Navigating the Inscriptions Landscape

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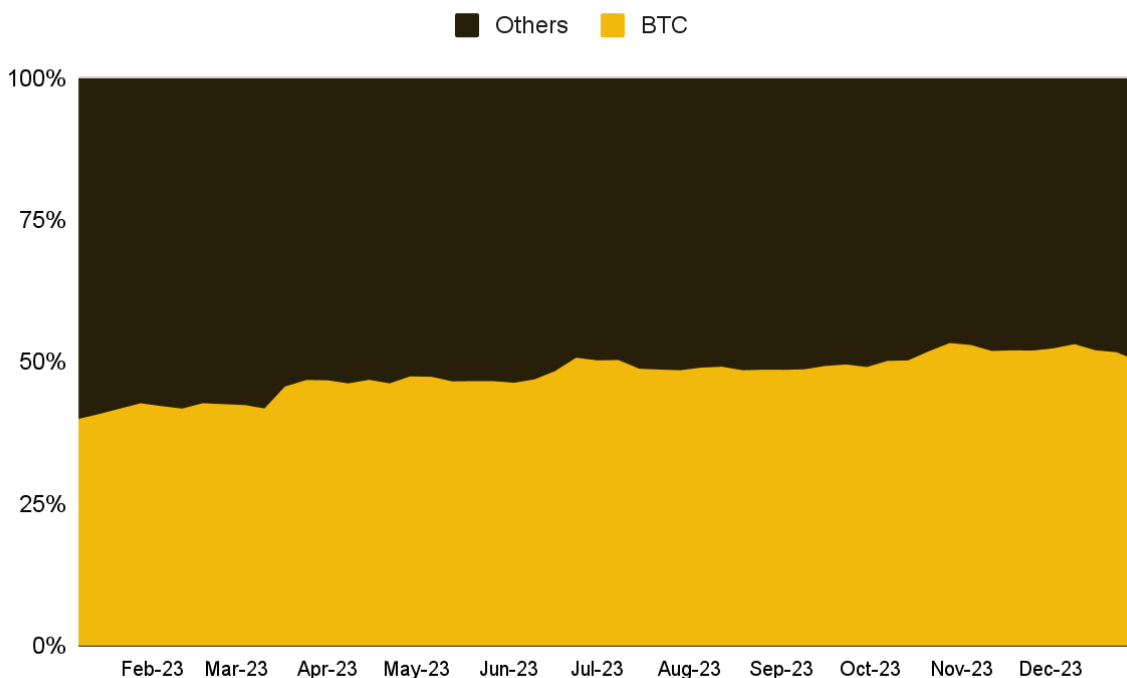Brian Chen

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1 Key Takeaways

◆ Inscriptions and BRC-20s have served as significant catalysts for activity in the Bitcoin ecosystem over the past year. They have also invigorated developer communities by drawing in new talent, accelerating the pace of project updates, and generating innovations within the Bitcoin ecosystem.

◆ Despite being in its infancy, the landscape of Bitcoin Ordinals has branched out into various sectors, such as DeFi, NFTs, and tooling, fostering a small yet growing ecosystem.

◆ Inscriptions have also expanded beyond Bitcoin to a range of other EVM-compatible chains. Trading activity initially surged, causing network outages in some instances, but has since subsided significantly. Considering that these EVM-compatible chains possess native smart contract functionality and the trade-offs associated with using off-chain indexers, it remains to be seen if inscription activity on EVM-compatible chains will experience a resurgence.

◆ In this report, we also shine light on a few platforms through which users can participate in inscriptions. These include trading, inscribing, and storing inscriptions and BRC-20 tokens, among other actions.

2023 was a year where Bitcoin dominated headlines within the crypto industry, largely due to the eagerly awaited spot BTC ETFs and substantial advancements in the Bitcoin ecosystem. The launch of spot BTC ETFs played a crucial role in the market's resurgence in the latter half of the year. However, another significant contributor to this trend was the emergence of inscriptions/BRC-20s, experimental non-fungible and fungible tokens that sparked a speculative frenzy reminiscent of meme coins, leading to a surge in Bitcoin transaction activities. The demand for block space on the Bitcoin network skyrocketed and the network saw elevated transaction fees especially in the later part of the year.

Figure 1: Bitcoin dominance was on a strong uptrend throughout 2023, climbing from around 40% to 50% by the end of the year

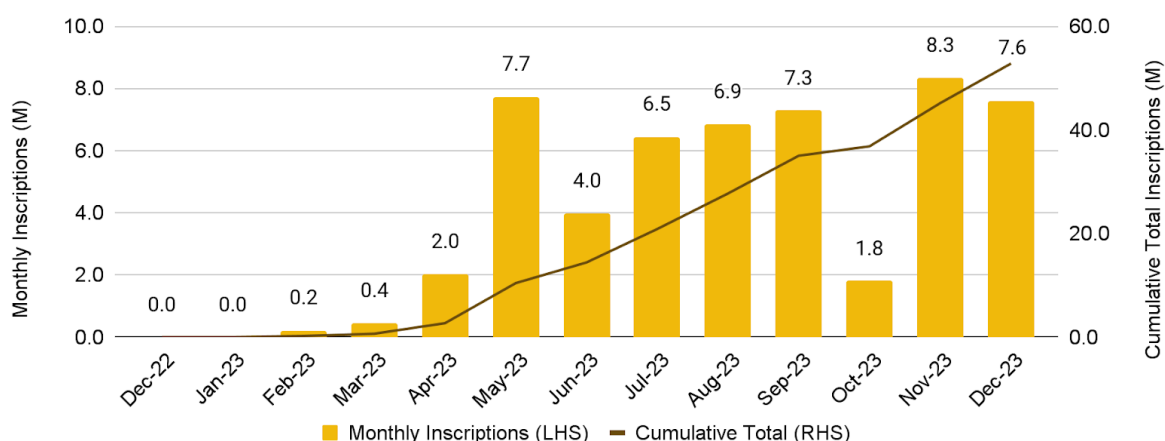Source: CoinMarketCap, Binance Research, as of December 31, 2023

Diverging viewpoints exist concerning inscriptions/BRC-20s. Some critics argue that they result in network congestion and high fees. Conversely, others perceive them as a golden opportunity for Bitcoin, especially in addressing the network's decreasing security budget and focusing on enhancing the ecosystem, particularly in terms of scalability solutions like Bitcoin Layer 2s ("L2s"). The prevailing sentiment in the community leans towards building and improving, with discussions about various Bitcoin applications heating up.

In our [previous report](#), we delved into the fundamentals of inscriptions/BRC-20s. Now, with more than half a year passed, we revisit this topic with recent developments and progress of the sector. We start by recapping inscriptions/BRC-20s, providing an overview and assessing their impact throughout 2023. Our focus then shifts to notable developments in the Bitcoin ecosystem, spotlighting projects related to BTCfi. We also explore inscriptions outside of Bitcoin and highlight recent trends in this area. Lastly, we share about some ways to participate in the inscription ecosystem.

(2.1) A Refresher on Inscriptions and BRC-20s

The origin of inscriptions lies in Casey Rodarmor's "Ordinal Theory", which allows the tracking and unique identification of individual Satoshis (the smallest unit of Bitcoin). This makes it possible to "inscribe" each Satoshi with arbitrary content, such as text, images, or videos. Many view inscriptions as Bitcoin NFTs, but there are notable differences between inscriptions and their Ethereum counterparts. While the minting of inscriptions slowly increased, it was really when BRC-20s came about that the demand for Bitcoin block space started to surge.

Figure 2: Total Bitcoin inscriptions exceeded the 50M mark after the surge in minting volumes in November and December
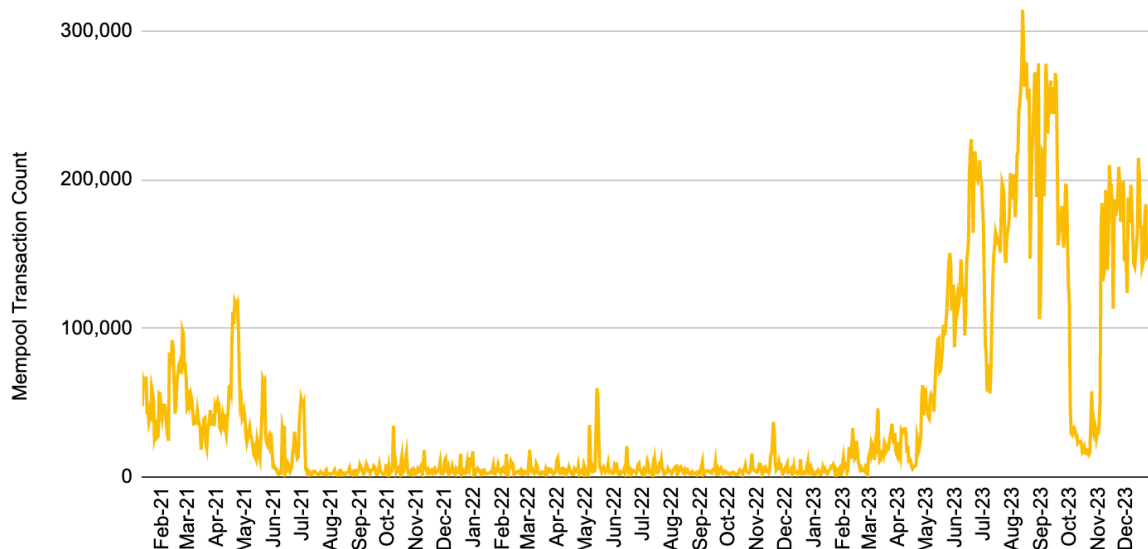

Source: Dune Analytics (@dgtl_assets), Binance Research, as of December 31, 2023

First conceptualized in March 2023 by pseudonymous Crypto Twitter user domo[1], BRC-20 is an experimental token standard that enables the deployment, minting, and transferring of fungible tokens on the Bitcoin blockchain. The idea behind BRC-20s is that JSON data (which is a text-based data format) can be inscribed onto individual sats via the Ordinal Protocol to create fungible tokens. This led to a surge in meme coins, akin to a Cambrian explosion in the BRC-20 space. New coins with a variety of names emerged daily, each vying for market attention. This phenomenon, combined with the market's recovery,

significantly amplified the speculative activities with the Bitcoin network. As shown in Figure 2 above, the minting volume of inscriptions on the Bitcoin network showed a steady and substantial increase throughout the year. The number first surpassed the 1M market in April, and by year's end, had exceeded 50M. Currently, the total number of inscriptions minted on the Bitcoin network has reached 59M, contributing to over US$260M[2] of fees.

Figure 3: Bitcoin's mempool transaction count has been at all-time highs in 2023 following the activity generated by inscriptions and BRC-20s

Source: Blockchain.com, Binance Research, as of December 31, 2023

The impact of inscriptions and BRC-20s on the Bitcoin network has been notable. Looking at Figure 3, Bitcoin's mempool transaction count significantly exceeded past years' levels and reached all-time highs in 2023, spurred by the activity from inscriptions and BRC-20s. Other metrics, like average block size and transaction fees, also experienced notable shifts.
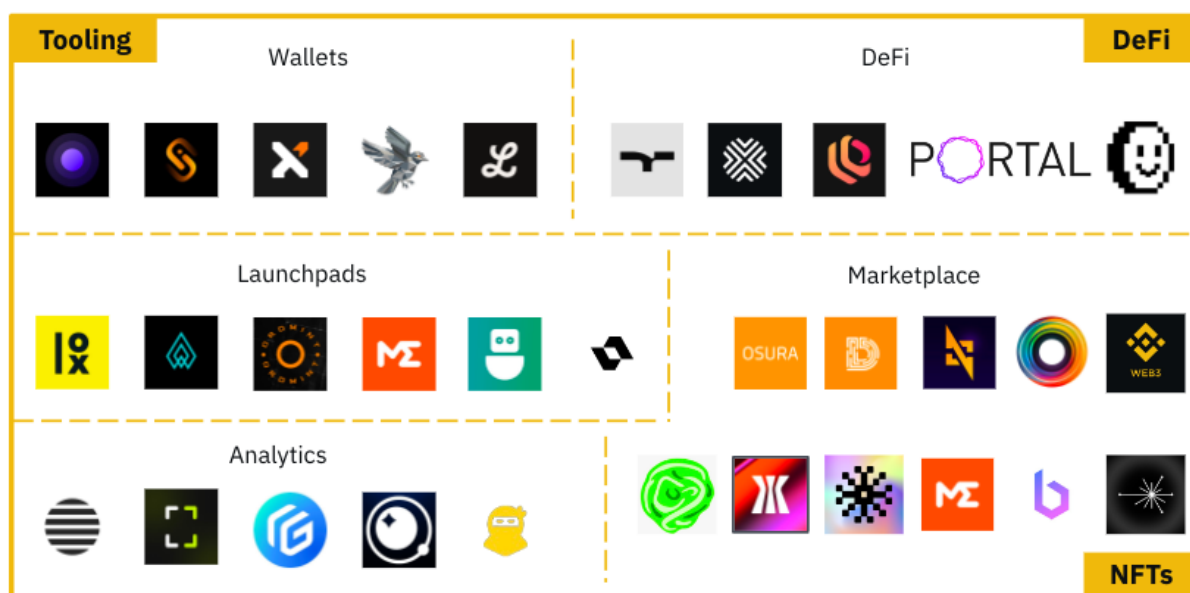
Beyond metric changes, the most profound impact of inscriptions/BRC-20s on the Bitcoin ecosystem would be the increased motivation among the developer communities. Numerous new builders have been attracted to Bitcoin, existing projects are updating more quickly, and various novel ideas are circulating within the Bitcoin community.

As such, we could witness a completely different Bitcoin ecosystem in the coming years. Some might argue these changes contradict BTC's intended role as "hard" money. However, continuous innovation is crucial for creating new, engaging use cases that can promote broad-based adoption. Thus, it's intriguing to consider where Bitcoin could head next.

3 Protocols in Action

As depicted in Figure 4, the landscape of Bitcoin Ordinals, albeit in its nascent stage, has already branched out to various verticals including DeFi, NFTs, and tooling. It is a small but growing ecosystem.

Figure 4: An overview of the Bitcoin ordinals ecosystem

Source: Binance Research

In the following section, we examine a few projects in more detail, providing an overview, and sharing how they work. These projects straddle diverse verticals, including stablecoin, lending, and cross-chain technology. We also touch on wallets and marketplaces in another section.

Note that the mention of specific projects does not constitute endorsement by Binance. Instead, projects cited are used for the purposes of illustrating conceptual use cases.
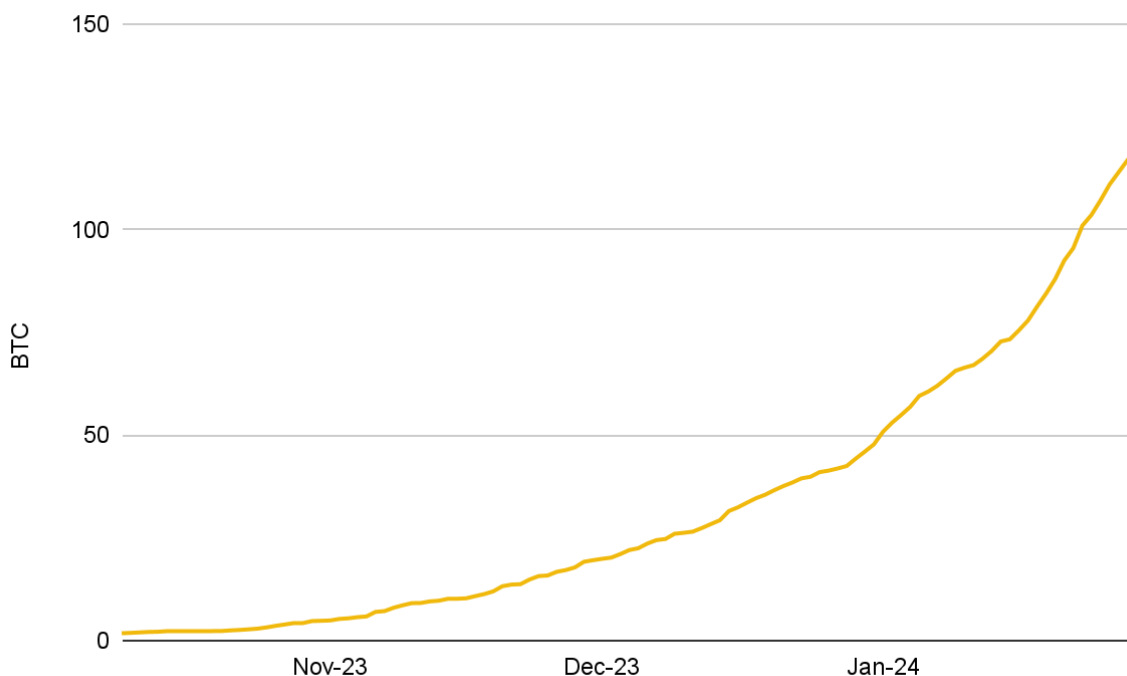
bitSmiley

bitSmiley is a Bitcoin DeFi infrastructure protocol, integrating three critical DeFi domains: stablecoin, lending, and derivatives. Initially, the protocol will launch bitUSD, a BTC-backed stablecoin. **bitUSD is based on bitRC-20, an enhanced version of BRC-20**, with greater functionality to support the operation of stablecoin. Similar to the mechanics of conventional overcollateralized stablecoin, bitUSD mandates users to pledge BTC as collateral to mint bitUSD. This stablecoin aims to serve various roles within the Bitcoin ecosystem, acting as a store of value, medium of exchange, unit of account, and more. Beyond bitUSD, bitSmiley plans to introduce bitLending – a lending market, alongside a credit default swap offering, to inject further innovation into the Bitcoin DeFi landscape.

Liquidium

Liquidium operates as a peer-to-peer Bitcoin lending protocol, **enabling Bitcoin-based assets such as inscriptions and BRC-20s as collateral**. Much like the operational model of other peer-to-peer lending platforms, Liquidium allows borrowers to collateralize their ordinals according to the terms they find acceptable, while lenders provide BTC loans that align their risk-reward preferences. Since its launch, Liquidium has processed over 118 BTC in volume across 2,700[3] completed and active loans. Alongside the growth of the Bitcoin ecosystem, the demand for leveraging Bitcoin assets for liquidity purposes is expected to rise. As such, platforms like Liquidum play a crucial role, offering users enhanced financial options for their Bitcoin assets.

Figure 5: Since its inception, Liquidium has processed over 118 BTC in volume across 2,700 completed and active loans

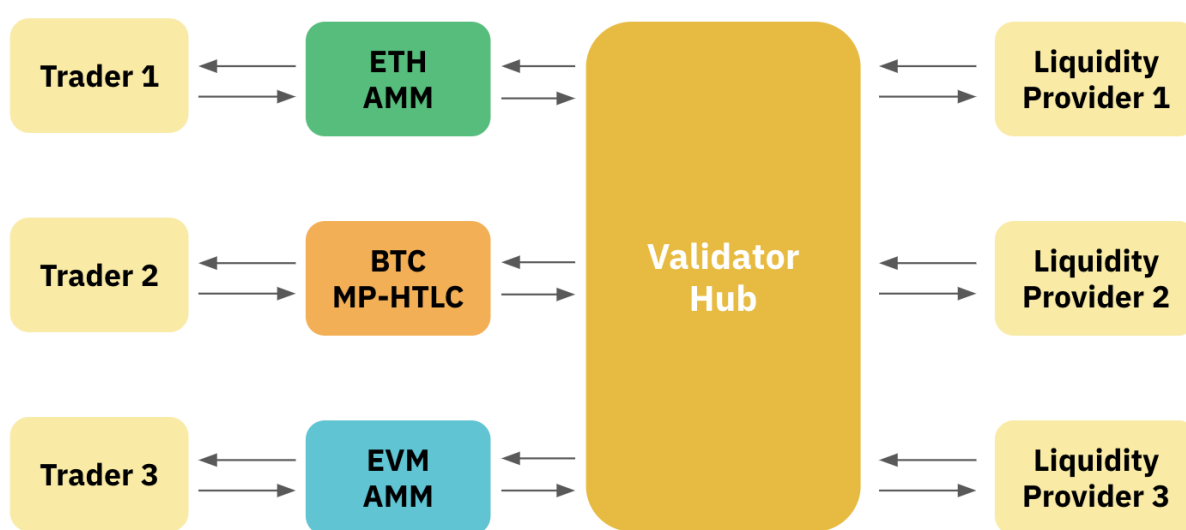Source: Liquidium, Binance Research, as of February 4, 2024

Liquidium borrowing mechanics:

- When an Ordinal's value is expected to drop, users can utilize Liquidium to mitigate the risk of their Ordinal position.
- After purchasing an Ordinal, the user can secure a loan against the newly acquired Ordinal via Liquidum.
- During a market downturn, the user can repurchase the Ordinal at a lower price. If the net expenditure is less than the loan amount, the user then generates a profit, which is the loan amount minus the repurchase price.

Portal

Portal is a Bitcoin-centric **cross-chain liquidity solution**, emphasizing decentralized exchange and wallet services. It enables BRC-20 swaps to other chains. Anticipating Bitcoin's widespread adoption, the Portal team aims to mitigate custodial risks and elevate the cross-chain user experience. At its heart, Portal leverages a Multi Chain Layer-2 Automated Market Maker ("MC-LAMM"), powered by Layer-1 contracts across supported blockchains. These Layer-1 contracts feed outputs to a group of validators, who orchestrate swap requests and orders, ensure order book congruency, and secure the execution of protocol's Layer-2 atomic swaps. The incentive model for validators is rooted in Proof-of-Stake, designed to bolster transaction volume and liquidity with the AMMs.

Figure 6: Schematic of Multi chain Layer 2 AMM
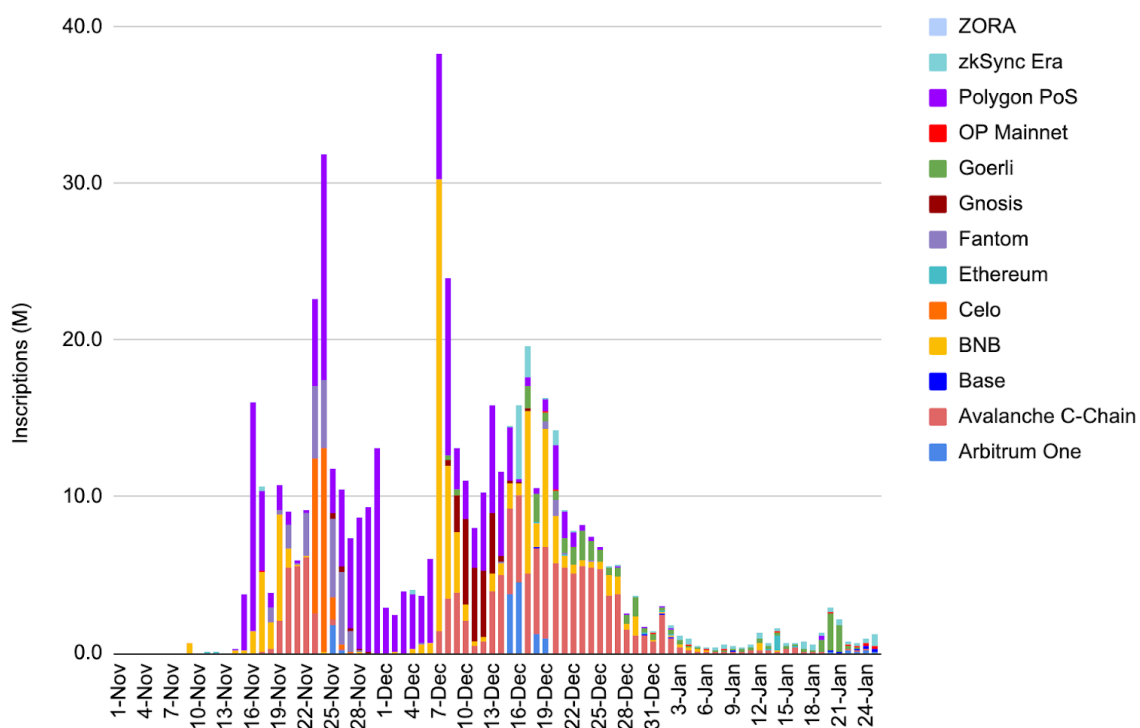

Source: Portal, Binance Research

Portal Wallet:

- ◆ Currently in Testnet Beta, Portal Wallet is Portal's wallet product with functionality that goes beyond simple asset storage.
- ◆ The wallet houses built-in cross-chain swap functionality and is programmable, enabling the execution of rule-based transactions, such as "Swap BTC to ETH when the exchange rate exceeds Y."
- ◆ It also includes an AI Agent to assist users in their financial goals by presenting relevant signals and metrics.

While inscriptions started on Bitcoin, the Ordinals protocol has since been emulated by several projects on a range of other EVM-compatible chains. Despite these chains possessing native fungible and non-fungible token functionality, inscriptions have actually seen considerable transaction activity in the later part of 2023, likely motivated in part by market speculation, as traders sought to replicate the success of BRC-20 tokens on these chains.

Figure 7: Number of inscriptions on EVM-compatible chains spiked in late-2023

Source: Dune Analytics (@hildobby), Binance Research, data as of January 29, 2024

We have also observed cases of network outages and performance degradation, caused by a prolonged increase in inscription-related activity on blockchains such as Arbitrum, Avalanche, zkSync, and others. These surges are often induced by users or bots spamming transactions in a short timeframe, made feasible due to the relatively cheaper fees of these transactions compared to smart contract transactions.

Considering that EVM-compatible blockchains support smart contracts, **reduced gas cost has been often cited as the key motivating factor for using inscriptions instead of smart contracts**. This is possible as inscriptions on the EVM inscriptions inscribe data in transaction calldata. Calldata is read-only and cost effective, as opposed to interacting with

smart contracts. Additionally, calldata is permanently accessible on-chain, allowing users to reconstruct the sequence of events if they so desire.

However, while there is the advantage of lower gas cost, **EVM inscriptions have several trade-offs relating to the use of off-chain indexers, and lack of composability.** Specifically, as the information in calldata is stored in numerous random transactions, users will need to rely on centralized off-chain indexers to interpret and read an inscription transaction. Additionally, as smart contracts and applications cannot directly access such data, it would also lead to fragmentation, and a lack of composability and interoperability.

As indicated in figure 7, the fervor surrounding EVM inscriptions has subsided over the past month. It remains to be seen whether this signals a fleeting trend or if it merely represents a typical lull before the next upsurge in market activity.

5   **Participating in Inscriptions**

There are several ways to participate in the inscriptions ecosystem. Users can trade, mint, or store tokens across different blockchains by using a variety of platforms and tools.

A non-exhaustive list of ways to interact with inscriptions includes:

- ◆ **Binance Web3 Wallet:** The newly launched inscriptions marketplace hosted on the wallet allows users to interact with inscriptions across Bitcoin and other EVM networks.

- ◆ **UniSat:** Chrome extension for Bitcoin Ordinals and BRC-20 tokens. Users can store and transfer Ordinals NFTs. They can also store, mint and transfer BRC-20 tokens.

- ◆ **Ordinals Wallet:** Self-custodial wallet and marketplace that supports the Bitcoin, Doge, and Bells network.

- ◆ **Magic Eden:** Apart from supporting trading and minting of Bitcoin Ordinals and BRC-20 tokens, the platform also supports inscriptions on Solana.

Note that the mention of specific projects does not constitute endorsement or recommendation by Binance. Additional due diligence should be undertaken to better understand the projects and associated risks.

Binance Web3 Wallet

Binance has recently launched the Binance Inscriptions Marketplace — a one-stop solution hosted within the Binance Web3 Wallet — that allows users to inscribe and trade a wide variety of inscription tokens such as BRC-20 tokens, Ethereum Virtual Machine ("EVM") tokens and more, within the Binance App.

By leveraging the API of UniSat, users have access to UniSat's deep liquidity and a vast range of over 60,000 BRC-20 tokens directly within the Binance app interface. Users are also able to access a wide range of EVM tokens via integration of third-party dApps.

Binance Inscriptions Marketplace offers a wide range of features for users to explore the world of inscription tokens including:

- ◆ **Access to a range of tokens:** buy, sell, or inscribe BRC-20 tokens, EVM tokens,and many other inscription tokens

- ◆ **Seamless transfers:** move inscriptions between the Binance exchange platform and Web3 Wallet in a single click

- ◆ **Faster transactions:** enjoy faster transactions powered by BTC Transaction Accelerator

UniSat

UniSat provides support for inscribing and trading Ordinals/BRC-20 tokens on the Bitcoin network. The UniSat wallet works as a lightweight browser extension wallet that boots in seconds. Users can receive, store, and send NFTs just like any typical Bitcoin transaction.

Since its launch, UniSat has expanded its range of products to include UniSat Wallet, UniSat Inscribe, UniSat Search, UniSat Marketplace, BRC-20 swaps, and others.

Some features that UniSat offers include[4]:

◆ **See unconfirmed NFTs immediately:** Users can check details of NFTs before they are mined into blocks, thereby reducing wait time and even enabling users to override the NFT to correct any errors if necessary by paying a fee.

◆ **Inscribe without running a full node:** Users can create new NFTs quickly and easily

◆ **Participate through a Mobile App soon:** While not launched, UniSat has announced that the app development is complete, with a focus on security testing now. Users can expect to hear an official launch date soon.[5]

Ordinals Wallet

Ordinals Wallet offers a non-custodial BTC wallet that allows users to store and view their Ordinals directly within the wallet. It also features a marketplace for users to buy and sell their Ordinals. Besides the Bitcoin network, Ordinals Wallet also supports Doge and Bells network.

Features that Ordinals Wallet supports include:

◆ **Multi-inscribe:** Users can inscribe unlimited files/images, bulk text, and bulk Sats Names System ("SNS") at the same time.

◆ **Multi-wallets support:** Beside its own wallet, Ordinals Wallet also supports four other wallet providers, including UniSat, Phantom, Xverse, and Leather.

◆ **Access through a Mobile App:** Users can readily access Ordinals Wallet via its mobile app, which provides easy access to their digital artifacts and features like push notifications about sales and offers.

Magic Eden

Magic Eden is a multi-chain NFT platform on Solana, Polygon, Ethereum, and Bitcoin. Initially recognized as one of the leading NFT marketplaces for Solana, Magic Eden has been expanding its product scale and now also supports the buying and selling of Ordinals. Additionally, it has recently launched its Magic Eden Wallet, catering to multi-chain NFT needs including native Ordinals & BRC-20 support.

Magic Eden provides the following features:

- **Access to NFTs on various blockchains:** Users can buy, sell NFTs on several blockchains such as Solana, Polygon, Ethereum, and Bitcoin.

- **Magic Eden Wallet:** Acting as the one-stop wallet for NFTs across SOL and BTC, Magic Eden Wallet supports functions like cross-chain swap, NFT portfolio management, native Ordinals & BRC-20 support, and end to end rare sats management.

- **Solana inscriptions:** In addition to Bitcoin inscriptions, Magic Eden also supports inscriptions on Solana. Users can utilize tools such as LibrePlex to mint their Solana inscriptions, and then list them on Magic Eden.

6 Closing Thoughts

The excitement and innovation generated by the advent of inscriptions both within and outside the Bitcoin ecosystem is noteworthy. Numerous new builders have joined the space, many existing projects have shipped updates at a faster pace, and various new ideas are constantly being discussed.

While trading activity has come in waves and there has been consistent debate regarding the impact of inscriptions on Bitcoin, it seems that ongoing innovation and development within the Bitcoin ecosystem have largely overshadowed these concerns. Ultimately, continuous innovation is necessary to create new and exciting use cases that can drive widespread adoption and it is exciting to see where the ecosystem goes next.

References

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