support (UDT/RGB++):** Added whitelist support for User Defined Tokens (UDTs). This allows the network to route stablecoins and RGB++ assets, paving the way for a high-speed "BTCFi" ecosystem.

WebAssembly (WASM) Support

A major engineering breakthrough was the successful porting of the Fiber node to the WASM runtime.

- **Browser-Native Integration:** Core Fiber logic can now be directly run within a web browser, allowing developers to build truly non-custodial web wallets and dApps. These applications can manage payment channels and sign transactions locally, eliminating the reliance on centralized service providers or backend gateways.

Tooling & Ecosystem

Quantum Resistance (SPHINCS+)

- Completed the implementation of the [SPHINCS+](#) quantum-resistant lock script. This positions the CKB blockchain at the [forefront](#) of quantum security, enabling users to adopt a production-ready defense against future quantum computing threats without requiring a hard fork.

Check full documentation here: [Native Quantum Resistance](#).

Web5 Identity (DID-CKB)

- Released the [DID-CKB](#) protocol and the Web5 DID Toolbox. This infrastructure treats digital identities as live Cells on CKB that are persistent, owner-controlled, and interoperable with the W3C DID standard. The release included components for registration, login, and integration with the Community Fund DAO, paving the way for reputation-based governance.

Cryptographic Acceleration For JavaScript Runtime

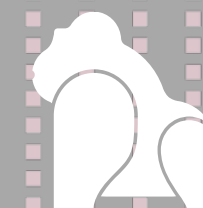
- Introduced high-performance C Bindings for the JavaScript environment to improve the performance of on-chain script. Developers writing contracts in high-level languages can now invoke native, optimized implementations of cryptographic standards.

Related PRs: [Add secp256k1 bindings](#), [Add hash bindings](#)

Ongoing Engineering Efforts

As part of the 2025 development cycle, several initiatives are underway to further harden the network's security and improve the operational experience for node operators and developers.

- **CFI Extension (Security Hardening):** To mitigate the risk of Return-Oriented Programming (ROP) attacks, engineering efforts are focused on implementing Control Flow Integrity (CFI) for CKB-VM. Based on the RISC-V CFI specification, this extension adds a critical layer of defense to on-chain scripts, ensuring execution paths remain secure and predictable.
- **CKB-TUI (Node Observability):** A new terminal-based user interface ([TUI](#)) is currently in development to provide real-time visibility for node operators. This lightweight dashboard offers a high-level overview of block synchronization, peer connections, and transaction pool status, streamlining node management.
- **Fiber Dashboard:** Introduced the [Fiber Dashboard](#) to increase transparency across Layer 2. This web-based visualization tool provides comprehensive, real-time monitoring of Fiber Network nodes and channel lifecycles, including geolocation data and channel capacities, through a centralized, read-only interface.



Research

Supporting Development

Cryptape continues to provide foundational cryptographic and protocol-level expertise to the Fiber development team and various strategic initiatives within the Nervos ecosystem. By bridging theoretical research with practical implementation, it ensures the long-term security and scalability of the network's core infrastructure.

Finished Papers

Our team published two major papers this year, addressing critical vulnerabilities in global networks and providing novel solutions for Bitcoin-native asset issuance.

Measuring and Attacking the Ethereum Global Network

Authors: Chenyu Li, Ren Zhang, and Xiaorui Gong.



Published on [eprint](#) and selected for the Science of Blockchain Conference (SBC) 2025, this research paper scrutinizes the multi-service architecture of Ethereum's P2P network. The analysis revealed that current node discovery protocols (Discv5) fail to prevent DHT pollution and partition attacks, posing significant security risks.

Solving Data Availability Limitations in Client-Side Validation with UTXO Binding

Authors: Yunwen Liu, Bo Wang, and Ren Zhang.



Featured on [eprint](#), this paper introduces UTXO Binding. This framework solves the "data withholding" problem in Bitcoin token issuance by securely binding a Bitcoin UTXO to a programmable UTXO on an auxiliary blockchain, such as Nervos CKB.

Research (Continued)

Working Papers

We are currently advancing several projects with the goal of submitting them to top-tier academic conferences in 2026:

- **The Cell Model:** A formal introduction and proof of the Cell model’s superior expressiveness and parallelizability compared to traditional account-based systems.
- **Multi-Path Payments (MPP) with Redundancy:** A new protocol for the Lightning Network using adaptor signatures to enhance privacy while optimizing splitting strategies for payment reliability.
- **Systematizing Knowledge on Ledger Models:** A comprehensive theoretical analysis of how states and transactions are encoded across existing blockchain architectures.
- **Selfish-Mining Resistance Difficulty Adjustment Mechanism:** A new design that improves the consensus protocol’s resistance to selfish mining.

Moreover, we initiated several new research projects:

- **Measuring Ethereum’s PBS Architecture:** Conducted a thorough measurement of Ethereum’s Proposer-Builder Separation (PBS) architecture, which now accounts for 90% of blocks. The study focuses on order flow exclusivity and value extraction mechanisms, revealing that builder centralization is a structural tendency deeply rooted in the PBS design.
- **Analyzing Existing Difficulty Adjustment Algorithms:** Analyzed three representative DAAs—epoch-based (Bitcoin), per-block (Ethereum PoW), and sliding window (Zcash)—to reveal a fundamental design dilemma in blockchain stability.
- **Enabling Shared State in UTXO Architecture:** Developing two novel techniques to implement shared state within UTXO frameworks, with plans to integrate these methods into the Cell model.

Community Services

Our researchers continue to serve the broader scientific community through peer review and committee leadership:

- **Ren Zhang:** Served on the program committees for ACM CCS, USENIX Security 2025, and CloudCom, and frequently reviewed for top journals like TIFS and TCSS, TNSM, and TSE.
- **Yunwen Liu:** Contributed to the program committees of leading cryptography journals, including IACR Communications in Cryptology and IACR Transactions on Symmetric Cryptology.

Developer Relations

Cryptape's DevRel team focuses on translating core protocol features into developer-friendly tools, documentation, demos, and educational resources. 2025 was the year to explore a consistent and systematic workflow to build a solid foundation for long-term developer relations.

CKB DevRel

- **Documentation:** Throughout 2025, we steadily updated, improved, and refactored the [CKB documentation site](#) to better support developer onboarding and long-term ecosystem growth. Major achievements included:
 - **Core Technical Content:** Expanded and clarified deep-dive topics—including script/runtime explanations, node operation guides, and light-client documentation—helping developers master both on-chain programming and infrastructure setup.
 - **JS/TS Integration:** Introduced first-class JavaScript and TypeScript guides, enabling web and frontend developers to build CKB smart contracts using toolchains they already know and love.
 - **Protocol Alignment:** Continually synchronized documentation with protocol evolution, reflecting major network upgrades such as the Meepo hard fork and related CKB-VM enhancements.
- **Tooling and Infrastructure:**
 - Released a major update (v4) for the local devnet tool [offckb](#). This release focused on simplifying the codebase and integrating deeply with [CKB-JS-VM](#) to provide an easy scaffolding setup for JavaScript developers writing CKB smart contracts.
 - Experimented with a new website, [ckb-tx-rocket](#), a visualization tool that illustrates the process of producing blocks on the CKB network.
 - Implemented feature enhancements for [CKB node-probe](#), a monitor for running nodes on the CKB network.
- **Educational Demos:** Built a wide range of small, real-world, open-source [examples](#) to eat our own dog food and provide references to the community for learning and easy copy-code reuse.
 - Many small demos are built around CKB's key features, such as the light client, CKB-JS-VM, and TypeScript toolchains.
 - Built educational resources to better explain the flexibility of CKB Address and Script reference concepts in the [craft-ckb-address website](#).

Ongoing DevRel

Beyond CKB, we expanded our DevRel support in 2025 to cover two additional projects: the Fiber Network and the Web5 protocol.

For Fiber, we delivered two iterations of the official [Fiber website](#) and launched a foundational [documentation site](#). We are currently planning educational examples and demos, while continuing to iterate on infrastructure tools like the [fiber-dashboard](#).

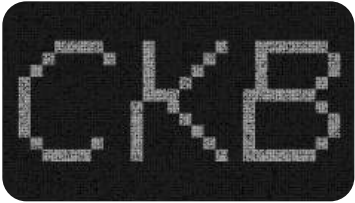
For Web5 protocol, we delivered a [Web5 website](#) with basic documentation, established a protocol improvement proposal repository [web5-wips](#), and implemented an infrastructure indexer service [web5-indexer](#).

In the coming year, we will shift our focus to providing increased support for Fiber and Web5 DevRel while maintaining a stable and reliable foundation for CKB DevRel.

CKB Dev Logs



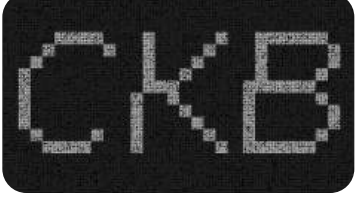
[CKB Dev Log 2025-01-08](#)



[CKB Dev Log 2025-01-22](#)



[CKB Dev Log 2025-02-19](#)



[CKB Dev Log 2025-03-05](#)



[CKB Dev Log 2025-03-19](#)



[CKB Dev Log 2025-04-02](#)



[CKB Dev Log 2025-04-16](#)



[CKB Dev Log 2025-04-30](#)



[CKB Dev Log 2025-05-14](#)



[CKB Dev Log 2025-05-28](#)



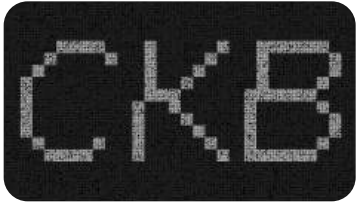
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[CKB Dev Log 2025-06-25](#)



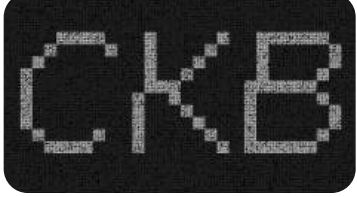
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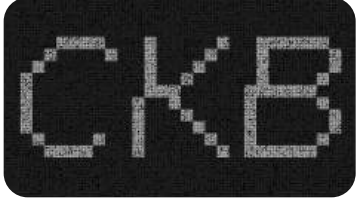
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[CKB Dev Log 2025-08-06](#)



[CKB Dev Log 2025-08-20](#)



[CKB Dev Log 2025-09-03](#)



[CKB Dev Log 2025-09-17](#)



[CKB Dev Log 2025-10-01](#)



[CKB Dev Log 2025-10-15](#)



[CKB Dev Log 2025-10-29](#)



[CKB Dev Log 2025-11-12](#)



[CKB Dev Log 2025-11-26](#)



[CKB Dev Log 2025-12-24](#)

Fiber Dev Logs



[Fiber Dev Log 2025-03-20](#)



[Fiber Dev Log 2025-04-03](#)



[Fiber Dev Log 2025-04-17](#)



[Fiber Dev Log 2025-05-01](#)



[Fiber Dev Log 2025-05-15](#)



[Fiber Dev Log 2025-05-29](#)



[Fiber Dev Log 2025-06-12](#)



[Fiber Dev Log 2025-06-26](#)



[Fiber Dev Log 2025-07-10](#)



[Fiber Dev Log 2025-07-24](#)



[Fiber Dev Log 2025-08-07](#)



[Fiber Dev Log 2025-08-21](#)



[Fiber Dev Log 2025-09-05](#)



[Fiber Dev Log 2025-09-18](#)



[Fiber Dev Log 2025-10-02](#)



[Fiber Dev Log 2025-10-16](#)



[Fiber Dev Log 2025-10-30](#)



[Fiber Dev Log 2025-11-13](#)



[Fiber Dev Log 2025-11-27](#)



[Fiber Dev Log 2025-12-25](#)

community



CKB Community Fund DAO

The [CKB Community Fund DAO](#) is a community-governed funding mechanism established by key contributors in the Nervos ecosystem in 2022. It aims to empower and support individuals and teams in building projects, organizing events, and driving the growth of the CKB ecosystem.

In 2025, several funding initiatives were voted on, with five being approved and seven being dismissed.

Passed

- ✓ [CKBoost Gamified Community Engagement Platform Proposal](#)
- ✓ [Community Fund DAO v1.1 Web5 Optimization Proposal](#)
- ✓ [CKB Integration for Rosen Bridge](#)
- ✓ [Fiber Link: A CKB Fiber-based Pay Layer \(Tipping & Micropayments\) for Communities](#)
- ✓ [Mobile-Ready CKB Light Client \(Pocket Node\) for Android](#)

Failed

- ✗ [AI Agent-driven Content Tipping and Curation System](#)
- ✗ [Transition to "Post-Payment" Model for DAO Fund Disbursement](#)
- ✗ [Project Progress Tracking Platform for Nervos](#)
- ✗ [Spore Studio: CKB Ecosystem Digital Art Platform Development and Deployment](#)
- ✗ [ChatPay-WhatsApp Payment Integration Proposal](#)

Eligible but Not Voted

- ✧ [Proposal for Community Fund DAO v2](#)
- ✧ [Rosen Bridge - Connecting CKB to Cardano, Ergo, and Beyond](#)

Merchandise

Quantum Purse Merch

For TOKEN2049, we prioritized high-touch brand engagement through premium, integrated Quantum Purse merchandise. The suite centered on a branded technical polo featuring a subtle, embroidered 'qp' icon, designed for professional presence on the exhibition floor. We extended the Quantum Purse branding to two functional takeaways: a technical baseball cap with reinforced panels and a custom-molded, textured off-white leatherette tech-pouch featuring an debossed logo.



Merchandise

Barcelona Meetup

For the Nervos CKB meetup in Barcelona, we designed a vibrant, site-specific merchandise collection that bridges blockchain technology with the city’s iconic artistic heritage.



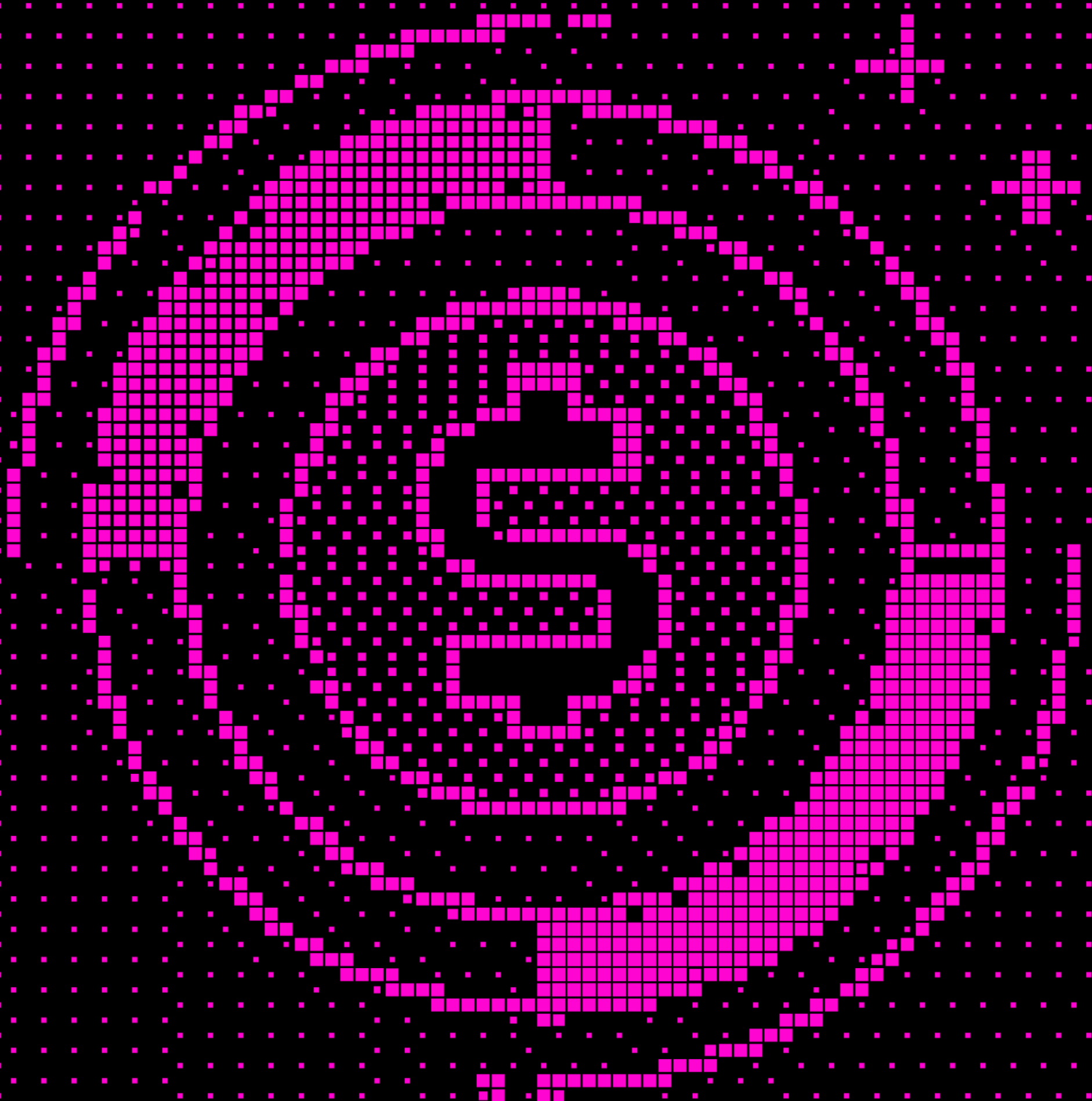
Merchandise

Mining Disrupt

For the Nervos CKB booth at Mining Disrupt, we leaned into our "ready for the quantum era" theme with some fresh custom merchandise. The centerpiece of our gear was this "RUN CKB" T-shirt, featuring pixelated block text that perfectly captures that intersection of blockchain-ready tech and crypto culture. Set against a black background with a geometric purple gradient border, it definitely made an impact and underscored our commitment to the future of decentralized infrastructure.



Budget Report



Budget Report 2025

The [Nervos Foundation](#) funds dedicated teams of blockchain enthusiasts who share a vision for improved global financial infrastructure and enabling the next era of the Internet.

The foundation supports these teams’ funding and operational needs, while each team contributes to the ecosystem in its focused domain. For example, [Cryptape](#) is focused on the research and development of CKB, while [App5](#) is focused on supporting network infrastructure such as [CKB Explorer](#) and [Neuron Wallet](#).

In line with our destination of decentralization, the teams funded by the foundation change over time.

2025 was a year of change, CKB Eco Fund pivoted strategies from promoting CKB as a Bitcoin Layer 2 to engaging a grassroots developer community, the Magickbase team was disbanded in the wake of the hack of Force Bridge, and the App5 team took over some infrastructure maintenance responsibilities.

Total spending for 2025 was **\$7,969,939 USDT** and **304,557,032 CKB**. Out of the overall spending, \$6,151,538.28 USDT, or 76.86% of spending was allocated to Technical Development, and 23.14% to Marketing and Operations.

As for CKB spending, 54.18% was allocated toward technical development, 37.4% to grants, and 8.43% to operations.

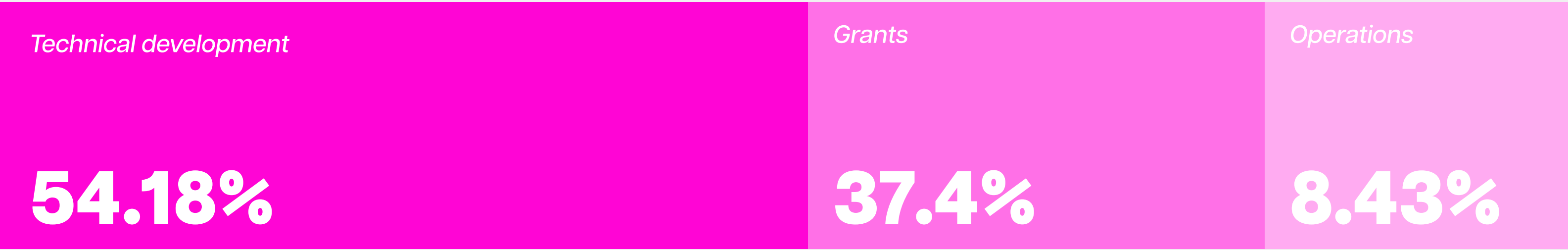
The Foundation's mission is to raise awareness and increase CKB's adoption among sophisticated developers and tech-centric blockchain enthusiasts worldwide. In 2026 and beyond, the foundation will continue to identify opportunities to grow the ecosystem, with a focus on enhancing the infrastructure and funding teams who can evangelize CKB’s unique attributes.

As time goes on, the foundation plans to gradually donate CKB to the [CKB Community Fund DAO](#) and other [Nervos DAO](#)-governed funding vehicles, moving power to the hands of CKB holders.

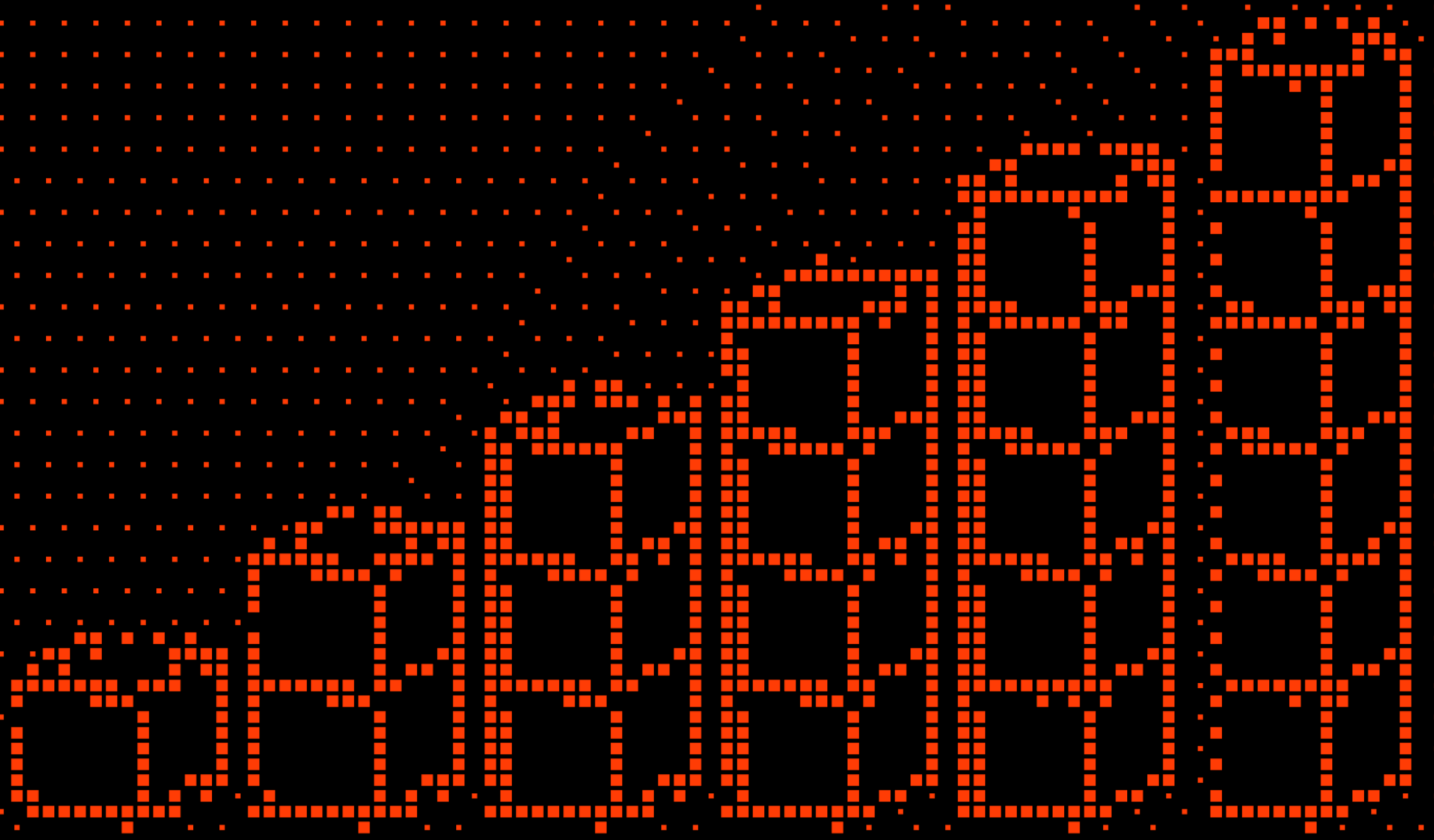
Total spending



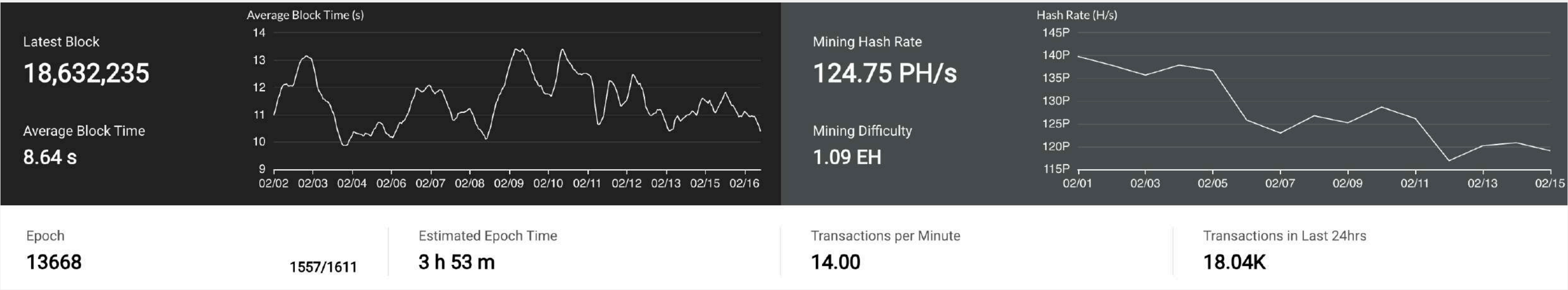
CKB spending



Growth & Metrics



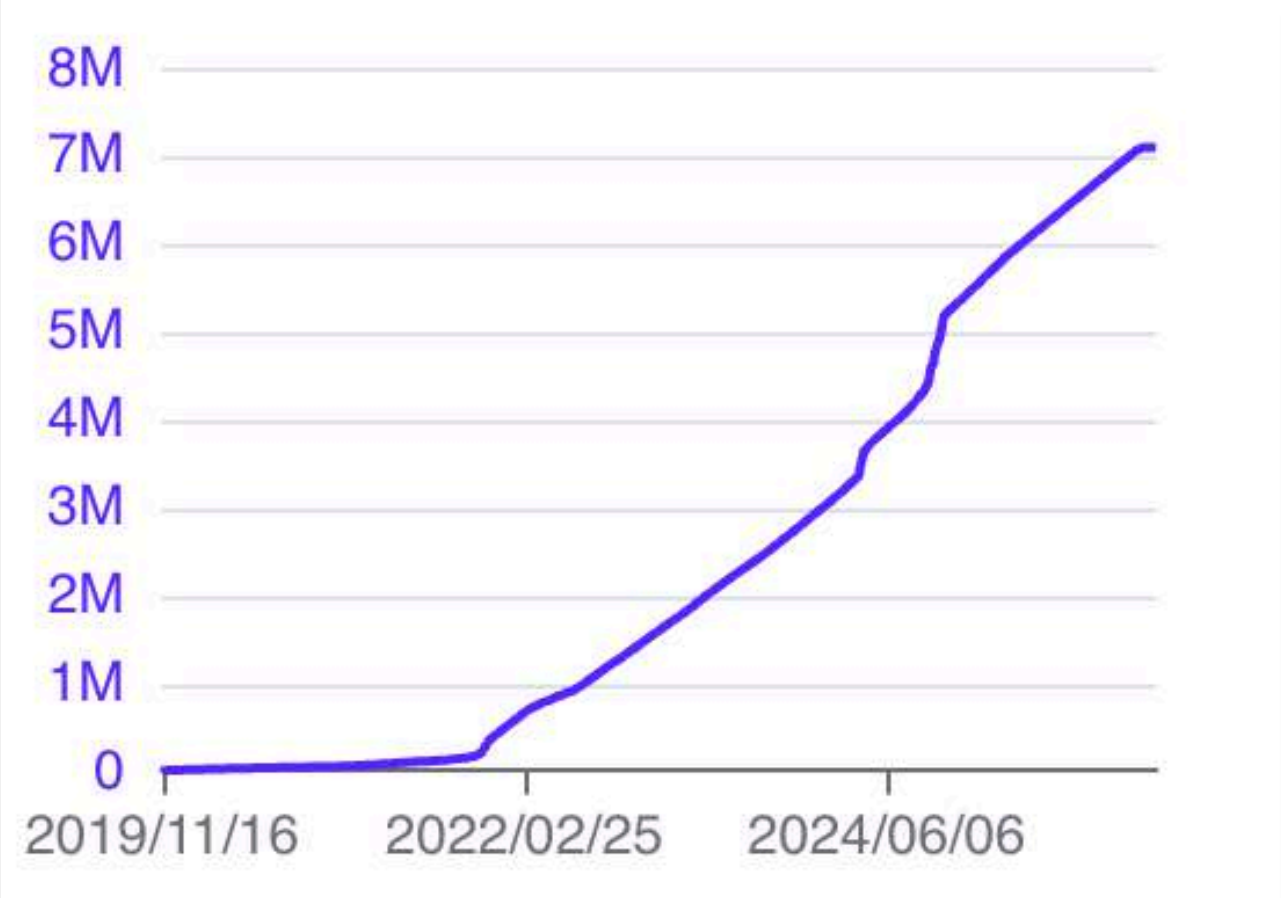
Network Growth and Metrics



In 2025, most metrics held strong, while hash rate showed a strong correction from its 2024 high.

Unique Addresses

Increased from 5.54m to 7.09m.



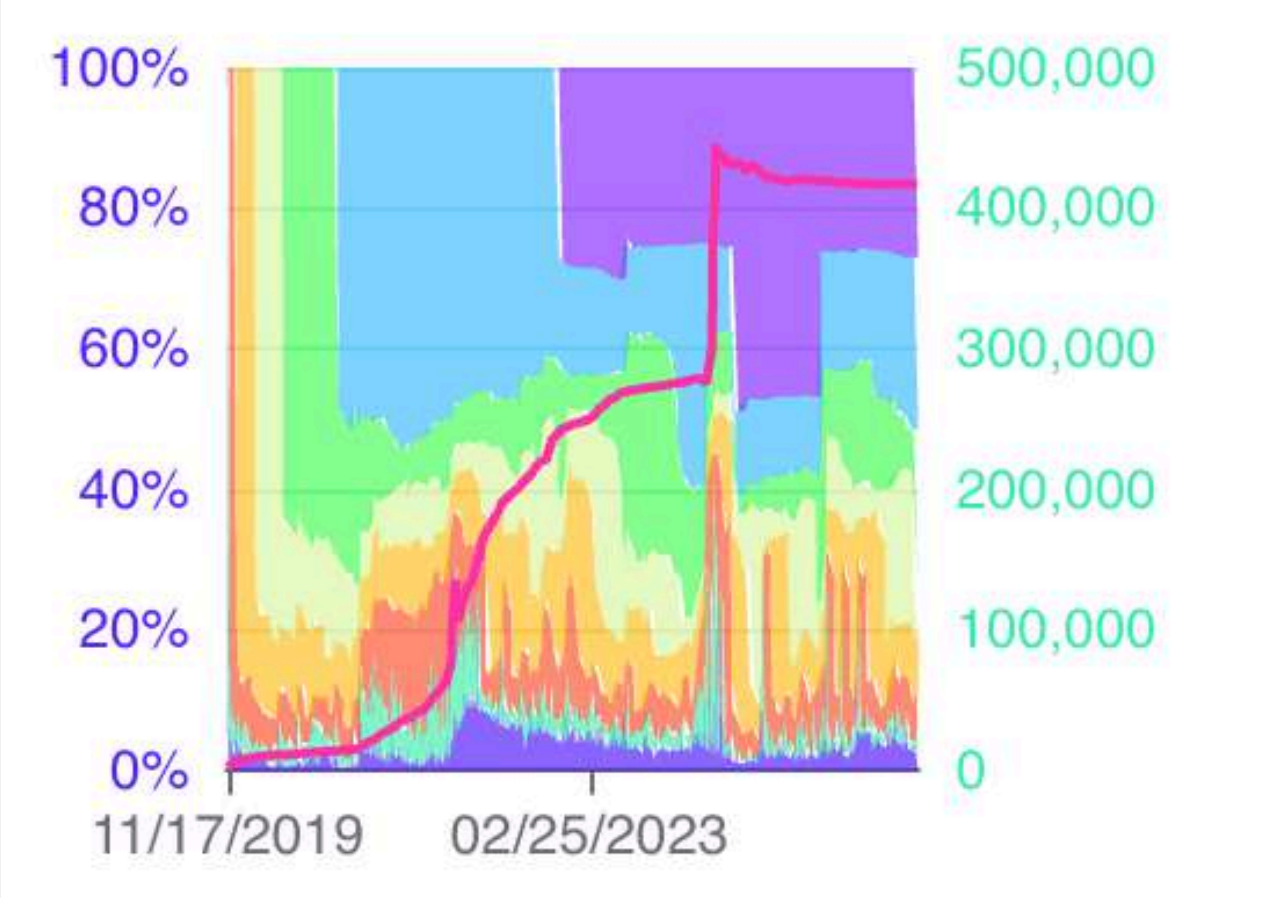
Hash Rate

Decreased from 452 PH/S to 145 PH/S.



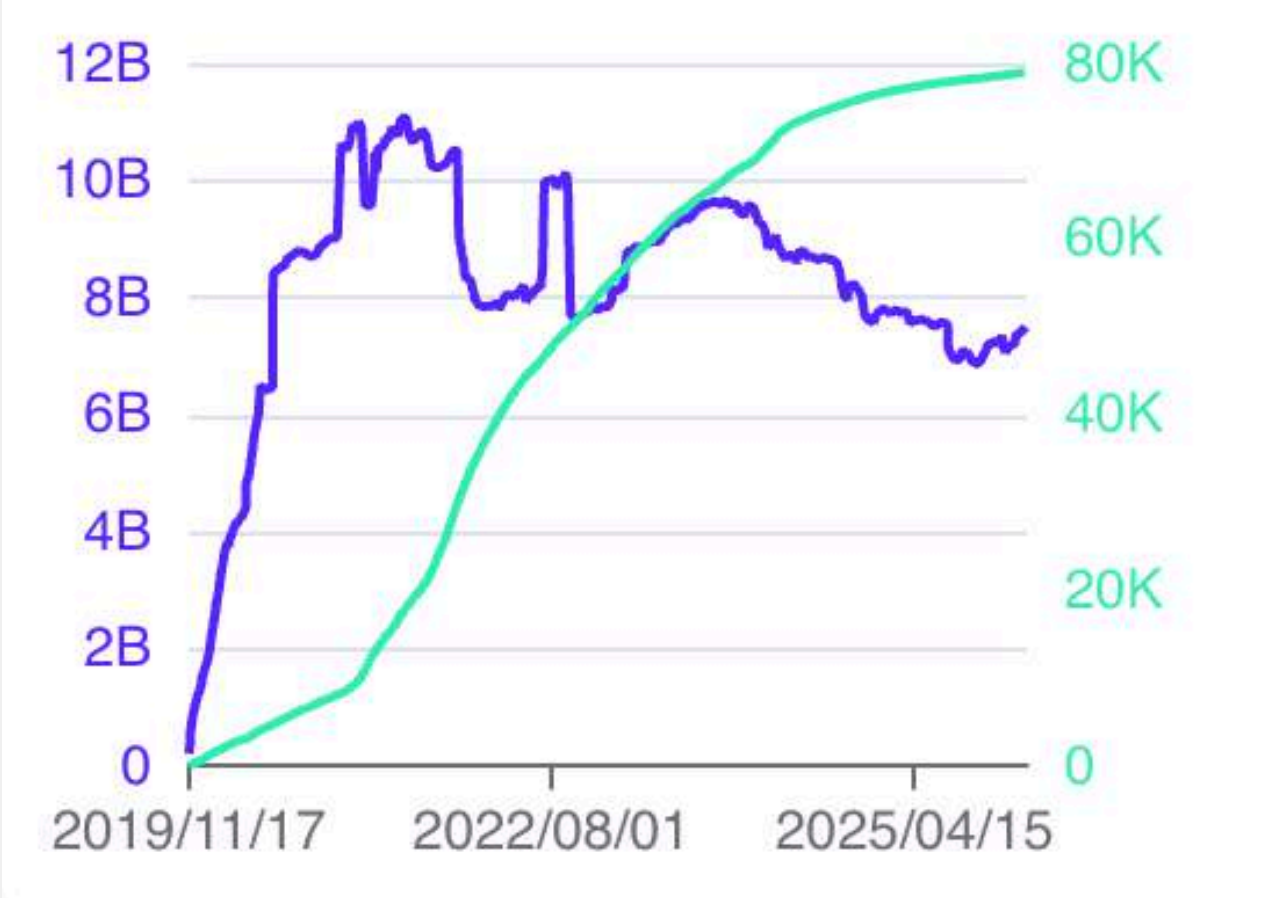
Long-Term Holders (>3 years)

Number of holders remained flat, long term holders declined while short term holders increased.

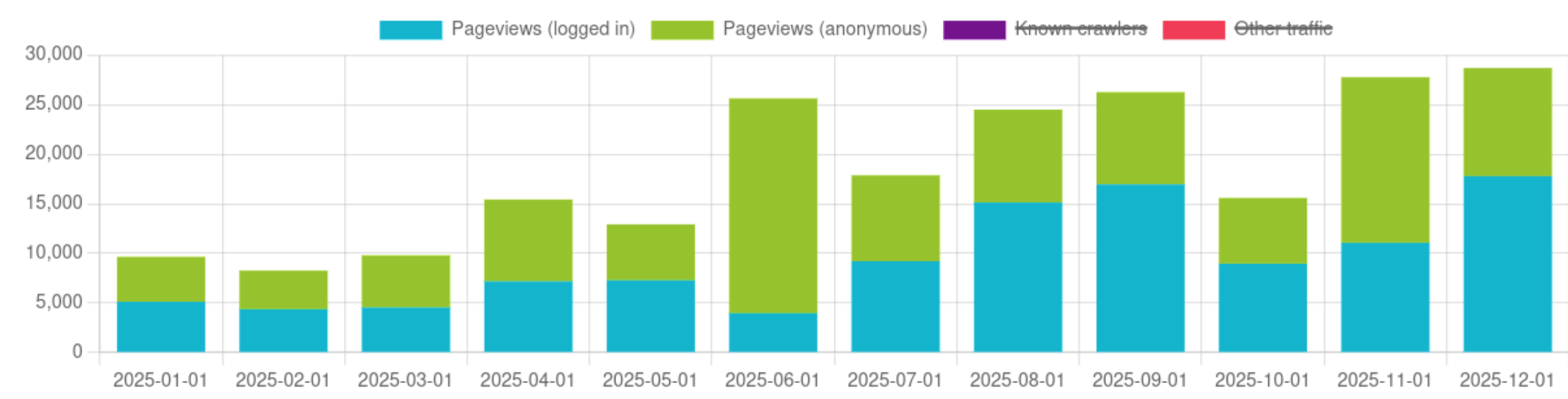


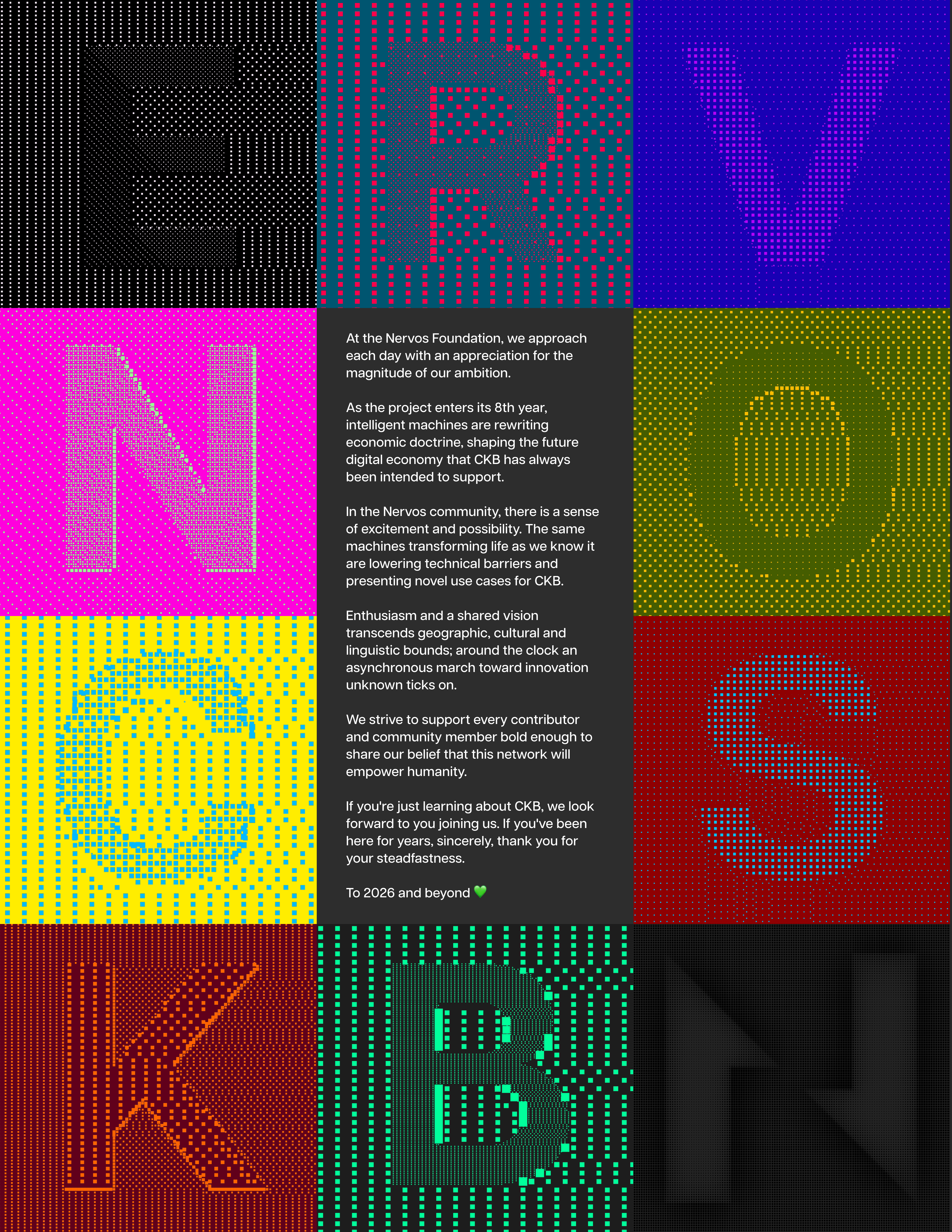
Nervos DAO Depositors

DAO deposits decreased slightly from 7.55 billion CKB to 7.17 billion, DAO depositors increased from 76,460 to 78,690.



Site Traffic (Nervos Talk forum)





At the Nervos Foundation, we approach each day with an appreciation for the magnitude of our ambition.

As the project enters its 8th year, intelligent machines are rewriting economic doctrine, shaping the future digital economy that CKB has always been intended to support.

In the Nervos community, there is a sense of excitement and possibility. The same machines transforming life as we know it are lowering technical barriers and presenting novel use cases for CKB.

Enthusiasm and a shared vision transcends geographic, cultural and linguistic bounds; around the clock an asynchronous march toward innovation unknown ticks on.

We strive to support every contributor and community member bold enough to share our belief that this network will empower humanity.

If you're just learning about CKB, we look forward to you joining us. If you've been here for years, sincerely, thank you for your steadfastness.

To 2026 and beyond 🍀