



# **Dangdang Chain**

**Supply Chain Logistics Management  
Platform**

**Dangdang Chain Foundation**

**Mar, 2018**

## Content

<b>Abstract</b> .....	<b>1</b>
<b>Part I Project Background</b> .....	<b>2</b>
1.1 What is a Block Chain.....	2
1.2 Background for the Market Development.....	3
1.3 Block Chain and Supply Chain Logistics Management.....	4
<b>Part IIDangdang Chain</b> .....	<b>6</b>
2.1 About Dangdang Chain.....	6
2.2 Ecospheric Model of Dangdang Chain.....	6
2.3 Functional Modules of Dangdang Chain.....	9
2.4 Scenes for Industrial Application of Dangdang Chain.....	12
<b>Part III Open Platform of Dangdang Chain</b> .....	<b>20</b>
<b>PartIV Technical Solutions</b> .....	<b>22</b>
4.1 Consensus Mechanism.....	22
4.2 Technical Structure.....	24
<b>Part V Brief Introduction to Tokens</b> .....	<b>26</b>
5.1 About the Tokens.....	26
5.2 Issuance Mechanism for Tokens.....	26
5.3 Issuance Plan for Tokens.....	27
5.4 Capital Use Plan.....	27
5.5 Profit Buyback Mechanism.....	28
<b>Part VI Development Program</b> .....	<b>29</b>
<b>Part VII Ecological Governance</b> .....	<b>30</b>
7.1 Foundation.....	30
7.2 Organizational Structure.....	30
7.3 Rules for Governance of the Foundation.....	31
<b>Part VIII Development Vision</b> .....	<b>33</b>

<b>Part IX Risk Warning</b> .....	<b>35</b>
9.1 Value Risks of Tokens.....	35
9.2 Regulatory Risk.....	35
9.3 Technology Risk.....	36
9.4 Project Team Risk.....	36
9.5 Safety Risk.....	37
<b>Part X Disclaimers</b> .....	<b>38</b>

## **Abstract**

As a large-scale collaborative tool and data storage tool, block chain bases itself on the decentration and mutual trust mechanism, effectively solves such issues as multi-agent information sharing and complex transaction costs and lays its solid foundation in management of logistics information resources throughout the supply chain.

Dangdang Chain has dedicated to the technological innovation with residential communities and third-party developers jointly to create a world-influential supply chain logistics management platform. It integrates block chain into the supply chain logistics management system of different industries, for example, automobile, food, luxury and electronics, and through the fusion of block chain technology with supply chain logistics information technology, improves the security of network information and the efficiency of logistics systems; builds up a smooth and transparent flow of information, achieves the transparency and traceability of information; reduces the cost for financial reconciliation and dispute settlement, avoids the violation behaviors of the trust subject and improves the business continuity and transactional efficiency; improves the management efficiency of supply chain, reduces the operating cost of businesses, and creates a new business model for global economic growth.

By opening the gateway, the Open Platform of Dangdang Chain can be connected with the external logistics companies, supply chain bill platforms, financial institutions, asset trading platforms and other multiple external platform systems, enriching the platform ecology and achieving infinite possibilities.

## **Part I Project Background**

### **1.1 What is a Block Chain**

The block chain technology, as a collective database maintenance technology of decentration and de-trust, first appeared with the design of Bitcoin and essentially, is an Internet Protocol integrated with multiple technologies, including the distributed storage technology, data encryption technology and P2P transmission technology.

The trust mechanism of the block chain technology is established on the base of the asymmetric cryptographic principles so that the people within the block chain system may achieve the trustworthy value exchange, thereby guaranteeing the security of information and the high efficiency and low cost of system operation.

The block chain records all transactions into the block and affixes them with timestamps so that the data records may not be tampered. Therefore, any value exchange activity between the transaction parties can be traced and queried. Such completely transparent data management system has provided reliable shortcuts for tracing the logistics operation, records of the operation logs, auditing and account reconciliation.

The method of distributed accounting and storage can distribute the storage functions of all data to each node point within the system. Therefore, the risk of sever crash under the centralized storage mode will not occur. The mode of distributed storage contributes much to the powerful fault-tolerant capacity of block chain during the process of operation, and any fault or attack to some of the nodes will not affect the storage and update of the whole database.

Based on the programmable principle, the block chain technology is embedded with the concept of scripts. Block chain may be applied to multiple scenes through smart contracts.

The foundation for trust of block chain is established through the pure digital mode of endorsement as to enable information sharing under conditions of anonymity without exposing the real identity of the people in the realistic world.

Therefore, the block chain technology has significant advantages in application. The distributed structure of decentralization, if used in the realistic world, can save much intermediary cost. The tamper-resistant timestamp features can solve such issues as data tracing and information anti-forgery; the safe trust mechanism can solve the core flaw in the present technology for the Internet of Things, and the flexible programmable features is conducive to regulating the existing market order.

## **1.2 Background for the Market Development**

After entering the twenty-first century, all countries successively included the global supply chain into respective national security strategy, and it has become a world consensus to enhance the supply chain management. The competitive power of all countries is no longer measured completely by the quantity of products but compared comprehensively by the force for controlling the supply chains, resource and capital occupation ratio and the capacity for enjoying the intellectual property rights.

Christopher, a British economist, proposed that there is no enterprise but supply chain in the market and that the real competition of the world is not the competition among enterprises but that among the supply chains. Research of a logistics consulting company of the USA shows that, if an enterprise borrows any third-party power to replace its self-operated logistics, it can save the cost by 5%, and if he takes advantage of the third-party network advantages for resource integration and improvement of part of the existing logistics process, it can save the logistics cost by 5% ~ 10%, and if he restructures his logistics process flow through the advantages of any third-party logistics so that the

third-party logistics can extend to the whole supply chain, he can save the logistics cost by 10% ~ 20%.

With the ever deepening of the globalized division of labor and continuous extension of the supply chains of modern enterprises, fragmentation, complication, geographical decentralization and other such features have brought forth great challenges to the logistics management of supply chains. At present, the supply chain industry has accounted for 1/3 of the world GDP (about USD 54 trillion). Therefore, any tiny growth in this industry may significantly increase the global economy.

### **1.3 Block Chain and Supply Chain Logistics Management**

As a large-scale collaborative tool and data storage tool, block chain bases itself on the mechanism of “decentration” and “mutual trust mechanism”, effectively solves such issues as multi-agent information sharing and complex transaction costs and lays its solid foundation in management of logistics information resources throughout the supply chain.

In the subject aspect, update and maintenance of the block chain database is completed by the common collaboration of the distributed subjects while the supply chain has become a diversified, multi-level and multi-functional organization through information sharing among such subjects as the manufacturers, suppliers, distributors, retailers and customers. The logistics management of block chains and supply chains are, with respect to subjects, in an obvious coupling relationship.

In terms of trading, multi-level complex transactions exist among all subjects within the supply chain. By introducing the decentration and de-trust mechanism of the block chain system, real records and verification of transactions can be completed and the opportunity cost subject to lack of trust among the subjects can be eliminated.

In the aspect of the smart contracts, the supply chain can guarantee the

automatic execution of the transactions through a series of smart contracts, and such smart contracts based on the block chain can prevent any malicious factor from interfering their normal performance, meanwhile bearing the cost efficiency advantage.



## **Part II Dangdang Chain**

### **2.1 About Dangdang Chain**

Dangdang Chain is a "Three Flows in One" distributed block chain application platform established for realizing the integrated with the information flow, product flow and capital flow. It brings the block chain into practical application within the supply chain logistics system, connects with the data silos, links the digital assets, enhances the control ability of the core enterprises over the supply chain and achieves the high-efficiency operation of the three flows.

Through the fusion of block chain technology with supply chain logistics information technology, it can improve the security of network information and the efficiency of logistics systems, build up a smooth and transparent flow of information, achieve the transparency and traceability of information, reduce the cost for financial reconciliation and dispute settlement, avoid the violations of the trust subject and improve the business continuity and transactional efficiency.

### **2.2 Ecospheric Model of Dangdang Chain**

The logistics information service platform of Dangdang Supply Chain, with block chain as the base technology, has built up multiple advantages, including anti-attack, data confidentiality, self-healing toughness and operating ecologization. It can promote the occurrence, formation and stabilization of the information ecosphere of the supply chain and achieve the ecospheric harmony step by step.

Data tier: the nodes of Dangdang Chain System are linked up into a network structure and form redundant data paths. Even parts of the data paths are attacked and obstructed, the information can still be successfully transmitted through other data paths;

Network tier: only the nodes of Dangdang Chain, which has been authorized,

can obtain the public key of other nodes and sensors, and without such public key, the attacker is unable to decrypt the data information transmitted through the network;

Consensus tier: All sensors have respective private key. When data information is distributed to the whole network, all data packages are affixed with the digital signature encrypted by the private key, adding much to the difficulty for attackers to forge the data to deceive other nodes in the network;

Application tier: the personal information of all users within the block chain system is given the absolute right of privacy to prevent any privacy from being disclosed.

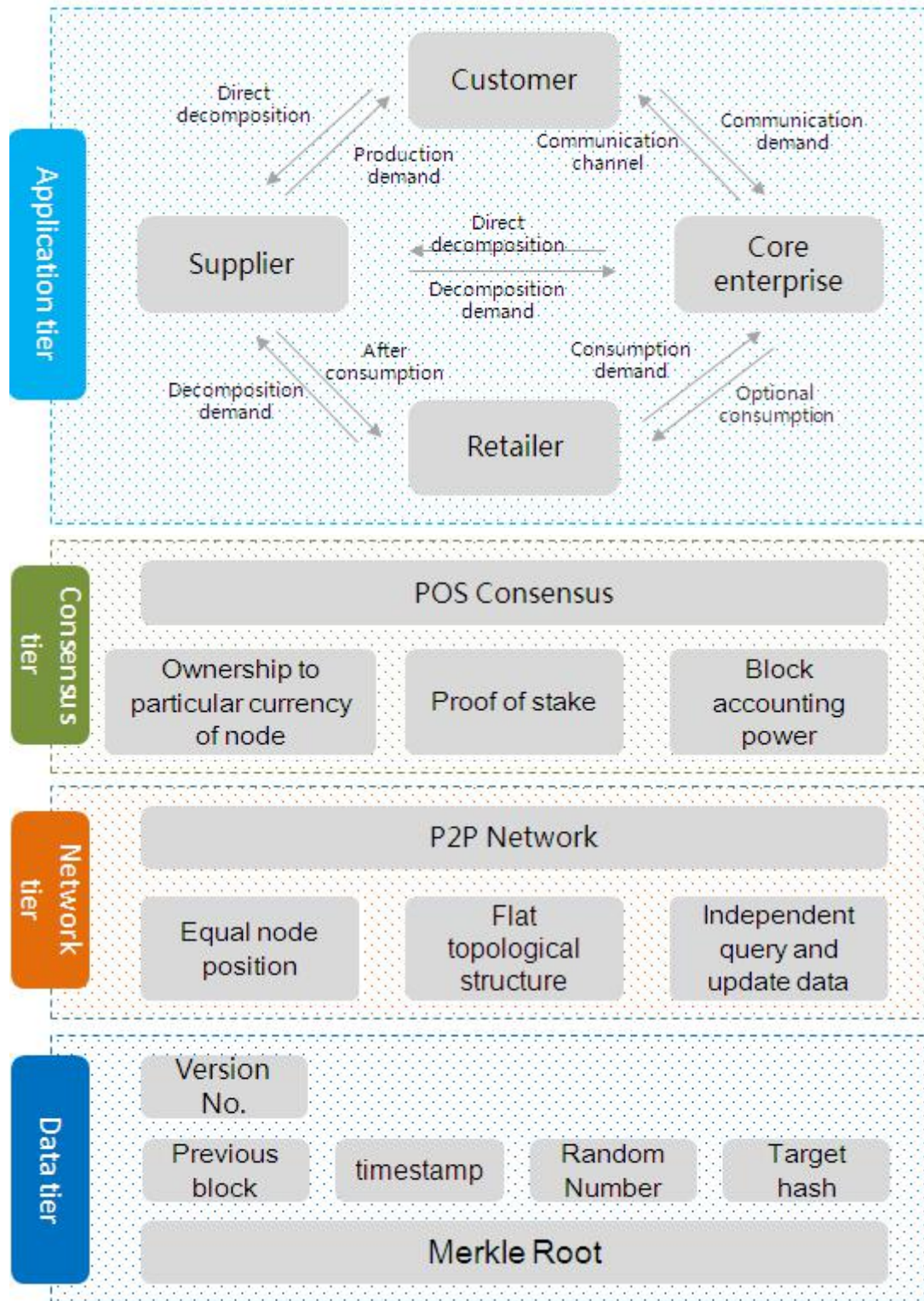


Figure 2-1 Dangdang Supply Chain Logistics Information Ecosphere Model

### 2.3 Functional Modules of Dangdang Chain

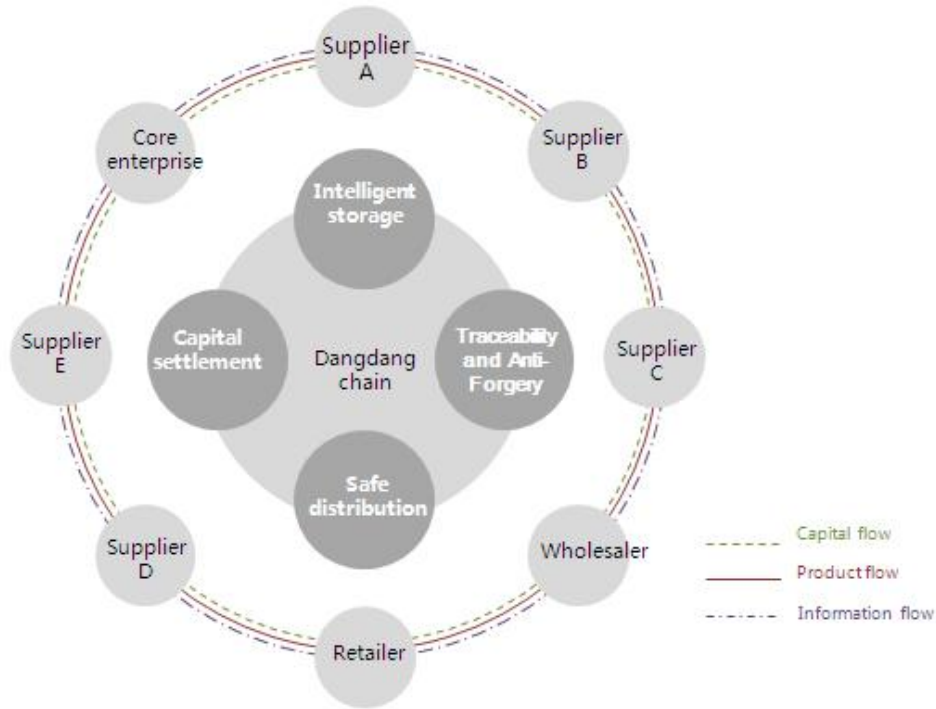


Figure 2-2 Dangdang Supply Chain Logistics Management Platform

#### 2.3.1 Smart Warehousing

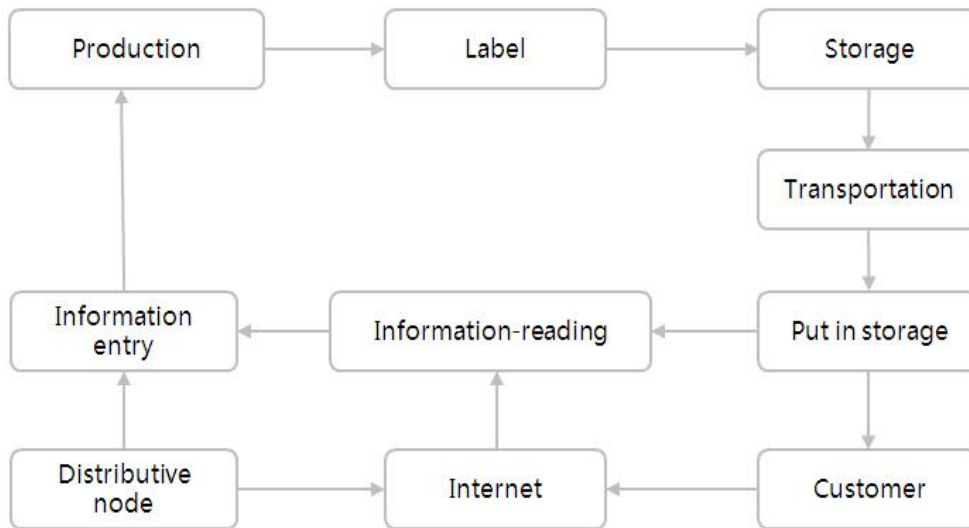


Figure 2-3 Smart Warehousing Module for Dangdang Supply Chain Logistics Management Platform

The distributed “accounting” of Dangdang Chain and block chain guarantee that the smart warehousing data are not be privately tampered. Connection of the

distributed ledger platform of Dangdang Chain with the special logistics facilities can help users trace their packages conveniently. The system does not only enhance the transparency of the whole process but also guarantees the logistics transaction of all enterprises in a safe and trusted environment.

### 2.3.2 Safe Distribution

Dangdang Chain adopts the asymmetric encryption and decryption mechanism and the digital signature. This can ensure in the technical level the information security, protect the user privacy during the logistics distribution process, simplify the logistics procedures and greatly improve the efficiency of logistics distribution.

An asymmetric key has two characteristics: when the encrypted information of one key is used, only the other corresponding key can decrypt. No public key can deduct the corresponding private key. A public key can be opened publicly while a private key has confidentiality. This can effectively eliminate such abnormal behaviors as forgery of signatures and evasion, and guarantee the accurate, safe and timely delivery of the goods.

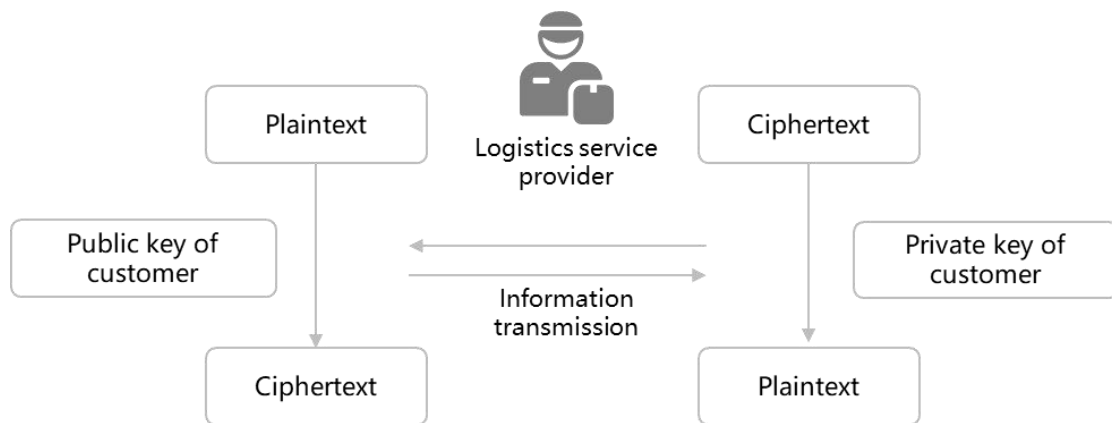


Figure 2-4 Safe Distribution Module of Dangdang Supply Chain Logistics Management Platform

### 2.3.3 Traceability and Anti-Forgery

The block chain base technology adopted in Dangdang Chain has the function of timestamps and the traceability technology can effectively solve the problem of

traceability and anti-forgery of the goods. Through the private databases of Dangdang Chain, such data as of production, processing, logistics, wholesales, retail sales and consumption can be saved in the block chain, thereby effectively preventing and discovering any fraud and error.

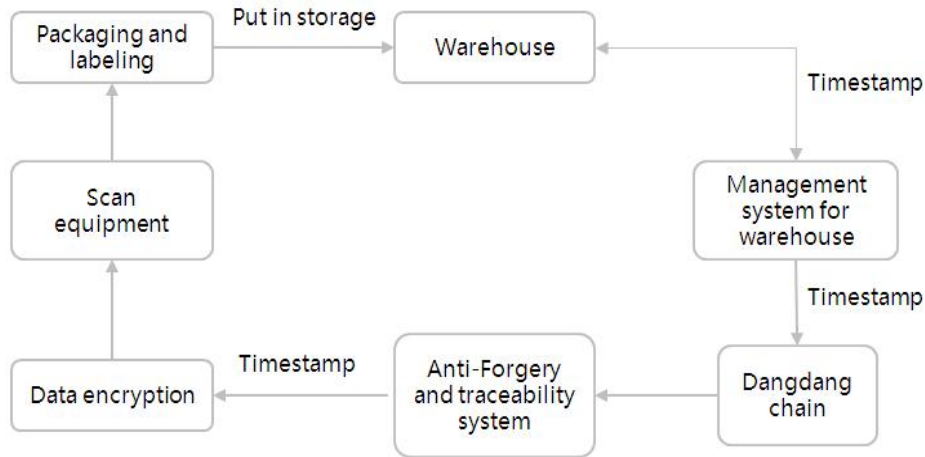


Figure 2-5 Traceability and Anti-Forgery Module of Dangdang Supply Chain Logistics Management Platform

### 2.3.4 Settlement of Capitals

Tokens are issued through the exclusive supply chain logistics information platform established in Dangdang Chain. This achieves the DANG token management supporting a unified standard and facilitates the AutoClear with tokens among all parties participating in the supply chain logistics. All logistics parties preserve a DANG token wallet account in the smart contract to save the tokens used for logistics settlement. The DANG tokens are issued by the logistics originator and Dangdang Chain Operation Platform is authorized for the logistics settlement.

The contracts receive the parameterized data of the settlement model, and record the account addresses of all interested parties, and according to the digital signatures confirmed by all interested parties of the current contract, broadcast the consensus on the block chain and write it into the block chain at last.

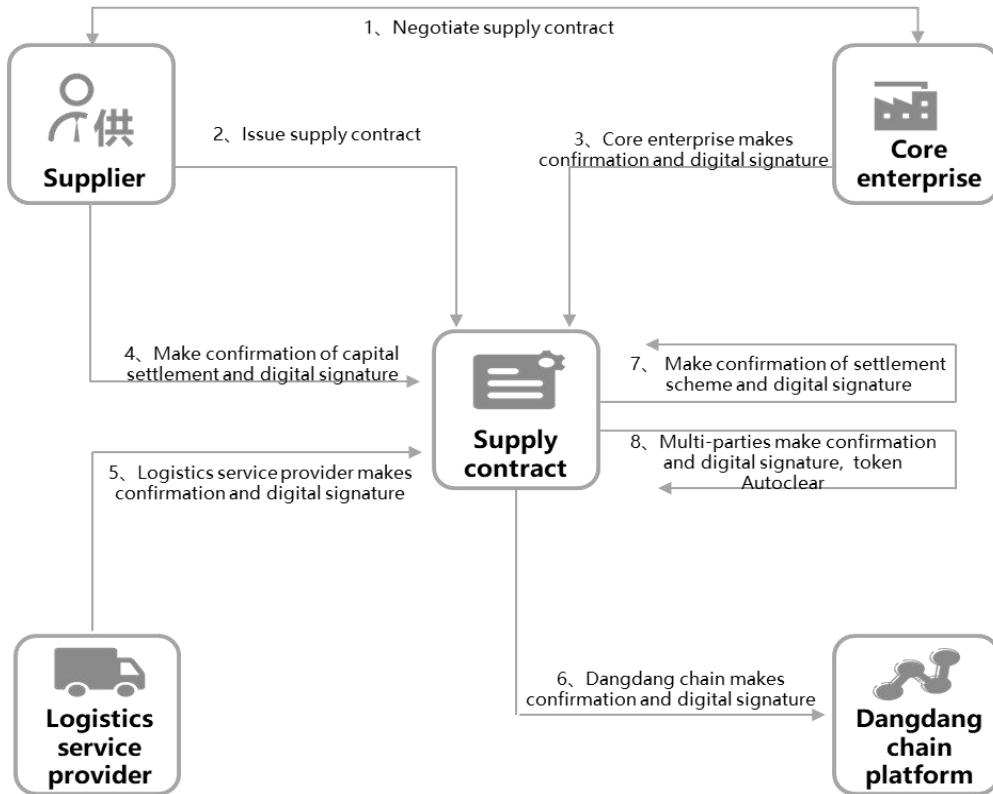


Figure 2-6 Capital Settlement Module of Dangdang Supply Chain Logistics Management Platform

When clearing the goods capitals, all parties to the transaction can also settle the transaction with the tokens of Dangdang Chain and at the end of each account period, the system will automatically deduct the corresponding quantity of tokens according to the contracts. This can significantly improve the operating efficiency of the supply chain system.

## 2.4 Scenes for Industrial Application of Dangdang Chain

### 2.4.1 Auto Industry

#### (1) Problems existing in the development of the supply chain logistics of the auto industry

**High logistics cost:** In order to raise the logistics level and save the logistics cost, enterprises of the auto industry successively introduce advanced logistics information management systems. However, the cost of investment therein is

too high, the logistics operation by enterprises within the supply chain is in an isolated status and the logistics information fails to be shared. Despite reduction of the logistics cost of individual enterprises, the logistics resources of the whole supply chain are wasted. Moreover, there are such problems as over-production, waste of warehousing space and empty pack transportation, resulting in the high logistics cost of the auto industry.

**Lack of awareness for logistics collaboration:** the upstream and downstream enterprises within the supply chain generally lack of the cooperation awareness of collaboration so that the logistics resources cannot be fully shared, with the logistics resources of some enterprises in idle or waste and the logistics resources of others, insufficient.

**Poor circulation of logistics information:** due to the poor circulation of the Logistics information in the supply chain, deviation occurs continually to the customer order information during circulation of the supply chain logistics, thereby resulting in poor management of the procurement quantity and warehoused stocks and ultimately affecting the enterprise's profit level. In addition, enterprises at different nodes of the supply chain suffer information asymmetry and even mutual concealment of information so that enterprises with business contact receive inconsistent logistics information and make inconsistent behaviors.

The logistics issues of the auto supply chain cannot be solved effectively and severely affect the development of the auto industry. Thus, enterprises of the auto industry should give the highest priority to the quest of effective solutions and strategies.

## **(2) Logistics solutions for the supply chain of the auto industry in Dangdang chain**

A supply chain enterprise alliance should be established with the complete automobile manufacturing enterprises as the core based on Dangdang Chain so



as to build up a smart platform for sharing transparent information covering the whole supply chain.

The "Three Flows in One" strategy (information flow, product flow, capital flow) in the auto supply chain system can be realized through the smart warehousing system, logistics traceability system and capital settlement system of Dangdang Chain. The transparency, opening and co-sharing of the logistics information of the auto supply chain can be fulfilled through distributed information storage of block chain.

**Guarantee the accuracy of the logistics information flowing in the supply chain:** after a downstream enterprise of the supply chain receives the product order from a customer, it should record the correct data timely into the logistics Information Service Platform System of Dangdang Supply Chain. The system will calculate through intelligent decomposition the spare parts and components for assembling the ordered products according to their process sequences and corresponding quantity. Through the distributed storage technology of block chain, enterprises on all nodes can understand at any time the overall operation of the supply chain and work out the corresponding procurement and production plans. Each item of data is affixed with a timestamp so as to ensure that these data will not be tampered.

**Elimination of the occurrence of enterprise deviation and avoidance of waste of the personnel, property and goods resources:** The logistics Information Service Platform System of Dangdang Supply Chain achieves the accurate circulation of information, minimizes occurrence of the enterprise deviations, avoids surplus procurement, excessive production and the waste of the personnel, property and goods resources due to over-demand for warehousing space and minimizes the impact from the "Bullwhip Effect".

In this way, enterprises may open and share their internal procurement plans, production programs, warehousing plans, transport plans and the

corresponding logistics resources in Dangdang Chain, so that the upstream and downstream enterprises can search for cooperation and co-sharing of the logistics resources and facilities, thereby achieving the full use of resources and enhancing the overall competitiveness of the supply chain.

**Improvement of the overall efficiency of the supply chain logistics and reduction of the operating costs:** the core enterprises may issue tokens through Dangdang Chain and the upstream and downstream enterprises within the supply chain and the logistics service providers may settle the transactions with such tokens so as to achieve the "Three Flows in One" (information flow, product flow, capital flow) operating mode, reduce the cost of reconciliation and eliminate the information asymmetry factors. In this way, the efficiency of the whole supply chain system can be greatly improved and the supply chain system is promoted into high-efficient operation.

#### **2.4.2 Food Industry**

##### **(1) Problems existing in the food supply chain logistics system**

**The food supply chain system suffers low informatization and the enterprises at different nodes fail to give full play to respective advantages:** compared with the developed countries, China is still backward in such fields as planning and construction of the food wholesales market, and informationized management and network distribution of the food commodities, and the functions of enterprises at such nodes as food processing and distribution of raw and fresh fruits and vegetables fail to be brought into full play, thereby resulting in great loss and waste of the agricultural and the sideline products.

**There are many units are the food logistics nodes but their mutual connection is not close enough:** the whole food supply chain system involves production, picking and processing of the agricultural and the sideline products, processing the raw products, production dispatching and distribution and the supermarket operation before the food products are purchased by the

consumers. Compared with the developed countries, China has fewer logistics functions in aspect of food products and insufficient integration, and lacks of innovative functions. The inter-node connection is not close enough. Moreover, processing of the food information at the nodes also affect the level of the supply chain logistics.

**Food security incidents occur frequently and the traceability problems remain difficult to solve:** the information asymmetry between governments, producers and consumers leads to frequent occurrence of the food security incidents. The food traceability system still suffers natural defects and relies on the unified central database, thereby resulting in much possibility that the information may be tampered during such links as data storage, transmission and display; many links of the food traceability system are still operated manually and the information providers may selectively shield the basic information unfavorable thereto respectively; application of the food traceability system mainly depends on the government regulation, the intentional operation of the system still exists and the rights of supervisors fail to be effectively restricted; moreover, the food traceability system can hardly protect the privacy of the producers and the consumers.

## **(2) Logistics Solutions for the Supply Chain of the Food Industry in Dangdang Chain**

In terms of logistics solutions for the supply chain of the food industry in Dangdang Chain, it is advisable to build, with focus on core enterprises of the food chain, an alliance chain linking the upstream of the industry chain to the consumers, and record the capital flow, information flow and product flow information into the block chain as to avoid intentional tampering.

It may be through the open data sharing to enhance the connection among enterprises at different nodes and improve the collaborative efficiency of the industry chain; combination with the further application of the Internet of

Things and the sensors can avoid the intentional selective supply of information and generate a basic food archive and achieve social governance of food security; anonymization of the personal information of the producers and consumers can help protect the privacy information of all parties; tokens may be issued through Dangdang Chain to achieve the high-efficiency clearing of capitals among all parties within the industry chain.

**Opening the collaboration data of the industry chain:** Through the distributed storage technology and the point-to-point transmission technology of block chain, the data generated through collaboration of the industry chain are recorded in the block chain, which can be queried by any enterprise at a node point with the block chain browser, thereby realizing the openness and transparency of data, eliminating the asymmetric information factors and improving the collaboration efficiency of the industrial chain.

**Transparent supervision of food security:** The block chain technology, Internet of Things and RF identification technology may be used to record from the sources of the food industry chain such information as quality security and distribution related to the planters, breeders, food processors, dealers and distributors and food catering enterprises into the block chain so as to form a basic food archive which cannot be tampered. The producers and consumers at each link may scan the special two-dimensional codes to understand the information of each link of the product circulation process. Supervisors may acquire relevant information from the block chain for law enforcement and obtaining evidences.

**Anonymization of the user information:** under the block chain technology, anonymization will no longer affect the level of trust. With the personal privacy of producers and consumers anonymized and in case of any food security accident, the personal information of producers and consumers is protected as to avoid occurrence of any mass disturbance.

**Digitization of capital settlement:** the core enterprises within the industry chain may issue tokens through Dangdang Chain, as can achieve the high-efficiency settlement of capitals during collaboration in the food industry chain, reduce the reconciliation cost and significantly improve the collaboration efficiency of the industry chain.

### **2.4.3 Luxury Industry**

#### **(1) The problems existing in the supply chain logistics of the luxury industry**

The supply chain logistics of the luxury industry covers all links of production and distribution. Due to the poor supervision, the consumers of luxury articles are eager to have a reliable method to verify the authenticity of the luxury articles.

The rampant fakes and inferior commodities deeply harm the interests of producers and consumers. Fakes also damage the brand images. It is reported that producers of such luxury articles as LV have to input a cost as high as 1% ~2% of their annual business income for anti-fake traceability. Meanwhile, consumers have paid prices not equivalent to the commodity values and suffered unwanted economic losses. Investigation results indicate that the global annual loss for luxury articles caused by fake goods amounts hundred billion US dollars, yet the luxury brands fall passive and weak in fighting fakes.

#### **(2) Logistics Solutions for the Supply Chain of Luxury Articles in Dangdang Chain**

Create the world's first block supply chain logistics for the articles of luxury with Dangdang Block Chain Platform as the core in combination of a series of technical solutions oriented towards the characteristics of the luxury industry.

By embedding the near field communication (NFC) smart chips, a physical connection can be established between the digital IDs of uniqueness with the

actual luxury articles and connected with such business application as internal production, logistics, warehousing, distribution, retail, supervision and settlement of the brand enterprises and Dangdang Block Chain through a series of smart contracts and standard Application Program Interfaces (API). What consumers should do is to prepare a smart phone installed with an exclusive APP and log in before they can achieve the authenticity check and obtain traceability information of all products.

It may be through Dangdang Luxury Block Supply Chain logistics Application Platform to join up all nodes of the luxury supply chain and achieve the "Three Flows in One" integration with capital flows, information flows and product flows so as to improve the collaboration efficiency of all nodes and raise the operational efficiency significantly.

### Part III Open Platform of Dangdang Chain

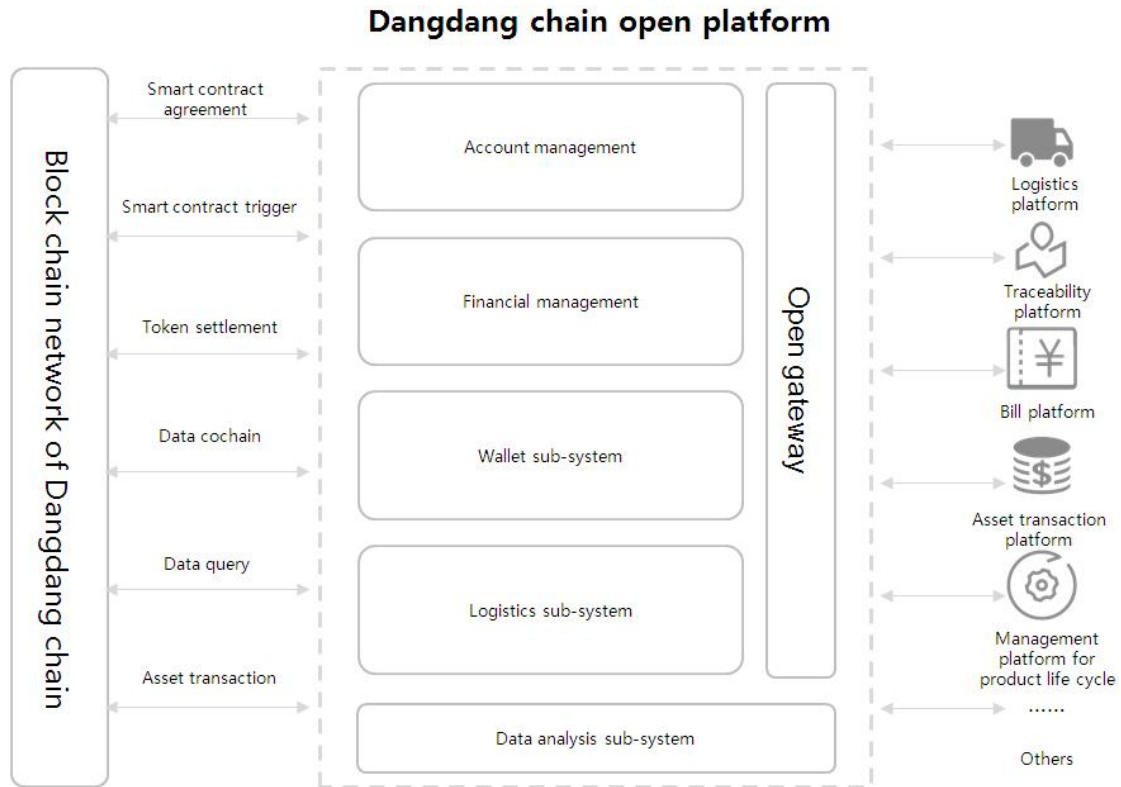


Figure 3-1 Architecture Diagram of the Open Platform of Dangdang Chain

As the core hub of Dangdang Chain, its open platform has the following functions:

- (1) Provide the access of different logistics platforms by opening the gateway. Provide services to the logistics platforms and further integrate the resources of large logistics enterprises to achieve a win-win collaboration and build a logistics industry ecosphere of better competitiveness.
- (2) Provide the access to such systems as finance and insurance by opening the gateway so as to build a more complete supply chain ecosystem;
- (3) It may be by means of Dangdang Chain to issue the smart contracts, trigger off the AutoClear of such contracts, uplink and query the logistics information and key business data and complete DANG token transfer, so as to achieve traceability of account management, raise the level of information management and improve the logistics management efficiency.

(4) Provide such basic functions as account management and pockets, manage the user information and facilitate the users' management of and settlement with their tokens.

(5) Expand the business ecology of Dangdang Chain through such business scenes as the supply chain logistics system, capital settlement system, traceability system, supply chain bill financing system, supply chain commodity life cycle tracking system, and asset digitalization system.

(6) Provide the direct access of the sensors of the Internet of things by opening the gateway, upload the data, use the big data and artificial intelligence (AI) and other related technical analysis, and provide enterprises with higher efficiency of management solutions.

(7) Provide complete data acquisition capability and data analysis capability based on the big data and AI to generate the accurate business reports, plans, business models and logistics management of supply plans and use them in management of the supply chain logistics of the core enterprises.



## **PartIV Technical Solutions**

### **4.1 Consensus Mechanism**

Dangdang Chain is developed on the base of the bottom tier of the graphene block chain.

The generic block chain platform is still endeavoring to achieve the first block chain application which can operate normally. Graphene block chains of special scenes, for example, BitSharesDecentration Exchange and Steem social media platform, have become successful application cases with the daily active users exceeding ten thousand. These two block chain applications based on the bottom tier of graphene have successfully improved the time for block confirmation to 1.5 seconds, attained to the 3300TPS transaction and achieved a user experience similar to that of the central server solution.

The software architecture of Dangdang Chain adopts the DPOS consensus algorithm. Based on this algorithm, users holding tokens in the whole network can select the block producers by the voting system, and once a producer is selected, anyone may participate in the production of the block.

It is estimated that a new block is generated every 3 seconds in Dangdang Chain. At any time, however, only one producer is authorized to generate the blocks. If no block is generated successfully within a certain time period, such block will be skipped.

In the architecture of Dangdang Chain, 21 blocks make up a cycle for generation of blocks. At the beginning of each block generation cycle, the producers of 21 blocks will be voted out. The first 20 block producers are automatically selected and the 21st block producer will be selected by the probability corresponding to the number of acquired votes. The selected producers will be mixed up by the pseudo-random number input from the block time so as to ensure the balance to the largest extent among the block producers.

Once a block producer misses a block and no block is generated during the recent 24 hours, such block producer will be deleted. This can ensure the smooth operation of network.

Under normal circumstances, DPOS block chain will not experience any bifurcation because block producers cooperate rather than compete with each other. In case of any block bifurcation, the consensus will automatically switch to the longest chain. A longer block chain with more producers has a high growth speed than a block chain with fewer producers. In addition, no block producer can generate blocks at the same time in two block chains. If a block producer is discovered as having done so, he may be out by voting. In the block chain under the maintenance of DPOS by the consensus algorithm, 100% of the block producers remain online. That is to say any transaction may, after 1.5 seconds, be written into the block chain and at the same time, such transaction may become known to all the block generation nodes. It means that a transaction can be identified within 1.5 seconds as accepted by 99.9% of the block chains.

In some abnormal situations where software bugs, Internet jams or malevolent block producers appear, the block chain may be bifurcated. In order to guarantee irreversibility of a transaction, it may not be confirmed until 15 blocks have identified it. According to the software configuration of Dangdang Chain, it normally takes 45 seconds for 15 blocks to complete the identification.

Within the 9 seconds for bifurcation, the block generation node may discover this bifurcation and prompt warning message to users. When a node observes the network and discovers 2 successive block losses, it means that this node is in the bifurcated fork of the block chain with 95% possibility. In case of 3 successive block losses, this node may be in a block chain on a bifurcated fork with 99% possibility. A forecasting model may be generated to make use of the information lost at the node, the recent participation rate and other factors to issue a rapid warning message to prompt the user about the discovered problems.

Response to such warning depends completely on the nature of the business transaction but the simplest response will be confirmed after 15/ 21, until the warning stops.

This can guarantee the consistency of the bottom layer with the application of Dangdang Chain Platform and avoid the possibility of double spending and bifurcation of block chain. This can ensure the stable operation of

DangdangChain to the greatest extent.

Dangdang Chain will also provide a series of open interfaces and data integration interfaces for third-party developers, platform operators and data suppliers for secondary development. This will enrich the DAPP application on Dangdang Chain Platform.

## **4.2 Technical Structure**

The development teams of Dangdang Chain have built three tiers for Dangdang Chain Platform through in-depth research of the bottom tier of graphene and provided the rapid development environment for application developers on Dangdang Chain Platform by means of the sound cooperative relations among the three tiers.

(1) Dangdang Chain adopts the graphene structure at the bottom tier, arranges multiple distributed nodes around the globe and builds a more complete decentralization block chain system. A block chain system without bottleneck restriction to its throughput is the core part of Dangdang Chain as well as the infrastructure supplied by Dangdang Chain. It is situated at the bottom tier of the whole Dangdang Chain System and it is the foundation tier.

(2) Above the foundation tier of Dangdang Chain, we have established the service tier, which consists of the smart contracts and various API of the core tiers as encapsulated by Dangdang Chain for the convenience of fastcall and development of various DAPP by developers.

(3) Over the service tier is the application tier of Dangdang Chain. The application tier of Dangdang Chain refers to various platform applications developed on Dangdang Chain. At present, the user experience of various applications on the block chain, such as wallet, is not ideal enough. The block chain developers pay more attention to the fulfillment of the practical functions than to the user attention and experience. However, Dangdang Chain attaches great importance to the user experience and is building a set of specifications and standards for its application tier. This will achieve a top-quality user experience.

The core foundation tier of Dangdang Chain is also the foundation for the ecological system of Dangdang Chain. The platform applications based on Dangdang Chain and different block chain systems make up an important link in the ecosphere of Dangdang Chain.

## **Part V Brief Introduction to Tokens**

### **5.1 About the Tokens**

Dangdang Chain will issue a native token called Dangdang Coin (DANG for short) as the circulation tokens of the whole business system. It is the value media in within the ecosphere and reflects the overall value of Dangdang Chain.

#### **Use value:**

Users may use Dangdang Coins to pay the logistics service charges of relevant supply chains and settle the goods fund;

Users can also use Dangdang Coins to pay the various service charges of Dangdang Supply Chain Logistics Service Platform;

The platform will use Dangdang Coins to pay the gains obtained through Dangdang Supply Chain Logistics Service Platform;

#### **Buyback:**

Dangdang Chain Foundation will spend 20% of the net proceeds of each quarter buying back the Dangdang Coins from the trading market and destroy them;

### **5.2 Issuance Mechanism for Tokens**

There are 1 billion Dangdang Coins in total and this figure is constant and no more coins will be issued;

The code for Dangdang Coin is: DANG;

The mechanism for issuance of Dangdang Coins is shown in the Table below:

**Table 5-1 The Mechanism for Issuing Dangdang Coin**

SN	Item	Proportion
1	Cornerstone investment and private placement	40%
2	Founding team	15%
3	Ecosystem construction & resource integration	20%
4	Academic research	10%
5	Commercial promotion	15%

### 5.3 Issuance Plan for Tokens

Upon completion of the private placement, namely, distribution of coins to the user wallet will be completed within a week. The raised funds will be transferred to the account of Dangdang Chain Foundation and managed hereby.

The locked position period of DANG held by teams is five years, taking a year as a cycle of five years, 20% will be released each year.

**Table 5-2 Issuance and Conversion Rules for Dangdang Coin**

Conversion plan	Raised quantity (ETH)	Conversion method	Quantity (DANG)/ pcs	Total conversion quantity
Investment institution	5000	1ETH	46000	230 million
Private placement period	5000	1ETH	34000	170 million

### 5.4 Capital Use Plan

The funds raised for the present time will be distributed as shown in the Table below:

**Table 5-3 Fund Use Plan of Dangdang Coin**

SN	Item	Proportion
1	Market promotion	30%

2	Technical R&D	30%
3	Company operation	15%
4	Legal compliance	5%
5	Emergency funds	20%

### 5.5 Profit Buyback Mechanism

At the end of each quarter, Dangdang Chain will spend 20% of the net quarterly profit in buying back Dangdang Coins at the market price from the trading market, establish an independent destroy account to buy back the Dangdang Coins for permanent destroy so that the total quantity of Dangdang Coins will reduce gradually. Dangdang Chain Foundation will publish the buyback records the quickest way possible. Any user may query such records by the block chain browser at any time as to ensure the records are open and transparent.

With the progress of buyback of DANG from the market, the circulation volume in the market reduces gradually but the value steadily rises.

## Part VI Development Program

**Mar. 2018:** the White Paper of Dangdang Supply Chain Logistics Management Platform was published;

**Mar. 2018:** the community sharing of Dangdang Chain was initiated;

**Mar. 2018:** Cornerstone investment + private placement of Dangdang Chain;

**Apr. 2018:** Dangdang Coin Online Exchange;

**Jun. 2018:** Make development of Dangdang Chain V1.0 Commercial Application;

**Jul. 2018:** Dangdang Coin remained ranked as the mainstream trading platform of the world;

**Aug. 2018:** The first generation of the near field communication smart chips and the first commercial applications were put online; cooperation in such industry as agriculture, electronics and machinery started as to expand business applications;

**Sep. 2018:** Launch in-depth collaboration with the block chain research institutes on China mainland;

**Oct. 2018:** Dangdang Chain V 2.0 went online, thus achieving the access of such industries as automobile, food and luxuries;



## Part VII Ecological Governance

### 7.1 Foundation

Dangdang Chain Foundation (hereinafter referred to as the “Foundation”) is a non-profit entity duly established in Singapore and dedicated to development and construction of Dangdang Chain, advocacy and promotion of transparent governance, promotion of the safe and harmonious development of open-source ecological communities.

The Foundation will build up sound governance structures to help manage the application and promotion of Dangdang Chain in such industry as automobile, food and luxury. The designed target of the governance structure for the Foundation mainly considers the sustainability of Dangdang Block Open Platform, validity of the strategic formulation, effectiveness of management and high efficiency of the platform economy. The decisions of the Foundation are formulated by the Executive Committee through deliberation. A professional board is set under the Foundation, for which the proper community members will be selected as its members to join the Functional Commission in the practical management and decision making.

### 7.2 Organizational Structure

The Foundation has such functional bodies as the Strategic Decision-Making Committee, Technical Review Committee, Risk Control Compliance Committee, Community Construction Committee and Public Relations Committee to deal with the routine work and special matters.

**Strategic Decision-Making Committee:** it is the supreme decision-making organ of the Foundation and responsible for review and approval of such major items as the strategic plan, annual plan and annual budget of the Foundation.

The tenure of the members in the Decision-Making Committee is two years, and the members of the initial members are members of the founding team and consultants and upon expiry of their term of office, the next term of members will be voted by the community.

**Chief Executive Officer (CEO):** the CEO is elected by voting by the

Decision-Making Committee and responsible to the Decision-Making Committee. The CEO fully performs the relevant decisions made by the Decision-Making Committee, puts into practice various specific affairs, plans and targets, and at regular intervals, reports the progress and operational results to the Decision-Making Committee.

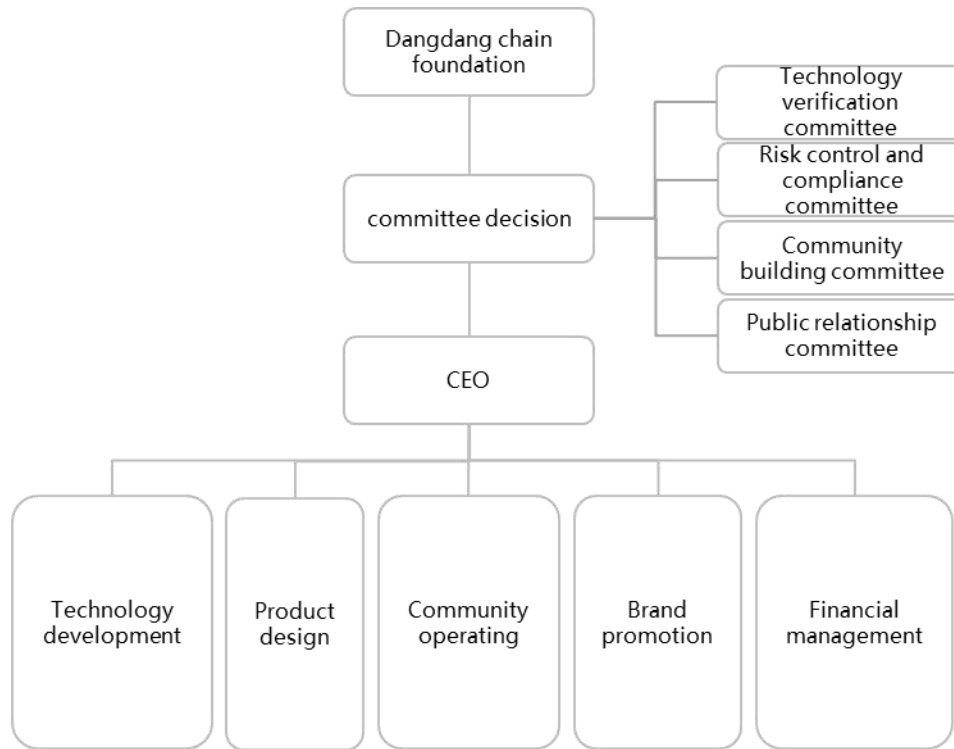


Figure 7-1 Organization Structure of Dangdang Chain Foundation

### 7.3 Rules for Governance of the Foundation

**Integration of centralized governance with distributed architecture:** the management architecture is based the centralized governance and entitles the top decision-making authority to the Decision-Making Committee so as to improve the deliberation and approval efficiency of major issues. Meanwhile, attention is paid to balance equity so that the responsible persons distributed at all nodes across the world can participate in the discussion and consultation and bring forth opinions and suggestions.

**Focusing on the ecological construction:** Within the ecological system, all decisions shall be oriented towards serving the prosperity of Dangdang Chain, promoting the value of DANG and enabling everyone that has participated in obtain sustainable earnings.

**Information transparency combined with democratic supervision:** the Foundation will make regular reports or irregular press releases through various media channels to disclose timely to users of the community the operations of the Foundation and the development and applications in different industries.

## Part VIII Development Vision

Dangdang Chain has dedicated to the technological innovation with residential communities and third-party developers jointly to create a world-influential supply chain logistics management platform. It will ultimately integrate block chain into the supply chain logistics management system of different industries, for example, automobile, food, luxury and electronics, improve the collaboration efficiency of supply chain, reduce the operating cost of businesses, and create a new business model for the growth of the global economy.

**Sustainable development:** Dangdang Chain Foundation will develop a sound governance framework to exercise scientific management of the general affairs and the affairs within the scope of privileged operation. The monitoring and supervisory functions will be introduced to join all nodes across the world in strengthening the governance of the Foundation.

**Commercial application:** Dangdang Chain Foundation will analyze and screen the perspective application industries, select the proper industries for promoting the application technologies of Dangdang Chain, facilitate development and application of the perspective enterprises in Dangdang Chain and promote the sustainable development of Dangdang Chain.

**Extensive collaboration:** Dangdang Chain Foundation and his partners will give full cooperation to the integration of multiple aspects of resources of the enterprises, business circles, technologies and governments so as to achieve the maximization of resource sharing, high-efficiency use of resources and collaborative development of the society.

Dangdang Chain Foundation will assist in the commercial application of Dangdang Chain through transparent financial management and innovative technical applications, abide by the relevant laws, rules and regulations with the high-standard integrity and the ethical business practices, and employ the professional third-party institutions to provide auditing, compliance management and supervision.

To fuel up the publicity and application of Dangdang Chain in the global supply

chain Logistics system, 85% of Dangdang Coins will be used to develop the commercial applications and market promotion and achieve the application and combination of Dangdang Chain with the entity economies. Dangdang Chain Foundation will reserve only 15% of Dangdang Coins to award the founding team.

## **Part IX Risk Warning**

As a new mode of investment, the digital asset investment bears different risks and the intended investors are expected to appraise the investment risks and the risk bearing capacity prudently.

### **9.1 Value Risks of Tokens**

No market: the tokens may not enter the tradable market when being first issued. Even if DANG is traded in the secondary market, maybe the transaction is not active and the price difference may be too large, which means the token holder may feel it hard to exit the token investment.

No value: DANG may bear no value and its negotiability can hardly be guaranteed. As the issuer of DANG, Dangdang Chain Foundation cannot ensure the marketable value, negotiability and market availability of DANG and hereby disclaims any liability therefor.

High risk: the token transaction in the secondary market bears very high speculativeness, and the trading prices of tokens may fluctuate greatly within a short period. In the worst case, tokens may be worthless. Holding tokens does not mean any ownership of the any asset of the company. Therefore, tokens are not supported by any tangible asset.

Tokens cannot be refunded: the company disclaims any obligation for refunding or compensating any token holder in any reason by any method. We cannot make any commitment to the future performance of DANG.

### **9.2 Regulatory Risk**

As the block chain is still in its initial development stage, there is no such legal document as preposition requirement, trading requirement, information disclosure requirement or locking requirement on any digital currency in the world. It remains unclear how the policies will be implemented. These factors may generate uncertain influence upon the investment in and the mobility of the project. Moreover, the block chain technology has become one of the major objects to be supervised by the major countries. If any supervision and management subject intervenes with or exerts influences upon Dangdang Chain,

for example, issuing any law or decree to restrict the use or sales of tokens, the development of Dangdang Chain may be blocked or even terminated thereby.

### **9.3 Technology Risk**

System development risk: with the continuous development such technologies as the block chain technology, it still needs to be explored and improved whether the technologies can be effectively integrated as to ensure the availability, stability and security of the whole system. Subject to the complexity of Dangdang Chain, the system development may encounter any difficulty that is hard to be predicted or conquered.

New technology risk: the block chain technology has outstanding characteristics and is changing the whole economic model but the commercial application of block chain may need time. The technology as mentioned in this White Paper is still new and has not been tested, and it may bear such risks as inability to be created or implemented. Moreover, subject to the fast updating of technologies, Dangdang Chain may encounter the risk of falling out of date within a certain period.

System congestion and vulnerability risks: the present DANG is created and distributed on the base of Ethereum (a smart contract). Subject to the congestion or vulnerability risk which may exist in the Ethereum network, it is hard to guarantee that no interruption of the creation and distribution process of DANG, no loss of any token or transfer failure will occur.

### **9.4 Project Team Risk**

There are too many projects within the field of block chain, adding much to the hot competition in the market. It takes great strength for any venture team to behave prominently on a global scale.

The development of the platform depends to a large extent on the senior executive team. Dangdang Chain will continue to employ and pull together elites of all aspects. However, such issues as brain drain, change of the core senior executives, urgent need of professionals and coordination of the newly-employed personnel may bring about major adverse impact upon the ecological

construction of Dangdang Chain.

### **9.5 Safety Risk**

Risk of private key loss: token holders store their tokens inside their digital wallets. If no backup is made of any of their corresponding private key or if any private key is lost, it is hard for the token holder to access to his wallet or complete account transfer with tokens. Moreover, if any third party obtains the access authority of such lost private key, he may steal the tokens from the holder. If such circumstance occurs, Dangdang Chain shall not assume any liability therefor.

Token theft risk: as Ethereum is the open source software and the smart contract may suffer any vulnerability subject to the attack by hackers. As a result, partial or complete loss of tokens or access authority may occur. Once such case occurs, there is no remedial measure and the token holder may suffer losses.

Moreover, there are other such risks as that the public key is not mapped to the account or the digital wallet is not compatible.



## Part X Disclaimers

This document is used for the purpose of conveying information only and shall not constitute any related opinion about the purchase or sales of DANG token. Any similar proposal or price collection shall be performed under a trustworthy clause and applicable securities laws and other relevant laws and regulations. The above information or analysis shall not constitute any investment decision or specific opinions or suggestions.

This document shall not constitute any investment suggestion, investment intent or instigation to investment in any securities form. This document shall not constitute or be understood as any behavior of providing any purchase or sales or invitation to the purchase or sales of any form of securities or any contract or commitment in any form.

Dangdang Chain hereby makes it clear that relevant intended users should expressly understand the risks on Dangdang Chain Platform. Once an investor participates in the investment, namely, he shall be deemed as having accepted the risks of this project and being willing to assume any result or subsequence therefrom. Dangdang Chain explicitly disclaims any liability for any such direct or indirect loss subject to participating in Dangdang Chain as including:

- (1) The reliability of all information as supplied in this document;
- (2) Any error subject thereto or to the user's misinterpretation of the information, any negligence or inaccurate information or any behavior caused thereby;
- (3) Any financial risk subject to user's participation in any project as recommended by Dangdang Chain;
- (4) Any loss caused by the user's transaction and any subsequence arising therefrom;

DANG is a digital token taking Dangdang Chain as one of its application scenes.

We cannot guarantee that DANG will appreciate. Its value may depreciate under certain circumstances. Given the unpredictable circumstances, the targets listed in this White Paper may change. Although our teams will dedicate all their efforts to the realization of all targets as specified in this White Paper, all individuals and teams that have purchased the DANG token shall assume the corresponding risks.

DANG token shall not be construed or deemed as a kind of ownership or controlling right. The control of any DANG token shall not represent the control of any ownership of Dangdang Chain or Dangdang Chain Application. DANG token does not empower any individual any right to participate in or control or make any decision on Dangdang Chain and Dangdang Chain Application.