VALU

Value Chain
White Book
(v.03 @Singapore)

Catalogue

Abstract

This White Book describes that VALUE chain is a technology that applies blockchain technology and CBT (Cross-Blockchain Transaction) protocol to actualize the seamless consumption connection between online & offline shop and blockchain assets. It illustrates how to make seamless connection between any real or virtual consumption place (online & offline shops) and crypto currency, and reward each consumption by providing VLC tokens, which can also be consumed on blockchain. As the first landed project connecting the blockchain to the real consumer business, the VALUE chain uses infrastructure to interconnect and interoperate physical and virtual platforms with the aim of creating a secure, stable, transparent and tamper-proof product. We strive to provide maximum convenience to our users, empower them to use as much blockchain assets as possible, and let them earn rewards for spending while complying with the highest safety standards in the ecosystem.

VALUE chain does not belong to any party. Instead, it is an open and distributed network of authentication nodes that will constrain the behavior of all participants. It uses a protocol tokens mechanism to create shares certificate blockchain in order to achieve market activity among participants. This high-performance distributed network allows transactions among various types of assets—be it an issuer backed by legal currency, or a fully decentralized blockchain token (ERC-20 and localized crypto digital currency). Any spend on the VALUE chain, regardless of which tokens are being used, users would make a “mining” on VALUE chain through CBT protocol conversion. Unlike almost any other decentralized transaction platform, the distributed network allows for directly decentralized transactions between different blockchain without the need for trusted gateway tokens. In addition, market spreads will drop significantly, and market protection will be reinforced through decentralization regulation and increased transparency in market activities. The above process ensures the correct pairing of entrusted transaction books by using smart contracts and protocol tokens. This is a new structure that uses Ethereum guarantee liquidation and Ethereum smart contract to protect historical transaction data.

Key words: sharing economy; consumption mining; blockchain; CBT; value chain; VLC; digital assets; Ethereum

1. Concept and current problem

The main function of blockchain is to solve the coordination issues of the multilateral protocols among internet participants. By ensuring, guaranteeing and implementing the transparency, we can effectively reach into multi-party consensus, which is impossible in old times. Internet participants are more willing to engage in coordination when they finds that the business is transparent, and the operation mechanism can not be changed easily. Obviously, participants can be better guaranteed that no party can forcibly collect exorbitant profits or rental by changing business processes or using information asymmetries. In other words, any single participant is more than happy to use a system whose business processes and mechanisms are not owned by any other individual participant.

There are basic coordination issues between online and offline merchants, gateways and blockchain consumers. For example, consumers at supermarkets or shops want to use crypto currency, while local legal currency can not provide benchmark to crypto currency immediately, and the crypto currency network is sometimes delayed and congested. In the past, building a payment system that was compatible between payment networks and agencies was a massive undertaking. This process is usually done by establishing an exchange that manages the transaction, that is, using the communication network of central clearing center or bank current accounts, such as FedWire, CHIPS, SWIFT bank card payment network, NSCC / DTCC, OCC and ACH. These networks serve in different roles and functions, including local / national payments, international payments, credits, stock / asset delivery and derivatives. These centralized networks allow control entities to change mechanisms at will, resulting in a substantial increase in transaction costs in terms of information costs, due diligence and the execution of contracts between all parties.

We think there is a vast rising market (such as Venmo, Alipay, etc.) of using new payment platform to subvert digital payments. These networks are significant to cross-network transactions, as they often need to undertake the indirect costs that are notable and mutually trusted between the networks and transaction facilities. Contracting parties are reluctant to use central clearing center or bank current accounts as neither side wants to be obedient to each other and the use of banking accounts requires contracts between participants. While larger networks have enough incentive to protect their own network, we believe most companies and institutions want to offer e-Wallet services that require more coordination among multiple players. These medium-sized players will be able to exchange cross-network value in order to have a sufficient impact on availability. These infrastructures and reference frontends enable the network effects to be encoded into this network so that new e-Wallet users can immediately create advanced network facilities. Blockchain allows the society to transform the world's business processes from a single-center company into an open, decentralized computing network. [1][2] VALUE (Value Chain) is a product that uses infrastructure to interconnect and interoperate physical and virtual platforms and generate incentive products.

We strive to provide our users maximum convenience, and enable them to work in a completely trusted, timely and cost-effective manner by connecting to blockchain and using the CBT protocol. By transforming these business processes traditionally housed in a single company, we may be able to provide a complete exchange method for the e-Wallet provider in a high-performance and open network, which is the CBT protocol.

2. Transaction realization method

The final status of VALUE chain is an architecture with the decentralization mechanism for e-Wallet platform that owns the value of the legal currency. As one of the core functions of this product is to realize the transaction between the e-Wallets, VALUE chain must have a [3] [4] blockchain ledger to maintain the overall fund balance for each e-Wallet service (or any user / node). This ledger must be able to record funds across multiple types of assets / commodities. However, holding a ledger is not enough for exchange. The mechanism must also allow these assets / commodities to be traded.

In order to exchange, it needs to place a command between traders in the open public market. This requires a decentralized transaction commission ledger and CBT protocol. This CBT protocol is built in the VALUE blockchain. When a matching order is validated by most verification nodes, the order will be released for further match. This process will be executed as part of each block, which creates a unilateral non-regulated, decentralized transaction where such e-Wallet platform can trade with other e-Wallet platforms without having to trust a centralized entity.

However, direct e-Wallet tokens exchange is not desirable, because it can be complicated. In the absence of a single preference, we need to use crypto currency in the mobile market. By bundling Ethereum with a smart contract [5] (or binding a Bitcoin-similar token to a clearing center), we can create a mobile market based on Ethereum or other crypto currency e-Wallet (if each pair is crossed with ETH, in the case of low currency fluctuations, the price difference will be much smaller). For activities requiring very small price difference, it may happen that some e-Wallet tokens will engage in cross use; however, due to the coordination and trust advantages associated with procedural arbitration, it will be necessary for us to use decentralized tokens and, if necessary, you can use other e-Wallet tokens. By allowing crypto digital currency to support the e-Wallet platform, all e-Wallet trading activities are fair.

This means that locked-in funds require greater liquidity, and VALUE decentralized transactions may be less desirable for low-value transaction activities (such as large amounts of micropayments). Not each payment between two different e-Wallets has to be done using a decentralized transaction. We can assume that the e-Wallet will reserve tokens of some other e-Wallets for the microfinance in the popular direction. For example, architectures such as the Lightning Network allow recording balance in e-Wallet to facilitate a chain payment on the premise

of quick payment. We allow payments across Bitcoin [7], Ethereum [8] and various other crypto currencies, which can easily be ported to the VALUE chain through the CBT protocol to record e-Wallet balances.

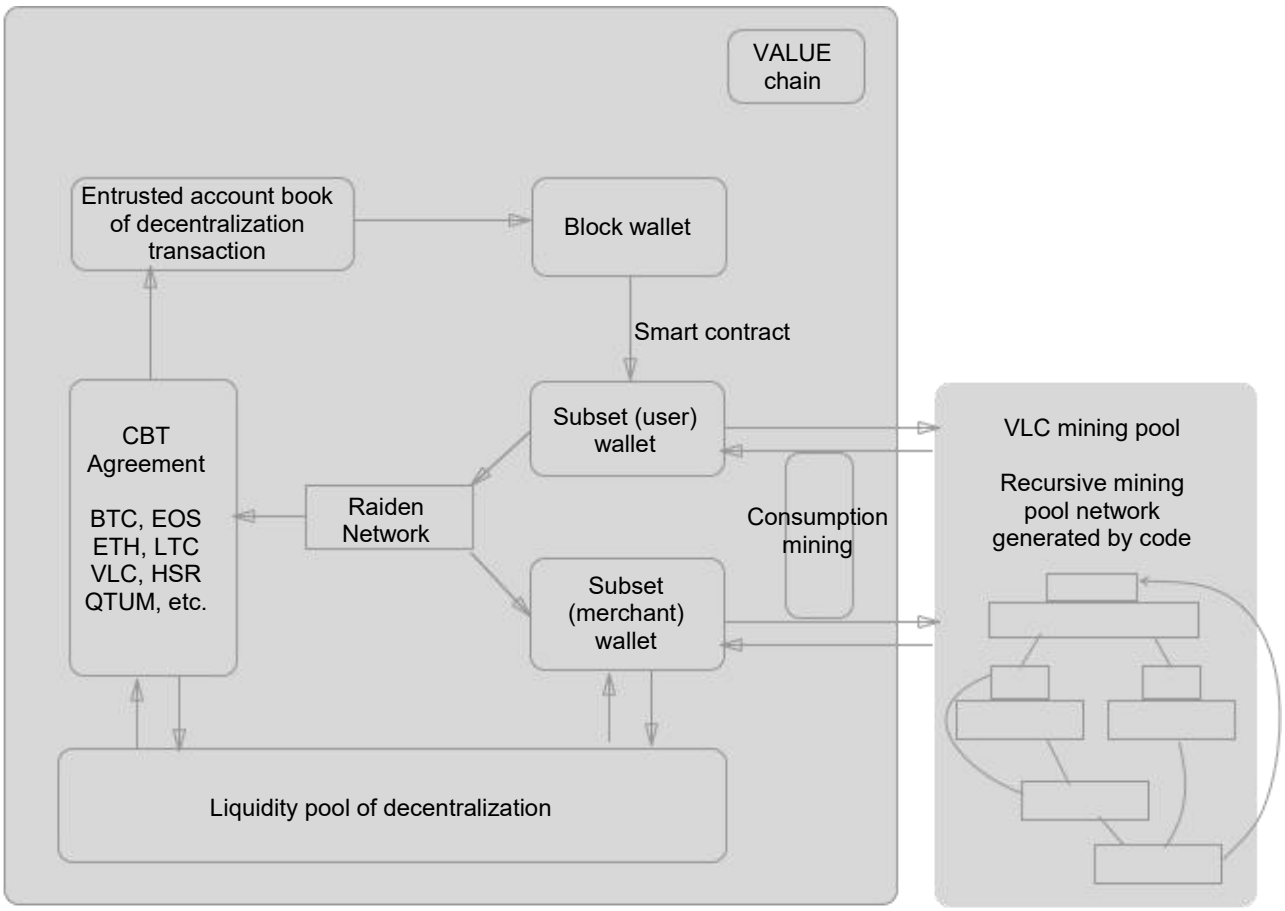
2.1 Lightning Network and decentralized liquidity pool

With the help of decentralized transactions and crypto digital currencies (such as BTC, ETH, EOS, etc.) matching, the VALUE blockchain architecture allows online or offline transactions between any e-Wallet.

An additional benefit of this architecture is that it allows a decentralized liquidity pool to be used for various cryptographic currency payment channels. For separate token payment on the blockchain, it is necessary for us to extend the underlying blockchain activities without affecting the underlying chain, so as to reduce the computational burden on the verification / mining nodes. Therefore, using a Lightning Network is a must (or a similar architecture to lightning network channel). However, the Lightning Network faces tremendous pressure on the network effects of capital, so we want to avoid centralizing liquidity pools in the hands of a single trusted entity. By using the same mechanism as decentralized clearing center, we can create a lightning network hub that does not belong to any single entity and supports more sophisticated smart contracts (eg. Ethereum, ERC-20 tokens, etc.). For currencies with simple smart contracts, any node in the network, such as a Bitcoin network, can act as a gateway to the VALUE chain pool, and cross with any other participants. This will significantly reduce many of the online activities of the VALUE chain, while encouraging decentralization.

In conjunction with the CBT protocol, we believe that we can use certainty / known consistency rules to practice the method of decentralized interest chains in mitigating the natural network effects of liquidity concentration.

Especially for Ethereum (and other blockchain with full-featured smart contract scripts), all participants can set the channel as an ETH smart contract that exercises the function of single pool of funds. The chain status of VALUE chain reflects the current balance of the participants. This will allow any participants to provide liquidity on this network, which can be allocated according to the VALUE chain consensus rules (if this structure has been successful before robust testing / validation, then we will add some restrictions at early stage to prevent the blockchain from absorbing all remaining liquidity from crypto currency). Therefore, these funds can be used for any liquidity activity on the VALUE chain and for consumer mining incentives on the VALUE chain.



3. VALUE wallet and credit card payment

The VALUE wallet is the core product that connects the VALUE chain, digital assets, CBT protocols, users and merchants, enabling consumers to spend instantly on their blockchain assets through their smart phones or debit cards. In the future, there will be access to more than 36 million global online and offline retail outlets. The VALUE wallet app is free to download on IOS and Android systems (it will come online in early or middle 2018). VALUE wallet has the following advantages:

• access to 38 million online and offline retail outlets in more than 180 countries around the world

• most reliable conversion rates and transaction fees (at no additional cost)

• decentralized wallet, trustworthy wallet app

• support for multiple digital currencies (any blockchain asset)

• support for multiple national currencies

• For each consumption, the user would make a mining at the VALUE chain and the result will be a VLC token transferred to the user, who can enjoy the added value bonuses arising from tokens increase (see the Tokens Sales section for more information)

3.1 VALUE wallet and credit card

Once the user downloads the app, it can set up the account by phone number or email account. A wallet that supports multiple digital currencies is then automatically created, hence users can consume in different digital currencies. Private keys are completely secure with industry-standard cold and hot storage solutions. In mid-2018, we will connect smart wallets directly to CBT where users can store their own private keys.

Until the last confirmed online / offline consumption, digital currency does not need to be converted into legal currency, and this conversion happens in real time. Users can choose different blockchain assets to make the payment. Furthermore, by using our smart wallet, users have the flexibility to convert blockchain assets such as Bitcoin, ETHERNET, EOS, HSR, and many other digital currencies.

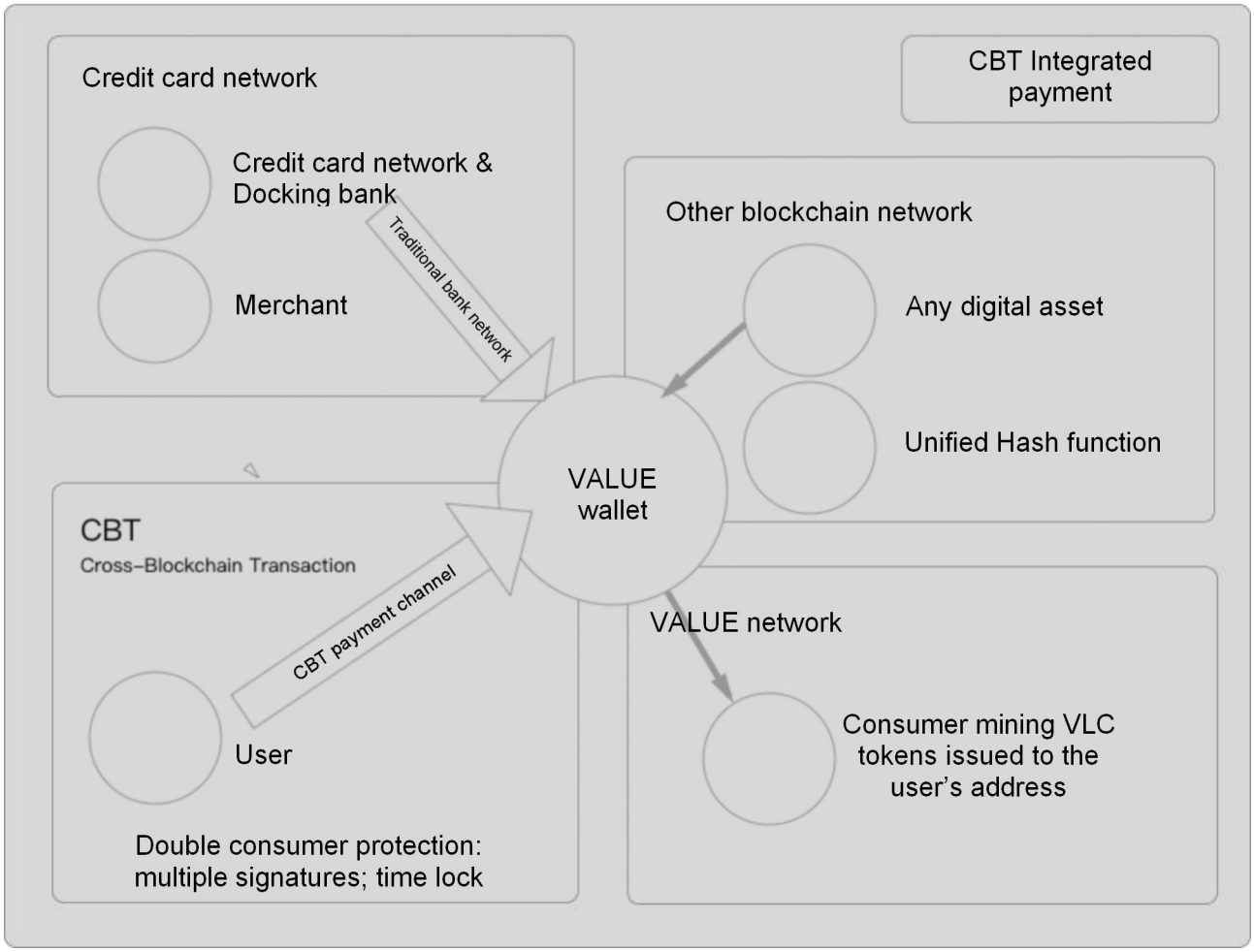
Users can directly select virtual or real debit cards through our app. For safety, we offer the user two options: to lock or not to lock the card. This makes our product safer than traditional credit or debit card.

3.2 CBT integrated payment

Payment procedure:

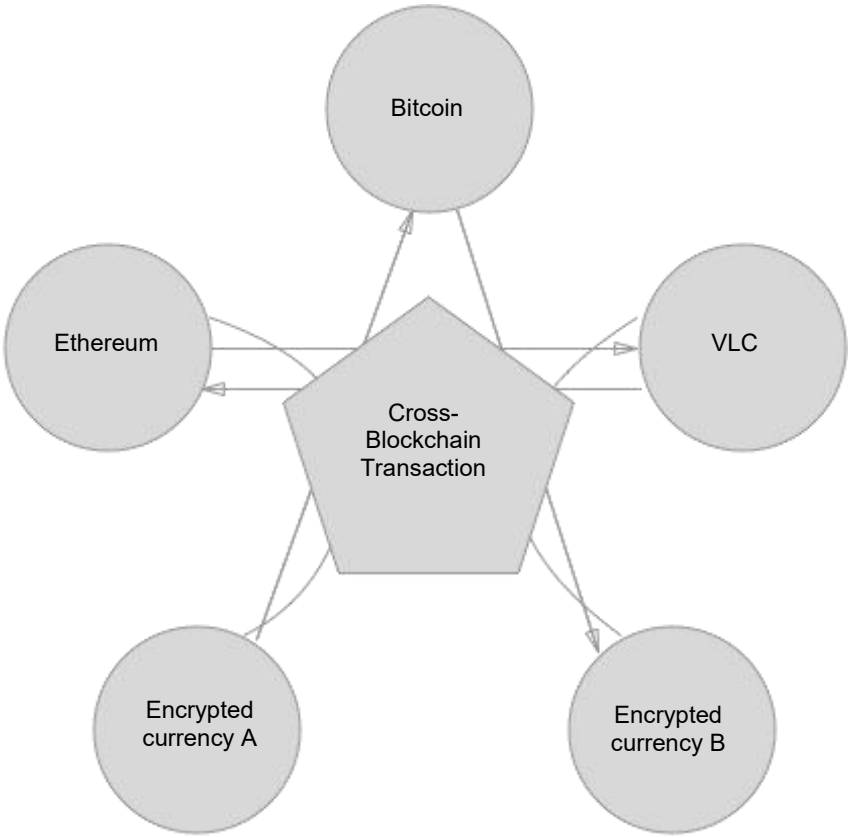
VALUE cardholders are able to buy products and services using any blockchain asset at more than 38 million retail outlets. We use the CBT payment channel to allow users to make payment requests from credit cards. Here's how to make real-time payments from your wallet to your credit card:

1. The user can use virtual or real VALUE debit card at online / offline shops
2. The credit card system will automatically send a request to our server
3. VALUE will send the payment request to the user via CBT network
4. The user can choose which blockchain assets to pay, and then send the appropriate amount to the VALUE system through VALUE wallet app
5. VALUE will approve the transaction and transfer it to the retailer upon the receipt of payment request


Credit card network
Credit card network &
Docking bank
Merchant
Traditional bank network
CBT Integrated
payment
Other blockchain network
Any digital asset
Unified Hash function
VALUE
wallet
CBT
Cross-Blockchain Transaction
CBT payment channel
User
Double consumer protection:
multiple signatures; time lock
VALUE network
Consumer mining VLC
tokens issued to the
user's address

4. Interpretation to CBT protocol

Prior to the invention of the TCP / IP protocol, the Internet was dispersed across many local networks, namely the so-called local area networks. These improve the efficiency of traditional point-to-point communications (such as letters, faxes, telephones). The real breakthrough was in 1973, when the different LANs realized they could communicate with each other using a unified Internet protocol and the Internet was born.



The basic structure of the Internet and CBT is exactly the same, and their purposes are similar: value exchange. In today's world, value exchange is very similar to the information exchange before the existence of Internet, that is, a point-to-point exchange in a closed system.

The full name of the CBT protocol is Cross-Blockchain Transaction. It is a protocol based on the VALUE chain that aims to convert any asset on the block.

VALUE-chain-based CBT protocol runs this core protocol with four features:

- Dual consumer protection
- Multi-signature
- Time lock
- Uniform hash function

Below we will respectively elaborate on these features of the CBT protocol.

Double consumer protection:

Dual consumption protection is the primary significance of the blockchain. In technical jargon, this means that two valid transactions that consume the same transaction output (UTXO) will have conflicts, and only one will be confirmed on the network. Account-based languages (such as Ethereum) allow the same amount to be consumed multiple times from the same address, and there are often other ways to prevent dual consumption.

Multiple signatures:

Multi-signature is a very old concept, which allows a comparison among multiple payment ledgers that need to be shared by signers. Multi-signature allows the enforcement of any rules that require joint-signature. CBT adopts two multi-signatures, both of the signers must sign the transaction to as to be accepted by the network. Multi-signature transaction is a must for VALUE chain payment channel.

Time lock:

Time lock is the simple need to lock in funds to a future date. Blockchain possesses two different types of time locks: relative and absolute time locks. The absolute time lock will lock the transaction output until a specific time in the future. The relative time lock will lock the transaction output related to the time the transaction was confirmed. CBT uses relative time locks because they allows for the opening of payment channels indefinitely.

Uniform hash function:

To be able to cross multiple blocks, we need to use the same hash function, provided by the smart signing language for each blockchain. Standard hash functions like the SHA256 hash function are usually available and perfectly suited for this purpose.

5. VLC (Value Currency) tokens and consumption mining mechanism

To make the ecosystem of VALUE work more perfectly, the VALUE team issues VLC tokens to reward all consumers who contribute to the VALUE ecosystem. VLC token is the code name of tokens on VALUE chain, and VLC tokens are created based on Ethereum smart contracts. Ethereum is an open-source, publicly-maintained distributed underlying computer system based on blockchain technology that provides decentralized turing-complete virtual machines to support the operation of smart contracts. As the most mature platform for smart contracts in the market, Ethereum has very active community and its foundation runs well. Therefore, VALUE founding team decided to adopt Ethereum to build cross-chain consumption and multi-asset swap consumption on blockchain application, so that we can focus more on business development and ecological promotion, and avoid excessive investment in the early stage to develop the underlying blockchain technology.

We implemented a number of characteristics based on Ethereum to support the operation of VLC, including “standardized asset registration” via smart contracts.

5.1 Token Contract Standard

ERC20 Token Standard is the account contract standard acknowledged by Ethereum community. Bancor protocol, Status, Tenx, BAT, ugChain and other well-known token contracts applied to Ethereum comply with the standard, part of applications can be found at https://etherscan.io/tokens, and the token contracts complying with the standard can be searched at https://etherscan.io/token-search
With a large number of well-known applications based on ERC20 constructing token contracts, VLC uses ERC20 to avoid potential risks on contractual layer.

5.2 Standardized asset registration

The VALUE team will register any asset consumed on the VALUE chain with VLC in a unified way across the blockchain to ensure that all data is made public, transparent and not tampered with once the asset is validated through the smart contract. Therefore, the data used for VLC sharing assets is completely reliable, without the appearance of false assets or transactions.

5.3 VLC Consumption mining algorithm: PoV Mining difficulty algorithm

As a completely new algorithm, the PoV(Proof of Value) Consensus algorithm originated by VALUE team motivates users' contributions to consumption. Mining difficulty is the measured value of consumption contribution with the output of per VLC. When digging out more tokens, the greater the degree of difficulty, the higher the market value of the output VLC, that is to say, mining difficulty will change as the difficulty coefficient of total output changes. Under the PoV consensus mechanism, the following algorithm is applicable to the consumption mining difficulty:

$$\text{Mining difficulty} = 10\ (\text{Benchmark difficulty}) \times \frac{1}{(1 - \text{Percentage of excavated})^2}\ (\text{Difficulty coefficient})$$

Among which, the benchmark degree of difficulty = 10 blocks; update cycle: once every 30 minutes. Assuming that the total consumption amount on the VALUE chain is V, the PoV consumption mining income is:

$$PoV_{\text{Mining income}} = \frac{V}{\text{Mining difficulty}}$$

Therefore, the more you spend on the VALUE chain, the greater the income will be.

5.4 Comparison between consumption mining PoV and bitcoin mining PoW

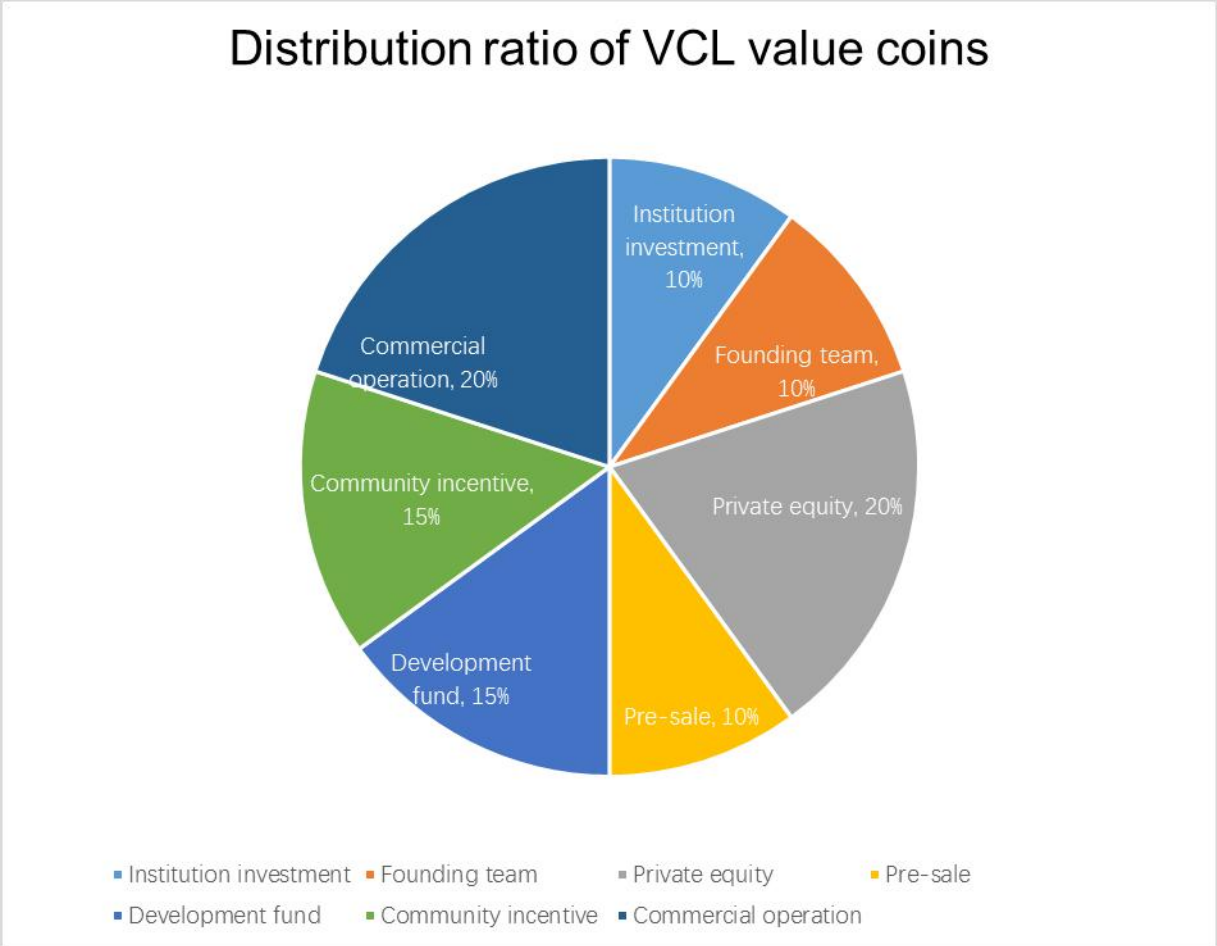
The three basic elements of a blockchain network include computing, storage and network. The PoW algorithm is an economic incentive to calculate the contribution of users. PoV is the economic incentive for consumers to spend on the VALUE network, contributing to maintaining the long-term safety, stable and reliable operation of VALUE. It will play an irreplaceable role in the healthy development of VALUE ecology.

Table Comparison between PoV and PoW Consensus algorithm

Comparison	PoV-VLC value coin	PoW-bitcoin
The main elements of mining	Online / offline consumption	GPU (+CPU) computing
Mining costs	Zero cost	High
Economic model	The limited total amount	The limited total amount
Mining difficulty	Production is related to market demand from easy to difficult	Production cycle can be calculated from easy to difficult
Whether resources are wasted	No, resources are used reasonably. VLC can be reinvested in network use	Yes, extremely wasted.
Verifying/billing node number	Many	Many
Consensus cycle is reached	Short, suitable for commercial use	Long, not suitable for commercial use
Decentralization	Yes	Yes
Incentive ways	VLC value coin	bitcoin
Anti-monopoly	Yes	Yes
Support side-chain applications	Yes	No

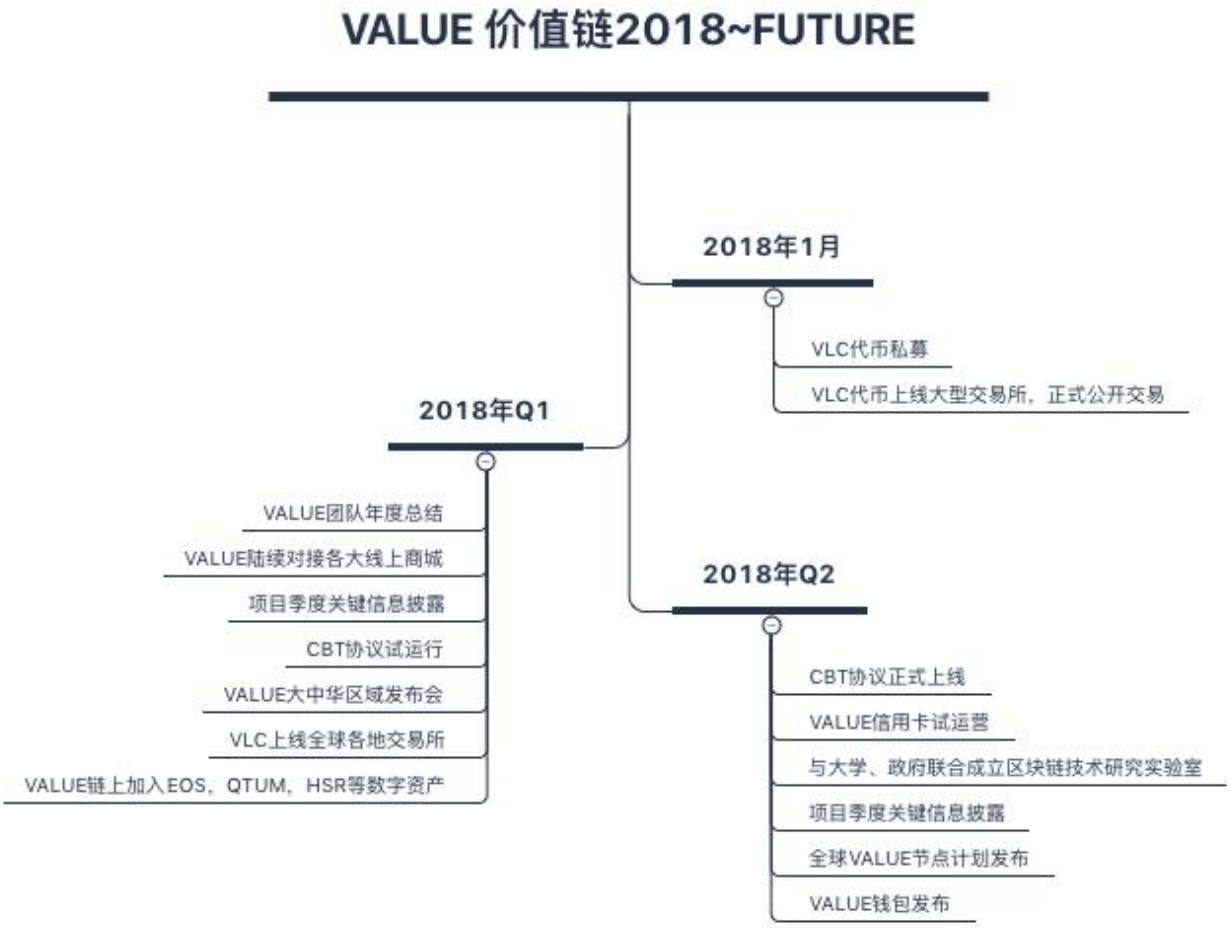
5.5 Summary of Token Structure

Distribution ratio of VLC value coins		
Total issue of 300,000,000 coins (limited edition, never additional)		
	ratio	**numbers**
Institution investment	10%	30000000
Founding team	10%	30000000
Private equity	20%	60000000
Pre-sale	10%	30000000
Development Fund	15%	45000000
Community incentive	15%	45000000
Commercial operation	20%	60000000
Total amount	100%	300000000



6. Progress and plan

6.1 Future plan



7. About the Team

7.1 R & D & Operation Team

Peter Sha
Date of Birth: 12 November 1979

CEO of TOP10 Singapore Travel Company (HQ)
CEO of Singapore Fushi Technology Fund Company

Many years' rich experience in mass consumption and financial investment; excellent understanding of industry trends.
One of the early investors of blockchain, with profound insight into the blockchain economy.
One of the early developers of the tourism blockchain.

Educational background:
Bachelor degree in University of London
Major: Finance and financial investment

Lynn Luo
Date of Birth: 14 August 1981

Director of important customer bidding for the Southeast Asia region of UTi, a logistics company entitled as World's Top500 and listed on NASDAQ
Director of Sales & Market Operation Department, Top 10 Singapore Travel Company (HQ)
COO of Singapore Fushi Technology Fund Company
One of the early developers of the tourism blockchain
One of the early investors of digital currencies

Director of Sales & Market Operation Department
Brighten sands holidays Pte. Ltd. – Singapore
General agent of Shanghai Lvmama (a well-known large OTA travel agency in China) in Southeast Asia region
Director of global important customer bidding
UTi Worldwide Logistic company

Educational background:
Graduated from University of Electronic Science and Technology of China

Liu Jianming

Leng Yue. Dr. Liu Jianming has multiple years' work experience in Silicon Valley. He used to serve as director of Deep Learning and Artificial Intelligence R & D department, and director of Blockchain R & D department. Full stack developer in VLSI Design, AI and consumer electronics algorithms. Rich industry experience in cryptocurrency and blockchain sectors. He founded the ZCCoin and BiChai blockchain wallet.

Educational background:
Master in Tsinghua University; Doctor in University of Missouri

King Jin

The value chain Value head of the Asia Pacific Region
The founder of the million Club of value chain
International professional certification trainer
Executive director of science and technology innovation driven business school
Deputy director of public works China branch
Jin Qian Cci Capital Ltd Chairman

Born in 1983, he graduated from the Department of computer science of Anhui University. After his work, he continued to attack Tsinghua University MBA and Peking University EMBA, and visited Japan, South Korea, Singapore, Malaysia and Thailand and other Southeast Asian countries to study, investigate and communicate. As the president of Jin Qian Cci Capital Ltd, he won the ten largest network marketing planner in China in 2009, the author of the global best-selling book "the miracle of life". After his contact with bitcoin in 2011, he became crazy about block chain technology and numeral numeral, and became the early investor and community promoter of bitcoin in 2012. As an angel investor and participating in the investment of a number of Internet Co, Jin Qian investment management company was formally established in 2015, which is mainly invested in block chain technology related enterprises. At the same time, he found the sacred mission of "helping the enterprise to be brilliant and helping the personal achievement dream", and made clear the goal of "helping the 100 million people in the world to realize their dreams and surpass the dream", and to make the "10 billion charitable donation to the society".

7.2 Strategic partner

8. Conclusion

With the popularity of e-wallet platform, island network is becoming a problem. This situation creates a unique opportunity for legal tokens to actualize decentralization web transactions and increase the cross compatibility of crypto digital currency. In order to establish such decentralization transaction network, it needs not only a blockchain that fits well with the issued tokens to be paid and traded, but also a decentralization transaction center that supports these activities, as well as an incentive to develop an efficient flow pool. Eventually, these issued tokens may be getting closer and closer to being totally decentralized (including the keys owned by the user), maximizing the agent right of individual. We can do this by creating transparency in business processes of payment transaction, and by removing ownership of the business process from a single trusted person. VALUE hopes that in the future, every single consuption will be able to generate greater value.

8.1 Acknowledgement

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8.2 License

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