



Research Report | 30.04.2024

Solana: setting new standards in the blockchain evolution

Solana is on the cusp of significant developments in the blockchain world that have the potential to have a lasting impact on the landscape of digital currencies. After all, the network has established itself as a serious competitor in the field of smart contract platforms.

Smart contract-enabled blockchains are advanced database technologies based on blockchain technology, allowing contracts and agreements to be automated and secured in digital form. The technology enables the execution of decentralized applications (dApps) that realize complex applications on a blockchain and offer solutions for various areas, from financial services to supply chain management.

Ethereum was the first blockchain to introduce smart contracts on a large scale, ushering in a new era of blockchain usage for the network.

Solana: a "High-Performance" Blockchain

The so-called blockchain trilemma describes the challenge of maximizing security, decentralization, and scalability while controlling rising transaction costs. Ethereum has been struggling with this issue for years, leading to the development of layer-2 scaling solutions and independent smart contract-enabled blockchains (Layer 1). Both are currently experiencing significant development activities and user adoption.

Currently, the Solana blockchain is the leading independent Layer 1 solution, distinguished by a unique combination of speed, scalability, and low costs. Compared to Ethereum, Solana can process thousands of transactions per second while maintaining low transaction costs. This is made possible by an innovative technology called Proof of History (PoH).

The introduction of a new Solana client called Firedancer aims to further improve network security and scalability. As a new validator, the software is expected to significantly enhance performance this year and contribute to the network's robustness. With Firedancer, the transaction rate could theoretically be increased to up to 1 million transactions per second (TPS), propelling the blockchain into a new realm of speed.

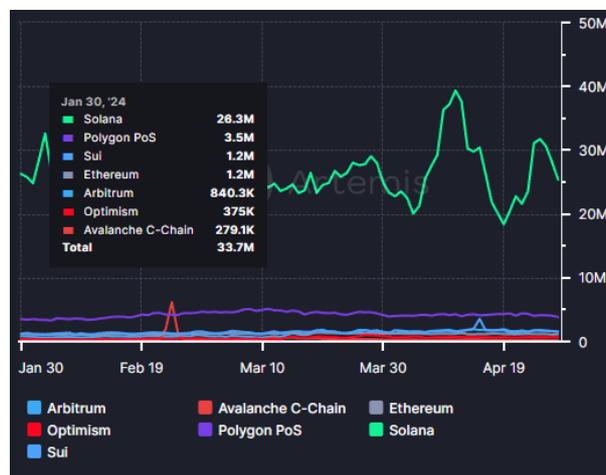


Figure 1: Processed transactions per day, broken down by blockchain / Source: Artemis

Solana's Ecosystem: Diversity and Innovation

Solana has distinguished itself not only through its technical prowess but also through a dynamic and versatile ecosystem. The network encompasses a wide range of applications in areas such as Decentralized Finance (DeFi), Non-Fungible Tokens (NFTs), and Web3 applications. Trading "Memecoins"



is also particularly popular. This diversity fosters broad acceptance and the continued growth of the platform.

The Solana Phone, known as "Saga," represents a unique and innovative step that other blockchains have not yet taken. Specifically designed for the use of blockchain technology, it offers direct support for crypto wallets and dApps, setting it apart from conventional smartphones. The device significantly facilitates the integration of blockchain-based applications into daily life.

Additionally, Solana actively promotes the development of its ecosystem by supporting developers and startups. Through funds and incubation programs, Solana accelerates innovation and facilitates the development of new applications. These initiatives position Solana as a pioneering platform and fertile ground for blockchain innovations.

Serious Competition

Solana has proven itself to be a serious competitor to established blockchains, including Ethereum, through its technological approach and rapid user adoption. However, the challenge lies in advancing technological innovation without jeopardizing network stability. In the past, Solana has been burdened by outages and network congestion, which could potentially endanger the rapid user acceptance the blockchain enjoys.

Thanks to its high speed and low costs, Solana has all the prerequisites to emerge as a major beneficiary in the Web3 space. Payment providers already appreciate the fast blockchain. An example is the credit card company Visa, which conducts a portion of its transactions using the USDC stablecoin on the network. This year, the blockchain has already recorded the largest stablecoin volume, surpassing Ethereum in this area.

Solana has the potential to play a leading role in the infrastructure development of blockchain adoption. With a current market capitalization of about \$60 billion USD, the blockchain currently ranks fifth in the

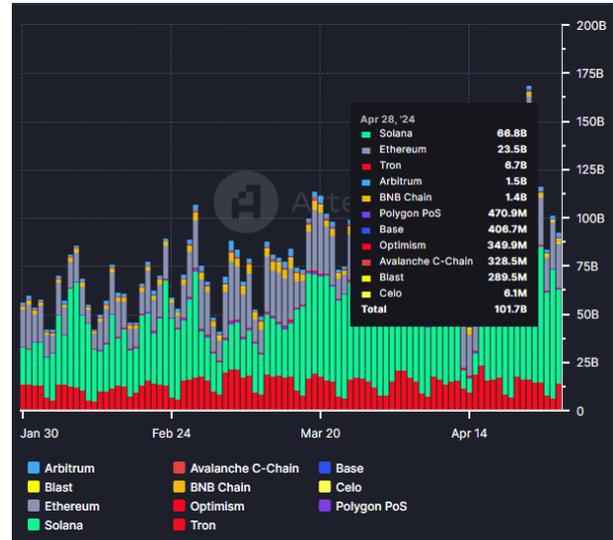


Figure 2: Daily stablecoin volume by blockchain / Source: Artemis

ranking of the most valuable cryptocurrencies. If the integration of Firedancer is successful, Solana has all the necessary components to further climb the ranks.