CHAIN FUSION

ECOSYSTEM REPORT

INTERNET COMPUTER

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Introduction

Themes:

- The Internet Computer is growing rapidly in network usage. Much of that is being driven by multi-chain applications leveraging Chain Fusion technology.
- The scope of Chain Fusion continues to expand; starting with Bitcoin, now with Ethereum and soon with Solana. Most chains will be brought into the Chain Fusion stack.
- Chain Fusion is resulting in ICP developer growth.

Chain Fusion is not just a collection of technologies that allow ICP smart contracts to read and write to other blockchains without intermediaries. It provides developers a full stack solution for building applications unbounded by blockchain borders, making it simple to tap into user communities and liquidity across the crypto landscape.

It provides users with applications that provide a smooth and simple user experience, regardless of which chain the user is interacting with. But, perhaps most importantly, it provides a path forward for our industry that is less focused on tribal dynamics and more focused on products that can scale to the masses.

The Internet Computer has experienced a lot of growth in the previous twelve months. Network activity has grown 150%. Full time developer counts, as reported by Electric Capital, has grown 30%, despite an industry-wide slowdown of 16%. ICP has the fastest growing network of developers of blockchains with more than 100 developers, according to Electric Capital. Much of this growth is due to the adoption of Chain Fusion technology by many projects in the ICP ecosystem, allowing them to expand their product offering to new communities and use cases. The subnet that houses the Chain Fusion technologies has seen activity grow by 12.3x in the past twelve months as more apps go multi-chain. And message counts for the Chain Fusion subnet have seen a 20.4x increase in the past 12 months as ICP multi-chain apps see more and more adoption by new user communities.

ICP is still early in its Chain Fusion journey. Bitcoin integration went live at the end of 2022 and Ethereum integration was completed in May of 2024. There are currently two dozen chains already supported by Chain Fusion. But we have a long way to go to ensure that most blockchains are supported and we excitedly look forward to the next major milestone for Chain Fusion: integration with Solana.

Author: Kyle Langham
Director of Data and Analytics, DFINITY Foundation

ICP Network Activity

10M
8M — 8.2M
6M — 6.4M
4M
2M

457.7K 577.3K 465.6K 1.2M 1.2M 1.5M 1.6M 2.5M 2.6M 3.6M 6.4M 8.2M
0

Sep '23 Oct '23 Nov '23 Dec '23 Jan '24 Feb '24 Mar '24 Apr '24 May '24 Jun '24 Jul '24 Aug '24
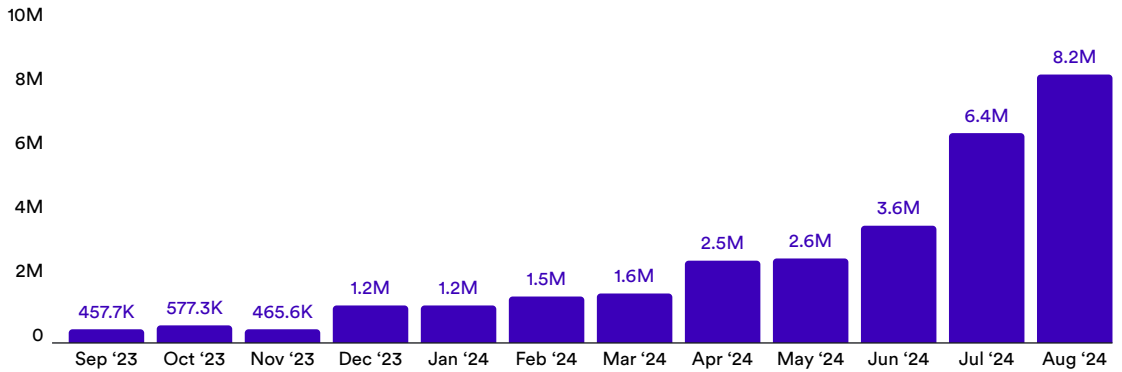
Chain Fusion subnet average messages/day by month

■ UpdateMessages

150T
100T
50T

8T 28T 15T 21T 24T 31T 30T 35T 31T 39T 74T 108T
0

Sep '23 Oct '23 Nov '23 Dec '23 Jan '24 Feb '24 Mar '24 Apr '24 May '24 Jun '24 Jul '24 Aug '24
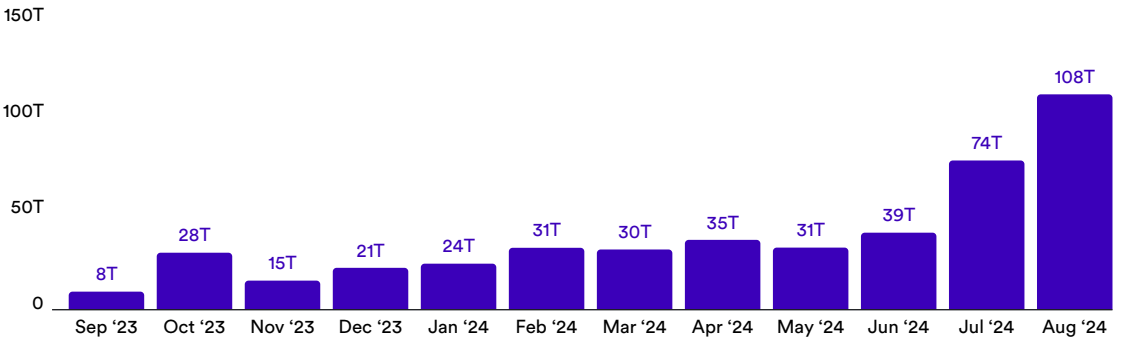
Chain Fusion subnet average cycle burn/day by month

■ Avg. Daily Cycles Burned (Acc. +/- 2%)

1,200T
1,000T
800T
600T
400T
200T

462T 621T 626T 734T 614T 710T 1,170T 733T 764T 878T 1,101T 1,154T
0

Sep '23 Oct '23 Nov '23 Dec '23 Jan '24 Feb '24 Mar '24 Apr '24 May '24 Jun '24 Jul '24 Aug '24
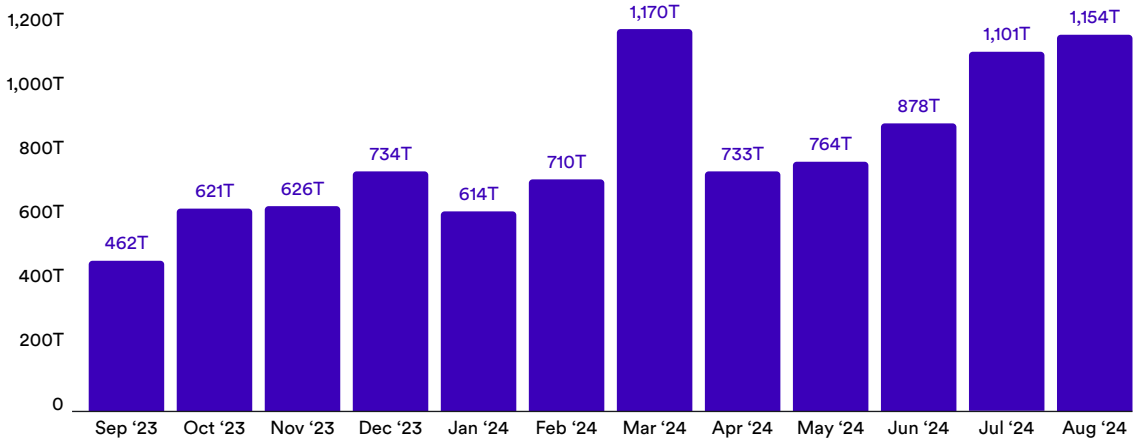
ICP total cycle burn/day by month

■ Avg. Daily Cycles Burned (Acc. +/- 2%)

The Chain Fusion R&D Roadmap

Chain Fusion truly became multi-chain in 2024. The year kicked off with ckETH joining ckBTC as a synthetic twin of the native asset on ICP, held in custody by smart contract logic governed by the ICP governance system. That feat was followed by full Ethereum integration. The highlight of the Ethereum integration was the Tritium milestone, which provided full read/write support for the Ethereum ecosystem, including EVMs and L2s. The backend technology that delivered this integration, RPC endpoints through https outcalls, also unlocked a handful of other chain integrations and brought the total number of chains supported by Chain Fusion to two dozen. The Ethereum integration was released in tandem with signing latency and throughput improvements, as well as the ability to launch "ck" versions of ERC-20 tokens. While the year started with only one ck token (ckBTC), there are currently 23 ck tokens, with ckBTC, ckETH, ckUSDC and ckUSDT as the four most used ck tokens.

2024 was also highlighted by the release of threshold Schnorr signatures and bitcoin block head data. These features, released in the Deuterium milestone, unlock unique opportunities related to Bitcoin fungible tokens like BRC-20s and runes, as well as building out decentralized Bitcoin services and infrastructure.

In 2025, ICP will welcome the next major integration, Solana, to its Chain Fusion toolkit. This will not only complete integration with the three largest blockchains (Bitcoin, Ethereum and Solana), but it will also feature the support of EdDSA signatures on ICP. Joining ECDSA and Schnorr signatures, EdDSA is a major signature algorithm used throughout crypto, and by supporting all three, ICP unlocks the capability to expand its integration packages to almost any other blockchain. This leads the Internet Computer towards our vision for a true World Computer.

Author: Kyle Langham
Director of Data and Analytics, DFINITY Foundation

Learn more about ICP's R&D Roadmap

Chain Fusion HUBS: Uniting Ecosystems

In 2024, Chain Fusion HUBS emerged as a pivotal series of events for the Internet Computer (ICP) ecosystem, embodying the core values of interoperability and collaboration. These gatherings have effectively brought together a diverse array of crypto enthusiasts, developers, and institutional players, fostering a unified vision for a decentralized future. Each edition of Chain Fusion HUBS has demonstrated the potential for real-world connections within the Web3 space, highlighting the unique contributions of ICP and its Chain Fusion technology.

EthCC – Brussels

Chain Fusion HUB at EthCC marked the inaugural showcase of our Chain Fusion narrative, successfully engaging both the Ethereum community and the broader crypto landscape. This event emphasized ICP's commitment to contributing to the ETH ecosystem through its innovative third-generation blockchain technology. Our team's interaction with various stakeholders yielded promising leads for future collaborations, establishing a strong foundation for ongoing developments.

Bitcoin Conference – Nashville

Chain Fusion HUB at the Bitcoin Conference in Nashville highlighted ICP's role in the Bitcoin Layer 2 space, positioning Chain Fusion technology as an essential component for unlocking new multichain opportunities. By showcasing the native integration of smart contracts with Bitcoin, ICP illustrated its capacity to enhance decentralized finance, AI applications, and ordinals. This engagement resonated with the Bitcoin community, revealing the immense potential for collaborative growth in the BTC space.

Coinfest Asia – Bali

At Coinfest Asia, the transformative power of ICP was on full display, focusing on community-driven innovation. Dominic Williams' participation enhanced the experience of thousands of attendants at Chain Fusion HUB & Hacker House, encouraging developers to experiment and create. Participants engaged actively, experienced the technology firsthand, and gained valuable insights into decentralized applications development, reflecting the dynamic potential of the Internet Computer ecosystem.

Korea Blockchain Week – Seoul

Chain Fusion HUB during Korea Blockchain Week revealed ICP's robust capabilities in AI and multichain integration. Project pitches from the local ICP ecosystem showcased how ICP's secure, low-cost

infrastructure addresses key challenges such as data privacy and decentralized identity management. These advancements are critical for mass adoption in various sectors, including healthcare and gaming. The seamless blending of AI with blockchain through Chain Fusion illustrates ICP's potential to deliver impactful, real-world applications across industries.

Token 2049 – Singapore

Chain Fusion HUB at Token 2049 made a big splash, featuring 14 events over 2 days, a signature party, and over 150 speakers, all drawing a diverse audience of thousands. With multiple ICP project booths and significant partnerships forged, this event solidified Chain Fusion's reputation and turned into a must-attend destination during Token 2049. The engagement of influential founders from prominent projects and key industry figures created a vibrant atmosphere for networking and collaboration, positioning ICP at the forefront of Web3 innovation.

As Chain Fusion HUBS continue to unfold around major global conferences, they signify an exciting effort to connect communities and thought leaders within the crypto space, encouraging dialogue and collaboration among diverse stakeholders. The events not only elevate ICP's profile but also contribute to the broader mission of creating a unified Web3 ecosystem.

Author: Emilio Canessa
Head of Global Adoption, DFINITY Foundation

BITCOIN
X
ICP

Bitcoin Integration Challenges

Introduction

User fragmentation and liquidity fragmentation continue to grow across the crypto ecosystem. We see it across Layer 1s (BTC, ETH, SOL, etc), we see it within L1 ecosystems (ETH, Polygon, Arbitrum, Optimism, etc), and we even see it within a single chain like fungible token standards on Bitcoin (BRC-20, Runes, Atomicals, TAP, etc). This problem will continue to grow over time as developers continue to launch new L1s, L2s, sidechains, rollups, and token standards.

This user and liquidity fragmentation problem is exacerbated by the fact that we have so much infrastructure in crypto, and every infrastructure product needs users, developers, and liquidity to survive. So there is a massive capitalistic driving force that is splitting up the crypto ecosystem into walled-off gardens that generally lack composability. We see this in the form of incentivization models, points programs, airdrops, tokens, and even developer grants.

With so many fragmenting forces across the crypto ecosystem, we need seamless, permissionless interoperability solutions more than ever.

The Interoperability Problem for Bitcoin

Layer Zero, Wormhole, Axelar, Particle Network, and Across are a few existing interoperability solutions that are trying to fill in the omni-chain gap. These interoperability solutions work by deploying omni-chain smart contracts on source and destination chains which enables burning and minting of tokens across chains.

These solutions generally consist of a relayer network for message transport, signing services to create cross-chain transactions, an oracle solution to validate finality on source chain transactions, and developer tooling to enable omni-chain applications.

The problem with these models is you can't deploy omni-chain smart contracts on Bitcoin, so Bitcoin assets cannot currently plugin to these systems. This includes BTC, the Lightning Network, Ordinals, BRC-20, Runes, Tap, Pipe, Atomicals, BRC-100, RSM, OP_NET, and others.

This also includes Bitcoin sidechains or Bitcoin L2s that don't align with the EVM focus for most of the existing interoperability solutions (Move, SVM, WASM, etc).

L3s, shared sequencing (Espresso), shared bridging (Polygon Agg Layer), and real-time proving between rollups are all potential interoperability solutions within their specific tech stack, but even in these scenarios it is overly optimistic to think that everyone is going to build on a single stack.

Potential Solution: Bitcoin-native Layer 0 with ICP

A potential solution to these challenges could be a Bitcoin-native Layer 0 interoperability protocol. This would be a Layer 0 protocol that focuses first and foremost on Bitcoin. Other ecosystems could be integrated as well (ETH, ETH L2s, Solana, Cosmos, etc) but Bitcoin would be the primary focus.

Such a protocol generally consists of two main technical components:

1. Node Network: The node network on ICP is threshold signing subnets. These subnets can handle threshold signing (ECDSA, Schnorr, EdDSA) to enable cross-chain signatures, and then ICP supports an ultra light node setup where blocks are pulled in as needed to verify finality on source chains.

2. Execution Layer: These threshold signing subnets are natively integrated into the Internet Computer Protocol (ICP), so it is easy to incorporate them with ICP smart contracts directly. This execution layer (ICP) is essentially the home for omni-chain applications. Developers could potentially build a single application that can work across Bitcoin native assets, meta-protocols, sidechains, L2s, other L1s, etc.

Leveraging ICP for Bitcoin Layer 0

The Internet Computer Protocol (ICP) offers several key features that make it particularly well-suited for implementing a Bitcoin Layer 0 solution:

1. Bitcoin Light Node: ICP can run a Bitcoin light node fully on-chain. This enables direct verification of Bitcoin transactions and blocks on ICP, providing a secure and decentralized way to interact with the Bitcoin network.
2. Threshold Signing Subnets: As mentioned earlier, ICP supports threshold signing subnets for ECDSA, Schnorr, and EdDSA (coming soon). This capability is crucial for enabling secure cross-chain signatures.
3. HTTP Calls in Smart Contracts: ICP smart contracts can make HTTP calls directly. This feature allows for easy integration of external data sources and oracles, which are essential for verifying finality on source chains and enabling cross-chain communication.
4. Gasless Transactions: Users on ICP don't have to pay gas fees for transactions. This significantly improves the user experience and lowers the barrier to entry for interacting with the protocol.

These features of ICP could potentially address many of the technical challenges involved in creating a Bitcoin Layer 0 solution, providing a robust foundation for building interoperable, cross-chain applications.

Conclusion

In conclusion, while interoperability remains a significant challenge in the crypto ecosystem, particularly for Bitcoin, the concept of a Bitcoin-native Layer 0 protocol built on ICP presents an interesting potential solution. By leveraging the unique features of ICP, such a solution could address many of the technical and usability challenges inherent in cross-chain interoperability. As the ecosystem continues to evolve, such approaches may play a crucial role in addressing fragmentation and enhancing cross-chain functionality.

Author: Bob Bodily Phd
CEO, Bioniq

Bioniq

Bioniq leverages Chain Fusion to make it possible to create, collect, and trade bitcoin-based Ordinals but without the need to pay gas fees—and with quick transaction times.

Bitcoin Ordinals are like Bitcoin-based non-fungible tokens (NFTs). Ordinals make it possible to write and record individual information to the transaction data of bitcoin transactions, effectively making that transaction unique.

This means that bitcoin can be used for collectibles or other NFT-like projects. But the downside of creating Ordinals on bitcoin is that they are expensive (transaction costs) and can cause network congestion. That's where Bioniq comes in.

By using Chain Fusion and having ICP handle most of the backend work while leveraging bitcoin's bomb-proof ledger, it's like having the best of both worlds: No-cost NFTs that can settle quickly all while living on bitcoin's global and immutable ledger.

Website: www.bioniq.io
X: www.x.com/bioniqMarket
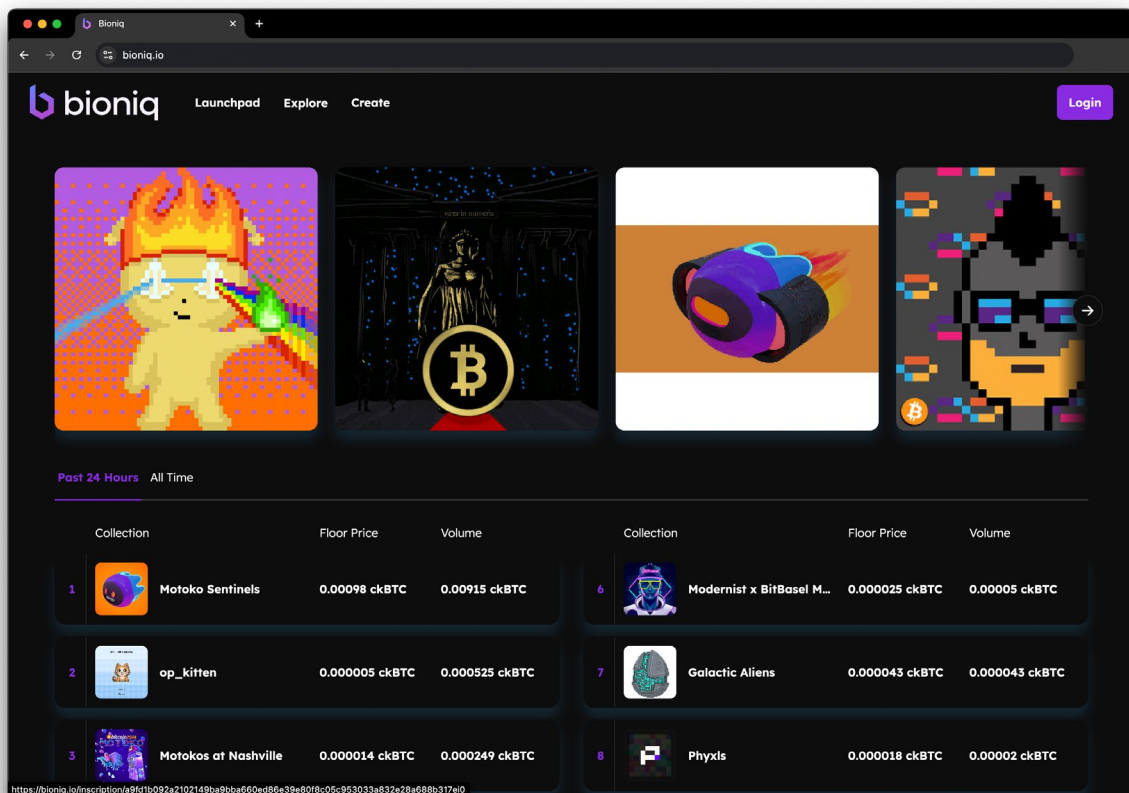
Meta-Protocols on Bitcoin

Overview

The evolution of token protocols on Bitcoin, from Colored Coins to Ordinals, Runes, and Atomicals, highlights the continuous innovation in the ecosystem. Technological enhancements like SegWit, Schnorr signatures, and Taproot have opened new possibilities, making Bitcoin a more versatile and robust platform for decentralized finance. These advancements signal a new dawn for Bitcoin, expanding its role beyond a store of value to a foundation for diverse digital assets and complex financial applications.

Metaprotocols 1.0
Early Efforts: Colored Coins and Ethereum

Initial efforts to create tokens on Bitcoin began with Colored Coins. This method involved "coloring" specific Satoshis with additional information to represent assets like stocks or real estate. Despite its innovative approach, Colored Coins faced significant limitations due to Bitcoin's scripting constraints and the lack of native support for complex transactions. This drove the need for more advanced solutions, leading to the development of Ethereum. Recognizing Bitcoin's limitations, Ethereum was created to offer a more flexible platform for decentralized applications (dApps) and smart contracts. The introduction of the ERC-20 standard by Ethereum laid the foundation for a vast ecosystem of tokens and dApps, significantly advancing the capabilities of blockchain technology.

New Paradigms: Ordinals, Runes, and Atomicals

- Ordinals: Ordinals allow data inscriptions on individual Satoshis, enabling unique digital assets directly on the Bitcoin blockchain. This method, although innovative, led to issues like network congestion and high fees due to its non-UTXO model.
- Runes: Runes address some of the inefficiencies of Ordinals by utilizing Bitcoin's UTXO model, making it more scalable and easier to integrate with existing infrastructure. Runes are ideal for fungible tokens such as stablecoins and loyalty points.
- Atomicals: Atomicals leverage the UTXO model to introduce the ARC-20 standard, backing each token with a Satoshi. This ensures intrinsic value and simplifies token management while avoiding the off-chain indexing issues of BRC-20 tokens.

Technological Enhancements: Taproot, Schnorr Signatures, and Segregated Witness

- Segregated Witness (SegWit): Implemented in 2017, SegWit separates transaction signatures from transaction data, reducing the size of transactions and increasing Bitcoin's block capacity. It also mitigates transaction malleability, paving the way for more advanced second-layer solutions like the Lightning Network.
- Schnorr signatures: Schnorr signatures offer a more efficient and secure way to aggregate multiple signatures into one, reducing the size of multi-signature transactions. This improves scalability and enhances privacy by making multi-signature transactions indistinguishable from regular transactions.
- Taproot: Activated in 2021, Taproot introduces MAST (Merkelized Abstract Syntax Trees) and integrates Schnorr signatures, allowing for more complex and private smart contracts. Taproot

enhances Bitcoin's scripting capabilities, making it more suitable for advanced applications and reducing transaction costs.

Metaprotocols 2.0

Since the beginning of 2024, metaprotocols have experienced rapid development. In April, during the halving cycle, the successful launch of Runes pushed metaprotocols to new transaction volume peaks. However, by May, with the overall adjustment of the crypto market, user fatigue towards new asset issuance stories and a lack of market liquidity led to a downturn in metaprotocols. Despite this, developers continue to iterate and innovate on metaprotocols.

MEME vs. Utility Tokens

The current landscape of tokens on Bitcoin, particularly those under the Ordinals and BRC-20 standards, is predominantly meme-based. These tokens often lack functional utility, serving more as speculative assets rather than offering tangible benefits. Transitioning from meme to utility involves integrating functionalities such as governance, staking, or access to specific services. Utility tokens have the potential to enhance value and foster broader adoption within the crypto ecosystem. Developers and the market have high expectations for OP_CAT, a Bitcoin script operation code capable of concatenating strings, which could enhance Bitcoin's scripting capabilities. This enhancement could enable more complex operations and functionalities, paving the way for utility-based tokens with advanced contract logic. However, as an early-stage proposal, the timeline for OP_CAT's integration into Bitcoin's mainnet remains uncertain.

Programmability and Evolution

The development and deployment of advanced token protocols and smart contracts on Bitcoin currently require significant programming skills. However, the ecosystem is evolving to provide more user-friendly tools and frameworks, reducing this barrier. One possible future direction is bridging Bitcoin with Ethereum's Virtual Machine (EVM), allowing Bitcoin to leverage Ethereum's extensive smart contract capabilities. This approach would foster interoperability and expand the potential use cases for Bitcoin-based assets. Alternatively, enhancing Bitcoin's native programmability could involve developing new scripting languages or extending existing ones, enabling more sophisticated smart contracts and decentralized applications (dApps) directly on Bitcoin without relying on external chains.

User and Market Demands

Users and markets are increasingly demanding tokens with tangible utility, reflecting a desire for assets that offer more than just speculative value. This includes tokens that can be used in real-world applications, provide governance rights, or offer staking rewards. Venture Capital (VC)-backed tokens have fallen out of favor due to concerns about centralization and unequal distribution, which contradict the decentralized ethos of the crypto community. Additionally, the perception that VC tokens prioritize profit extraction over community and long-term project sustainability has caused wariness among users and investors. The market has also seen an influx of VC-backed tokens, many of which have failed to deliver on their promises, leading to skepticism and a preference for community-driven, transparent projects.

Opportunities with Internet Computer (ICP)

The Internet Computer (ICP) is continuously enhancing and exploring integrations with Bitcoin, presenting significant opportunities for metaprotocols. ICP's subnets provide a Bitcoin API, and soon, the Header API will be introduced, enabling on-chain verification of Bitcoin transactions and acting as Simplified Payment Verification (SPV) nodes. This integration allows ICP canister smart contracts to directly interact with the Bitcoin network without intermediaries, facilitating seamless transactions and improving security.

ICP now supports Threshold Schnorr signatures following the implementation of t-ECDSA. This

development means that ICP subnets are able to support and broadcast Taproot signatures, enhancing compatibility with advanced Bitcoin protocols and expanding the capabilities of Bitcoin-based applications. These enhancements position ICP as a robust platform for developing next-generation Bitcoin protocols, leveraging its unique features like chain-key cryptography and high-performance smart contracts.

Building on its capabilities, ICP can provide the technical foundation needed for enhanced programmability and the creation of utility tokens. By natively implementing BTC transaction indexing and metaprotocol declarations using its token standards, ICP offers a new combined paradigm that integrates current metaprotocol advancements with chain-key technology. This fusion can lead to the development of trustless liquidity markets, allowing seamless and secure interactions between different digital assets, thereby attracting more users to issue and engage with metaprotocols on ICP.

Author: Rainbow Protocol team

Rainbow Protocol

#bitcoin **#metaprotocols** **#DeFi**

Rainbow Protocol is bringing new kinds of functionality to Bitcoin. The basic idea driving Rainbow Protocol is to make it easier to build more financial functionality on top of Bitcoin, while leveraging Bitcoin's security and network effects.

Rainbow Protocol is developing a new system of Bitcoin-based smart contracts that leverage Bitcoin's overall security and infrastructure, and ICP's ease of smart contract development. It's like taking the best of both worlds and combining it into something better.

Rainbow addresses some of the limitations of current inter-chain solutions and opens possibilities for new kinds of onchain innovation across sectors.

There is a growing movement underway to use the Bitcoin network as an infrastructure layer that enables more decentralized apps and services.

When compared to other crypto networks and protocols, Bitcoin lacks functionality such as the ability to write smart contracts.

Smart contracts make it possible to extend the functionality of decentralized systems. Put simply, they allow developers to create specific applications and services that can be tailored with a high level of specificity, but also use an underlying blockchain as a final settlement or data layer. While Bitcoin has plenty of other uses in a decentralized world, its lack of programmability raised questions about its overall utility or adaptability to changing needs.

A few new developments including Ordinals, Runes, and other Bitcoin extender projects, have started to challenge the Bitcoin community's monolithic posture and inspired a new generation of builders interested in things like Bitcoin-based DeFi and other Bitcoin-based decentralized services. One of the ways to scale Bitcoin-based development is by leveraging other decentralized computing systems and making it possible to plug systems together. The basic system design would be to connect Bitcoin's underlying utility and security with a platform that is already optimized for smart contract development.

This is where ICP's Chain Fusion comes in. Chain Fusion makes it possible to write smart contracts on ICP and then deploy them across other Layer 1 networks, like Bitcoin via a system of bridges.

Website: www.docs.rainbowprotocol.xyz
X: www.x.com/rbo_protocol

Tap Protocol

#bitcoin   #metaprotocols   #DeFi

TAP is a cutting-edge multi-asset metaprotocol for Bitcoin Ordinals, enabling more complex financial operations directly on the Bitcoin blockchain, powered by and benefiting from the Ordinals ecosystem. It's designed to be more flexible and user-friendly than other token metaprotocols, enabling features like token staking, swapping, and liquidity pools (to name a few) without the need for secondary layers or complex mechanisms.

Tap Protocol is designed to create decentralized bridge security, while making building on Bitcoin via ICP's Chain Fusion safe and easy.

Website: www.trac.network/tap
X: www.x.com/trac_btc

Bitfinity

#ethereum   #DeFi   #bitcoin

Blockchain developers often have to make decisions early in their careers about which Layer 1 they want to build with: Bitcoin or Ethereum.

The decision is like choosing between Coke and Pepsi or between paper or plastic. There are obvious trade-offs, or advantages and disadvantages that have to be considered. But what if it were possible to build on multiple Layer 1 stacks? What if instead of having to decide between the Bitcoin developer environment and the Ethereum developer environment, you could just design and develop projects and then choose the best chain for the job?

That's where Bitfinity comes in. Bitfinity is an Ethereum Virtual Machine (EVM) designed to work on top of Bitcoin. ICP's Chain Fusion plays a critical role in making Bitfinity's EVM compatible with Bitcoin and acts as the go-between for the two chains. A key feature enabled by Bitfinity is that it makes it possible to write and deploy smart contracts (Ethereum-like capability) on Bitcoin.

Website: www.bitfinity.network
X: www.x.com/bitfinitynet

Runes, Beyond Bitcoin

The Runes Protocol

The Runes Protocol is a fungible token protocol built on top of Bitcoin, featuring a fair minting issuance method that is more accessible to the public. The protocol extends Bitcoin's UTXO model into a model where UTXOs can hold balances of arbitrary fungible tokens (called Runes) alongside their satoshis. Its core advantage lies in its construction based on Bitcoin's UTXO, which makes transaction steps simpler, indexing more efficient, and scalability better.

Runes are completely unrelated to Ordinals, Inscriptions, and BRC-20 tokens, and are directly competitive with BRC-20s. Runes are much more efficient at using blockspace compared to BRC-20s (and contribute less to state bloat). They are also likely to be more compatible with Bitcoin protocols (wallets, bridges, and scalability solutions), as they simply exist on UTXOs (like Bitcoin). In contrast, BRC-20s usually required Ordinal-supported infrastructure in order to interoperate.

Runes Market Cap and On-Chain Data Status

The Runes Protocol was launched during the 2024 Bitcoin Halving, and was well-marketed in advance, with various Ordinals projects offering Pre-Rune airdrops, and generating significant discourse on crypto Twitter.

As expected, the initial launch was highly anticipated. Over 20 mainstream Web3 wallets, on-chain trading platforms, and Bitcoin ecosystem tools, including OKX, ME, Unisats, and Xverse, supported the minting, trading, and transferring of Runes assets from day one. Tools for Runes minting, mempool analysis, UTXO acceleration,

and aggregation quickly flooded the market, drawing many new crypto players into the Runes issuance and trading market.

Runes market cap once exceeded US$2B, making it one of the most vibrant and active ecosystems of 2024.

Since the launch of Runes on April 20, they have significantly eroded the market share of BRC-20. Runes have accounted for over 95% of the Bitcoin fungible token market on average since their launch. Looking at all Bitcoin transactions, Runes transactions have represented over 60% on average. Runes have generated over 2,500 BTC in fees, equivalent to approximately US$165M at the time of writing. This represents about 30% of all fees on the Bitcoin network since April 20th.

Runes Use Cases and Outlook

Focusing on Runes applications, given the current limitations of Bitcoin's low performance, high costs, and lack of smart contracts, the "Runes Ecosystem" and "BTC Layer2 and other high-speed smart contract execution chains" are moving towards a mutual integration.

On one hand, numerous memecoins issued based on the Runes protocol are seeking to enter BTC Layer2 and other high-speed smart contract execution chains to further spread meme culture and explore more use cases and collaborations.

On the other hand, more Bitcoin ecosystem projects and RWA projects are choosing to issue their utility tokens using the Runes protocol, allowing assets to be issued on Bitcoin and then cross-chained to BTC Layer2 or other smart contract execution chains for distribution, trading, and application.

- For example, the Rune $SATOSHI●RUNE● TITAN, built on Bitlayer, serves as the platform token for the LayerX GameFi platform, with 7.1% of its Runes cross-chained to Bitlayer for community incentives and governance. It consistently ranks among the Top 15 by market cap.

Currently, leading the new field of Rune cross-chain is the Omnity Interoperability Protocol, with cross-chain asset volumes exceeding $1M. It links Bitcoin, ICP, Bitlayer, Merlin, BEVM, Bob, X Layer, and B^2 Network, supporting all Rune assets and enabling self-service Bridge and Runes.

    Omnity cross-chain protocol, based on ICP's Chain Fusion technology, operates entirely on-chain, driven by smart contracts without relying on any off-chain components like relayers or indexers. It offers a fast, simple, and low-cost user experience, making it the ideal cross-chain infrastructure for Bitcoin network assets. Omnity provides composable protocol interfaces for Rune etching, minting, transferring, and burning from Layer2, promoting the integration of Bitcoin L1 and L2.

    In conclusion, Runes, as the standardized fungible token on the Bitcoin settlement layer, have established their legitimacy and are widely recognized in the modular architecture of the crypto world. All ecosystems welcome Runes assets, and with the continuous development of cross-chain infrastructure and Layer2 applications, the cross-chain flow and application of Runes assets in the entire crypto ecosystem is inevitable. The activity and influence of the Runes ecosystem will continue to rise, potentially becoming the most important and widely adopted fungible token standard in the crypto world.

Figure 1: Red Envelope, the 1st Runes Dapp on ICP

Author: Louis Liu
Founder & CEO, Omnity Network

Omnity

Omnity is a cross-chain protocol built on ICP, specially designed to fit into the modular blockchain landscape. It is the first 100% decentralized protocol in the cross-chain domain, while the best possible user experiences are kept. Omnity addresses challenges like security vulnerability, high cost and latency, and liquidity fragmentation by leveraging ICP's unique capabilities, including Chain Key and HTTPS Outcalls, among others. The brand new protocol provides a more cost and time efficient, secure, and ubiquitous cross-chain service compared to all existing ones.

Website: www.omnity.network
X: www.x.com/OmnityNetwork
Telegram: www.t.me/OmnityNetwork
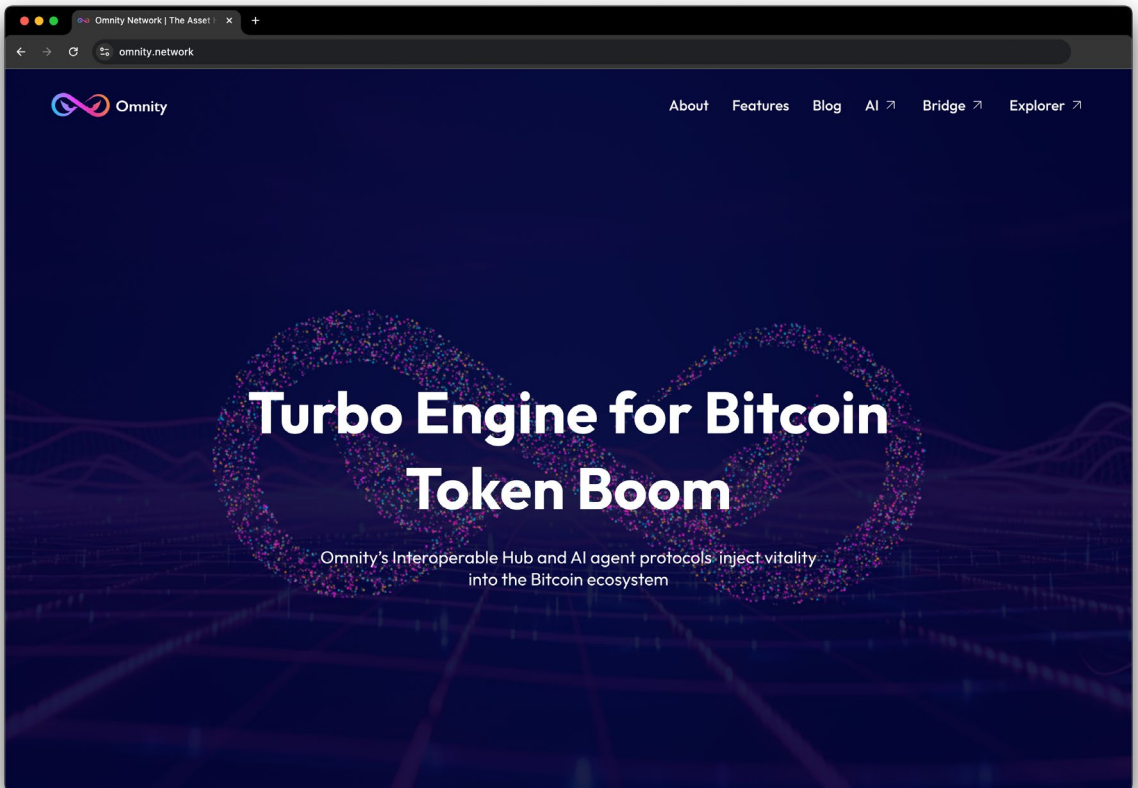
The future of Bitcoin Mining

"Information asymmetry begets stability, while transparency begets volatility."

This adage perfectly captures the difference between traditional stock markets or commodities like gold compared to Bitcoin. In the world of stocks and commodities, a lot happens behind closed doors. Insider trading and secret deals are quite common. Even though regulations demand transparency, regular investors often receive important information much later than insiders. This delay keeps stock prices and commodities relatively stable because the market isn't reacting to every bit of news instantly.

Bitcoin, however, plays by different rules. Everything is on-chain and verifiable by anyone. Here's how this transparency works:

- Wallet Activity: We can see all the balances on all wallets, and when whales move large amounts of BTC to exchanges, signaling potential sell-offs. This can cause immediate market reactions. One recent example is the German Bitcoin sell-off that immediately impacted the market price even though it has since bounced back.
- Network Metrics: The total terahash rate, network difficulty, and miners' payouts are all public knowledge. The coinbase reward algorithm which dictates that every four years the reward will be halved, is known to everyone.
- Transaction Costs: Data from the mempool (where pending transactions wait for confirmation) is public, so everyone knows the current transaction costs.

This openness makes Bitcoin more volatile, despite its large market cap. Unlike stocks and commodities, where information can be controlled or withheld, Bitcoin's transparency means that any significant activity can quickly impact the market.

Bitcoin Mining

In a world of transparency, participating actors like Bitcoin miners have almost zero edge in information asymmetry since all the data is public. It's not an easy endeavor. Miners need cheap energy, and while their costs are in dollars, their rewards are in Bitcoin, which is influenced by price action and mining difficulty.

From a miner's point of view, several factors impact the profitability and feasibility of Bitcoin mining:

Cost Factors:
- Energy Price: Depends on location and energy sources.
- Hardware Price: Varies based on access to manufacturers, economies of scale, technological advancements, and the fact that computing power doubles roughly every two years (Moore's Law) which forces miners to keep upgrading their hardware to stay competitive.

Revenue Factors:
- Price Action: Driven by Bitcoin market cap which is directly impacted by trading activity against fiat currencies.
- Mining Reward: Includes the Coinbase reward (set by the Bitcoin algorithm) and transaction fees (based on network traffic).

To handle these challenges, miners need to be financially savvy. Professionals often use derivative instruments like futures or options to hedge against their risks.

One of the exotic instruments that miners use is the forward hashrate contract by Loka Mining. Think of it like corn farmers selling their future harvests. Bitcoin miners can sell their future hashrate to get a cash advance to buy more mining machines, while also hedging against price volatility risks since they have already locked in the price of their hashrates upfront.

Here's how it works:

Bob is a Bitcoin miner who wants to expand his operation and buy more mining machines. Instead of selling his Bitcoin to fund the expansion, Bob lists a percentage of his future hashrates* for the next year for sale in the Loka protocol.

Based on the hashprice** trajectory, it is projected that Bob's hashrate will be rewarded with a total of 1 BTC in a year. Therefore, Bob lists his future hashrate for 0.9 BTC (a 10% discount) since he'll receive the money immediately.

Since Loka is a permissionless protocol, Bob also needs to put up 0.9 BTC as collateral for the contract to guarantee that he will deliver the hashrate according to his offer.

Alice is an investor who buys Bitcoin every month. She doesn't really care about the short-term price volatility of Bitcoin, but she always seeks to get Bitcoin at a lower price than the market.

Alice buys Bob's forward hashrate contract. The price of Bitcoin when the contract materializes is $60K, which means Alice paid Bob $54K (0.9 BTC).

In this transaction, Bob receives money upfront and can fund his expansion, while Alice eventually gets 1 BTC when the contract ends, by paying only 0.9 BTC.

During the contract, the protocol will release a fraction of Bob's collateral every 24 hours when Bob delivers the amount of hashrate specified in the smart contract. If Bob's machine goes offline, the collateral will be slashed for that period of downtime and given to Alice.

This mechanism creates a fair and safe environment for Bob and Alice to do transactions happily without knowing each other or the involvement of a centralized party.

The Technology Behind

Loka is building the future of decentralized Bitcoin mining by leveraging ICP's chain-key technology that creates "Bitcoin twin" that enable transactions in 1 second finality with almost zero fees, and allowing it to be used in smart contracts in the Loka protocol infrastructure.

ICP also enables Loka to build everything onchain, from the mining pool, the primitives and also the frontends that interact with end-users.

Author: Andy Fajar
Co-founder & CEO, Loka Mining

* Hashrate = units of power from his mining machines
** Hashprice = how much Bitcoin is awarded per unit of mining power

Loka

#bitcoin   #mining   #DeFi

Loka is a platform that enables retail investors to acquire BTC at a lower than market price by providing liquidity to Bitcoin miners without any exposure to centralized party risk using our trust-less non-custodial escrow and fully decentralized mining pool.

Loka platform is a two-sided marketplace powered by a P2P trustless protocol, connecting Bitcoin miners and individual investors in a non-custodial approach, where: Individual investors can invest in Bitcoin miners with access to cheap energy by purchasing contracts of future hash rate for a certain period of time, in return for Bitcoin at a lower price than buying from the market.
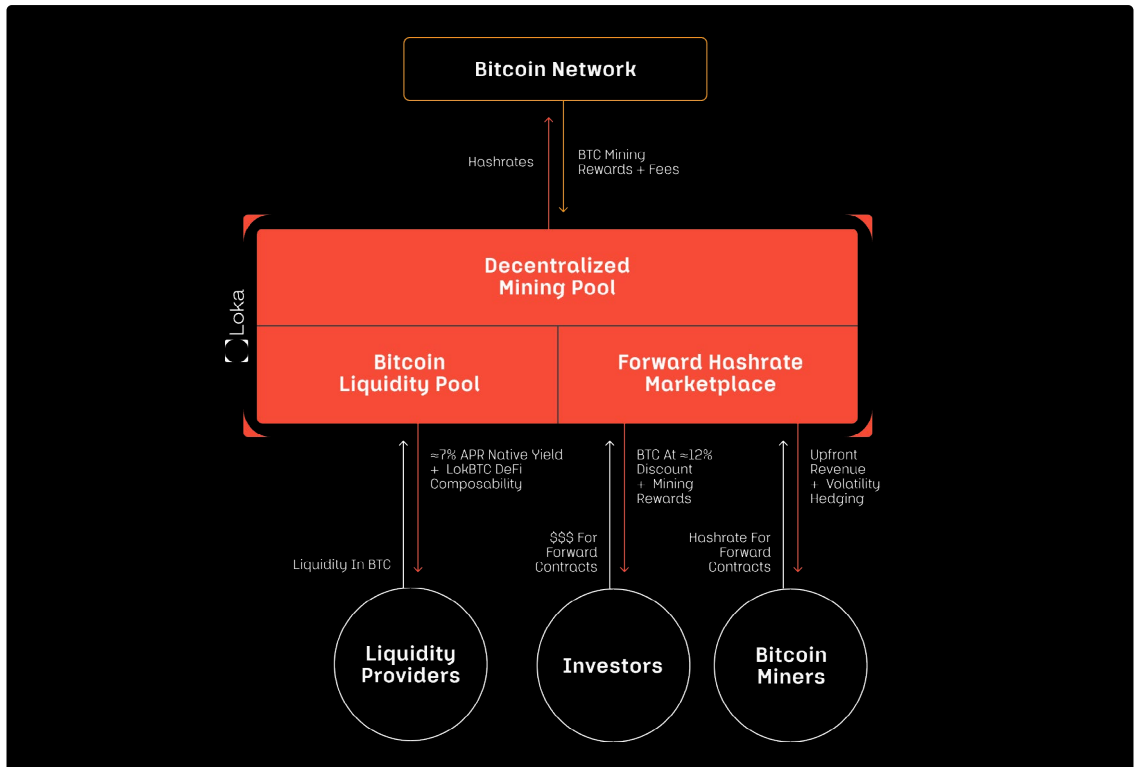
Bitcoin miners gain early return of their investment with a margin to scale up their hash rate capacity by purchasing more hardware, and hedging the risk of price volatility exposure.

Website: www.lokamining.com
X: www.x.com/lokamining
Telegram: www.t.me/lokaminers

DEFI
X
ICP

The Future of Chain-Fusion powered DeFi

Over the past few years, we've seen how Bitcoin's utility has far expanded beyond a store of value. From ordinals to bringing DeFi capabilities on the world's largest blockchain network—the possibilities of tapping into the Bitcoin economy are endless. And Bitcoin-native DeFi offers a sustainable ecosystem for Bitcoin's evolving use cases. Chain Fusion technology, powered by ICP, is driving this narrative by offering the tech stack and tools that boost the development of BTCfi applications.

By offering a unified web3 experience and with its protocol-level Bitcoin integration, Chain Fusion allows bitcoins to be used for activating DeFi functionalities. BTC can now be used directly for staking, restaking, lending, borrowing, and yield generation—functions traditionally associated with programmable blockchains like Ethereum and Solana.

One such ecosystem project, Bitomni, is at the forefront of BTCFi innovation, leading the way in integrating Bitcoin and its tokens with omnichain capabilities. As a BTCFi-driven omnichain asset management protocol, Bitomni facilitates seamless asset management across multiple blockchain ecosystems. By offering a suite of BTCFi products such as BitoBridge, BitoRestaking, and BitoIndexer, Bitomni unlocks BTCfi by offering mechanisms to enable BTC to unlock DeFi capabilities.

Ray from Bitomni states "Bitomni leverages ICP's distinctive Chain Fusion technology to ensure seamless interoperability, which is essential for omnichain functionality. Bitomni harnesses Bitcoin Integration and ckBTC capabilities, empowering its dapps with direct protocol-level interaction with the Bitcoin blockchain. This gives Bitomni a competitive edge over other BTCFi products. Besides unique technologies like Chain Fusion and Bitcoin Integration, ICP's robust framework ensures secu-rity and scalability, making it an ideal foundation for leading innovations in the BTCFi market."

Another ecosystem project, ChainkeyX, is developing a Bitcoin Neobank aiming to replicate the modern banking system on-chain using Bitcoin. It offers a fully on-chain Bitcoin borrowing and lending platform, allowing users to earn yield on their Bitcoin without moving it to an exchange. "A borrowing and lending dapp just for bitcoin with no need for stablecoin", states Orange Donut from ChainkeyX.

The platform uses the Chain Fusion tech stack integrating ckBTC (Chain Key Bitcoin) and ckETH (Chain Key Ethereum) to facilitate borrowing and lending on-chain. The project also benefits from ICP's reverse gas model, allowing users to interact with the platform without needing ICP tokens or wallets. As of now, ChainkeyX is in testnet phase with over 1000 users and will be launching its mainnet end of this year in 2024.

ChainkeyX

#bitcoin   #DeFi   #neobank

ChainkeyX is imagined as a suite of products that combines the best of what works with banks with the best of what works with DeFi—an onchain neobank.

Traditional banks offer a number of financial services such as fixed deposits, collateralized loans, and asset swapping. ChainKeyX makes possible a world where you can access those essential financial functions, but all have access to the speed and efficiency of operating onchain.

By using ICP's Chain Fusion, ChainKeyX users are able to create noncustodial wallets to access financial products connected to liquidity pools on both Bitcoin and Ethereum.

This setup results in bank-like access to the best of traditional finance and decentralized finance.

Website: www.chainkeyx.com

NFID Vaults

#bitcoin   #DeFi   #vault

Where did I put my wallet?
It's a question and a problem that spans generations—probably all the way back to the days when people first started minting coins and keeping ledgers.

The way things are looking, that problem could persist into the time of digital money and assets. As people take control over their finances and create noncustodial wallets, the issue of wallet security and wallet management gets even more complicated. After all, when operating with digital assets, there aren't any support lines to call. Creating better digital asset storage and management is where NFID Vaults comes in. NFID Vaults is like a crypto smart wallet, but with the advantage of being interoperable with multiple chains and assets. The best part is that NFID Vault enables a permissionless wallet recovery plan complete with multifactor signatures for added security.

This kind of multilingual wallet is only made possible by ICP's Chain Fusion, which makes it possible for NFID Vault users to access multiple chains from multiple devices, all with wallet-worth security.

Website: www.nfidvaults.com

Bitomni

#bitcoin   #DeFi   #ethereum

Bitomni is making Bitcoin-based DeFi available across multiple chains.

DeFi services such as staking, lending & borrowing, indexing, and token management are made possible by Bitomni's multi-chain approach. So far, products include BitoBridge, BitoRestaking, BitoIndexer, BitoBank, and BitoFund. Like other BTCFi projects, Bitomni makes it possible to add smart contract layer financial functionality on top of Bitcoin. Bitomni's structure enables the programmability and composability of decentralized finance, but also the security and universal,

decentralized access of the Bitcoin blockchain.

The multi-tool approach is made possible by ICP's Chain Fusion and while based on Bitcoin, by leveraging ICP, Bitomni is also compatible with other Ethereum Virtual Machine (EVM) compatible blockchains such as Aptos, Solana, Polkadot, and others.

Bitomni's operations are governed by Bitomni's DAO, which issues a BITO utility token.

Website: www.bitomni.io/en
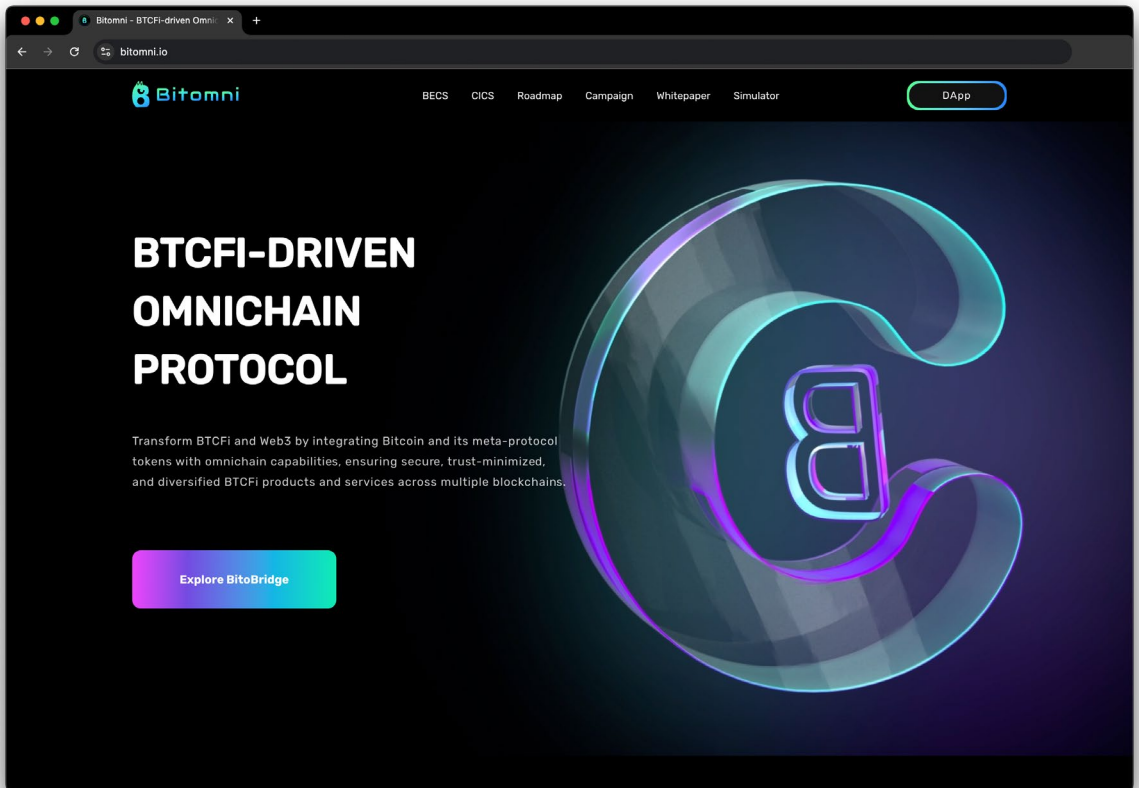
B3Wallet

#wallet   #DeFi   #security

In order to enable real decentralization, we need to rethink identity. Put another way: What if our digital asset wallet identity was based on our Internet Identity and not our traditional physical or social identity? You could imagine the implications for privacy and personal security. But you could probably also imagine the issues with fraud and scams if not handled properly.

Solving the balancing act between user protection while not enabling runaway sketchy stuff is where B3Wallet comes in. B3Wallet is a fully decentralized place on the internet to store assets from multi chains and sources. The wallet can be set up in multi configurations allowing for multiple owners, single owners, and multiple signatures. Users can set up a wallet without having to register and they can recover a wallet without the traditionally complex backup.

Thanks to ICP's Chain Fusion, all users need is an ICP Internet Identity to get started.

Github: www.github.com/B3Pay/B3Wallet

OISY

#wallet   #DeFi   #security

OISY Wallet provides a comprehensive solution for managing digital assets like BTC, ETH, and ICP within a single interface, eliminating the need to switch between multiple wallets for different cryptocurrencies. This seamless experience allows users to manage diverse assets across blockchain networks with ease and efficiency.

Built on ICP, OISY leverages network custody through advanced cryptographic methods, bypassing the need for users to handle private keys directly. This approach enhances security by distributing control across the network and mitigating risks associated with traditional key management.

The wallet itself is fully on-chain and doesn't rely on external servers. This decentralized model provides tamper-proof security, ensuring user data and assets remain safeguarded against unauthorized access. Moreover, by leveraging Internet Identity users can link multiple devices and enjoy a seamless experience across mobile, tablet and desktop without compromising security.

Website: www.oisy.com

Orbit

#wallet   #DeFi   #modular

Orbit aims to make blockchain technology as easy to use as its web2 alternatives.

The goal of the project is to lower the barrier to entry for developers to start building programmable functionality into onchain apps and services—even with web2 development skills and tools.

Orbit's first project is the Orbit Wallet, which uses ICP's Chain Fusion to make it possible for a wallet to easily communicate across various Layer 1 chains and control multiple assets.

The wallet is programmable and can operate from a variety of setups and permissions can be tailored to a wide range of use cases—from the multiasset collecting hobbyist to enterprise level power users.

The Orbit Wallet is the first proof of concept project and it demonstrates how Orbit is designed to work modularly and is extendable by relying on several ICP components such as canisters, stations, and control panels.

Github: www./github.com/dfinity/orbit

Plug Wallet

#wallet   #DeFi   #ethereum

Plug is a browser & mobile crypto wallet and identity/authentication provider for the Internet Computer. Featuring native ETH and ERC 20 storage, Plug's goal is to make users' Chain Fusion experience as smooth as possible.

Website: www.plugwallet.ooo

DeFi Vectors

#DeFi   #modular   #no-code

DeFi Vectors is a project that leverages the Internet Computer Protocol (ICP) to make it more efficient for developers to build new apps and services in the decentralized finance space.

DeFi Vectors is building the Zapier of decentralized finance. Once complete, DeFi Vectors will make it easy to create new kinds of DeFi functionality by mixing and matching pre-made components.

The goal is to reduce the development overhead so that anyone can quickly and securely create new kinds of financial products that are capable of interoperating with leading decentralized exchanges

and wallets. DeFi Vectors accomplishes this by setting standards and building components that can be snapped together to create new kinds of DeFi functionality. DeFi Vectors takes advantage of ICP's Chain Fusion technology to open up access and create more easy-to-use DeFi services.

Website: www.vectors.icpcoins.com

Helix Markets

#DeFi   #EVM   #orderbook

Helix Markets is a decentralized exchange that makes it possible to seamlessly (and cheaply) trade across chains all from one place.

The biggest difference between Helix Markets and other decentralized exchanges or DEXs is that Helix is user centric and built with the ideals of decentralization in mind.

Users control their assets during the entire transaction and there's not the same reliance on vulnerable bridges, liquidity pools, or aggregators (which are common in other decentralized exchange environments).

The functionality of Helix Markets is made possible because of ICP's Chain Fusion, which makes it possible to build using Bitcoin, Ethereum, and other Ethereum Virtual Machine compliant chains and layers.

One of Helix's biggest achievements so far is developing an API that is capable of handling up to 100,000 transactions per second, which makes scaling trading operations across exchanges and chains feasible at speeds not possible before.

Website: www.helixmarkets.io

ICP Swap

#DeFi   #permisionless   #AMM

ICP Swap is designed to provide a full suite of decentralized finance services including token issuing, market-making, and plug and play decentralized autonomous organizations.

Right now, developing decentralized financial services requires specialized knowledge and development skills across a number of stacks and blockchain environments. By consolidating common DeFi functions like the ability to mint tokens, create liquidity pools, or perform asset swaps, ICP Swap is lowering the dev cost and initial investment required for DeFi teams with innovative ideas to enter the market.

Built using ICP's Chain Fusion, ICP Swap works across chains making its operations efficient in terms of transaction cost and development cost.

The ICPSwap Token (ICS) operates as a governance and ecosystem token and has a built-in deflationary model—over time the 1 billion tokens will be repurchased and burned.

Website: www.app.icpswap.com
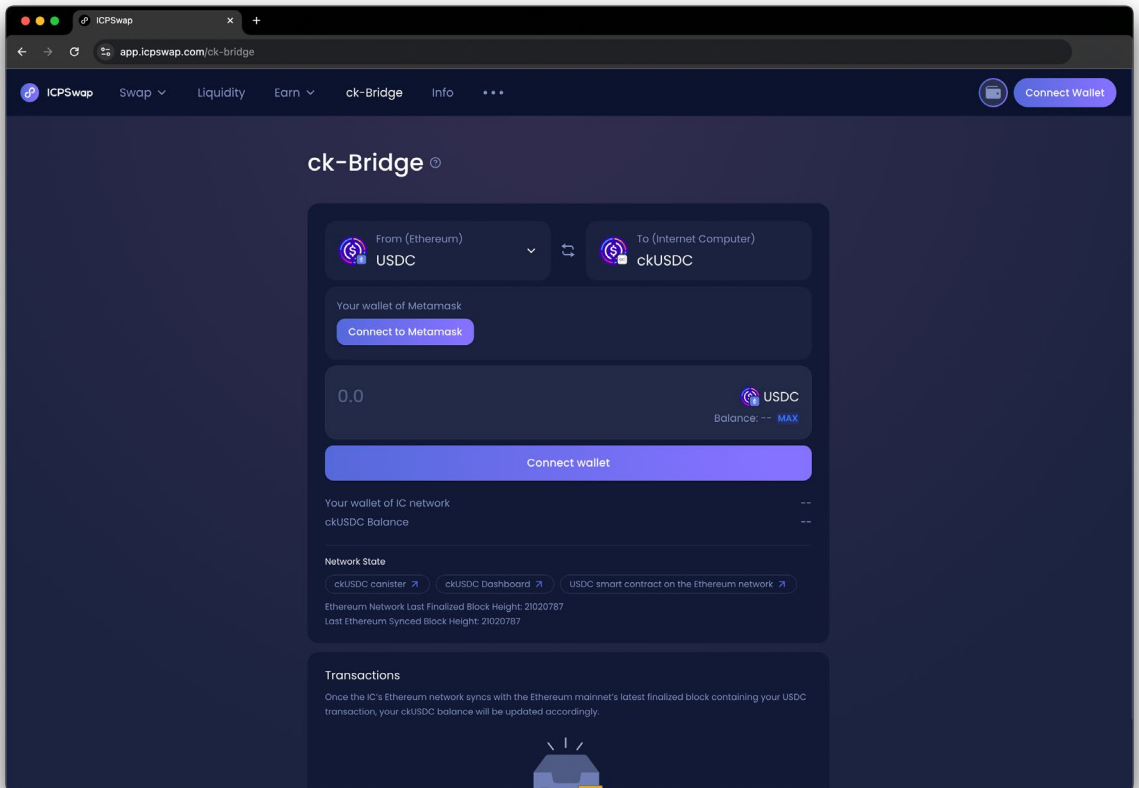
ICDex

#permissionless   #DeFi   #orderbook

ICDex is an order book-style decentralized exchange built on ICP and leverages Chain Fusion to work across a number of layer1 blockchains. ICDex is a fully onchain order book governed by smart contracts.

What sets ICDex apart from other kinds of decentralized order books is that it offers full trading functionality including standard trading functions such as limit orders and market orders, but also more advanced trading formats such as grid orders and iceberg orders. Additionally, ICDex also enables Orderbook Automated market-making,

which means anyone can participate in market-making by adding liquidity.

ICDex is one part of a suite of decentralized services offered by the Singapore-based ICLighthouse. Other projects include IC Router (a cross-chain network), ICHouse (an Internet Computer blockchain explorer), and CyclesFinance, a decentralized marketplace for ICP and Cycles.

Website: www.icdex.io

KongSwap

#AMM   #ethereum   #permissionless

KongSwap is building a SuperDEX or a decentralized exchange capable of allowing users to trade native bitcoin, ethereum, and solana with minimum transaction or gas fees.

Unlike other DEXs that require multiple layers and workarounds, KongSwap is built using ICP's Chain Fusion, meaning it is designed from the ground up for efficiency, scalability, and cross-chain interoperability. On the frontend, the ICP canister handles basic DeFi functions such as initiating trades, changing liquidity, staking pools, and keeping track of transaction history.

KongSwap is designed to run within a single canister that is governed by a smart contract. This simplified approach reduces the number of smart contracts needed to execute DeFi operations, keeping transactions streamlined and synced.

The design is also secure and relies on Threshold ECDSA and Schnorr signatures to manage overall access and interoperability.

Website: www.kongswap.io
X: www.x.com/kongswap

Sonic

#AMM   #ethereum   #permissionless

Sonic is a DeFi hub leveraging the scalability and low transaction costs enabled by Internet Computer's Chain Fusion model.

Sonic enables end users to create and issue their own tokens, trade tokens across chains, and earn rewards by becoming a liquidity provider.

One interesting feature made possible by Sonic is that users can make token swaps in a completely decentralized and permissionless environment. Meaning a user can start with one kind of asset and easily convert it to another asset onchain.

The decentralized swap capabilities require deep enough liquidity pools to function properly. In order to ensure sufficient liquidity, Sonic offers users rewards (shares of fees) to deposit tokens into liquidity pools—essentially creating a DeFi-enabled revenue generator.

Website: www.sonic.ooo
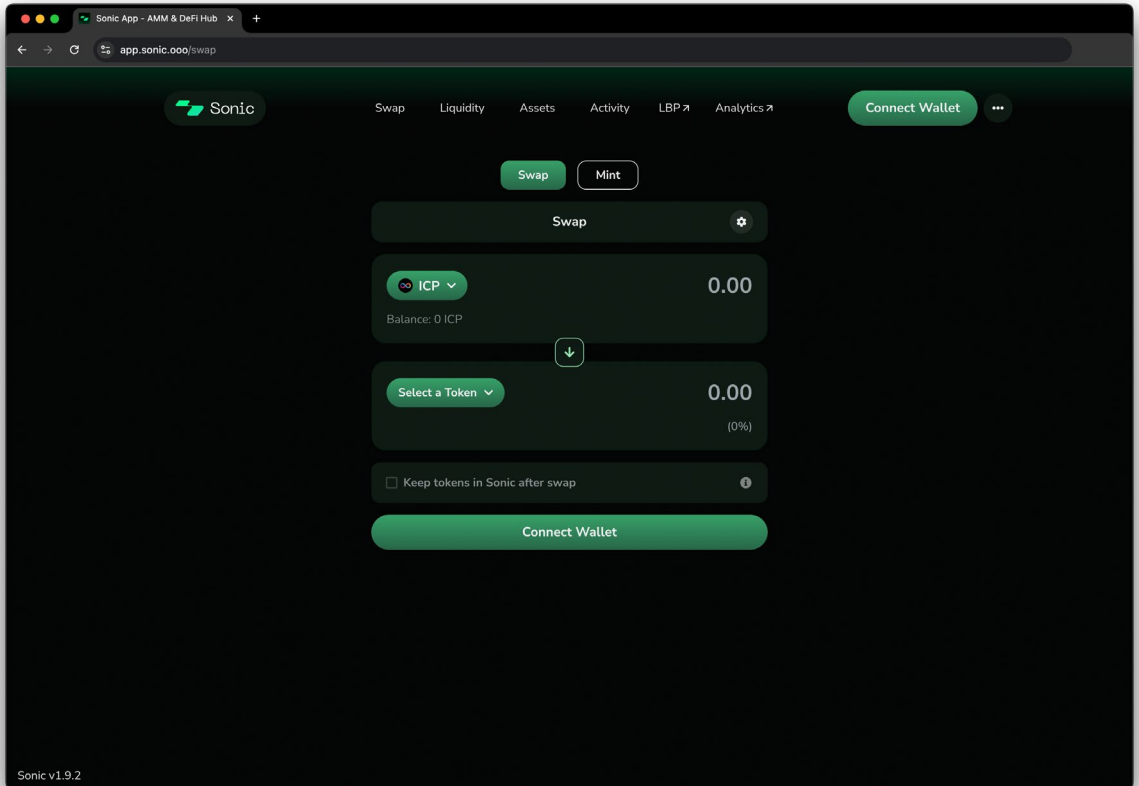
MSQ

#DeFi   #ethereum   #metamask

MSQ is a Metamask extension that makes it possible to use a Metamask wallet with Internet Computer.

Metamask is a popular web3 wallet that enables a widerange of onchain functionality from DeFi to decentralized social media.

In other words, MSQ is a secure way to connect to a growing galaxy of decentralized applications and then be able to transact in Internet Computer-based assets such as ICP, ckBTC, ckETH, etc.

Two core components driving MSQ's mission is to provide a simple wallet interface with built-in

privacy to protect sensitive data such as transaction or wallet connection history.

Website: www.icp.msq.tech

DFinance

#lending   #borrowing   #perpetuals

DFinance is a cutting-edge platform designed to revolutionize the DeFi sector by offering a secure and user-centric lending and borrowing ecosystem. At its core, DFinance harnesses the power of the Internet Computer (ICP) blockchain to ensure unparalleled data security and decentralization. Its mission is to provide a transparent and democratic financial environment where users have the power to shape the platform's future.

DFinance's primary goal is to create a decentralized financial hub where users can effortlessly engage in lending and borrowing activities, stake

tokens for governance, and actively participate in the platform's evolution through proposals and voting. DFinance aims to enhance the DeFi experience by introducing dynamic interest rate strategies, a reliable price feed, and a diverse range of token options, including ckBTC and ckETH. With a commitment to user governance and transparency, DFinance is set to become a cornerstone in the DeFi landscape, driving innovation and inclusivity.

Website: www.dfinance.app

DATA STREAMS X ICP

Bridging Off-chain and On-chain

Traditionally, the gap between off-chain and on-chain data has been bridged by oracle providers, who have held the power to decide which data is updated and under what conditions. However, the Internet Computer (ICP) is revolutionizing this paradigm, empowering users and developers to break free from these limitations.

Unlike conventional blockchains such as Ethereum and Solana, which operate in isolated environments, ICP enables direct communication between on-chain applications and the external world. This capability addresses a critical limitation: the restricted scope of data that can be handled, even when considering information provided by oracle services.

HTTPS outcalls empower ICP to index virtually any information as on-chain data, vastly expanding the potential for decentralized applications. Security isn't compromised; ICP employs a robust verification mechanism, calling the same endpoint multiple times to reach consensus and ensure data integrity.

This innovative approach positions ICP as a potential universal on-chain data hub, setting the stage for more comprehensive and data-rich decentralized applications.

Data stream from various markets
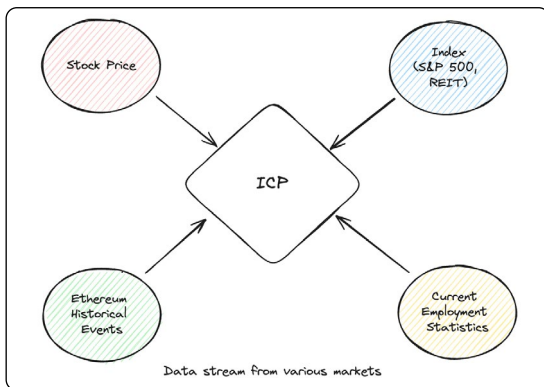
Data LEGO: Building Blocks of the Future

ICP can potentially introduce a revolutionary concept of modular data management, akin to the "Money LEGO" principle in DeFi. This system allows for the creation of a network of specialized canisters, each with distinct responsibilities:

1. Data Collection: Canisters can collect and store specific data (e.g., historical token prices).
2. Data Processing: Canisters can compute complex metrics (e.g., volatility indices) based on data from other canisters.
3. Flexibility: New canisters can be deployed to alter data processing without affecting data collection canisters.

This modular approach, combined with the ability to index diverse data sources via HTTPS outcalls and write canister logic in robust languages like Rust, has the potential to generate a powerful network effect of shared knowledge on the ICP. The concept of the "Money LEGO" proposed by Decentralized Finance (DeFi) can also be applied in the realm of data.

Cross-Chain Data Relay: Catalyzing DeFi Evolution

ICP's Chainkey technology is poised to revolutionize cross-chain data utilization, particularly in DeFi. This innovation facilitates bridge-free integration, enabling direct data transmission from ICP to any desired chain. It empowers smart contracts on external networks to leverage ICP's sophisticated data and computations, while allowing seamless synchronization of modular "Lego block" data across diverse blockchain ecosystems.

This advancement heralds a new era for DeFi, enabling protocols to incorporate complex, data-driven logic such as predictive analytics and automated asset filtering. Unlike traditional blockchains limited to current state references, ICP's synchronization capabilities foster a dynamic, data-rich environment. This robust foundation sets the stage for next-generation DeFi applications.

Consider an Arbitrum-based protocol leveraging ICP-synchronized data to dynamically adjust collateral rates or implement advanced risk models. This cross-chain data flow, powered by Chainkey, isn't merely bridging ecosystems; it's cultivating a fertile substrate for more intelligent and efficient DeFi applications. As this technology matures, we anticipate a wave of financial innovation that transcends isolated blockchain limitations, ushering in an era of truly interconnected, data-empowered decentralized finance.

Open Ratings: Revolutionizing Asset Evaluation in the Blockchain Era
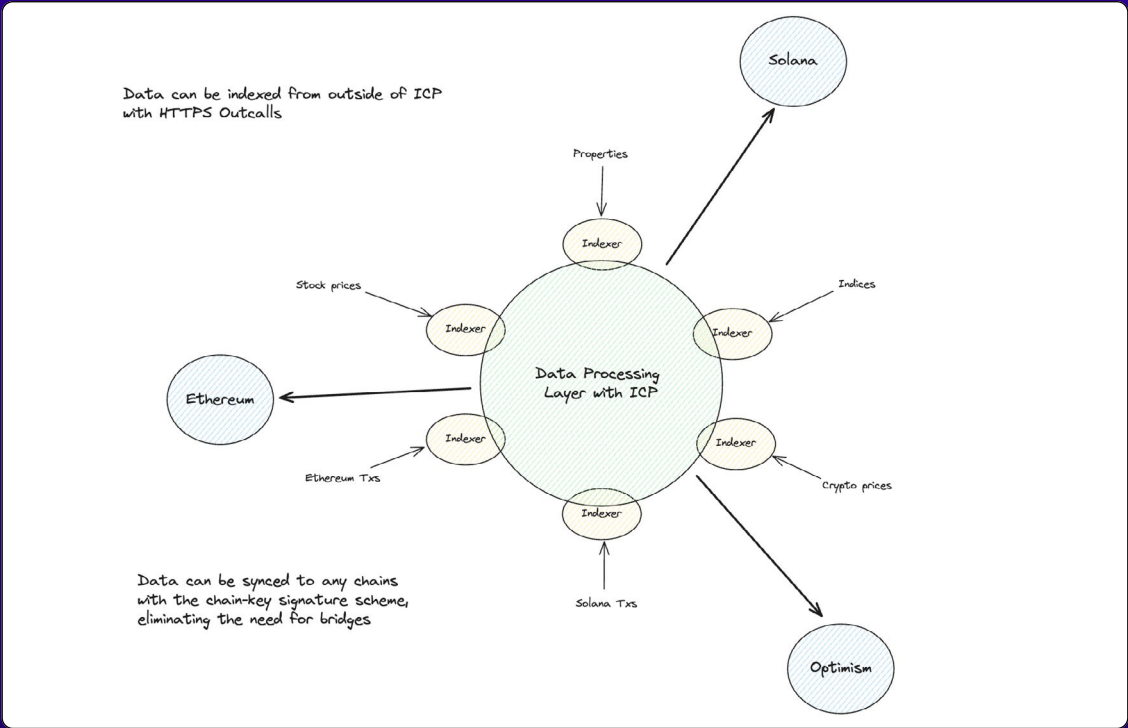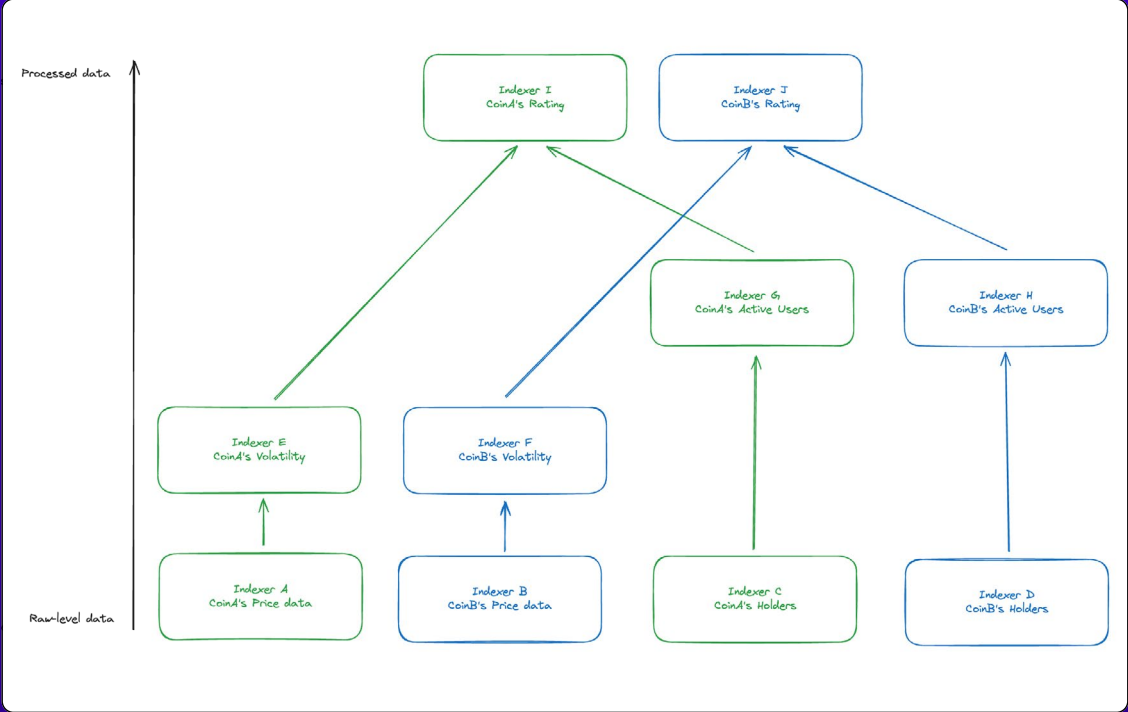
As blockchain technology expands its data management capabilities, ratings systems are becoming crucial in the crypto ecosystem. These systems distill complex, multidimensional information into easily digestible, single metric comparisons, a necessity as on-chain data grows in volume and complexity.

Leveraging blockchain's public nature, ratings can be updated automatically and in real-time. Unlike traditional finance, the crypto space allows individual builders to create and publish ratings privately, fostering a diverse and potentially more accurate evaluation ecosystem.

The blockchain creates a synergy between vast amounts of data, the ratings interpreting this data, and the reputation of the builders developing these systems. This combination increases transparency, fosters innovation, and builds trust through reputation.

While crucial for DeFi, ratings' impact extends to governance, digital assets, sustainability, and security within the blockchain ecosystem. As the space matures, these open, decentralized rating systems will become essential tools, contributing to the overall credibility of the crypto industry.

Author: Shumpei Koike
Co-Founder, Chainsight

Data can be indexed from outside of ICP with HTTPS Outcalls

Data can be synced to any chains with the chain-key signature scheme, eliminating the need for bridges

Chainsight

#data · #DeFi · #index

Chainsight is an advanced on-chain data hub that aggregates data from various markets and makes it accessible on-chain. Any data can be accessed from smart contracts, including data that can be retrieved from HTTPS endpoints on the web, results being calculated from huge amounts of data from other chains.

Chainsight is a network consisting of a large number of indexers. Each individual indexer has its own data, which can be combined to efficiently build new data. This new data can be written directly to blockchains, such as Ethereum, eliminating the need for off-chain bridges. This allows on-chain applications to utilize the data they need.

Website: www.chainsight.network
Documentation: www.docs.chainsight.network
X: www.x.com/chainsight_

Cloaking Layer

#ZKP · #ethereum · #DA

Cloaking Layer is building a way to add zero-knowledge verification to all blockchains.

Zero-knowledge (ZK) proofs will play an important role in the next generation of scaling for major blockchain applications. ZK makes it faster and cheaper to handle the complex computation required during blockchain transactions, which makes more data available for more onchain functions.

ZK also enables better privacy for users and overall security for layer2s and other apps and services built on blockchain.

Not to mention ZK will help drive down computation costs for onchain transactions because it alleviates most of the computing burden.

Cloaking Layer is able to build a ZK-as-a-Service style and be available across all blockchains by leveraging IC's Chain Fusion and taking advantage of ECDSA/EdDSA signatures to work across chains in a completely trustless manner.

Website: www.cloakinglayer.com

Orally

Orally sits at the forefront of decentralized solutions and oracle services within the blockchain ecosystem. As the digital world continuously evolves, the need for interconnected, secure, and versatile applications becomes paramount. Orally bridges this gap, offering a suite of tools that integrate the trustless nature of blockchain with the ever-expanding needs of decentralized applications (dApps).

Orally leverages the Chain Fusion technology by providing seamless interaction between traditional internet services and decentralized blockchain functionality. Through a sophisticated suite of services—Sybil, Pythia, Apollo, Hephaestus, and Hermes—developers, enterprises, and end-users are empowered to create a fully integrated, multi-chain, and versatile decentralized experience.

The complete Orally product suite comprises of:

Sybil: Inspired by the multiple sources of prophecy in ancient lore, Sybil provides a multitude of embedded price data feeds for various assets, operating through decentralized data fetching and offering custom feed creation based on the specific needs of dApps with an efficient verifiable approach.

Pythia: Named after the revered oracle of Delphi, Pythia is an automation module that allows for subscription-based data delivery by time or volatility, pulling from Sybil's data feeds or generating random numbers for an added layer of functionality.

Apollo: Reflecting the prophetic prowess of the god Apollo, this module facilitates request-based data delivery, where EVM contracts can request specific data, processed and delivered by our system with precision and efficiency.

Hephaestus: Symbolizing the transformative craft of the god of blacksmiths, Hephaestus allows for intricate data preprocessing, accepting user-defined algorithms to mold raw data into refined, dApp-specific requirements.

Hermes: Embodying the swift communication attributed to the messenger god, Hermes enables seamless messaging between chains, optimizing costs and enhancing connectivity across the blockchain spectrum.

Website: www.orally.network
Documentation: www.docs.orally.network
X: www.x.com/orally_network

Sybil

Custom data feed · Custom AI data source · Any data source

User data

Forex data provider — Daily forex rates

Exchange rate caniser — Data feed

Exchanges — [asset] /USD

chain data

Processing · Proof generation

Orally
Orally::Sybil canister
∞

Blockchains

Get data feed with proof

DApp

Signed transaction: dApp data + price feed with proof

Consumer contract on Ethereum

Consumer contract on BSC

Consumer contract on Optimism

Consumer contract on ...

eth_call: verifyUnpacked(data, proof)

Orally Verifier contract on Optimism

Apollo

Orally
Orally::Sybil canister — Data feeds — Orally
Orally::Apollo canister
∞

Listen requests

Apollo EVM request handler contract

Request data feeds

tx: Fulfill requested data

Consumer EVM contract
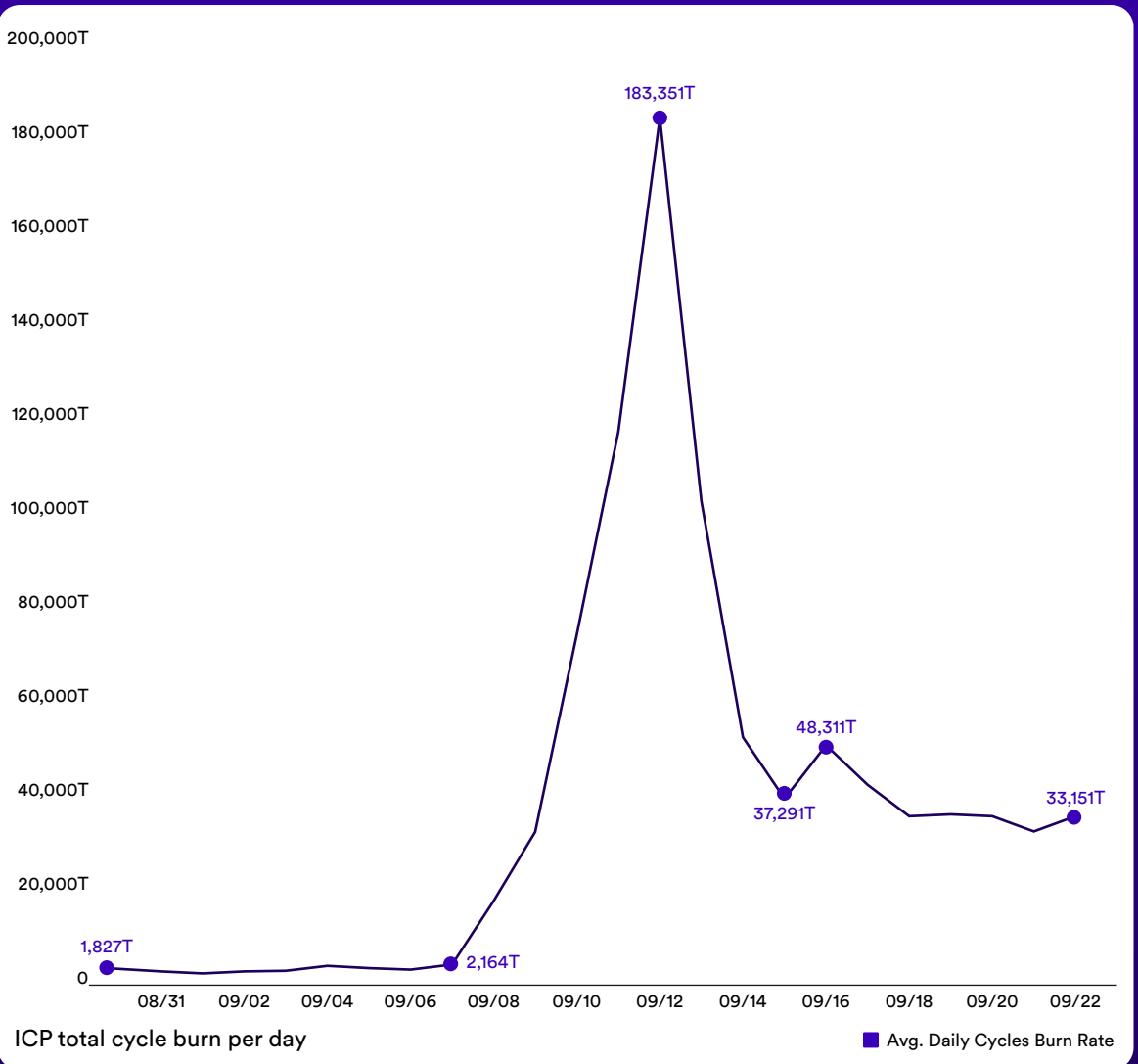
BLOCKCHAINS ON BLOCKCHAIN

Blockchains on Blockchain: an Introduction

A blockchain capable of hosting full web services unlocks novel use cases waiting for innovative entrepreneurs to explore. One such use case, which exploded in September, is the use of a blockchain to host another blockchain, aka "blockchains on blockchain". The first such application, named BOB, leveraged ICP's heavy compute capabilities to launch a memecoin that is distributed using a proof-of-work mechanism similar to bitcoin, all on-chain. The advantages of this are numerous including the ability to verifiably show token distribution fairness and the inability for any miner to gain an advantage through greater hardware capabilities. BOB was an instant success and that success attracted entrepreneurs to build other "blockchains on blockchain" applications.

The net result of this activity is an explosion in the computation on the Internet Computer, and thus an explosion in the network fees generated for the protocol. Network fees, also known as cycles burned, were already increasing rapidly in 2024, growing 90% from January to August prior to the launch of BOB. However, the "blockchains on blockchain" category absolutely dwarfed prior cycle burn growth and drove an increase in cycle burn rate of 3000% between August and September. In fact, more ICP was burned in the 35 days after the launch of BOB than the prior 3 years combined. This increase is showing no sign of slowing down as more entrepreneurs launch novel applications based on the "blockchains on blockchain" use case.

Author: Kyle Langham
Director of Data and Analytics, DFINITY Foundation

In September, the cycle burn rate skyrocketed:

ICP total cycle burn per day

■ Avg. Daily Cycles Burn Rate

Data points: 1,827T · 2,164T · 183,351T · 37,291T · 48,311T · 33,151T

Y-axis: 0 · 20,000T · 40,000T · 60,000T · 80,000T · 100,000T · 120,000T · 140,000T · 160,000T · 180,000T · 200,000T

X-axis: 08/31 · 09/02 · 09/04 · 09/06 · 09/08 · 09/10 · 09/12 · 09/14 · 09/16 · 09/18 · 09/20 · 09/22

BOB

#PoW #memecoin #mining

BOB or Blockchain on Blockchain is purpose-built and brings proof-of-work like consensus to Layer 2s. Or, according to the BOB website, the mineable crypto combines "Bitcoin's consensus with Doge's utility."

While the applications for BOB might not be immediately obvious, the innovation of bringing new kinds of consensus to layer2 and to reimagine the way that blockchain interoperability and scaling can happen is interesting.

BOB is only made possible because participants use ICP as the primary mining mechanism, or as a way to buy mining cycles. Miners can choose how fast they want their miners to run, which affects the amount of ICP consumed.

Website: www.bob.fun

BURN

#memecoin #mining #ethereum

MSQ.Burn was created by the same developers as the MSQ Metamask wallet extension.

BURN is a memecoin miner designed to level the playing field of memecoin operations.

All BURN pool members earn a reward each time a block is minted—the rewards are proportional to the share of the pool contributed by each user.

BURN also has straightforward tokenomics. BURN's block reward is halved every 5040 blocks (about once a week) until 1 BURN per block is reached. Once that level is reached, the block time will increase until it takes 720 minutes or 12 hours to complete. The goal is to create measured inflationary forces.

Lastly, BURN is targeting increased efficiency with the goal of minimizing mining waste (or unnecessary burning of compute cycles).

Website: www.burn.msq.tech

CONCLUSION

The Road Ahead for Chain Fusion

2024 marked a pivotal year for the Internet Computer and the crypto industry. The growth of multi-chain applications using Chain Fusion technology highlights both a demand from entrepreneurs to be able to leverage multiple chain technologies and user communities, and a growing trend within the industry away from tribalism and siloed communities. This report shows that 2024 marked a clear preference for developers to build new applications that leverage ICP alongside one or more other blockchains and for developers to extend existing applications from other chains in order to take advantage of one or more key features of the Internet Computer. So what will 2025 have in store for Chain Fusion?

From a roadmap perspective, 2025 will be highlighted by the release of EdDSA signatures, which can be leveraged, most notably, for integration with the Solana blockchain. This integration is currently planned for 2025. ICP already supports ECDSA and Schnorr signature algorithms and the release of EdDSA signatures will complete the integration toolkit with the three most popular signature standards in crypto. This will bring the Internet Computer very close to its goal of integrating with all of the major blockchain standards and allowing developers and applications in any crypto community to leverage key features of the Internet Computer without needing to rebuild their existing applications.

One of the key features that developers across the crypto industry are showing high interest in exploring is hosting AI models within an ICP smart contract. This year, developers pushed the limits of the Internet Computer and found that they can run all sorts of inference and medium-sized LLM models, with the largest model hosted being a Llama 3.8-billion parameter LLM. Combining the Internet Computer's AI capabilities with Chain Fusion technology allows for developers on any blockchain to host AI that can securely read block data and sign transactions on any blockchain. Some possible use cases could include AI-supported DeFi activity, tamperproof AI models and LLMs capable of sending and receiving bitcoin and other cryptocurrencies. 2025 will almost certainly be characterized by developers across the industry expanding their product offerings leveraging AI on ICP.

Finally, Chain Fusion has shown that the industry is ready for the next wave of innovation. Having access to powerful web3 hosting services that are more similar to web2 capabilities and being able to integrate with any other blockchain, entrepreneurs building on the Internet Computer are beginning to build new products that are novel to the web3 industry, and in some cases, novel to web2 as well. 2025 will be a year for innovation and new crypto product verticals. Chain Fusion technology will ensure the value of that innovation benefits the industry as a whole. The next innovation cycle has already begun on the Internet Computer. Thank you for being part of it.

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