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ATNL Animal Husbandry

Whitepaper

The Traceability Blockchain Specially For Animal Husbandry Industry
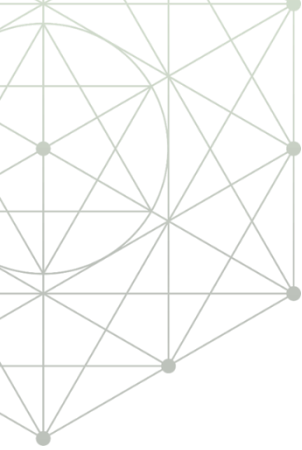
Mar 2018

Abstract

Atunala Blockchain Project is to apply blockchain technology to build a trustworthy publicly accessible animal husbandry ecosystem with traceability solution. We will introduce a utility token called ATNL, blockchain protocol and smart contracts to integrate consumers and supply chain participants into one trusted transaction chain. Through this blockchain, we will be able to:

- Improve and protect brand value for ranchers who insist on grass-fed animal husbandry;
- Protect quality and safety of the meat that come out of this chain;
- Benefit consumers that buy products from this chain;
- Help small ranches to be more competitive.

ATNL Blockchain is doing this innovation to contribute to the animal husbandry industry and make farm-to-table flow be possible and trustworthy. Through ATNL Token, consumers can buy products and services from this ecosystem.

We believe this is the future of animal husbandry industry. ATNL team will expand this blockchain into more areas in China, in other Asian countries, into America and other regions on this globe.

Welcome to the world of Atunala Blockchain!

Catalogue

PART ONE Project Background

In the vast Uragai Prairie and Kerqin Grassland in northern Inner Mongolia of China, where the Chinese Mongolian's traditional nomadic culture is still well protected, there are many beautiful grass ranches belonging to the local Mongolian ranchers who insist on doing naturally grass-feeding to their animals including sheep and cattle.

Sheep here are called "Hill Running Sheep" as they run freely amid the hills in the vast grassland. They drink natural water and natural fresh fruit and they are healthy. The cattle raised here are also green and healthy.

Atunala Inner Mongolia Animal Husbandry Co. Ltd is engaged in managing meat brands produced by local ranchers who insist in naturally grass-feeding sheep and cattle. The team emphasize on long-term value and brand protection rather than short-term financial return. They have been able to sell the local brands to consumers all around China, promoting their farm-to-table idol.

Atunala Animal Husbandry Blockchain is to apply blockchain technology to build a trustworthy ecosystem, allowing naturally grass-fed animal meat food to benefit from this blockchain, making farm-to-table possible and presenting consumers with high-quality, natural and safe meat products. The blockchain can also improve the small-to-medium ranch owners' competitivity to establish and build their brands. There are millions of small-to-medium ranches globally who will eventually benefit from this chain to promote their naturally grass-fed meat products.

Demand for Fresh Meat and Especially Increasing Demand for Safe and Green Meat Food

Taking China market as an example, the lamb and beef business is a trillion dollar market and with massive consumers. Especially as the number of middle-class family is increasing, the strong demand for healthy and green meat is escalating, which is called to be part of the China's Stage of Consumption Upgrade.

The steady increase for the demand of Lamb products in China:

Forecast of demand for mutton in China from 2016 to 2022

Year	Mutton consumption (100 million yuan)
2016	484
2017	494
2018	506
2019	518
2020	530
2021	541
2022	550

■ Mutton consumption:100 million yuan
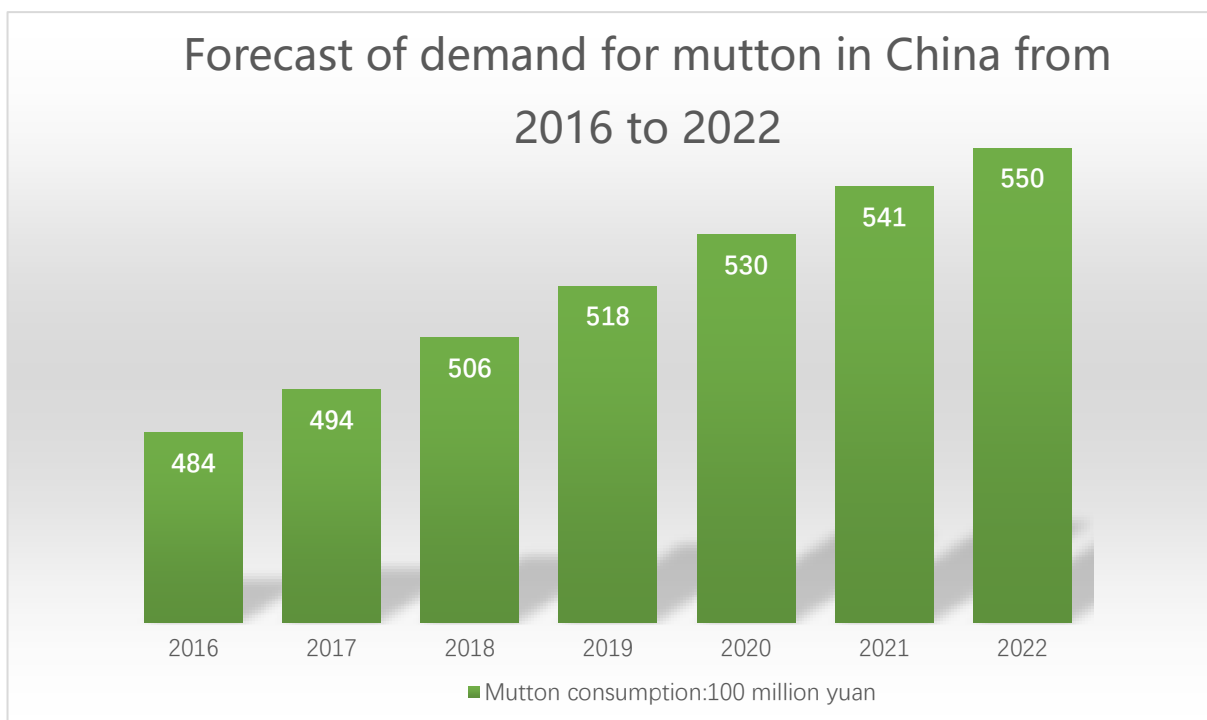
The per capita annual consumption of beef in China is about 5kg, which is only 1/2 of the world's average and 40% of the average value in Asia. Chinese beef has more space for development. Assuming that China's per capita consumption of beef reaches a world average of 10kg, the total consumption will be close to 15 million tons. Calculated at RMB 60 per kilogram, China's beef consumption market is expected to reach 900 billion yuan in the future.

Beef consumption contrasts

World consumption average	Asian consumption average	China consumption average
10	12.5	5

■ Beef consumption contrasts
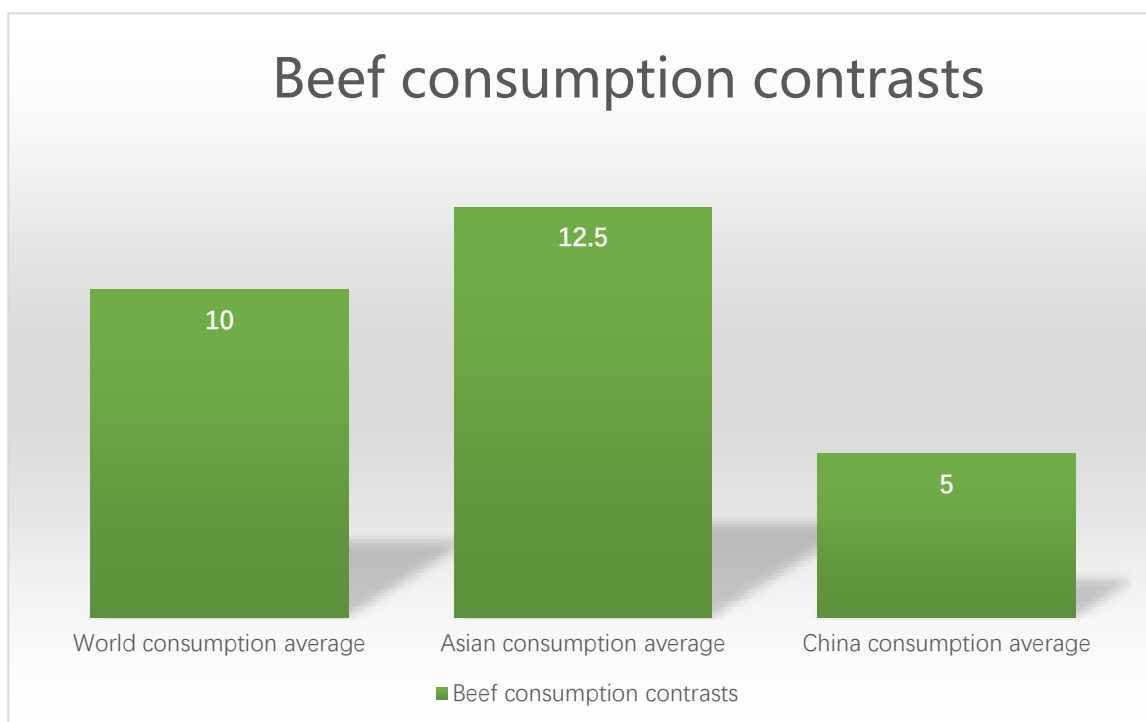
Market Potential for Food Traceability Solution Industry

Food safety issue is among the top issues with heavy attention from the global public. The global food traceability solution market will reach $15 Billion by year 2021. The highest growth Region is in Asia-pacific. These elements are beneficial to ATNL animal husbandry blockchain project.

Industry Problems to Solve

Food safety issue for Meat Products

Trustworthiness

Information Asymmetry

Food safety issue is among the top issues with heavy attention from the global public. Globally 1 in 10 people gets sick each year from foodborne diseases. Lack of food safety processes result in the death of 400,000 people, mostly children under age 5. By 2050, antimicrobial resistance (AMR) can cause low-income, developing countries to lose more than 5% of their GDP and push up to 28 million people into poverty.

It is a tough job to establish the trust in all the process flows from farm to table. Food frauds and dishonest supply chain processes have caused heavy loss each year to global economy.

From the demand side, many meat products don't sell well enough and are produced more than that can be sold. From the supply side, consumers are searching hard for green and trustable meat products. This is due to the imbalance between supply and demand as in the meat processing, distributing and consuming processes, consumers and produces are not allowed to realize information transparency. Neither side can make mutual agreement on the pricing of the products. Under this situation, both sides make rational but mistaken choice: producers take every measure to decrease cost and sacrifice the quality and lose the market; while consumers not knowing the real situation of meat producing, make decision to choose products at lower price. This ends up with lose-lose situation for both parties.

PART TWO

Atunala Animal Husbandry Blockchain Solution

Blockchain Technology Applied in
Animal Husbandry Industry

Blockchain Technology Applied in Animal Husbandry Industry: Atunala will apply blockchain technology into animal husbandry industry to build a publicly accessible animal husbandry blockchain, to raise naturally grass-feeding sheep and cattle in natural ranches. This chain integrates IoT, blockchain and AI and patented anti-fake technology, assigning a unique Animal ID Plate for each naturally grass-fed animal. The traceability tools can automatically collect animal position and activity data and transfer data to the blockchain. As blockchain can enable unchangeability for data and decentralized information processing. The whole mechanism can guarantee the data for each animal from birth to growth, from ranch to table, can be recorded and trustworthy, so that the whole information can realize anti-fake traceability.
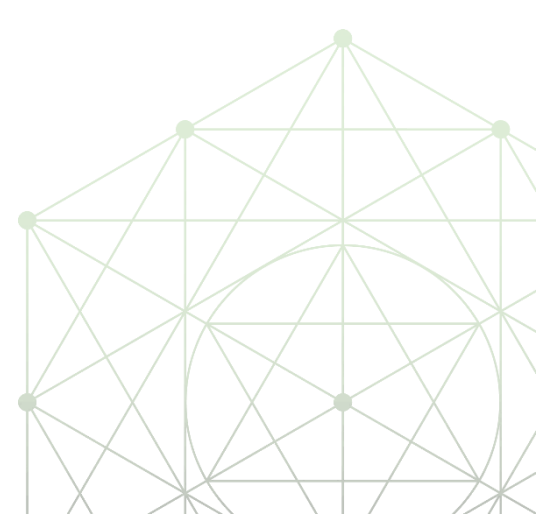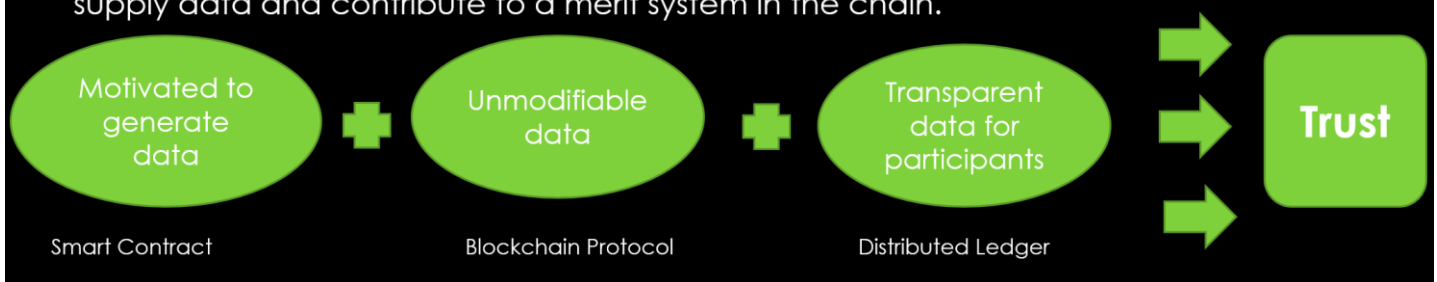
What's more, in the whole chain, from the source of animal – ranches and ranchers, to slaughter houses, to third party checking authority, to logistics, to distribution channels and insurance and financial service providers, the information will no longer be treated as siloes. All the information flow in the blockchain, strengthened by smart contracts and DPOS, is to be authentic, in the result of making sure the end-consumers to get the real naturally grass-fed lamb and beef as promised.

Why Blockchain?

ATNL Blockchain Solution enables traceability in a trusted ecosystem:
- Blockchain technology allows the data provided by all supply chain participants to be stored in a shared and distributed ledger to be transparent, so that no center organization can dominate the data usage.
- Blockchain technology ensures that every data provided by all supply chain participants are unmodifiable. In the blockchain, people don't need to trust each other. Credibility is built on technically unchangeable data and codes.
- Smart contracts in blockchain technology can be used to motivate participants to supply data and contribute to a merit system in the chain.

Motivated to generate data ➕ Unmodifiable data ➕ Transparent data for participants ➡ **Trust**

Smart Contract   Blockchain Protocol   Distributed Ledger

Atunala Blockchain Positioning and Operation

Atunala blockchain positions itself to be a publicly accessible blockchain for animal husbandry industry, with special focus on servicing premium naturally grass-feeding ranch products. Through this blockchain, a farm-to-table traceable eco-system is established and consumers will be able to purchase trustworthy meat products from this trustworthy ecosystem.

The operation is as follows:

Farming Stage

Each animal will be tagged with a unique ID – Animal ID Plate, to record birth and growth data, to be updated to blockchain via Atunala B2B app. The Animal ID Plate can automatically collect animal position and daily data, updated to blockchain. Animal medical data is also updated to blockchain via Atunala B2B App.

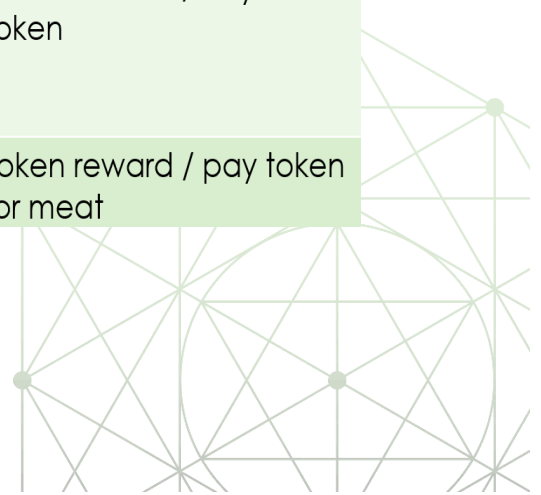| Participants	Role	Reward/cost
Rancher	Implement traceability tools and comment supply chain participants	Token reward and eventually rancher gets better paid for their animal sales
Veterinary	Input data and comment	Token reward
Insurance Company	Provide insurance	Pay token for data/Accept Token for insurance
Financial Institution	Provide financing	Pay token for data/win additional business

Processing Stage

Data will be updated to blockchain via Atunala B2B App by relative or delegated parties, including slaughtering house, package processing providers and third party checking agencies.

Participants	Role	Reward/cost
Rancher	Transfer animals, traceability tools, comment	Token reward
Slaughterhouse	Process animals, implement traceability tools, submit data, comment	Token reward
Packaging provider	Process Packaging, implement traceability tools, submit data, comment	Token reward
Warehouse Partner	Shipping in & Out processed meat, meat storage, implement traceability tools, submit data, comment	Token reward

Sales and Delivery Stage

Operation data like delivery and on-self and off-self etc will be updated to blockchain by relevant parties.

| Participants	Role	Reward/cost
Delivery Partners	Delivery to consumer, implement traceability tools, submit data, comment	Token reward
ATNL Marketplace Manager (Atunala)	Order management; implement traceability tools, submit data, management	Token reward / buy back token
Consumer	Buy and comment	Token reward / pay token for meat

Tools and products Provided by Atunala

Traceability Tools

Including Animal ID Plate (RFID/GPS) and QR codes to track and position animal and products.

Atunala App

Including B2B functions and B2C functions, usable to most basic mobile smartphones, for various roles to log in, submit info and check info, buy products and services etc, including ranchers, Atunala Management, Veterinary, slaughter houses, checking agencies, packaging providers, delivery service providers, sales channels and consumers.
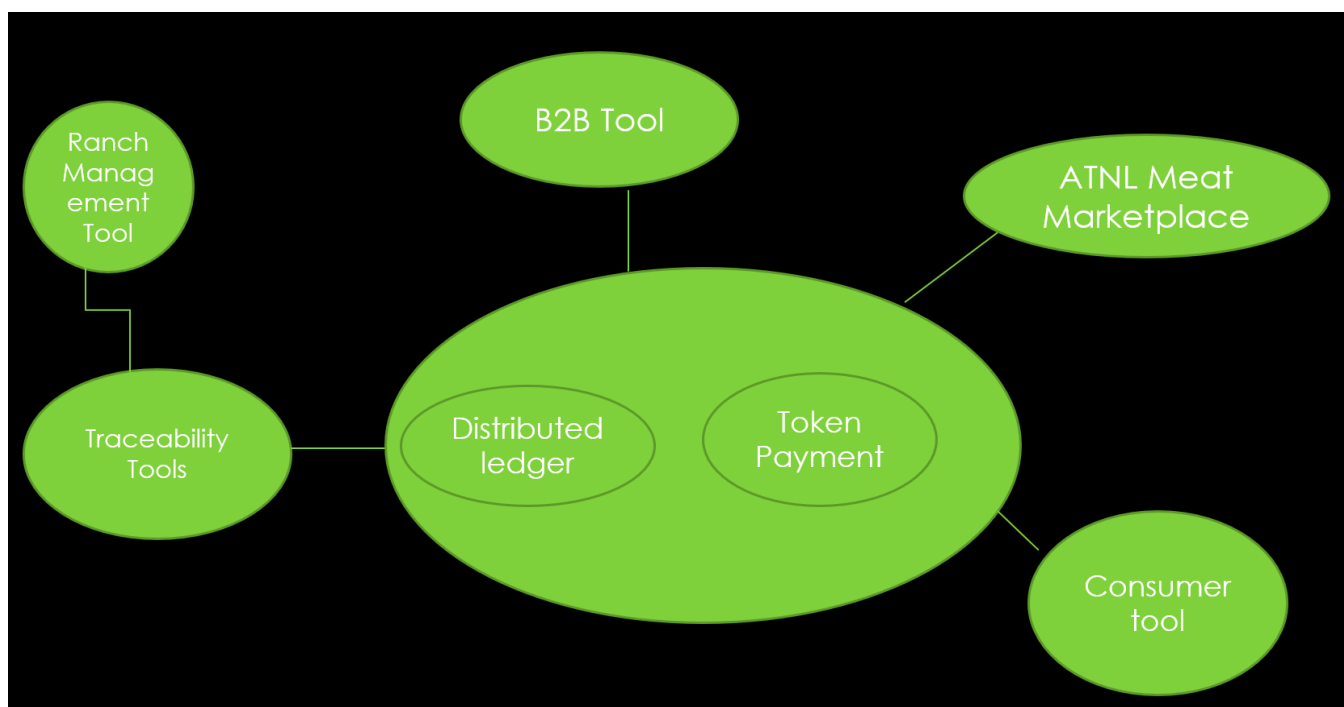
ATNL Token is used to make purchases and settlement within the ecosystem. Token economy is as follows:
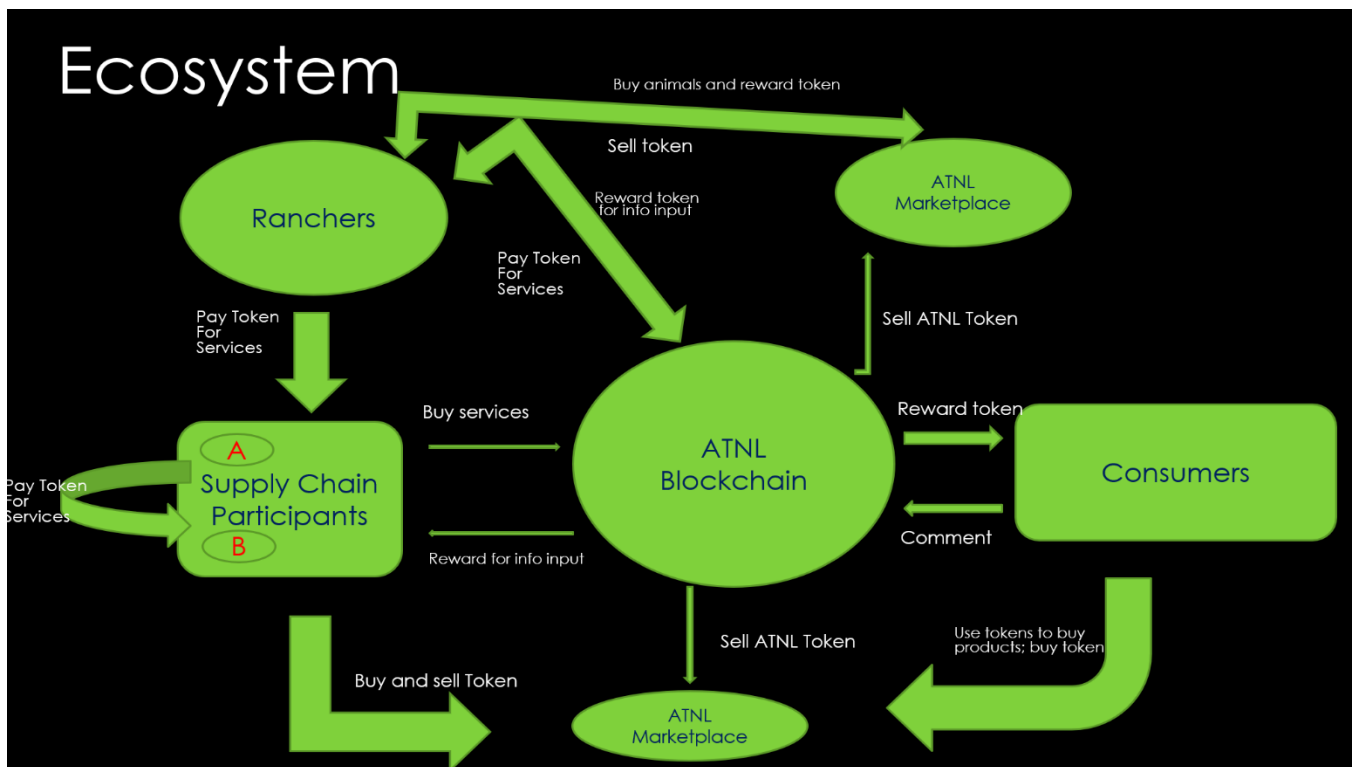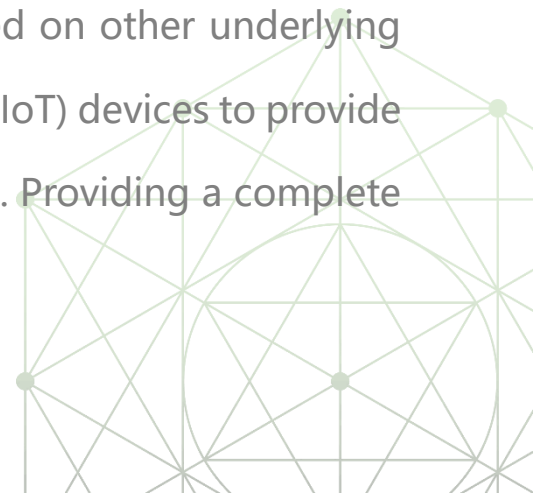
Atunala Blockchain Technology Framework

Basic concept

Blockchain is the new application mode of computer technologies such as distributed data storage, point-to-point transmission, consensus mechanism and encryption algorithm. The consensus mechanism can be realized by the mathematical algorithm of establishing trust and obtaining benefits between different nodes in the blockchain system. Precisely speaking, the blockchain is a kind of chain data structure which is composed of data chunks sequentially connected in a chronological order, and it is the distributed ledger cryptographically being secured to ensure that it will not be tampered with or forged. Broadly speaking, the blockchain technology is a new type of distributed infrastructure and computing paradigm which is to verify and store data by using chain data structure, generate and update data by using the distributed node consensus algorithm, ensure the security of data transmission and access by cryptography, and program and operate data by intelligent contracts consisting of automated script code.

Atunala animal husbandry blockchain is based on other underlying public blockchain and uses the Internet of Things (IoT) devices to provide smart contracts, data storage and other functions. Providing a complete closed-loop through online store.

The smart contract

The smart contract chain has completed the process of digital asset transactions and smart contract registration and distribution between various roles. As a digital asset. ATNL token supports the ecology in the economics category.

Underlyig data storage system

Animals' data such as cattle and sheep are securely stored by using encryption technology, transmitted over the Internet using p2p networks and stored permanently. Based on secondary development of IPFS (InterPlanetaryFile System) to create ATNL underlying file library.

Consensus algorithm

Using delegate proof of stake(DPoS) for bookkeeping on blockchain. DPoS is originated from Graphene, it is an alternative consensus mechanism that requires coin holders to vote for "delegates", who are then responsible for validating transactions and maintaining the blockchain. In DPoS, stakeholders elect what are known as witnesses. Witnesses are responsible and rewarded for generating blocks which are then added to the blockchain. DPoS is an alternative to the more commonly known, Proof-of-Stake model which requires miners to put up a stake in a cryptocurrency in-order for them to be able to validate transactions.

Features

High-performance and expandable

process 10000-100000 transactions per second, with 3 seconds blocktime. Considering the growing demand of on-chain business, expand horizontally, enabling even higher transaction speed without a hard fork.

Realtime parameter adjustment

Instead of fork to realize change parameters, ATNLChain can change blocktime, blocksize, transaction fee
etc. via voting.

Supported by bigdata

Support data transaction or exchange in multiple industry. Companies and individuals could acquire those data via purchase.

Open source

Code open to public at github.

System architecture diagram
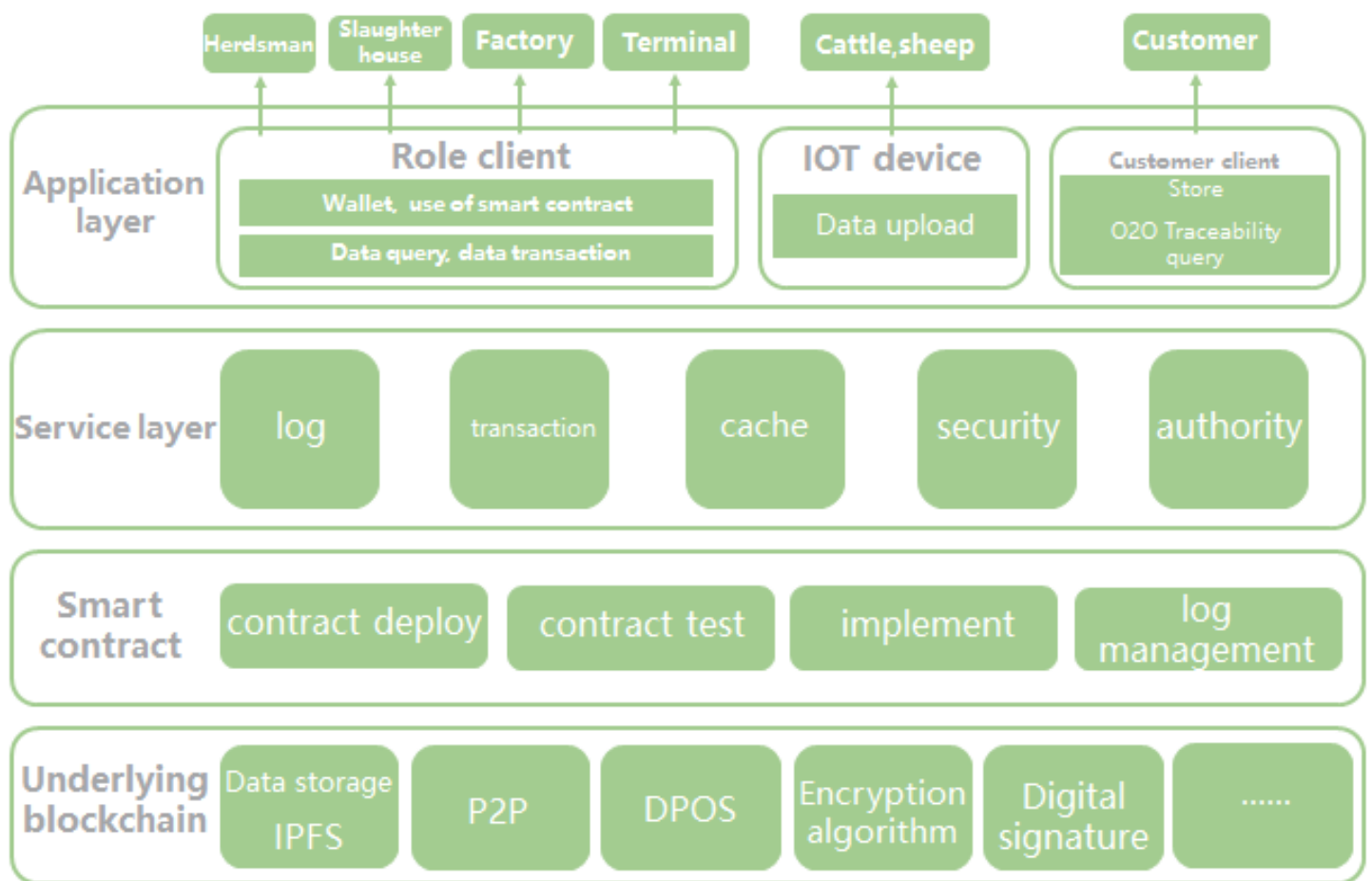
Blockchain Browser

Users can inquire block generation, transactions and address details in real time with the blockchain browser. With a specified transaction number, users can inquire the completion status of the transaction.

User End

It mainly supports ecological terminals such as farmers and slaughterhouses to register their own virtual roles and simultaneously perform various actions on the ecological chain (supporting browser, mobile, and pc) within the client.

DAPP Market

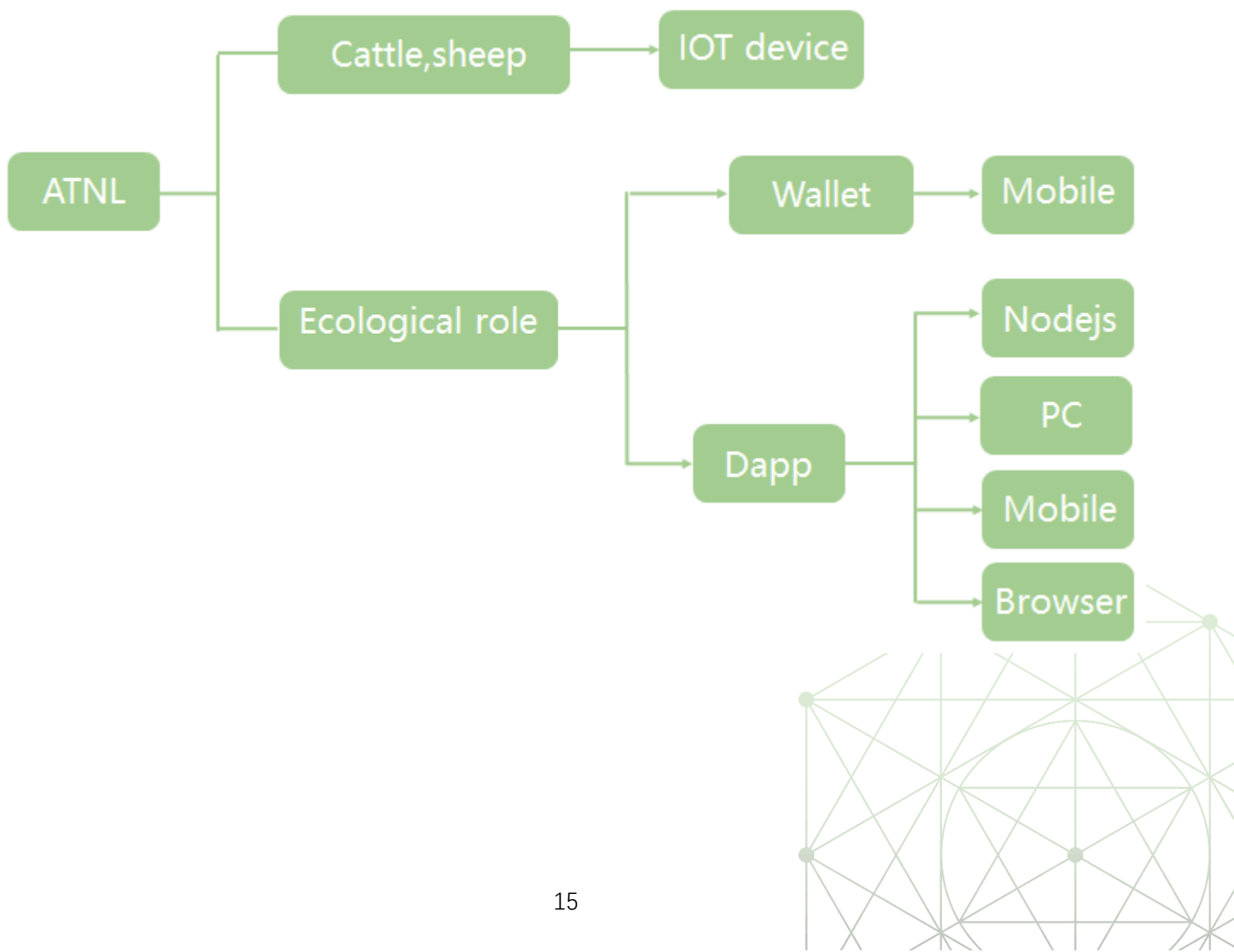AI model suppliers can publish models, model types, task requirements, and settlement methods of tokens in the AI model market.

IOT device

Collect cattle and sheep related data through the device and upload it.

Through the Internet of Things (IoT) device, records the entire process data of cattle and sheep and uploads it to the distributed file system.

Key Competitive Advantages of Atunala Blockchain

Atunala Animal Husbandry Co. Ltd is a company in Inner Mongolia of China. The founders' families are local ranchers having more than 70, 000 acres of ranches with more than 60000 sheep and 10000 cattle. As a key initiator and partner in China for ATNL Blockchain Project, the company provides an excellent trial place for launching ATNL Project.

Atunala Animal Husbandry Co. Ltd has been in operation to insist on selling meat products from naturally grass-fed animals and has already established trust with local ranchers and supply chain partners and retail channels and end-users. This lays a solid foundation for ATNL Blockchain Project. In the first test area of Inner Mongolia, the target is to trace 500000 sheep and cattle within three years, contributing a sales volume of more than 1 billion USD.
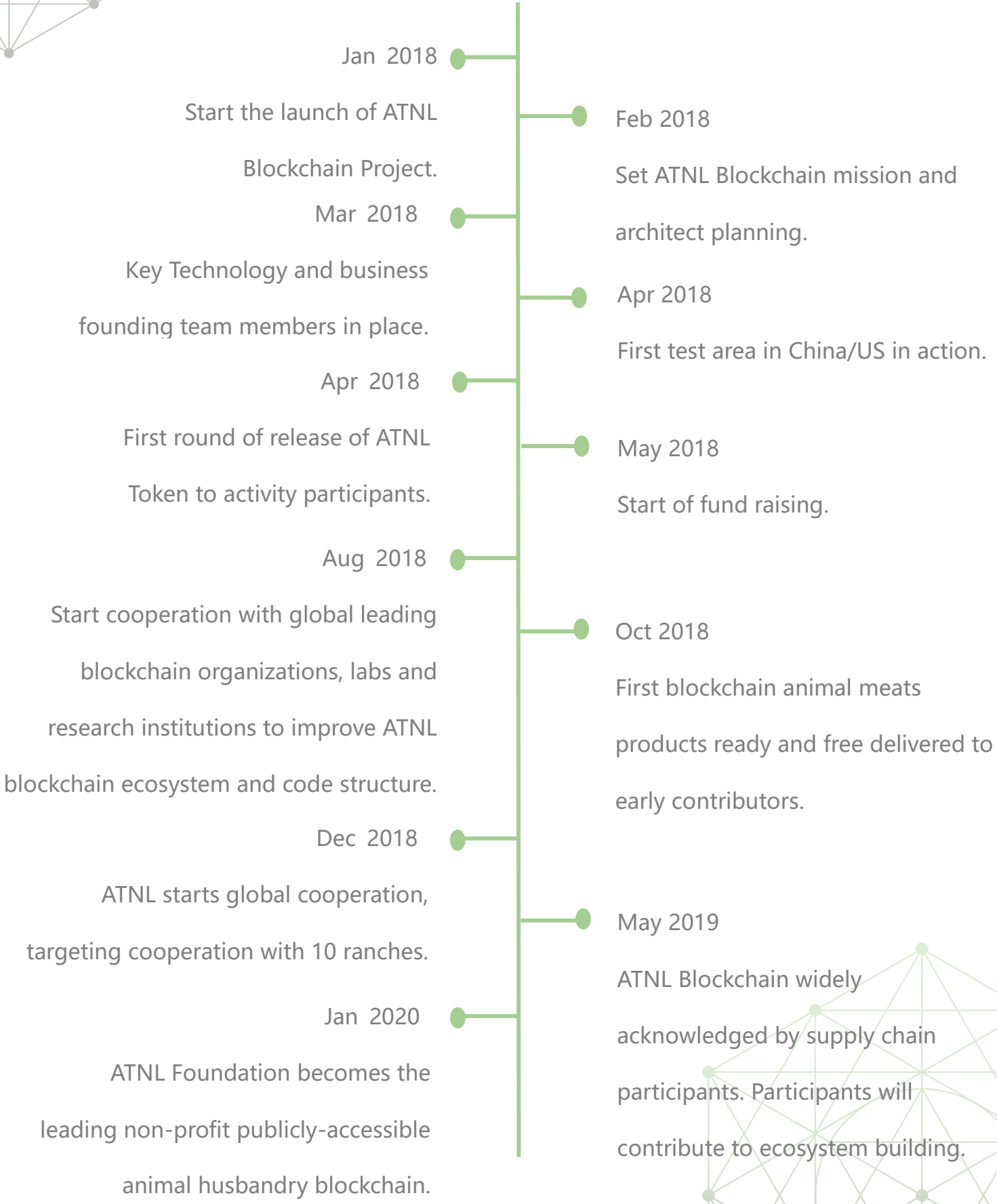

The ATNL Blockchain team has both traditional farming management and sales experience, and internet research and development and on-line B2C experience, combined with blockchain technology development experience. This makes Animal Husbandry Blockchain's success be possible and achievable.

PART THREE
Future of Atunala Blockchain Development

Jan 2018

Start the launch of ATNL

Blockchain Project.

Feb 2018

Set ATNL Blockchain mission and

architect planning.

Mar 2018

Key Technology and business

founding team members in place.

Apr 2018

First test area in China/US in action.

Apr 2018

First round of release of ATNL

Token to activity participants.

May 2018

Start of fund raising.

Aug 2018

Start cooperation with global leading

blockchain organizations, labs and

research institutions to improve ATNL

blockchain ecosystem and code structure.

Oct 2018

First blockchain animal meats

products ready and free delivered to

early contributors.

Dec 2018

ATNL starts global cooperation,

targeting cooperation with 10 ranches.

May 2019

ATNL Blockchain widely

acknowledged by supply chain

participants. Participants will

contribute to ecosystem building.

Jan 2020

ATNL Foundation becomes the

leading non-profit publicly-accessible

animal husbandry blockchain.

PART FOUR

ATNL Token Introduction

The Usage of ATNL Token

ANTL is used as a Utility Token, to buy products and services in the Atunala Blockchain.

- Payment: ATNL can be used to buy products and services provided in the ecosystem. For example, buy products from ATNL Marketplace. To be able to use the blockchain, supply chain participants need to use token to buy traceability tools, have access to data etc. supply chain participants accept token to pay for services they provide within the ecosystem.

- Reward: all participants in the ecosystem will receive ATNL Token rewards for providing valuable information and contributing to the ecosystem.

- Rights: token holders have the rights to vote and comment in the Merit System, a scoring tool to better serve the blockchain.

- Exchange of ATNL Token will need to consume ATNL.

- ATNL will be used to register and issue smart contracts for different roles.
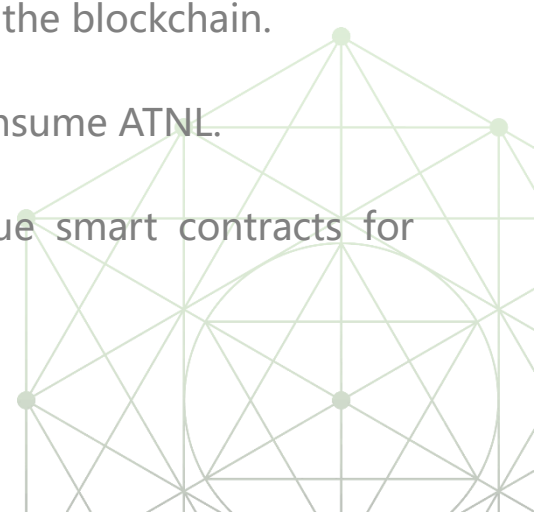
Distribution of ATNL Token

Ecosystem Building	**30 %**	**To build an efficient ecosystem, we will need many partners. 30% will be distributed to all important partners**
Business Implementation	**20 %**	**This project needs actual project implementation among all supply chain participants. ATNL Token will be released 12.5% every three months and this part will be released in 2 years.**
Team	**20 %**	**This part will be distributed to founding team and technology developing team. ATNL Token will be released 12.5% every three months and this part will be released in 2 years.**
Community Contributors	**20 %**	**This part will be used to reward contributing people who organize, promote and expand ATNL activities. ATNL Token will be released 12.5% every three months and this part will be released in 2 years.**
Foundation Reserve	**10 %**	**This part will be used for the foundation's proper operation. ATNL Token will be released 12.5% every three months and this part will be released in 2 years.**

Consumers can participate in early stage through purchasing a full-set of lamb to register for the distribution of ATNL Token for free.

PART FIVE
ATUNALA Foundation

Atunala Foundation is the initiating organization of ATNL Blockchain project and will focus on global development and expansion of ATNL Blockchain, aiming to govern and manage the transparency of the project for further development. The foundation will promote the safe and harmonious development of the open-source eco-society. All the rights of Atunala Blockchain will belong to this foundation's management. Inner Mongolia Atunala Animal Husbandry Co. Ltd is the foundation's China exclusive business partner.

PART SIX

Team Introduction of Atunala Blockchain Project

Joshua Halpern

Wenrong Tian

Ginko Gao

Co-founder and Global Business Development Executive for ATNL Project.

He is the Founding Director of Getting to Global Initiative (GtG) and founding member of the US Department of Commerce's Ecommerce Innovation Lab (EIL). Mr. Halpern holds a B.F.A from New York University's Tisch School of Arts, and EMBA degrees from both Tsinghua University and INSEAD. He has more than 10 years experience in leading several global startups and led the eCommerce, Retail, Franchise and Logistics portfolios for the US Embassy in China.

Co-founder and China Executive Director of ATNL Project.

Mr. Tian is CEO of Atunala Animal Husbandry Inner Mongolia Co. Ltd. He has more than 10 years internet marketing and entrepreneurial experience in both internet industry and animal husbandry industry. AS an Mongolian, he has wide connection in the farming society in Inner Mongolia. In 2016, he co-founded Atunala returning to his hometown to engage in naturally-fed animal husbandry industry.

Founder and Investor for ATNL Project.

Mr. Gao is Chairman of the Board for Atunala Animal Husbandry Inner Mongolia Co. Ltd. He has a Bachelor Degree from Peking University and EMBA degrees from both Tsinghua University and INSEAD. He has more than 20 years business experience in various companies including sales experience in multinational companies like P&G in China, professional experience in executive search industry and entrepreneurial experience in comics and mobile game industry. He is the co-founder for a leading Chinese comics mobile internet company which was listed in Chinese NEEQ capital market in 2016. In 2016, he invested and co-founded Atunala Animal Husbandry Inner Mongolia Co. Ltd and wanted to start a venture in safe food industry.
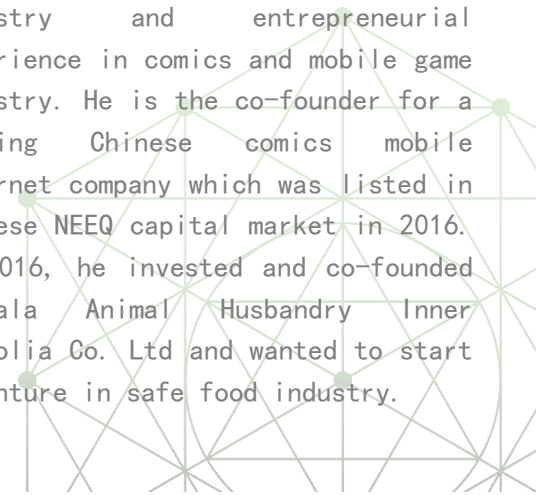
Yunda Liao

Co-founder and Blockchain Tech Partner

He is deeply involved with several startup companies as CTO and has extensive experience in data platform and financial system development. Blockchain and digital currency early followers, has a certain amount of research on the blockchain underlying technology architecture, blockchain product design, and eco-economic models.

Choon Hoon Loh

Co-founder and Chief Legal Officer for ATNL Project.

Mr. Loh holds a Master of Laws Degree from University of Cambridge, United Kingdom and EMBA degrees from both Tsinghua University, China and INSEAD, France/Singapore. He is a qualified lawyer in Malaysia and Singapore. He is the Managing Director of Pintas IP Group (PIPG), a regional professional IP firm with operational offices around the globe. He is also the treasurer of Malaysia Business Angel Network

Ni Jie

Technical Co-founder and App Developer Lead

More than 10 years development experience in mobile internet industry. Solid experience in game development and financial software development.

PART SEVEN

Contact Us

 Email：**contact@atunala.org**

 Telegram:

https://t.me/ATNLcommunity

 Wechat Public Official Account：阿图纳拉牧业区块链

 Wechat Customer Service：阿图纳拉 VIP 客服