

Cardano a smart-contract based platform that aims to provide multiple features through layered design and modularity.

The goal is to provide a more sustainable decentralized ecosystem that allows for future improvements through user voted soft or hard forks, integrations with sidechains, and separation of the accounting and computation layers.

## Project Overview

Name	Cardano
Issuer	Attain Corporation Japan
Category	Platform token
Sector	General purpose
Sale Start	01/09/2015
Sale End	01/01/2017

## Token Overview

Name	Ada
Symbol	ADA
Type	Native
Initial Distribution	25,927,070,538
Current Supply	25,927,070,538
Max Supply	45,000,000,000
Emission Type	Capped Inflation

## Resource Links

- [Website](#)
- [GitHub](#)
- [Twitter](#)
- [Reddit](#)
- [Blog](#)
- [Whitepaper](#)

## Project Background

Cardano aims to facilitate a wide set of features including smart contracts, decentralized applications, side chains, and multi-party computation. The project was created by the blockchain development firm Input Output Hong Kong (IOHK) and is led by Charles Hoskinson who is a co-founder of BitShares and Ethereum.

The team aims to address three main areas of existing blockchain technology. First, historically the most successful protocols have used a layered design (e.g., TCP/IP) and cryptocurrencies may benefit from the same principle of layering. Second, Cardano aims to accommodate future soft and hard forks, which is important for making future updates. Finally, Cardano views money as an inherently social phenomenon and therefore, believes in identification through metadata to facilitate reputation and regulatory compliance.

Cardano is currently in its "Bootstrap era." This means that only predetermined users have control of the network right now. The platform will move to full public deployment when the network has stabilized, and a majority of stake is in circulation.

The Cardano Foundation, IOHK, and Emurgo are partners in contributing to the development of Cardano. IOHK is a cryptocurrency research and development company, which holds the contract to design, build, and maintain the platform until 2020. IOHK drives the creation of the Cardano network. Cardano Foundation is an independent standards body based in Switzerland with core responsibilities to support the community of Cardano users and to work with authorities on regulatory and commercial matters. Emurgo invests in start-ups and assists commercial ventures to build on the Cardano blockchain.

## Technology

Cardano aims to create a sustainable ecosystem that can be easily upgraded and integrated with other systems. To achieve this, the network separates the accounting layer from the computing layer. The native token Ada (ADA), runs on the Cardano Settlement Layer (CSL) which uses a proof-of-stake (PoS) algorithm. The second layer is called the Cardano Computation Layer (CCL) and will support smart contracts and decentralized applications. This multi-layer approach aims to increase the capacity of the network to handle change by making soft-fork implementations easier.

Cardano's PoS algorithm is called Ouroboros and was developed by a set of academics from five institutions, led by Professor Aggelos Kiayias of the University of Edinburgh. Consensus is determined through coin-holder vote where slot leaders generate new blocks to verify transactions. Any coin holder with enough stake can become a slot leader. The slot leader can listen to transactions announced by other nodes, make a block of those transactions, sign this block with its secret key and publish it to the network. If a block leader doesn't complete the task in time, it loses its right to complete a block and must wait to be re-elected.

Slot leaders are elected from the group of all stakeholders who have enough stake, the amount of which is yet to be determined. These stakeholders are known as "electors." This approach is said to be highly scalable because Cardano can increase the number of slots per epoch and can run multiple epochs in parallel.

Ouroboros aims to improve security and modularize design. The team hopes that modularization will allow for features such as delegation, sidechains, better data structures for light clients, different forms of random number generation, and different synchronization assumptions.

Cardano uses two scripting languages, Simon and Plutus, for development. Simon was developed to facilitate grouping of financial transactions into foundational elements. The goal of this approach is to increase security and provide more easily understood execution. Plutus is a functional programming language derived from concepts of Haskell and is used to develop general purpose smart contracts.

As part of on-chain governance, Cardano plans to maintain a treasury that is to be funded by token inflation and transaction fees. Any user will be eligible to request funds from the treasury through a ballot system that is voted on by the stakeholders in the CSL.

Additionally, Cardano aims to implement more robust blockchain-based governance mechanisms to vote on soft and hard forks. The team seeks to address scalability issues by allowing stakeholders to elect a quorum of consensus nodes. The election of a quorum for an epoch requires a trusted set of nodes to maintain the ledger for a specific period.

## Distribution

Cardano held a token sale from Sept. 2015 to Jan. 2017 raising a total of \$62.2 million in bitcoin (BTC). The total supply of tokens will be capped at 45 billion ADA. Token sale participants received vouchers which were later redeemable for ADA through the native Daedalus wallet. Of the total eventually supply token sale participants received 57.6% (25.9 billion ADA). Member entities that support Cardano (Cardano Foundation, IOHK, and Emurgo) received 11.6% of total supply (5.2 billion ADA) following the creation of the genesis block. The remaining 13.9 billion ADA will be created as ongoing rewards for PoS miners.

Currently, Cardano is in the launch phase so no fees are collected, and no ADA is minted. Once the project moves to the reward phase, new ADA will be minted, and network fees will be collected and distributed. Minted ADA and collected fees will be distributed to block producers and the Cardano Treasury, which will be governed by ADA holders.

## Team

### Charles Hoskinson

Founder and CEO at IOHK

- Helped found and develop Invictus, Ethereum, and IOHK

### Jeremy Wood

Founder and Chief Strategy Officer at IOHK

- Previously managed operations at Ethereum

### Michael Parsons FCA

Chairman and Executive Director at Cardano Foundation

- Previous experience as an executive and consultant in the banking industry

### Darren Camas

Senior Advisor at Emurgo

- Previous experience in blockchain consulting

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## Additional Resources

- [Why Cardano](#)
- [Cardano Audit](#)
- [Cardano Monetary Policy](#)
- [Ada Genesis Distribution](#)

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