WHY SOLANA NOW?

NOVEMBER 2021

GALAXY

FUND MANAGEMENT

WHY SOLANA NOW?

BY STEVE KURZ
Partner and Head of Asset Management
Galaxy Digital

Solana (SOL), the digital asset that powers the Solana blockchain, has experienced remarkable growth since August 2021. SOL has quickly established itself as one of the world's leading digital assets with a $72B market cap.[1] The Solana blockchain is a Proof of Stake (PoS) blockchain, operating similarly to other Layer 1 blockchains such as Ethereum and Cardano. Solana also leverages a Proof of History (PoH) algorithm that solves one of the most challenging problems in distributed ledger systems: the consensus of event timestamping. A number of significant features and use cases contribute to the rising interest in Solana and its expanding ecosystem.

SOLANA'S ADVANTAGEOUS FEATURES

SPEED

Decentralized app developers like the speed that the Solana blockchain offers.

LOWER COST

The Solana blockchain typically offers far lower transaction fees than currently seen on certain other smart contract blockchains.

1) Source: Coinbase.com

SPEED

As one of the fastest programmable blockchains, Solana has quickly become one of the most widely used blockchains and largest digital assets by market cap. With the ability to process an average of 2,298 transactions per second (TPS), it caught the attention of developers and investors as a cheaper and faster alternative to Ethereum and other smart contract platforms. However, Solana has been tested and proved capable of reaching 50,000 TPS. Experts speculate that Solana's processing speed may reach 700,000 TPS as the network advances.[2] With Ethereum currently processing between 15 to 45 TPS, it's easy to see why interest in this digital asset continues growing. If you are curious how Solana's blockchain is so fast, you are not alone.

Proof of history speeds up the consensus process for the Solana blockchain by allowing validators to create a historical record proving an event on the blockchain occurred at a specific moment in time using a Verifiable Delay Function (VDF). A VDF encodes time itself into the block, considerably reducing the weight of consensus, thus significantly speeding up the time required for transaction processing. A set of recorded verifiable unique outputs called a 'hash' and a 'count' serve as validation keys in the data blocks resulting from the VDF process. You may think of these hashes and the accompanying count as a verifiable cryptographic timestamp attached to each block of transactions on the blockchain.

Solana's success as a secure, scalable blockchain is made possible by its ability to cut down on time spent linearly validating nodes across the blockchain. The innovative PoH feature builds upon the PoS consensus algorithm but dispenses with its need for linear data validation. No longer must validators expend time and energy congregating to agree simultaneously upon a time and sequence of events. Instead, validators use these unique identifiers to non-sequentially sort and order events. The network chains these historical records together, creating a proof of order relative to the unique assigned identifiers. The time saved by PoH enables record-breaking transaction processing capabilities for the Solana network.

Combining a PoS consensus mechanism with the PoH validation feature delivers a lighter, faster blockchain. The validators processing transactions run the Solana network. Validator selection considers the amount of SOL each individual has staked on the network. Nodes with the highest amounts staked are most likely to be selected to validate and add transaction blocks to the blockchain. Users holding smaller quantities of SOL can delegate their holdings to a larger validator in exchange for a portion of the validator rewards. This delegation method incentivizes both large and small shareholders of SOL to support the network. Staking requirements for achieving validator status serve as a helpful barrier of entry, deterring malicious actors from attacking the blockchain.

LOWER COST

The Solana blockchain offers far lower transaction fees than currently seen on Ethereum. Metrics across the NFT market in October 2021 demonstrate how Solana competes with Ethereum across the industry at a lower cost. The average cost per transaction on the Ethereum network is $49.27, while Solana's average cost per transaction rests at $0.00025.[3] Solana's lower transaction cost contributed to the NFT profile pic (pfp) flipping market that has the attention of ETH and SOL speculators alike.

2) Source: FXEmpire.com
3) Source: Solana.com "Powerful for developers. Fast for everyone," Solana, last accessed November 4, 2021

USE-CASES OF SOLANA

NON-FUNGIBLE TOKENS (NFTs)

The soaring NFT market is positioning Solana as a viable alternative to Ethereum. Congestion on Ethereum's blockchain due to the number of users and transactions on the network caused gas fees to soar this summer, driving many to Solana.

SOCIAL MEDIA

Decentralized social media platforms require high-speed, low-cost blockchains like Solana in order to scale to the masses.

GAMING

Solana offers blockchain-based games that give access to liquidity for participants to own and earn in-game assets.

DECENTRALIZED FINANCE

Due to many developers' preference for Solana's speed, there's an increasingly diverse ecosystem of decentralized finance (DeFi) apps powered by SOL.

SOLANA AND NON-FUNGIBLE TOKENS (NFTs)

Solana's roster of decentralized apps now includes a diverse ecosystem of over 400 projects spanning decentralized finance (DeFi), Web 3.0, NFTs, and more. These project categories include decentralized exchanges, lending protocols, staking platforms, online gaming, social media, storage solutions, and metaverse platforms. The technical sophistication of Solana attracts DeFi developers looking for faster and cheaper networks on which to build and operate their apps. And while Solana's initial goal was to support decentralized apps, it has also found accelerated popularity across the NFT market as an alternative to Ethereum.

The NFT market and the greater digital asset class are progressing rapidly, and we believe that is setting the stage for Solana to continue gaining market share. The Degenerate Ape project was a significant catalyst for Solana's rise this summer. Their NFT volume reached a total of 982K SOL as of November 1, 2021.[4] Popular NFT marketplaces like OpenSea are likely to enable SOL NFT sales in the future. Meanwhile, Solanart.io, a leading SOL NFT marketplace, approaches $1B in volume since inception[5], and total NFT secondary sales volume on Solana is over $500M[6], signifying the eagerness amongst NFT collectors to transact in SOL. Other NFT projects using SOL include Aurory with 526.6K SOL in trades and SolPunks with 404.6K SOL.[5]

Across the NFT market, Ethereum's NFT ecosystem saw 130K unique buyers and 102K unique sellers during October 2021, while Solana hosted 35% of Ethereum's unique buyer numbers and over 50% of the unique sellers.[4] These numbers are positive signs for Solana user adoption in the more mainstream NFT market.

EARLY DAYS FOR SOLANA

One potential risk in the Solana blockchain versus other Layer 1 involves the Solana Foundation potentially running a disproportionate amount of validators. However, since these are still Solana's early days, others argue that large numbers of validators are necessary to get such a large project up and running. It is plausible that Solana becomes more decentralized over time as the network grows in popularity.

Solana has proven that a faster blockchain does not have to mean higher gas prices. And the network is gaining traction as a host for Web 3.0 social networks and digital gaming apps. Time will tell if other blockchains will follow Solana's PoH consensus approach. But as one of the first movers on the market solving the challenge of time required for simultaneous network consensus, Solana demonstrates what scalability can look like on a modern blockchain.

4) Source: Messari Report as of 11/1/21
5) Source: Solanart.io
6) Source: CoinTelegraph.com

CONTACT US

(646) 779 5998

gfmclientservice@galaxydigital.io

galaxyfundmanagement.com

GALAXY FUNDS RISK FACTORS

Please note that the following are not all the risk factors associated with Digital Assets or the Funds (each, a "Fund"). Refer to the Offering Memorandum of the applicable Fund for more risk factors.

Investment Risks Generally. An investment in the Fund, involves a high degree of risk, including the risk that the entire amount invested may be lost. The Fund will invest in Digital Assets (such as Bitcoin, Ethereum, other cryptocurrencies or blockchain based assets, including those that represent the Decentralized Finance (or DeFi) portion or sector of the digital assets market) using strategies and investment techniques with significant risk characteristics, including risks arising from the volatility of the global Digital Assets markets and the risk of loss from counterparty defaults. The Fund's investment program may use investment techniques that involve substantial volatility and can, in certain circumstances, substantially increase the adverse impact to which the Fund may be subject. All investments made by the Fund will risk the loss of capital. No guarantee or representation is made that the Fund's investment program will be successful, that the Fund will achieve its investment objective or that there will be any return of capital invested to investors in the Fund, and investment results may vary.

Different from Directly Owning Bitcoin, Ethereum or Other Digital Assets. The performance of the Fund will not reflect the specific return an investor would realize if the investor actually purchased a Digital Asset. Investors in the Fund will not have any rights that Digital Asset holders have.

No Guarantee of Return or Performance. The obligations or performance of the Fund or the returns on investments in the Fund are not guaranteed in any way. Any losses of the Fund will be borne solely by investors in the Fund. Ownership interests in the Fund are not insured by the Federal Deposit Insurance Corporation, and are not deposits, obligations of, or endorsed or guaranteed in any way, by any banking entity.

Regulation. Digital Assets, including Bitcoin, Ethereum and DeFi tokens, are loosely regulated. Ongoing and future regulatory actions may alter, perhaps to a materially adverse extent, the value of a Fund's investment. If any Digital Asset is determined to be a "security" under U.S. federal or state securities laws or a Digital Asset exchange is determined to be operating illegally, it may have material adverse consequences for Digital Assets due to negative publicity or a decline in the general acceptance of Digital Assets. As such, any determination Digital Asset exchanges are operating illegally or that any Digital Asset is a security under U.S. federal or state securities laws may adversely affect the value of a particular Digital Asset or Digital Assets generally and, as a result, the value of a Fund's investment.

Exchanges. Exchanges may suffer from operational issues, such as delayed execution, that could have an adverse effect on the Fund. Digital Asset exchanges have been closed due to fraud, failure or security breaches. Any of the Fund's funds that reside on an exchange that shuts down or suffers a breach may be lost.

Value. Several factors may affect the price of Digital Assets, including Bitcoin, Ethereum and DeFi tokens, including, but not limited to: supply and demand, investors' expectations with respect to the rate of inflation, interest rates, currency exchange rates or future regulatory measures (if any) that restrict the trading of a Digital Asset or the use of a Digital Asset as a form of payment. There is no assurance that a Digital Asset will maintain its long-term value in terms of purchasing power in the future, or that acceptance of bitcoin payments by mainstream retail merchants and commercial businesses will continue to grow.

Protocol. Many Digital Asset networks, including Bitcoin, Ethereum and DeFi tokens, operate on open-source protocols maintained by groups of core developers. The open-source structure of these network protocols means that certain core developers and other contributors may not be compensated, either directly or indirectly, for their contributions in maintaining and developing the network protocol. Lack of incentives to, or a failure to properly, monitor and upgrade network protocol could damage a Digital Asset network. It is possible that a Digital Asset protocol has undiscovered flaws that could result in the loss of some or all assets held by the Fund. There may also be network-scale attacks against a Digital Asset protocol, which could result in the loss of some or all of assets held by the Fund. Advancements in quantum computing could break a Digital Asset's cryptographic rules. The Fund makes no guarantees about the reliability of the cryptography used to create, issue, or transmit Digital Assets held by the Fund.

Volatility & Supply. Values of Digital Assets have historically been highly volatile, experiencing periods of rapid price increase as well as decline. For instance, there were steep increases in the value of certain Digital Assets, including Bitcoin, over the course of 2017, and multiple market observers asserted that digital assets were experiencing a "bubble." These increases were followed by steep drawdowns. For example, during the period from December 17, 2017 to February 5, 2018, Bitcoin experienced a decline of roughly 60%. During the period from February 13, 2020, until March 16, 2020, the value of Bitcoin fell by over 50%. Bitcoin had a strong start to 2021, hitting an all-time high of nearly $65k in April. But, it closed H1 2021 down 47% from its record. Supply of Digital Assets is determined by computer code, not by a central bank. For example, uncertainty related to the effects of Bitcoin's recent and future "halving" could contribute to volatility in the Bitcoin markets. The value of the Bitcoin or other Digital Assets held by a Fund could decline rapidly in future periods, including to zero.

IMPORTANT DISCLOSURES

The information (Information) contained herein may not be reproduced or redistributed in whole or in part, in any format, without the express written approval of Galaxy Digital Capital Management LP ("GALAXY"). By accepting this document, you acknowledge and agree that all of the Information contained in this document is proprietary to Galaxy. While not explicitly referenced within this piece, Galaxy manages the Galaxy Bitcoin Funds and the Galaxy Crypto Index Master Fund LP (collectively, the "Funds") which invest in bitcoin. The Information is not an offer to buy or sell, nor is it a solicitation of an offer to buy or sell, interests in the Funds or any advisory services or any other security or to participate in any advisory services or trading strategy. If any offer and sale of securities is made, it will be pursuant to the confidential offering memorandum of the Funds (the Offering Memorandum). Any decision to make an investment in the Funds should be made after reviewing such Offering Memorandum, conducting such investigations as the investor deems necessary and consulting the investor's own investment, legal, accounting and tax advisors in order to make an independent determination of the suitability and consequences of an investment. Securities transactions are effected through Galaxy Digital Partners LLC, a member of FINRA and SIPC. The Information is being provided to you solely for discussion purposes and may not be used or relied on for any purpose (including, without limitation, as legal, tax or investment advice) without the express written approval of Galaxy. Investment in the Fund is different from the Bloomberg Bitcoin Cryptocurrency Fixing Rate (the "Index"). The performance of the Fund will vary from the performance of the Index.

Certain statements reflect Galaxy's views, estimates, opinions or predictions (which may be based on proprietary models and assumptions, including, in particular, Galaxy's views on the current and future market for digital assets), and there is no guarantee that these views, estimates, opinions or predictions are currently accurate or that they will be ultimately realized. To the extent these assumptions or models are not correct or circumstances change, the actual performance of Galaxy and the Fund may vary substantially from, and be less than, the estimated performance. None of Galaxy, the Fund nor any of their respective affiliates, shareholders, partners, members, directors, officers, management, employees or representatives makes any representation or warranty, express or implied, as to the accuracy or completeness of any of the Information or any other information (whether communicated in written or oral form) transmitted or made available to you. Each of the aforementioned parties expressly disclaims any and all liability relating to or resulting from the use of the Information or such other information.

Except where otherwise indicated, the Information is based on matters as they exist as of the date of preparation and not as of any future date and will not be updated or otherwise revised to reflect information that subsequently becomes available, or circumstances existing or changes occurring after the date hereof.

Investing in financial markets, the Fund and digital assets, including Bitcoin, involves a substantial degree of risk. There can be no assurance that the investment objectives described herein will be achieved. Any investment in the Fund or bitcoin may result in a loss of the entire amount invested. Investment losses may occur, and investors could lose some or all of their investment. No guarantee or representation is made that Galaxy's investment strategy, including, without limitation, its business and investment objectives, diversification strategies or risk monitoring goals, will be successful, and investment results may vary substantially over time. Nothing herein is intended to imply that the Galaxy's investment methodology or that investing in bitcoin may be considered "conservative", "safe", "risk free", or "risk averse." Neither historical returns nor economic, market or other performance is an indication of future results.

Certain information contained herein (including financial information) has been obtained from published and non-published sources. Such information has not been independently verified by Galaxy, and Galaxy does not assume responsibility for the accuracy of such information. Galaxy does not provide tax, accounting or legal advice. Notwithstanding anything to the contrary, each recipient of this Information, and each employee, representative or other agent of such recipient may disclose to any and all persons, without limitation of any kind, the U.S. income and franchise tax treatment and the U.S. income and franchise tax structure of the transactions contemplated hereby and all materials of any kind (including opinions or other tax analyses) that are provided to such recipient relating to such tax treatment and tax structure insofar as such treatment and/or structure relates to a U.S. income or franchise tax strategy provided to such recipient by Galaxy.

Certain information contained herein constitutes forward-looking statements, which can be identified by the use of terms such as "may", "will", "should", "expect", "anticipate", "project", "estimate", "intend", "continue" or "believe" (or the negatives thereof) or other variations thereof. Due to various risks and uncertainties, including those discussed above, actual events or results, the ultimate business or activities of Galaxy or the Fund or the actual performance of Galaxy, the Fund, or bitcoin may differ materially from those reflected or contemplated in such forward-looking statements. As a result, investors should not rely on such forward-looking statements in making their investment decisions.

None of the Information has been filed with the U.S. Securities and Exchange Commission, any securities administrator under any state securities laws or any other governmental or self-regulatory authority. No governmental authority has opined on the merits of the offering of any securities by the Fund or Galaxy, or the adequacy of the information contained herein. Any representation to the contrary is a criminal offense in the United States. Affiliates of Galaxy own investments in some of the digital assets and protocols discussed in this document, including bitcoin.

Hedge funds and other alternative investments involve a high degree of risk and can be illiquid due to restrictions on transfer and lack of a secondary trading market. They can be highly leveraged, speculative, and volatile, and an investor could lose all or a substantial amount of an investment. Alternative investments may lack transparency to investors of information as to share price, valuation, and portfolio holdings. Complex tax structures often result in delayed tax reporting and potentially materially different returns for offshore versus onshore investors. Compared to mutual funds, alternative investments are subject to less regulation and often charge higher fees.

BLOOMBERG is a trademark or service mark of Bloomberg Finance L.P. GALAXY is a trademark of GDCM. Bloomberg Finance L.P. and its affiliates (collectively, Bloomberg) are not affiliated with GDCM, the Fund and their respective affiliates (collectively, Galaxy). Bloomberg's association with Galaxy is to act as the administrator and calculation agent of the Index, which is the property of Bloomberg. Neither Bloomberg nor Galaxy guarantee the timeliness, accurateness, or completeness of any data or information relating to the Index or results to be obtained. Neither Bloomberg nor Galaxy make any warranty, express or implied, as to the Index, any data or values relating thereto or any financial product or instrument linked to, using as a component thereof or based on the Index (Products) or results to be obtained therefrom, and expressly disclaims all warranties of merchantability and fitness for a particular purpose with respect thereto. To the maximum extent allowed by law, Bloomberg, Galaxy and its or their licensors, and its and their respective employees, contractors, agents, suppliers, and vendors shall have no liability or responsibility whatsoever for any injury or damages— whether direct, indirect, consequential, incidental, punitive, or otherwise—arising in connection with the Index, any data or values relating thereto or any Products—whether arising from their negligence or otherwise.