

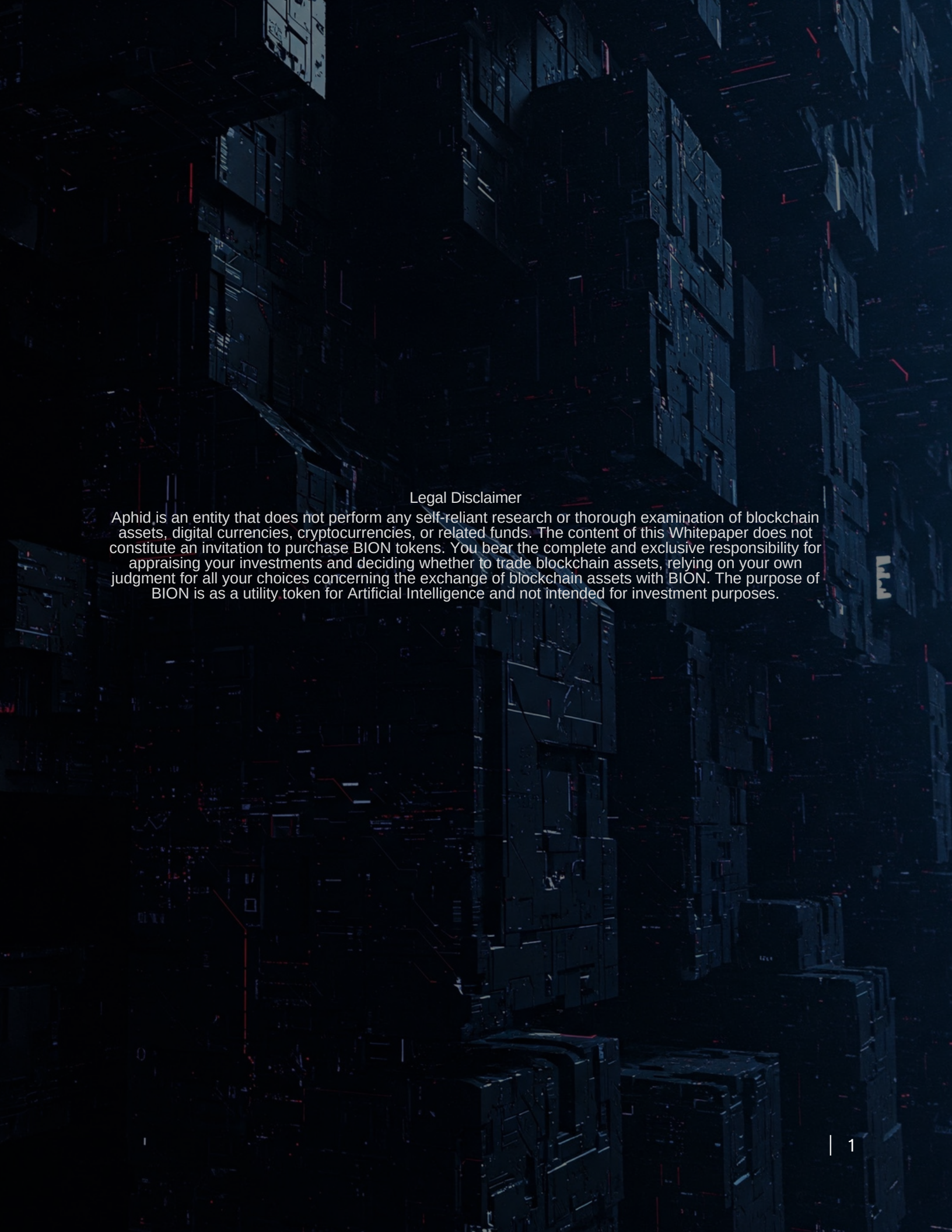


B I O N

Whitepaper

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Legal Disclaimer

Aphid is an entity that does not perform any self-reliant research or thorough examination of blockchain assets, digital currencies, cryptocurrencies, or related funds. The content of this Whitepaper does not constitute an invitation to purchase BION tokens. You bear the complete and exclusive responsibility for appraising your investments and deciding whether to trade blockchain assets, relying on your own judgment for all your choices concerning the exchange of blockchain assets with BION. The purpose of BION is as a utility token for Artificial Intelligence and not intended for investment purposes.

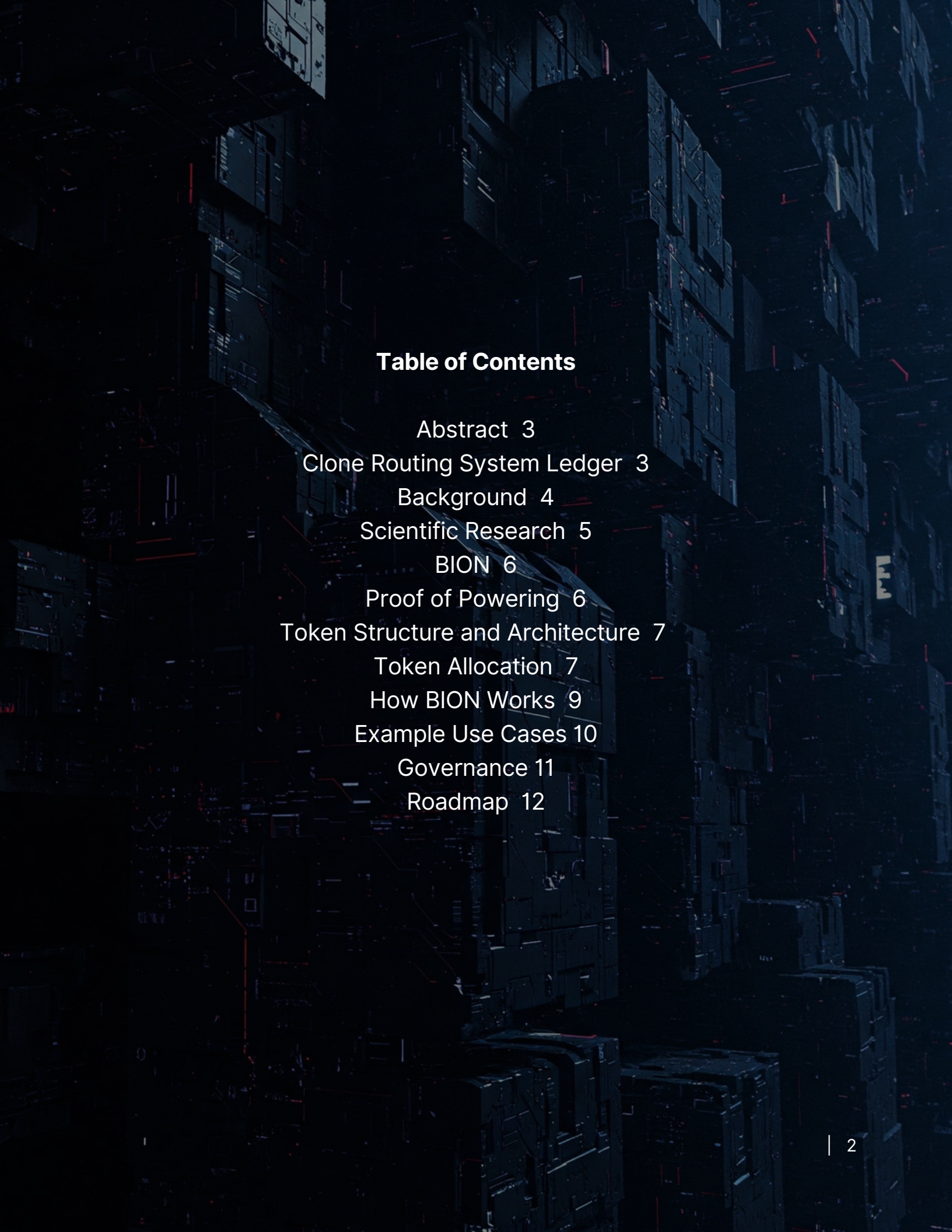


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Abstract

BION is at the epicenter of the fourth industrial revolution which is a combination of Artificial Intelligence (AI), the Internet of Things (IoT), decentralized ledger technology (blockchain), quantum computing, robotics, and more. Artificial intelligence and blockchain technology shall serve as a catalyst for the next paradigm shift of the 21st century. In a world where labor requires manual input and delayed output, the BION token powers automated actions on behalf of its users for rapid results. Consider BION to be a conductor of time saving, automated decision making, and payout mediator between human and machine. BION is a chain-agnostic utility token.

Clone Routing System Ledger (CRSL)

Aphid, a fintech automation company, created the Clone Routing System Ledger (CRSL) to allow bots to work on behalf of human Human Monitoring Agents (HMA's). The Clone Routing System consists of a tiered protocol. The BION token connects to the Web3 tier of the Clone Routing System. Each time a digital bot is powered or summoned in the network for a task, a small fraction of BION is used to power the inference or action, similar to an API call. API stands for "Application Programming Interface" which works as a software intermediary that allows two applications to talk to each other. The BION token also operates independently of the Aphid ecosystem as an automation digital asset.

Background

Artificial Intelligence (AI) has become an integral part of modern technology. AI is a set of algorithms and processes that enable machines to learn and perform human-like tasks. The potential applications of AI are numerous, ranging from speech recognition and natural language processing to image and video analysis, fraud detection, and automated decision making. AI has also gained attention in the blockchain space, where it can be used to enhance security, increase efficiency, and automate processes. In this whitepaper, we will explore how AI works on a technical level and how it can interact with blockchain transactions.

Blockchain is distributed ledger technology that allows for secure and transparent record-keeping of transactions. In a blockchain network, transactions are validated and processed by a decentralized network of nodes, without the need for intermediaries such as banks or financial institutions. Artificial Intelligence (AI) tools can be integrated with blockchain to enhance the security and efficiency of transaction processing, and to enable new use cases for blockchain technology.

One way in which AI tools can interact with transactions in blockchain is through the use of smart contracts. Smart contracts are programmable contracts with terms of agreement between buyers and sellers written immutably in lines of code. These contracts can be programmed to automatically trigger actions based on predefined conditions, such as the completion of a transaction or the receipt of a payment. AI tools can be used to analyze transaction data in real-time and trigger the execution of smart contracts based on certain conditions. AI algorithms can also be used to analyze transaction data to identify potential opportunities for cost savings or improved efficiency in the transaction processing workflow.

Scientific Research

The intersection of Artificial Intelligence and Blockchain is an area of ongoing research, and there is not yet a standard set of scientific formulae or mathematical equations to describe how these two technologies interact. However, some theoretical models and algorithms have been proposed, which we will discuss below.

One proposed model is the integration of machine learning (ML) algorithms with blockchain, which enables the creation of decentralized and trustless AI systems. In such a model, the data used to train the ML algorithm is stored on the blockchain, and the algorithm is run on a decentralized network of nodes. Each node in the network contributes computing power and participates in the training process, and the resulting model is stored on the blockchain, making it transparent, auditable and immutable.

Mathematically, the process of training an ML algorithm involves the optimization of a cost function, which measures the difference between the predicted output of the model and the actual output. The optimization process involves adjusting the weights and biases of the neural network using gradient descent and backpropagation algorithms.

In a decentralized ML model, each node in the network contributes to the computation of the cost function and the gradient, and the resulting updates to the weights and biases are broadcast to the network. The consensus mechanism of the blockchain is used to ensure that the updates are agreed upon by all nodes in the network, and the resulting model is stored on the blockchain.

Another proposed model is the use of smart contracts to automate the execution of AI algorithms. Smart contracts are automatically-executing contracts that run on the blockchain, and can be programmed to execute complex business logic. In the context of AI, Smart Contracts can be used to automate the execution of ML algorithms, NLP models, and other AI applications. The input data and output of the AI application are stored on the blockchain, making it transparent and auditable.

Mathematically, the execution of an AI algorithm can be expressed as a function that takes input data and produces output data.

$$f(x) = y$$

Where x is the input data, y is the output data, and f is the AI algorithm.

In a smart contract-based AI model, the AI algorithm is programmed as a smart contract, and the input data is passed to the contract as a parameter. The output data is stored on the blockchain as a transaction, making it transparent, auditable and immutable.

BION

BION is the utility token used to power software and hardware automation on the Clone Routing System Ledger.

Proof of Powering (PoP)

Proof of Powering (PoP) allows users to power automation tools and track the task activity on the public ledger of the blockchain. PoP creates a timestamp of the powered action to ensure a successful API call has been executed.



Token Structure and Architecture

Ticker: BION

Origin Blockchain: Solana

Upcoming Bridges: Base, XRPL, Ethereum, Stellar

Token Address: [HTskJUiHaGzWMEgreucDGJuft3Zco4en2dRkzJ3WRHkh](https://solscan.io/address/HTskJUiHaGzWMEgreucDGJuft3Zco4en2dRkzJ3WRHkh)

Token Allocation

Total Supply: 7,655,957,368.99

Max Supply: 7,655,957,368.99

Distribution Timeline: 10 years

1,591,673,537.00 (20%) Token Sale

BION tokens are made available on exchanges and launchpad platforms.

~10% of supply is distributed per year (~766,000 tokens) using the following percentage breakdown. Exact numbers vary based on network activity.

2,296,787,210.70 (30%) Network Pool

Allocated to Human Monitoring Agents (HMA's) based on their activity utilizing the Clone Routing System Ledger including powering AI agents and supervising AI software systems. BION tokens are allocated to Human Monitoring Agents (HMA's) for hardware maintenance, cloud and quantum computing, and robotic processes.

1,148,393,605.35 (15%) Reserve

Supply retained for necessary network activities, and supporting future expansion.

1,148,393,605.35 (15%) Team

Fifteen percent of the overall supply will be distributed to the Aphid team. Aphid powers bots for users in a gig economy ecosystem to earn money. Vesting policy with unvested tokens held in publicly viewable wallets until vesting. Holders will have limited restrictions on personally trading BION tokens.

1,087,911,542.47 (15%) Grants and Social Impact Programs

Used for token grants to qualified low-to-middle income individuals for usage of automated tools. BION grants are also used during economic downturns such as recessions to be used to power automated software.

382,797,868.45 (5%) Partnerships and Hackathons

Allocation for strategic partnerships and hackathons using BION as utility tokens in various ecosystems.

Example Use Cases

Workforce Economy

Employees or Human Monitoring Agents (HMA's) use hardware and software bots to complete tasks. Digital tasks are executed utilizing Robotic Process Automation (RPA). Robotic Process Automation is a business process automation technology based on software robotics. BION tokens are used or accumulated during the duration of robotic tasks.

Automated Finance Trading

Algorithmic trading is becoming more accessible to quantitative investors. The BION token is used to pair with cryptocurrencies for automated trading tools.

Machine Learning and Deep Learning Modeling

After inputs are validated, experts are given tokens for their contribution. Third party applications are upgradeable, dynamic, and optionally decentralized. Developers can provide other developers with BION token incentives for input.

Internet of Things/Smart Cities

The BION token powers automation into real-world hardware devices.

Governance

The BION token is governed by the BION DAO, a decentralized autonomous organization controlled by the holders of the BION token. Holders can choose to lock BION tokens into its governance smart contract, making them eligible to make proposals and vote on proposals after a required cooldown time has passed.

Decentralized governance requires well-balanced incentive mechanisms that accurately model both positive and negative outcomes. The BION DAO will be established on a positive incentive system, where all participants' voices are heard, and contributors that improve the health of the network are rewarded.

The collective decision making process ensures that the ecosystem functions and operates in a manner that suits BION's global user base. This is a fundamental feature of decentralized governance. We anticipate the ecosystem to have a flourishing community, and proposals will cover a wide array of decisions for the betterment of the whole ecosystem and its users. The BION DAO will support hackathons, airdrops, and other developer incentive programs to empower individuals to expand and improve the ways BION can be used.

To the extent that it can, the BION DAO will always pursue automated processes and the implementation of smart contracts that allow for decision-making to be done by AI. The BION DAO will work towards being as "hands-off" as possible, and will seek to minimize the number of proposals and changes made. The ultimate goal of the BION DAO is to no longer make decisions about the BION token at all, but instead to occasionally make decisions about the AI governing the token.

Governance Examples

Given a sufficient majority vote by holders, the BION DAO may:

- Raise or lower the number of BION tokens required to be a DAO member
- Raise or lower the "cooldown time" for new voters
- Raise or lower the rate of earning rewards for DAO contributions
- Make modifications to an AI that can do all of the above

Staking & Rewards

Individuals may lock BION tokens into DAO governance contracts (known as "staking") to become DAO members and gain governance power.

DAO members are passively rewarded with more BION tokens based on the amount of tokens they have staked, and for how long the tokens have been locked.

Roadmap

Phase 1 - Completed

- The BION token is securely deployed and minted on the Solana blockchain.
- Partnerships are built with other blockchains in preparation for future implementation of cross-chain operability of the BION token.

Phase 2- Completed

- The BION Foundation is established to act as a legal entity representing BION DAO.
- The BION token is deployed on Solana.
- Cross-chain bridge between Solana and Base is created.

Phase 3

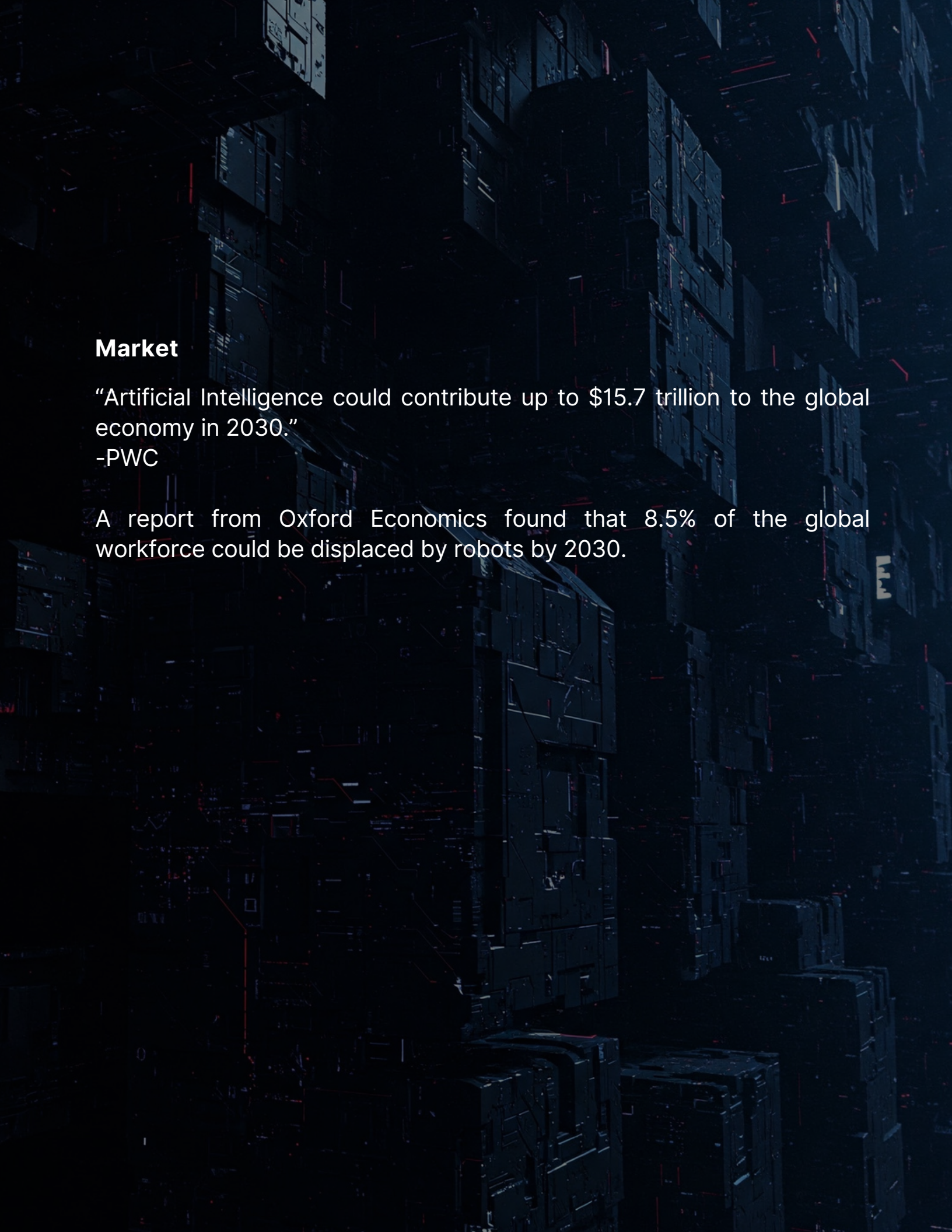
- Private keys for minting, updating, and distributing the BION token are passed from Aphid to the BION Foundation.
- The BION Foundation distributes the initial allocations of the BION token.
- First vote is held by BION DAO to determine frequency of future distributions (monthly, quarterly, or yearly).

Phase 4

- BION DAO members continue to propose changes to the voting structure, BION tokenomics, and other topics pertinent to broadening the usage of the BION token in web3 AI projects.
- The BION token is made available on more blockchains. The particular chains, and the order in which they are integrated, are determined via BION DAO votes.
- BION tokens continue to be distributed by BION DAO based on allocation percentages and rates determined by BION DAO votes.
- The BION DAO Clone begins training in preparation for handling BION DAO's future tasks and responsibilities.

Phase 5

- BION DAO votes and new blockchain integrations for the BION token continue.
- BION DAO members may vote to end token distributions if it is determined that the existing supply is sufficient. Otherwise, BION token distributions will continue.
- The BION DAO Clone is put in charge of more and more of BION DAO's tasks and responsibilities, as determined by BION DAO votes.



Market

“Artificial Intelligence could contribute up to \$15.7 trillion to the global economy in 2030.”

-PWC

A report from Oxford Economics found that 8.5% of the global workforce could be displaced by robots by 2030.