BlockDAG

Whitepaper

April 2026

Introduction

BlockDAG is a high-performance Layer 1 blockchain infrastructure network built on a Directed Acyclic Graph (DAG) architecture combined with Proof-of-Work security and full Ethereum Virtual Machine (EVM) compatibility.

Since the original publication of this whitepaper, the BlockDAG ecosystem has progressed from concept into a live operational network with active infrastructure, validator operations, exchange integrations, staking systems, smart contract deployments, explorer tooling, wallet support, decentralized applications, and ecosystem utility products.

The BlockDAG network combines the scalability advantages of DAG-based consensus with the security and decentralization principles of Proof-of-Work mining. The architecture enables high-throughput parallel transaction processing while preserving deterministic ordering and finality through the GHOSTDAG consensus protocol.

BlockDAG supports account-based EVM execution for decentralized applications, smart contracts, DeFi, gaming, NFTs, and ecosystem services. The result is a unified hybrid architecture capable of supporting payments, decentralized finance, gaming economies, staking systems, cross-chain functionality, and enterprise-grade blockchain infrastructure.

Network Status and Ecosystem Expansion

The BlockDAG mainnet is live and operational. The ecosystem now includes:

- Mainnet transaction processing.
- Staking infrastructure.
- NFT marketplace integrations.
- Decentralized exchange functionality.
- Wallet integrations and smart wallet support.
- Exchange trading integrations.
- Explorer infrastructure and public on-chain metrics.
- DAO tooling and developer environments.
- Gaming and casino utility integrations.
- Cross-chain bridge development.
- Super App ecosystem infrastructure.

The ecosystem continues expanding through infrastructure deployment, liquidity integrations, mining expansion, developer onboarding, and ecosystem utility growth.

EVM Architecture

BlockDAG leverages the EVM subsystem which provides Ethereum-compatible smart contract execution. Developers can deploy Solidity smart contracts using existing Ethereum tooling including Hardhat, Remix, Truffle, MetaMask, Web3.js, and Ethers.js.

DAG Architecture and Consensus

Traditional blockchains process blocks sequentially, limiting scalability and throughput. BlockDAG replaces the linear chain structure with a Directed Acyclic Graph.

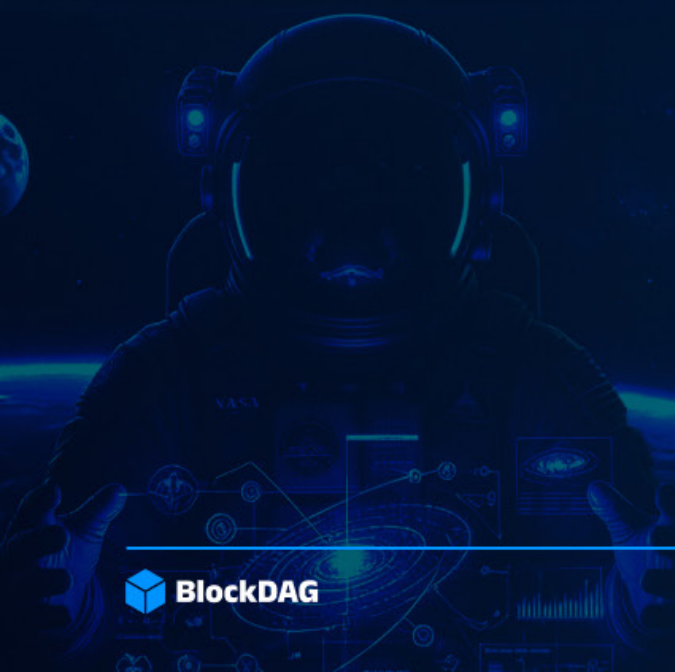
The BlockDAG consensus model allows multiple blocks to be produced simultaneously while maintaining network security and eventual deterministic ordering.

Consensus is powered by:

- Proof-of-Work security.
- GHOSTDAG ordering logic.
- Parallel block creation.
- Finality through DAG referencing.

This architecture enables:

- Faster transaction confirmations.
- Reduced congestion.
- Higher scalability.
- Lower fees.
- Greater network throughput.



The GHOSTDAG Protocol

GHOSTDAG is the core consensus engine responsible for ordering blocks in the DAG.

Unlike traditional blockchain systems that discard parallel blocks, GHOSTDAG incorporates concurrent blocks into consensus while identifying honest miner participation through graph connectivity analysis.

The protocol:
- Preserves security under Proof-of-Work assumptions.
- Supports parallel block production.
- Resolves transaction ordering conflicts.
- Protects against double-spending.
- Provides scalable transaction throughput.

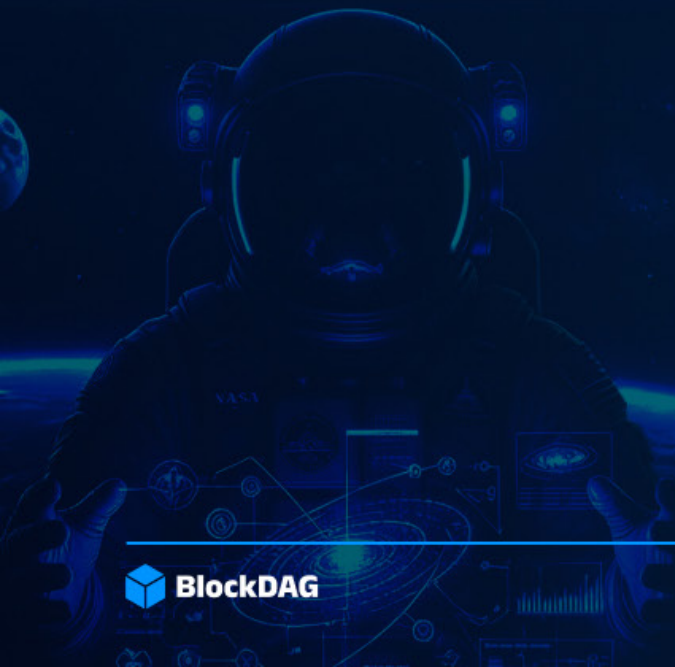
The network gradually establishes a stable total ordering of blocks while maximizing network efficiency and miner participation.

Transaction Processing

The lifecycle of a transaction within BlockDAG includes:

1. Transaction creation and signing.
2. Network propagation through the peer-to-peer layer.
3. Validation by nodes and miners.
4. Inclusion within DAG blocks.
5. GHOSTDAG ordering and consensus.
6. Finalization and state updates.

The network is designed for near-instant propagation with rapid finality and low transaction costs.



Staking, Utility and Ecosystem Products

The BlockDAG ecosystem has evolved beyond a base-layer blockchain into a broader utility-driven digital economy.

Current and planned utility layers include:
- Fixed and flexible staking.
- Decentralized exchange infrastructure.
- NFT marketplaces.
- Cross-chain bridge systems.
- Lending and borrowing infrastructure.
- Gaming and casino integrations.
- Developer IDE tooling.
- Swap functionality.
- Mobile reward mining integrations.
- Super App ecosystem services.

The ecosystem strategy focuses on long-term utility generation rather than speculative usage alone.

Mining Infrastructure

BlockDAG utilizes Proof-of-Work mining secured through ASIC-compatible infrastructure.

Mining systems include:
- X-series mining hardware.
- Distributed mining operations.
- Parallel block production.
- DAG-aware consensus participation.

Mining rewards follow a geometrically reducing issuance schedule designed to balance:
- Network security.
- Long-term sustainability.
- Miner participation.
- Economic stability.

Mining infrastructure continues expanding globally as the network decentralizes further.

Coinomics

BDAG is the native utility asset of the BlockDAG ecosystem.

The coin supports:
- Transaction fees.
- Smart contract execution.
- Staking participation.
- Ecosystem utility.
- Governance participation.
- Gaming and payment functionality.
- Liquidity systems.
- Cross-platform utility.

The ecosystem continues implementing long-term sustainability mechanisms including utility demand, staking participation, ecosystem growth, and transaction-driven usage.

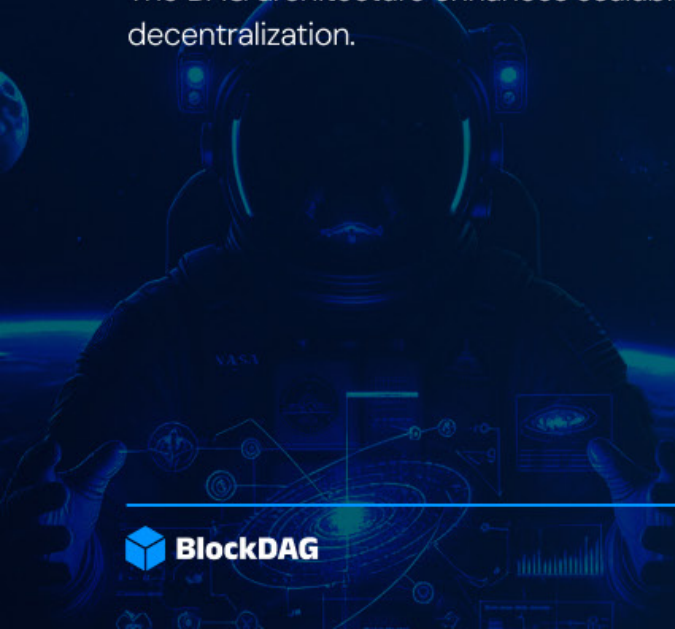
The total maximum supply remains capped at 150 billion BDAG.

Security

Security remains a foundational pillar of BlockDAG.

The network utilizes:
- Proof-of-Work consensus.
- Cryptographic transaction signing.
- SHA-based hashing mechanisms.
- DAG-based consensus ordering.
- Anti-spam and DDoS protection.
- Network propagation verification.
- Smart contract validation systems.

The DAG architecture enhances scalability while preserving network integrity and decentralization.



Node Infrastructure

BlockDAG supports:
• Full archival nodes.
• Validator infrastructure.
• Mining nodes.
• EVM execution clients.
• Consensus clients.
Full archival nodes.
BlockDAG supports two kinds of nodes, archival full nodes and more specialized miner nodes. Full nodes are the backbone of the BlockDAG network. They store a complete copy of the blockchain (DAG), validate transactions, and participate actively in the consensus process. Full nodes are critical for maintaining the decentralized integrity of the network and ensuring that all transactions adhere to the consensus rules.

Full nodes are archival: they are responsible for storing all past all past blocks. They help ensure security by validating blocks, and they communicate with other full nodes to propagate transaction and block information. Minimal hardware requirements for running a full node are listed below.

Miner Nodes
Miner nodes are specialized nodes that participate in the consensus process by solving the cryptographic puzzle at the heart of the PoW algorithm. Specifically, a miner collects pending transactions from the P2P network's transaction pool, validates them, constructs a candidate block, and attempts to solve that block's PoW puzzle. If it succeeds in time, the miner adds the new block to the DAG. Miners compete to earn block rewards and transaction fees. Miners also propagate newly mined blocks across the network for validation by full nodes. Miners secure the network by contributing computational power to prevent attacks such as 51% attacks.

Miner nodes are essential for maintaining the integrity and security of the BlockDAG network, as they ensure that blocks are added to the DAG through a competitive, decentralized process. They also contribute to the network's scalability by enabling
parallel block creation in the DAG structure.
Recommended infrastructure includes enterprise-grade networking, SSD storage, multi-core processing, and scalable deployment configurations. The ecosystem is designed to support global decentralized infrastructure participation.

Developer Ecosystem

BlockDAG provides a complete development environment for builders and enterprises.

Supported tools include:
- Solidity smart contracts.
- MetaMask integration.
- Hardhat.
- Remix.
- Truffle.
- Web3.js.
- Ethers.js.
- REST and RPC APIs.
- Block explorers.
- SDK integrations.

Future development includes:
- Expanded cross-chain interoperability.
- DAO frameworks.
- Enhanced developer tooling.
- Enterprise integration layers.

Governance and Foundation

BlockDAG operates under a global corporate structure with ongoing movement toward increased ecosystem decentralization.

The BlockDAG Foundation supports:
- Open-source development.
- Ecosystem growth.
- Infrastructure coordination.
- Developer support.
- Research and security initiatives.

Long-term governance evolution is expected to incorporate broader ecosystem participation mechanisms.

Future Roadmap

The next phase of the BlockDAG ecosystem includes:

- Expanded exchange integrations.
- Additional liquidity infrastructure.
- Broader mining deployment.
- Super App launch and scaling.
- Gaming ecosystem expansion.
- Lending and borrowing systems.
- Cross-chain bridge deployment.
- Institutional infrastructure.
- Increased developer adoption.

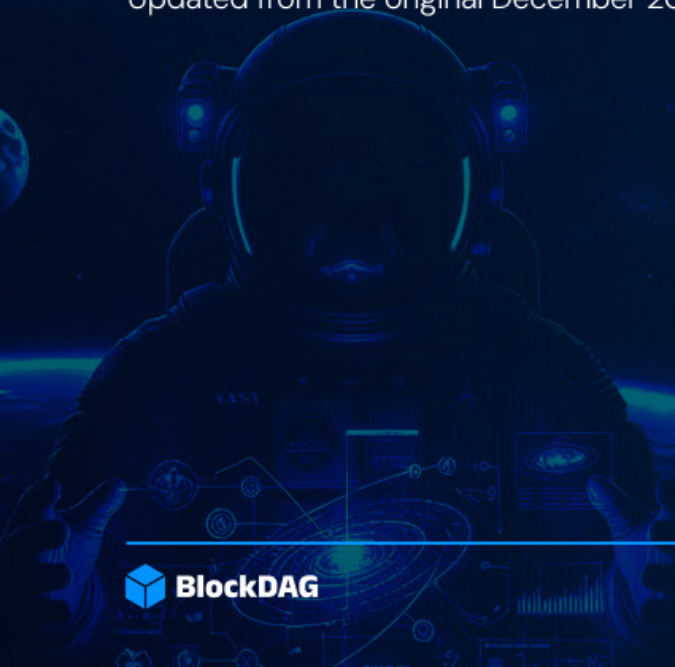
The ecosystem strategy is focused on long-term infrastructure growth, utility expansion, and global blockchain adoption.

Legal Disclaimer

This document is provided for informational purposes only and does not constitute financial, legal, investment, or regulatory advice.
Digital assets involve risk, including volatility, technological risk, regulatory uncertainty, and market risk.
Participation within the BlockDAG ecosystem is undertaken entirely at the participant's own discretion and risk.

No guarantees are made regarding future market value, exchange listings, liquidity, utility growth, or ecosystem adoption.

Users are responsible for complying with local laws and regulations within their respective jurisdictions.
Updated from the original December 2024 whitepaper structure on April 2026



Corporate Structure and Legal Framework

BlockDAG operates through DAG Systems Ltd., incorporated in Samoa as an international company supporting the BlockDAG ecosystem and global infrastructure operations.

The ecosystem is structured to support international blockchain operations, ecosystem expansion, infrastructure deployment, developer participation, and long-term decentralization initiatives.

The BlockDAG Foundation and supporting ecosystem entities are intended to progressively expand decentralized participation and governance structures over time.

Market Position and Competitive Landscape

BlockDAG operates within the global Layer-1 blockchain infrastructure market.

The network competes across multiple sectors:
- High-throughput Layer-1 networks.
- DAG-based blockchain protocols.
- EVM-compatible smart contract ecosystems.
- Decentralized finance infrastructure.
- Mining-based blockchain systems.

BlockDAG differentiates itself through:
- Proof-of-Work security.
- DAG-based scalability.
- Parallel transaction execution.
- Full EVM compatibility.
- Consumer mining accessibility.
- Mobile mining participation.
- Dedicated ASIC mining infrastructure.
- Real-world utility integrations.

The architecture is designed to combine the decentralization and security of traditional Proof-of-Work systems with the throughput and usability expected from next-generation blockchain infrastructure.

User Adoption and Ecosystem Growth

The BlockDAG ecosystem has achieved significant global adoption across both Web2 and Web3 user segments.

Key ecosystem growth indicators include:
- Millions of X1 Reward Miner mobile application users.
- Community participation across more than 130 countries.
- Expanding node and mining infrastructure.
- Significant social and developer ecosystem growth.
- Global presale and wallet participation.
- Rapid ecosystem onboarding and engagement.

The X1 Reward Miner application serves as a gateway for mainstream onboarding into blockchain participation through simplified mining rewards, gamified engagement systems, and ecosystem integration.

BlockDAG continues expanding its user base through developer programs, mining participation, educational initiatives, ecosystem partnerships, and decentralized application deployment.

Developer Ecosystem and Education

BlockDAG supports a growing developer ecosystem through:
- Open development tooling.
- EVM compatibility.
- Smart contract support.
- Educational initiatives.
- Developer onboarding systems.
- Hackathons and ecosystem grants.
- Developer SDKs and APIs.

The BlockDAG Academy initiative supports blockchain education and ecosystem training designed to accelerate adoption and developer participation globally.

The ecosystem roadmap includes expanded no-code tooling, account abstraction systems, smart account support, and simplified application deployment frameworks.

Real-World Utility and Partnerships

BlockDAG is focused on real-world blockchain adoption through ecosystem integrations and strategic partnerships.

Current and planned utility initiatives include:
- Fan engagement systems.
- Sports partnerships.
- NFT ecosystems.
- Gaming integrations.
- Payment infrastructure.
- Digital asset commerce.
- DeFi systems.
- Lending and borrowing applications.
- Consumer-facing Super App infrastructure.

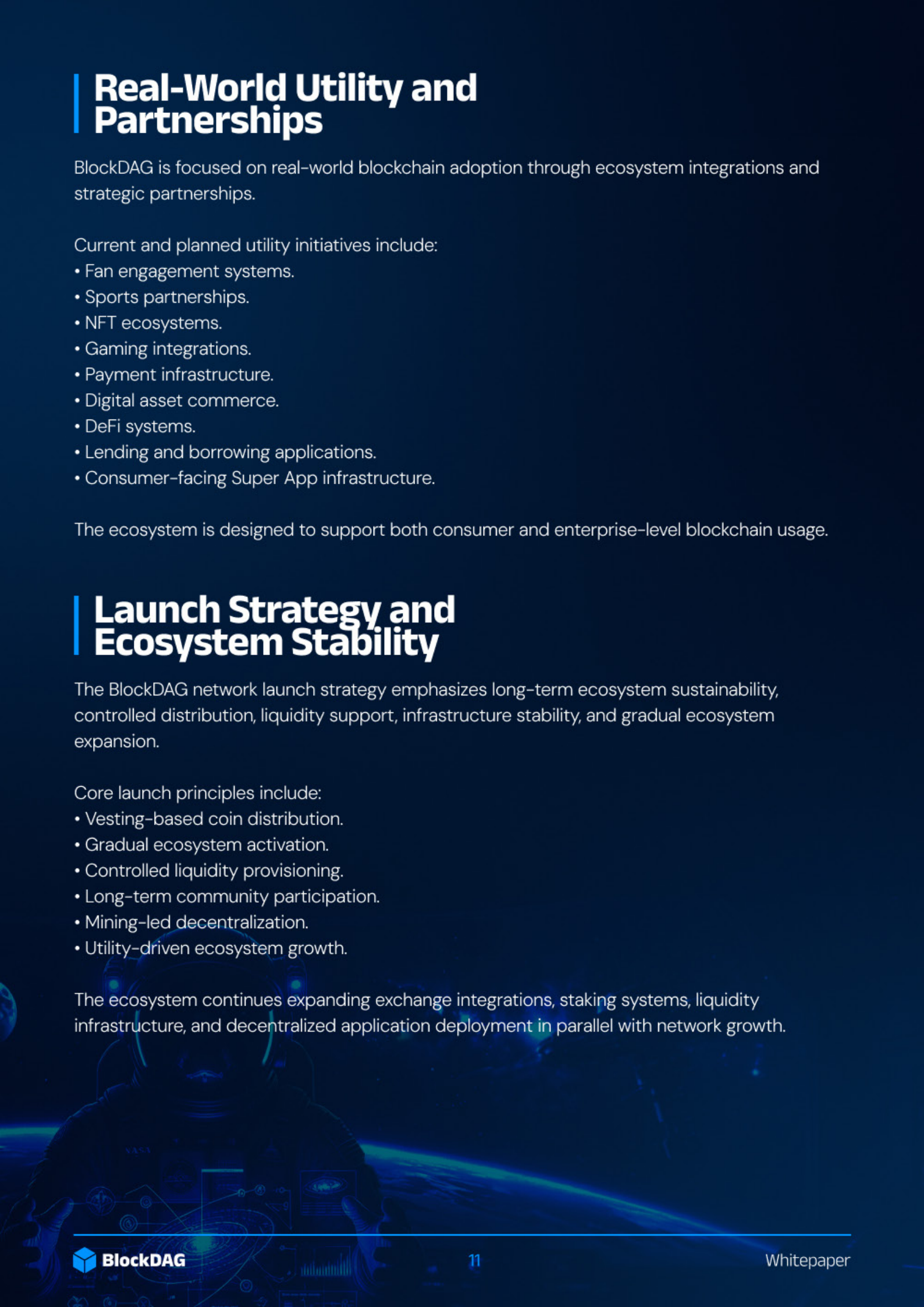
The ecosystem is designed to support both consumer and enterprise-level blockchain usage.

Launch Strategy and Ecosystem Stability

The BlockDAG network launch strategy emphasizes long-term ecosystem sustainability, controlled distribution, liquidity support, infrastructure stability, and gradual ecosystem expansion.

Core launch principles include:
- Vesting-based coin distribution.
- Gradual ecosystem activation.
- Controlled liquidity provisioning.
- Long-term community participation.
- Mining-led decentralization.
- Utility-driven ecosystem growth.

The ecosystem continues expanding exchange integrations, staking systems, liquidity infrastructure, and decentralized application deployment in parallel with network growth.



Future Ecosystem Vision

The long-term BlockDAG vision extends beyond blockchain infrastructure into a complete digital asset and decentralized application ecosystem.

Future ecosystem expansion includes:
- Global payment integrations.
- Expanded DeFi infrastructure.
- Decentralized lending systems.
- Gaming and metaverse integrations.
- Cross-chain interoperability.
- Institutional infrastructure.
- Enterprise blockchain deployment.
- Consumer-facing blockchain applications.

BlockDAG's long-term strategy is focused on scalable decentralized infrastructure capable of supporting global blockchain adoption.
Legal Disclaimer
1. Disclaimers and Limitations of Liability
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Nor does the issuer of the BDAG Coin provide any warranties over any thirdparty services such as wallets, or marketplaces which you may use to access the BDAG Coin. You accept the inherent security risks of providing information and dealing online over the internet.

The issuer of the BDAG Coin will not be responsible or liable to You for any losses You incur as the result of your use of any blockchain network or any digital and/or electronic wallet, including but not limited to any losses, damages or claims arising from: user error, such as forgotten passwords or incorrect smart contracts or other transactions; server failure or data loss; corrupted wallet files; or unauthorised access or activities by third parties, including but not limited to the use of viruses, phishing, brute forcing or other means of attack.

Crypto coins are intangible digital assets that exist only by virtue of the ownership record maintained on the Blockchain. All smart contracts are conducted and occur on the decentralised within the blockchain, which is early stage and/or experimental technology. The issuer of the BDAG Coin makes no guarantees or promises with respect to smart contracts. The issuer of the BDAG Coin is not responsible for losses due to blockchains or any features of or related to them or any electronic and/or digital wallet.

The issuer of the BDAG Coin and their subsidiaries, affiliates, and licensors, and their respective employees, agents and contractors, will not be liable to You or to any third party for any indirect, incidental, special, consequential, or exemplary damages which you may incur, howsoever caused and under any theory of liability, including, without limitation, any loss of profits (whether incurred directly or indirectly), loss of goodwill or business reputation, loss of data, cost of procurement of substitute goods or services, or any other intangible loss, even if they have been advised of the possibility of such damages.

You agree that the issuer of the BDAG Coin's total, aggregate liability to you for any and all claims arising out of or relating to the BDAG Coin, is limited to the amounts You actually paid the issuer of the BDAG Coin in the twelve (12) month period preceding the date the claim arose. The issuer of the BDAG Coin sold the purchased BDAG Coin in reliance upon the warranty disclaimers and limitations of liability set forth herein, which reflect a reasonable and fair allocation of risk and form an essential basis of the bargain. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, and some jurisdictions also limit disclaimers or limitations of liability for personal injury from consumer products, so the above limitations may not apply to personal injury claims.

2. Governing Law and Jurisdiction
BlockDAG Network operates under a global corporate structure and is fully incorporated through Dag Systems Ltd, registered at Intershore Suite, Le Sanalele Complex, Apia, Samoa, in accordance with applicable corporate and regulatory requirements.

3. Arbitration
You and the issuer of the BDAG Coin agree that any and all disputes arising out of or in connection with the BDAG Coin will be resolved exclusively by means of individual arbitration. You and the issuer of the BDAG Coin agree that such disputes will be settled in accordance with the Centre for Effective Dispute Resolution ("CEDR") Model Mediation Procedures, and a mediator shall be nominated by the CEDR. You and the issuer of the BDAG Coin are waiving your rights to normal recourse to the Courts of Law.

4. No Class Action
You and the issuer of the BDAG Coin agree that any claims brought against each other will be brought in their own individual capacity, and not as a member of a class of claimants in any legal action.


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