



**NEXI CHAIN**

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# NEXI CHAIN: INTEROPERABLE LAYERED DPOS NETWORK

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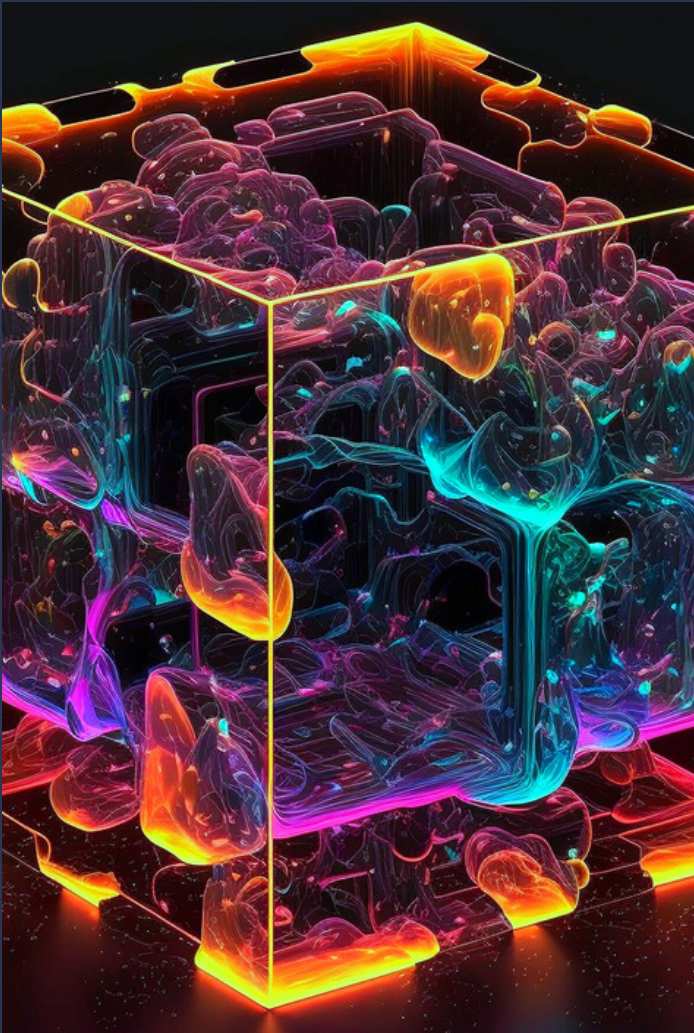
# INTRODUCTION

Traditional blockchain networks face inherent limitations in terms of scalability, transaction throughput, and high fees. As more users and businesses enter the space, these challenges become apparent, hindering the widespread adoption of decentralized applications (dApps) and limiting the potential of blockchain technology to disrupt multiple industries.

Scalability is another pressing concern as existing networks struggle to handle the increasing transaction volumes, leading to congestion and skyrocketing fees. This bottleneck severely impacts the user experience and makes it impractical for blockchain technology to serve as a viable alternative to centralized systems for various applications.

To address these challenges and unlock the full potential of blockchain technology, there is a growing demand for scalable and interoperable blockchain solutions. These solutions aim to provide high transaction throughput, low latency, reduced fees, and seamless communication between different blockchains. By overcoming these limitations, scalable and interoperable blockchain networks can foster innovation, drive mass adoption, and empower developers and businesses to create transformative decentralized applications that can revolutionize industries such as finance, supply chain, gaming, and identity verification.

# NEXI AS A SOLUTION



Nexi aims to be at the forefront of this demand, offering an interconnected EVM-scalable layer 1 blockchain that provides the scalability and interoperability necessary for the decentralized future. By leveraging cutting-edge technology and a robust ecosystem, Nexi is poised to transform the blockchain landscape and pave the way for a new era of scalable and interconnected decentralized applications.

# LAYER 1 OPERATION

As a layer 1 blockchain, Nexi operates at the core infrastructure layer, enabling it to provide fundamental improvements in performance and efficiency. By addressing the limitations of existing networks, Nexi empowers developers and businesses to create scalable, robust, and secure dApps that can handle massive transaction volumes and cater to a global user base.

One of the key features of Nexi is its scalability. Traditional blockchains often struggle with transaction throughput and high fees, making it challenging to support real-world applications with large user bases. Nexi leverages cutting-edge technology, such as sharding, sidechains, or off-chain processing, to achieve high transaction throughput, low latency, and reduced fees. This scalability breakthrough ensures a smooth user experience and allows for the seamless execution of complex transactions within the Nexi ecosystem.

Nexi is designed to be fully compatible with the Ethereum Virtual Machine (EVM), enabling developers to leverage existing Ethereum tools, smart contracts, and the vast Ethereum developer ecosystem. This compatibility ensures that dApps built on Nexi can seamlessly interact with the Ethereum network and other EVM-based blockchains. Additionally, Nexi implements cross-chain communication protocols and standards to enable interoperability with other blockchain networks, fostering a connected and vibrant decentralized ecosystem.

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# WORKING AGAINST OBSTACLES

**High Transaction Costs:** Many blockchain networks suffer from high transaction costs, often referred to as gas fees. These fees are necessary to incentivize miners/validators to include transactions in blocks.

**Network Congestion:** Blockchain networks, particularly those with a single main chain, can experience congestion when the number of transactions surpasses the network's capacity.

**Scalability Bottlenecks:** Scaling blockchain networks to accommodate a high volume of transactions while maintaining decentralization and security is a complex task.

**Storage and Bandwidth Requirements:** As blockchain networks grow, the storage and bandwidth requirements increase, which can pose challenges for participants, particularly those with limited resources.

**Solutions like Nexi aim to address these scalability limitations by implementing innovative approaches and optimizing the underlying infrastructure to achieve high transaction throughput, low latency, and improved cost-efficiency.**

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# LAYERED DPOS MECHANISM

Nexi implements an innovative consensus mechanism known as Layered Delegated Proof of Stake (LPoS). This consensus mechanism is designed to ensure security, decentralization, and efficient block validation in an interconnected EVM compatible chain.

- **Layered Structure:** Nexi employs a layered structure that consists of multiple interconnected chains, each with its own set of validators and block producers. This layered approach allows for horizontal scalability, as each chain can handle a specific set of transactions and smart contracts, while remaining connected to the overall Nexi ecosystem.

- **Layered Delegated Proof of Stake (LPoS):** Within each layer, LPoS involves a voting-based election process where token holders stake their tokens and vote for a set of trusted delegates. These delegates are responsible for block production and validation on their respective chains. LPoS offers high transaction throughput and low latency by delegating block production to a limited number of trusted nodes.

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**The LPoS consensus mechanism in Nexi ensures horizontal scalability through its layered structure. Here's how the mechanism achieves scalability:**

- **Interconnected nodes:** LPoS employs a layered structure consisting of multiple interconnected nodes and block validators. Each node operates independently and focuses on a specific set of transactions and smart contracts. This approach allows for horizontal scalability by distributing the transaction load and computational requirements across multiple nodes and validators.

- **Parallel Processing:** The layered structure enables parallel processing of transactions across the interconnected nodes. Transactions can be processed simultaneously on different nodes, allowing for increased transaction throughput. This parallel processing capability enhances scalability as the network can handle a higher volume of transactions in a given time frame.

- **Independent Validators and Block Producers:** Each node in the LPoS system has its own set of block producers. Validators are responsible for validating transactions and ensuring their integrity, while block producers create new blocks and add them to the chain. By having independent validators and block producers, LPoS enables concurrent processing and validation of transactions, contributing to horizontal scalability.



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# DELEGATION PROCESS

In Nexi as a Layered Delegated Proof of Stake (LPoS) chain, the delegation of block production involves token holders selecting a set of trusted delegates to perform the responsibility of creating and validating blocks on behalf of the network.

•**Token Holder Staking:** It requires Nexi native token holders to stake their tokens as part of the consensus mechanism. By staking tokens, holders indicate their interest and commitment to the network. The number of tokens staked can determine the weight of their influence in the delegation process.

•**Delegate Candidates:** LPoS allows individuals or entities to become delegate candidates. These candidates express their willingness to undertake the role of block production and validation. They campaign, provide information about their skills, reputation, and technical expertise to gain the trust and votes of token holders.

•**Voting Process:** Token holders participate in a voting process to select the delegates they trust. Each token holder has a designated number of votes, typically proportional to the number of tokens they have staked. They can distribute their votes among multiple delegate candidates or allocate all their votes to a single candidate, depending on the LPoS implementation.

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- **Delegate Selection:** The delegates with the highest number of votes are selected to become active block producers. The exact number of delegates chosen may vary depending on the LPoS design, but it is typically a limited number to ensure decentralization and prevent concentration of power.
  - **Block Production and Validation:** Once the active delegates are selected, they take turns in creating and validating blocks within the network. The order of block production rotation can be determined by a predetermined schedule or through an additional consensus algorithm. The delegates are responsible for verifying the authenticity of transactions, assembling them into blocks, and adding them to the blockchain.
  - **Incentives and Rewards:** As a reward for their role in block production and validation, delegates will receive incentives in the form of a staking-shared minted token. The specific reward system varies depending on the LPoS implementation and the network's economic model. The incentives motivate delegates to perform their duties diligently and maintain the security and integrity of the network.

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# SHARDING ON NEXI

**Layered sharding in the context of Nexi's LPoS mechanism refers to the combination of sharding and the layered structure of the network. It is a technique employed by Nexi to achieve scalability and enhance the performance of the blockchain.**

·**Sharding within Layers:** Within each layer of the Nexi network, sharding is applied. Sharding involves dividing a layer into smaller subsets called shards. Each shard processes a subset of transactions and has its own set of validators and block producers. Sharding within layers allows for parallel processing of transactions within each layer, improving transaction throughput and reducing latency.

·**Interconnected Sharding:** The shards within each layer of the Nexi network are interconnected, allowing for communication and interaction between them. This enables seamless transfer of assets and information across different shards, promoting interoperability and enhancing the overall functionality of the network.

**Scalability and Performance:** Layered sharding via Nexi's LPoS mechanism achieves scalability and enhances performance in multiple ways. The combination of sharding and the layered structure allows for parallel processing of transactions within each layer and across different shards, increasing transaction throughput.

# SIDE-CHAINS ON NEXI

A Nexi side-chain operates as a separate blockchain that is interoperable with the main Nexi chain. It allows for the execution of specific transactions or smart contracts with distinct requirements or characteristics that are not directly handled by the main chain.

·**Creation of a Side-Chain:** To establish a side-chain on the Nexi LPoS blockchain, a separate blockchain is created with its own set of rules, consensus mechanism, and validators. The side-chain can be customized to cater to specific use cases, such as handling particular types of transactions or applications that require different functionality or performance characteristics.

·**Interoperability with the Main Chain:** The side-chain is designed to be interoperable with the main Nexi chain. It achieves this through various mechanisms, such as two-way pegging or cross-chain communication protocols. These mechanisms allow for the transfer of assets or information between the main chain and the side-chain, enabling interoperability and seamless interaction.

**Validators and Consensus:** The side-chain has its own set of validators and consensus mechanism. These validators are responsible for validating transactions and maintaining the integrity of the side-chain.

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# STAKING DELEGATION

**Nexi Chain uses an interoperated model for using a staking-share token to incentivize staking delegators and node validators:**

**1. Staking-Share Token:** Nexi Chain introduces a staking-share token specific to its network. This token represents a share or ownership in the staking rewards generated by the network. It serves as a mechanism to distribute and manage the rewards earned through block validation.

**2. Staking Delegators:** Users who hold Nexi Chain's native asset can choose to stake their tokens by locking them in a staking contract or wallet. In return, they receive a corresponding amount of staking-share tokens. These staking-share tokens represent the rights to a portion of the staking rewards earned by the validators.

**3. Node Validators:** Validators are participants in the Nexi Chain network responsible for proposing and validating blocks. They play a crucial role in maintaining the network's security and consensus. Validators are required to hold a certain amount of the native asset and stake it as collateral to participate in block validation.

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**4. Staking Rewards Pool:** The staking-share token is used to manage the rewards pool generated by the network. The rewards pool is typically funded by sources such as transaction fees, inflation, or block rewards. The staking rewards are distributed among validators and their delegators based on their stake and level of participation.

**5. Staking Rewards Distribution:** The staking-share token represents the share of the staking rewards earned by validators and delegators. Validators and delegators receive staking-share tokens proportional to their stake and participation. The rewards distribution is governed by smart contracts or protocols deployed on the Nexi Chain's main network.

**6. Incentives for Validators and Delegators:** Validators and delegators are incentivized to actively participate in the network's block validation process through the staking-share token. Validators earn staking-share tokens as rewards for successfully validating blocks, while delegators receive staking-share tokens based on the amount of stake they have delegated to validators.

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**7. Tradable Asset:** The staking-share token can be a transferable and tradable asset within the Nexi Chain ecosystem. Users holding staking-share tokens have the flexibility to trade or transfer their ownership rights to other participants in the network.

**8. Governance and Voting Rights:** The staking-share token can also grant holders governance and voting rights in the Nexi Chain network. Holders will have the ability to participate in voting processes to influence protocol upgrades, parameter changes, or validator selection methods. This empowers the staking community to actively participate in decision-making processes.

**By deploying the staking-share token to manage block validation rewards, Nexi Chain incentivizes staking delegators and node validators to actively participate in the network's staking process. Validators earn staking-share tokens for their block validation efforts, while delegators receive staking-share tokens based on their delegated stake. This model aligns the interests of stakeholders, encourages active participation, and allows for the transferability and governance rights associated with the staking-share token within the Nexi Chain ecosystem.**

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# ROLL-UP INTEGRATION

Implementing layer 2 solutions, such as roll-ups, can significantly enhance the scalability of Nexi Chain. Roll-ups allow for the aggregation of multiple transactions into a single batch, which is then verified and submitted to the main chain as a single transaction. By reducing the number of on-chain transactions, roll-ups can greatly improve the scalability and throughput of the network, while minimizing costs and congestion.

- Cross-Roll-up Interoperability:** Enabling interoperability between different roll-up solutions can unlock a wide range of possibilities for Nexi Chain. Inter-roll-up communication protocols can facilitate the seamless transfer of assets, data, and transactions between different roll-up environments. This interoperability expands the ecosystem's reach and allows for collaboration and innovation across various layer 2 solutions.

- Smart Contract Optimizations:** Roll-ups can benefit from smart contract optimizations to further enhance the performance of Nexi Chain. Techniques like state channel networks or plasma architectures can be used to offload certain computations or transactions from the main chain to layer 2 environments. These optimizations reduce the computational load on the main chain, enabling faster and more cost-effective execution of smart contracts.



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# NATIVE UTILITY TOKEN

Nexi Chain has its own native token, NEXI, which serves as the primary asset within the ecosystem. The NEXI token is designed to facilitate governance, incentivize participation, and provide scalability features within the Nexi Chain network.

By utilizing the native NEXI token for governance and scalability features, Nexi Chain creates an ecosystem where token holders have a say in the network's decision-making process and benefit from participating in its growth.

The Nexi token has a total supply of 10 billion tokens, which are distributed as follows: **35% for the strategic reserve (to be locked), 25% for the ecosystem treasury, 25% for staking rewards (on-chain), 10% for partners and backers and 5% for the team and advisors.** The team and advisory board tokens are being locked up for at least six months to prevent dumping and manipulating the market.

The Nexi token has an internal deflationary model, whereby a percentage of every transaction is burned, reducing the token supply over time. The burn rate starts at 1%, and it decreases by 0.1% every year, reaching a minimum of 0.5% in the fifth year. This mechanism ensures that the token's value appreciates over time as the supply decreases.

# USE-CASES

·**Decentralized Finance (DeFi) Applications:** Nexi Chain can serve as a platform for various DeFi applications such as decentralized exchanges (DEXs), lending and borrowing protocols, stablecoins, yield farming platforms, and liquidity pools. By integrating with Nexi Chain, these DeFi applications can leverage its scalability and technical support to provide efficient and secure financial services to users.

·**Non-Fungible Tokens (NFTs):** NFTs have gained significant popularity in recent years, enabling the ownership and trading of unique digital assets such as artwork, collectibles, and virtual real estate. Nexi Chain can provide a scalable and robust infrastructure for NFT marketplaces, enabling artists, creators, and collectors to mint, trade, and showcase NFTs with reduced transaction costs and increased throughput.

·**Supply Chain Management:** Nexi Chain's scalability and smart contract capabilities make it an ideal platform for implementing transparent and secure supply chain management solutions. Companies can leverage Nexi Chain to track and authenticate the movement of goods, verify product provenance, reduce counterfeiting risks, and streamline logistics processes through automated smart contracts.

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- **Gaming and Virtual Worlds:** The gaming industry can benefit from Nexi Chain's technical capabilities by integrating blockchain technology into games and virtual worlds. Nexi Chain can support in-game currencies, item ownership and trading, provable scarcity of virtual assets, and decentralized marketplaces, providing gamers with more control and ownership over their digital assets.
  - **Identity Management:** Nexi Chain can be utilized for innovative identity management solutions, offering users enhanced privacy, security, and control over their personal data. Self-sovereign identity systems can be built on Nexi Chain, empowering individuals to manage their digital identities, selectively disclose personal information, and participate in trusted interactions with various organizations.
  - **Internet of Things (IoT) Integration:** Nexi Chain's scalability and technical support can facilitate the integration of IoT devices with blockchain technology. By connecting IoT devices to Nexi Chain, data integrity, security, and interoperability can be ensured, enabling use-cases such as supply chain tracking, energy management, smart cities, and autonomous vehicle management.

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·**Cross-Chain Interoperability:** Nexi Chain can explore interoperability solutions to connect with other blockchain networks, allowing assets and data to flow seamlessly between different chains. This would enable users and developers to leverage the unique features and benefits of multiple blockchains, fostering collaboration and innovation across various ecosystems.

·**Decentralized Autonomous Organizations (DAOs):** Nexi Chain's scalability and smart contract capabilities provide a suitable platform for the development of DAOs. DAOs are organizations that operate autonomously based on predefined rules and governance mechanisms. By integrating with Nexi Chain, DAOs can facilitate decentralized decision-making, resource allocation, and community governance.

**By connecting these innovative and emerging use-cases to Nexi Chain's ecosystem, mutual development can be fostered.**

**Developers and entrepreneurs can leverage Nexi Chain's scalability, technical support, and smart contract capabilities to build and deploy new applications that address real-world challenges and unlock the potential of blockchain technology in various industries.**