Smart Supermarket

The world’s first decentralized supermarket cloud system based on cashierless supermarket

White Paper

Project Description

1.0 Introduction

Smart Supermarket is the solution project focused on cashierless supermarket technology released by the Smart Supermarket Team belonging to Sherry Company. Smart Supermarket is also the name for cloud platform organized by Smart Supermarket project. Smart Supermarket aims at solving the problems, such as high human labor cost, low efficiency at shopping, etc., existing in traditional retail industry (online and offline business), to enhance the consumer experience. By adopting a new way of thinking and new technology, Smart Supermarket not only reduces the costs of traditional retail industry operation, but also directly build link between supermarket suppliers and customers. While the costs of running supermarket have been reduced, the customers’ extra spending incurred in shopping is also lowered down. The Smart Supermarket cloud platform also includes functions, such as customer experience rating system, merchants rating system, merchants competition system, etc. Smart Supermarket cloud platform provides access to the merchant users’ information with a fee.

In the cloud platform of Smart Supermarket, merchants are the users of the softwares on platform (Smart Supermarket owns cashierless supermarket developed by itself); and customers are the users of the commodities provided by merchants. 其中商 店在 Smart Supermarket 云平台中的信息为接入平台的其他商店用户有代价 (支付 SSPJ)的共享。（这句话语法有问题，看不懂。请改写）The platform would execute credit rating on each merchant user who has joined onto it. The credit rating results will be served as the recommendation basis for merchant users. The credit rating partly depends on the merchants’ expense on softwares from platform and the SSPJ tokens possessed by merchants, because it is assumed that the more SSPJ tokens one merchant possesses, the more actively the merchant would upkeep the platform and the ecosystem derived from the platform. The expenses incurred on the platform will be charged in the form of SSPJ tokens and SSPJ tokens are the only income voucher. Every year, 10% of the annual income produced by Smart Supermarket will be distributed among the SSPJ token holders; SSPJ token is the also the voucher for the bonus. In addition, the SSPJ token holders are not liable for the possible operating risks in Smart Supermarket project.

Smart Supermarket is the technical adverser of cashierless supermarket, the solution provider, the proponent of new smart supermarket retail model, the planner of cashierless supermarket retail model, and the cashierless software manufacturer. The traditional retailers will either become the joined users of Smart Supermarket platform, or be overthrowed by cashierless supermarket trend.

2.0 Analysis of Business and Market

2.1 Market Value of Retail Trade

The market value for the entire retail trade is enormous and has long been above the threshold of billion dollars. Nevertheless, due to the vicious competition of the traditional retail trade, waste of resources, and high costs, the growth of the traditional retail trade’s market value is becoming slower and slower, and the condition of resource waste gets more severe.

2.2 The Current Condition of Traditional Retail Trade

Traditional retail trade includes: offline store direct sales (e.g. Wal-Mart Stores Inc., Costco Wholesale Corporation, etc.) and online retail sales (e.g. [amazon.com](http://amazon.com), [JD.com](http://JD.com), etc.).

The traditional retail trade has many obvious defects: singular market mode, severe vicious competition, and low transparency of resources. The confidentiality of information between companies has created huge wastes of resources. Meanwhile, the resource locking has caused closed loops inside companies, making the construction of storage and the utilizing of geographical resources inappropriate. Thus the costs of commodities and logistic charges unreasonably high.

Without a professional dispatching system, the time latency between placing order and receiving commodities is high and so is the human labor cost.

2.3 The Exploration of Traditional Retail Trade Development

After the prosper boost by the end of 19th century, the traditional retail industry has entered the stage of saturation (or vicious competition).

Traditional retail trade is also gradually exploring for new retail trade solutions. (快乐购查到是湖南的，和美国没关系，需要修改）These movements are only a small step made by traditional retail trade. To the entire retail trade market, the revolutionary effects are petit and could not solve the vicious competition from the root. Of course, there are cashierless supermarket ideas that have been come up with by some predecessors, but these ideas are not integrated with block chain, cloud computation, and other developed technologies, and produce a solution based on software services.

2.4 The Vista of New Cashierless Retail Trade

The cashierless supermarket can solve the problem of human labor to certain extent, but it has no help towards the vicious competition between companies.

2.5 The Market Size of Cashierless Supermarket

The purpose of cashierless supermarket is to seize the entire retail market, which would no doubt be a revolutionary movement to traditional retailers. Therefore, the cashierless supermarket’s market share will not be lower than that of the traditional retail market, or even more.

2.6 The Potential Market Scale of Smart Supermarket

Smart Supermarket is the service application platform based on cashierless supermarket, which aims at promoting the development of cashierless supermarket. Smart Supermarket has retained the virtues of cashierless supermarket, solved the problem of information confidentiality between individual companies, and led this revolution ahead of the whole trade. We hope to acquire half of the market share, or even attained monopolization of retail industry. Even if this expectation could not be met, the lowest prediction of 10% of the market share is also a giant number.

3.0 Description of Smart Supermarket Platform

3.1 Definition of Smart Supermarket

To solve the technical problems of cashierless supermarket, the team has introduced Smart Supermarket project, the world’s first distributive cloud application platform based on cloud construction. It is to serve all cashierless supermarkets that join the Smart Supermarket Platform (traditional supermarkets can join onto Smart Supermarket and customize the software services that to reduce human labor costs and logistics costs In this way, they could transform into cashierless supermarket gradually). Smart Supermarket focuses on cashierless supermarket services and applications (smart security, cargo inspection, loss prevention system based on machine vision and deep learning, smart shopping cart, self-service commodity picking, commodity recommendation, big data analysis of customer information, smart supermarket supply chain system). All these applications in Smart Supermarket Project are of distributed application system. In early stage, the system would be common centralized system, and gradually, the system will transform into distributed one to guarantee the stability of the system and be responsible for the merchant users’ software customizing configuration and credit rating.

3.2 Smart Supermarket’s Software Service System

All the Smart Supermarket service software system will be serving the merchant users of Smart Supermarket (mostly cashierless supermarkets and also traditional supermarkets who are transforming into cashierless supermarkets). By paying different amount of fees through SSPJ tokens, the merchant users of Smart Supermarket will receive different levels of cashierless supermarket service mode.

1. Smart Security System

In managing a supermarket, incidents such as fire hazards and shoplifting must be taken into serious consideration. This is where the smart security system is needed, so as to reduce risks and loss to the lowest level. The smart security systems of each unit of single cashierless supermarket are independent from each other. It will execute realtime monitoring of the security condition of the supermarkets. When accidents happen, the security function of the smart security system will be activated. Meanwhile, the smart security system is joined onto the Smart Supermarket cloud platform. Smart Security System will upload the realtime data of supermarkets to the data collection system on cloud platform. By analyzing the security information with big data technology, effective prevention measures will be provided.

1. Loss Prevention System

In traditional offline supermarkets, the annual income loss caused by shoplifting behaviors is about 10%-20% of the total income. Thus, the QR code technology is widely used in China’s online payment methods. Customers only need to scan the QR code instead of pulling out cash or credit cards to take their chosen commodities. Simple technology as this can win huge amount of capital funding.

In cashierless supermarkets, there will be no employee theft for no human workers are needed. The loss prevention system would apply machine vision and deep learning technology to conduct effective analysis to determine whether there are commodities not scanned and decide if security system is needed to intervene.

1. Cargo Inspection System

Cargo inspection system is to automatically identify the demands of commodities, fetch commodities in storage, transporting, and sorting the shelves.

1. Smart Shopping Cart System

In cashierless supermarket, to enhance the customer experiences and to liberate customers from heavy tasks, the smart shopping cart system is developed. It can also help the customers to save time. The sensor system on the cart can detect if the commodities are put in or taken out of the shopping cart and perform an easy calculation on the due payment. The cart can also detect if the customers are to make a payment.

1. Big Data Analysis System

Inside the big data analysis system, there are various smaller data analysis systems that have different purposes and all of them would be accessed to the Smart Supermarket platform, on which the big data analysis system will realize the flow of information resources and paid inner sharing.

1. Commodity Recommendation System

The commodity recommendation system depends on the big data analysis system on the Smart Supermarket platform. The commodity recommendation system will acquire useful user information from the big data analysis system and recommend the user information to the cargo inspection system and online shopping platform. It is designed to improve the sales mode of cashierless supermarkets and commodity varieties, and also provide users with helpful online shopping advices.

1. Self-service Commodity Selection System

The self-service commodity section system is also depending on the big data analysis system to provide with required information to help customers to select commodities. When the amount of users’ information and data has reached a threshold, the users could activate the machine-shopping mode, by which the cashierless supermarket would pick commodities for the smart supply chain system to directly send to the house of customers, judging by the previous shopping history.

1. Smart Supply Chain System

The Smart Supply Chain System is based on the Smart Supermarket cloud platform. It can automatically acquire the position information. Combining with the cargo inspection system and the self-service commodity selection system, the supply chain system will calculate the route with lowest costs to the shelves and to the end of customers.

3.3 Definition of SSPJ

SSPJ is the payment token based on the Smart Supermarket project, which is both currency and capital. SSPJ is the payment currency used to trade between Smart Supermarket platform and merchant users who have joined the platform. It can also be traded between the cashierless supermarkets and customers. SSPJ is the income voucher.

4.0 The Technical Properties of Smart Supermarket Platform

Comparison between Smart Supermarket and Traditional Retail Trade

|  |  |
| --- | --- |
| **Traditional Retail Trade** | **Smart Supermarket** |
| Low transparency. Multiple layers of agents are needed. Costs are enhanced. | High transparency between merchants and customers. Smart Supermarket will promote the competition between merchant users and the inner competition will lower the fees paid by customers. |
| Competition from online retail has reduced development speed of retail trade. | The cashier less supermarket mode can effectively alleviate the vicious competition and promote the positive growth of retail trade. |
| The resources of retail trade is not sufficiently used and each merchants owns their private customer resources and production resources. | The merchant users joined will realize the sharing of information resources to certain extent, lowering the costs incurred by information communication and logistics costs. |
| The costs of traditional trade’s logistics and human labor are high. | The need of hiring employees is eliminated and thus the costs of human labor are reduced. Because the Smart Supermarket has realized information sharing, thus the commodity costs and logistics costs will be reduced. |
| The traditional retail trade lacks customized service softwares. | Customization of services and softwares is simple to be made. |

5.0 Placing Arguments for SSPJ

The SSPJ token is issued by the ERC20 Standard of Ethereum Block Chain. The total amount of SSPJ tokens is 2,000,000,000 and no new tokens will be issued later. The tokens allocated to the Smart Supermarket Team will be frozen for six months, and 10% of the original quantity will be unfrozen in each season.

5.1 Common Argument

Symbol of token: SSPJ  
Total released amount: 2,000,000,000 SSPJ  
Total sold amount: 60% of the total released amount OR 1,200,000,000 SSPJ Private sales: 120,000,000 SSPJ  
Pre-sale: 360,000,000 SSPJ  
Official sale: 720,000,000 SSPJ  
Accepted currency: ETH(Ether, recommended), BTC(Bit Coin)

5.2 Private Sale Argument

Date of private sale: 2018 May 1st to 2018 May 15th

Private sale limit: 120,000,000 SSPJ

Private sale price: 1ETH = 10,000 SSPJ (sale commission included)

Lowest limit of purchase: 100 ETH

Highest limit of purchase: 500 ETH

Sale commission: 100% of the price during official sale

5.3 Pre-sale Argument

Date of pre-sale: 2018 May 16th to 2018 May 31st

Pre-sale limit: 360,000,000 SSPJ

Pre-sale price: 1 ETH = 7,000 SSPJ (sale commission included)

Lowest limit of purchase: 0.1 ETH

Highest limit of purchase: no limit

Sale commission: 40% of the price during official sale

5.4 Official Sale Argument

Date of official sale: 2018 Jun 1st to 2018 Oct 31st

Official sale limit: 720,000,000 SSPJ

Official sale price: 1 SSPJ = 0.0002 ETH; 1 ETH = 5,000 SSPJ

Lowest limit of purchase: 0.01 ETH

Highest limit of purchase: no limit

5.5 The Sale Commission System of Official Sale Stage

|  |  |
| --- | --- |
| Sale Commission | Amount of tokens |
| 20% | 7,000,000 SSPJ |
| 15% | 7,000,000 SSPJ |
| 13% | 7,000,000 SSPJ |
| 11% | 7,000,000 SSPJ |
| 9% | 7,000,000 SSPJ |
| 7% | 7,000,000 SSPJ |
| 5% | 7,000,000 SSPJ |
| 3% | 7,000,000 SSPJ |
| 0 | 16,000,000 SSPJ |

6.0 The Function and Distribution of Tokens

6.1 Functions of SSPJ

(1) As an active currency circulated between merchant users and Smart Supermarket cloud platform, SSPJ can be used to purchase all the applications on Smart Supermarket cloud platform.

(2) As an active currency circulated between consumers and supermarkets on Smart Supermarket cloud platform, SSPJ can be used to purchase all the commodities sold on Smart Supermarket cloud platform.

(3) SSPJ is the income voucher on Smart Supermarket cloud platform. We will return 10% of the income from road map project on Smart Supermarket cloud platform to all SSPJ holders, and the number of SSPJ tokens is the voucher shares.\

(4) SSPJ can serve as a security-like investment products. The valuation of the entire application market on Smart Supermarket cloud platform is $ 25,000,000,000,000. If our project can seize 10% of this market share (considering that we are the predecessor of Smart Supermarket, the market share we are getting is far more than this), then our predicted market value is & 2,500,000,000,000. Therefore, the investors of SSPJ tokens will acquire 10% of the annual profit of Smart Supermarket and asset appreciation rate of 1000 times.

(5) SSPJ can store value as currency. When the market experiences fluctuation, the investors can purchase SSPJ as investment products to avoid market risks and get appreciation.

6.2 Distribution of SSPJ

SSPJ Shares

Bonus 10%

Market Expansion 10%

Reservation for Team 20%

Market Investment 60%

7.0 Development Strategy and Road Map

1. 2017 Mar—2017 Sep: Finish the Smart Security Section of cashierless supermarket.
2. 2017 Sep—2018 Feb: Finish the Loss Prevention Section of cashierless supermarket.
3. 2018 Mar—2018 Oct: Plan to finish the Smart Shopping Cart project and Cargo Inspection project; Get alpha testing online.
4. 2018 Apr—2018 Oct: Three phases of ICO of Smart Supermarket.
5. 2018 Nov—2019 Apr: Plan to finish the supermarket cloud platform based on block chain technology, service software code library, and get the finished projects online to the cloud platform; finish the Docker integrated application environment; push the applications of integrated environment to the code library.
6. 2019 Apr—2021 May: Finish the Smart Supply Chain System.
7. 2021 Jul—2025 Oct: Finish the Big Data Analysis System, Commodity Recommendation System (long time is needed for the collection of data)
8. 2025 Oct—2027 Oct: Maintain and perfect the cashierless supermarket’s integrated applications developed in prophase; update the cloud platform and code library
9. 2027 Oct—later: Maintain and update the cashierless supermarket and code library of service software; lead the development of cashierless supermarket; revolutionize the retail trade mode

8.0 Team and Consultants

8.1 Team

Jie Xu, founder. Previous project manager of Cryptape (the only agent of Ethereum in China) Star-fire mining pool, leading to accomplish the Star-fire mining pool. Huawei’s cloud architect, participating in various large cloud architecture programs. Senior securities analyst.

Jianwen Chen, co-founder. Machine vision professor of Tsinghua University, leading to finish many frontier researches on machine vision and deep learning with major breakthrough.