



# Summarized Whitepaper

A decentralized and incentivized  
platform for personal health data.

v1.1

May 18, 2018

# Problems

Human body produces a large amount of health data everyday. Health data accumulated over time is considered valuable as it can be used for various purposes. However, the current system leaves a number of challenges for both of those producing and consuming health data.

## 1 Problems for Data Producers(Users)

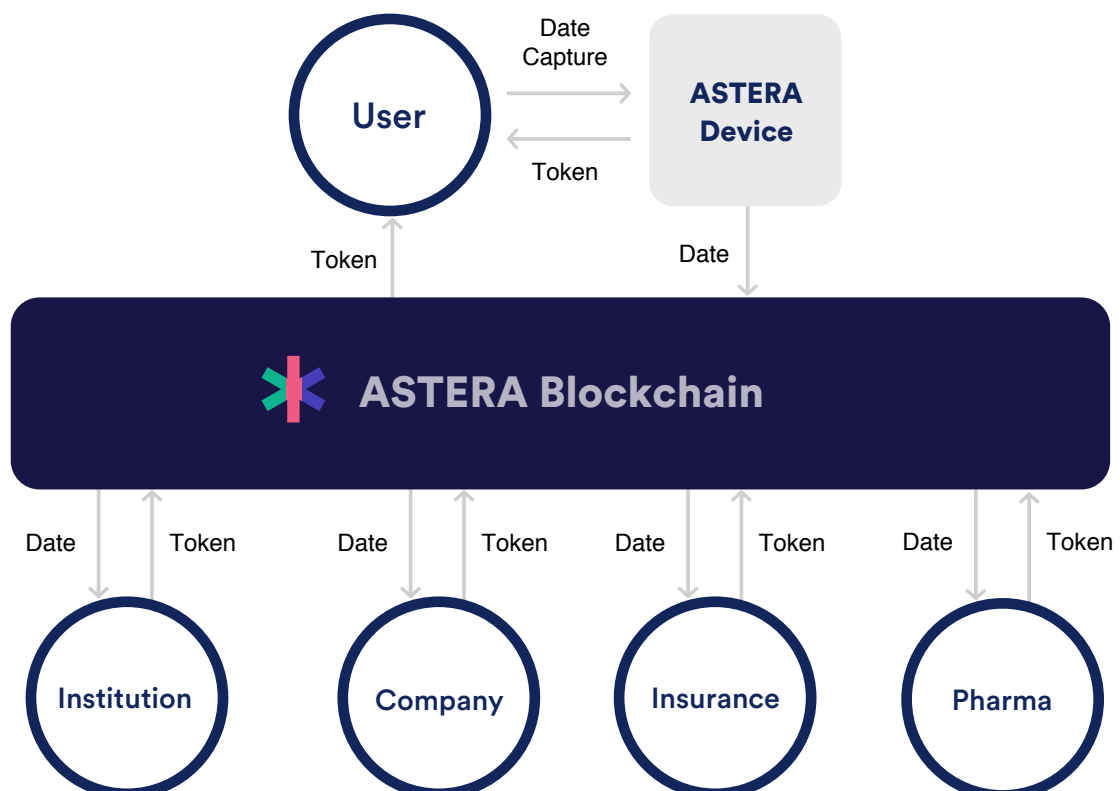
People want to monitor their health condition. However, in order to collect health data, it is necessary to use expensive measuring equipments from hospitals or health institutions. The annual visits to these places are limited, so it is not possible to continuously measure data. There exist devices to measure simple health data at home, but these devices are often too expensive(up to \$500) to be widely used across the norm.

## 2 Problems for Data Consumers(Companies and Institutions)

Research institutions, insurance and pharmaceutical companies collect and analyze large amount of population health data before making important decisions. However, the source of data is limited to their own samples, and the only other way to obtain data is by spending lots of money on data brokerages.

# Astera's Solution

Astera utilizes blockchain, token economy, and IoT hardware to incentivize people to generate their everyday health data, while providing a method for institutions to find and purchase health data they seek for.



## 1 Solution for Data Producers(Users)

Astera develops and provides Astera B, a health tracking IoT device that captures 8 fundamental health data values of a human body. Astera B can also acts as a mining tool that plays a role as a node in the Astera network. With Astera B, users can easily measure and store their health data at home on daily basis in return for Aster tokens, which compensate and incentivize users to track record of their data.

## 2 Solution for Data Consumers(Companies and Institutions)

On Astera, data consumers who want to find users with specific data can search and directly contact the user pools of the desired conditions. By using the Astera network's search engine, data consumers can easily find specific user pools and access their data with reasonable AST rewards to motivate participation.

## Why Blockchain?

<b>Security</b>	Blockchain can provide direct transfer and access to health data upon multi-signature approvals between users and data-seeking entities. This eliminates the need for brokerage, providing commission free transactions.
<b>Micropayment</b>	Blockchain grants the use of micropayments for automatically transferring compensation to users for participation. Smart contracts enable mass compensation that involves a large amount of people.
<b>Incentive</b>	Blockchain can track user data through Astera devices, and automatically generate rewards in token based on specific milestones.

## Astera B (Astera Body Checker)

Astera B is a health tracking IoT device that captures 8 fundamental health data values of a human body. It can also acts as a mining tool that plays a role as a node in the Astera network. With Astera B, users can easily measure and store their health data at home on daily basis in return for Aster(AST) tokens, which compensate and incentivize users to track record of their data.

Astera B is provided for free to those participate in the ICO, contributing more than USD \$1,000.



## Astera Compensation System

Astera network has several compensation methods to incentivize users to a) collect health data regularly, b) hold onto AST tokens to prevent price fluctuation, and c) maintain Astera B as a node on the network.

- 1 Incentivizing Data Collection** - Everytime a user captures his or her health data on Astera B, the network issues AST tokens as compensation for data production.
- 2 Incentivizing Token Hold** - In order to prevent unnecessary price fluctuation in the market, Astera provides interest for all AST deposited in savings wallet. AST deposited in savings wallet are not transferable for 12 weeks, but is subject to receiving interest.
- 3 Incentivizing Node Maintenance** - Astera B connected to WiFi can act as a node. The Astera Network compensates users with 3.3% of newly issued AST each year to incentivize maintaining Astera B as a node.

## Decentralized Product Selling (DPS)

Unlike centralized systems, decentralized marketplace connects data consumers with data producers directly without any intermediaries. Ideally, decentralized system does not incur any unnecessary commission fees.

The Astera Network does not charge any commission fees, but instead generates revenue by selling hardware devices. Astera leverages the blockchain and the token ecoomy to fulfill Decentralized Product Selling (DPS), a revolutionary method of selling devices where **users can purchase a device without paying the full price, while the manufacturer sells at the full price.** DPS is a new, innovative way to sell products, shifting the paradigm of the existing sales method.

## Market & Customer Needs

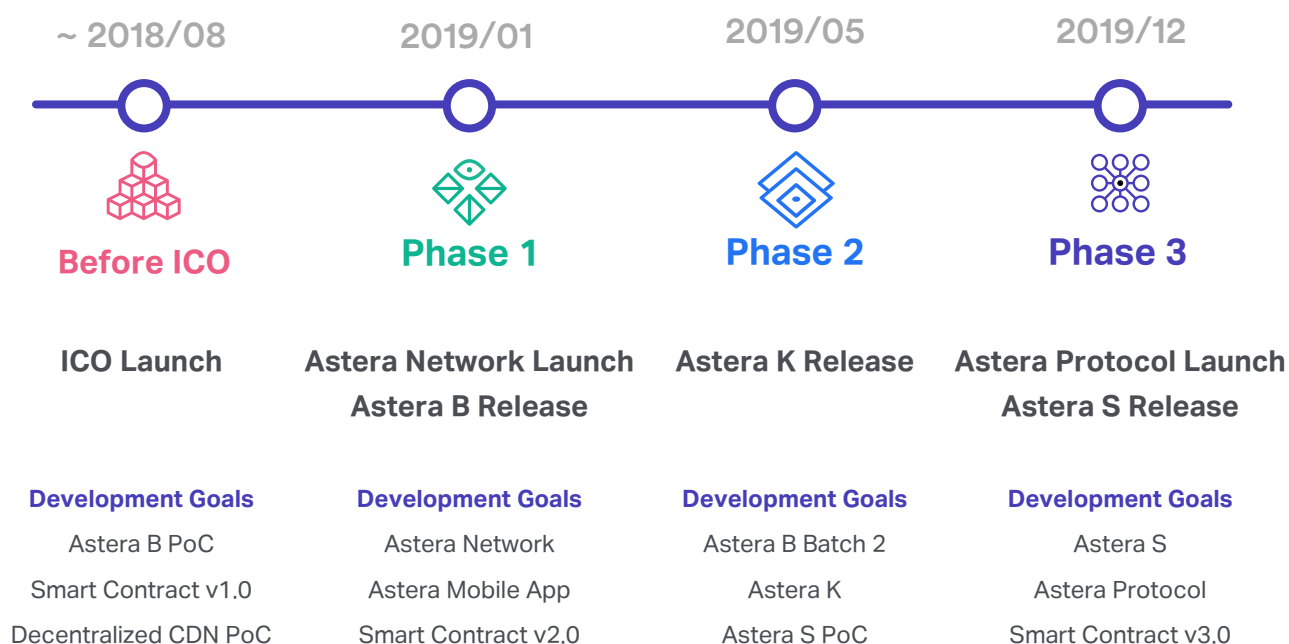
### Smart Scale Market (Data Producers) - \$4.3B

More and more analog scales that only measure weight are turning into electronic smart scale that measures other body composition metrics as well. Smart scales normally costs within the range between \$100 to \$500, much more expensive than the traditional scale. However, the market size accounts to \$4.3B as of 2017, with the number growing to reach \$6.3B by 2025.

### Health Analytics Market (Data Consumers) - \$9B

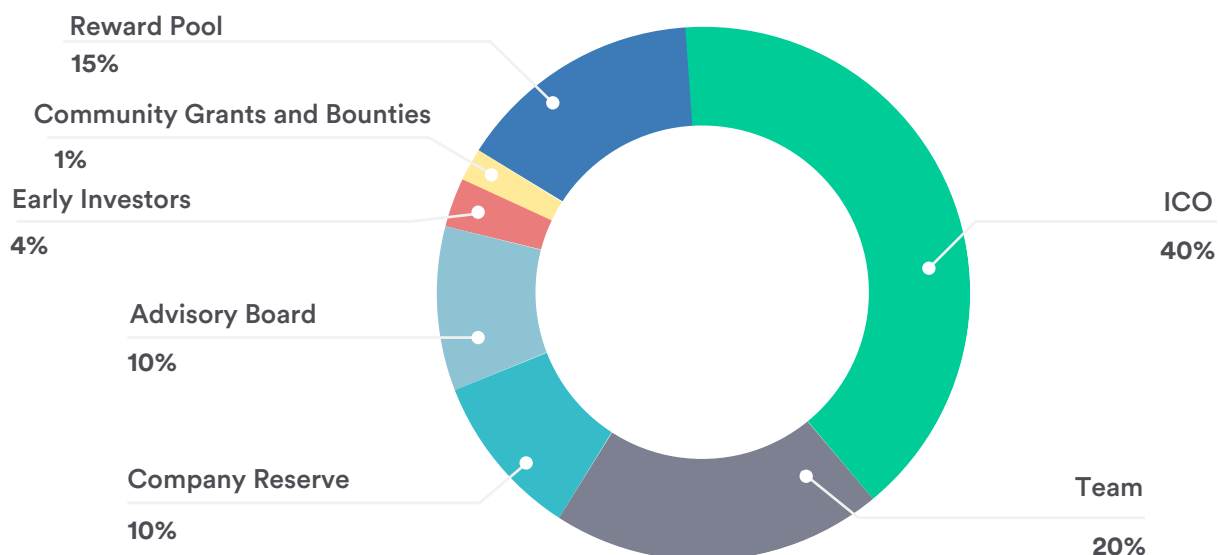
Health analytics can help companies conduct much more effective business in the market. With the help of population health data, insurance companies can better understand people's health condition, pharmaceutical companies can develop more effective drugs, and institutions can discover new therapeutic pathways. The health analytics market size is \$9B as of 2017, but this number is growing to reach \$30B by 2022.

# Roadmap



## Token & ICO Details

Token Name	Aster, AST
Total Supply	3,000,000,000 AST
ICO Supply	1,200,000,000 AST (40% of Total Supply)
Protocol	ERC-20 (To be swapped as EOS dApp)
Purchase Method	Ether (ETH)
Price	\$0.025



# Astera Team



**Jay, CEO**  
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**Lex, CTO**  
Cisco Systems, LG Electronics



**Emin, CDO**  
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**Anton, Hardware Engineer**  
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# Advisors & Partners

