

TOS COIN

Business Model

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Greeting

Preface

We deeply appreciate our supporters who have waited for the release of TOS coin and the whitepaper for a long time. The presentation of this whitepaper has been delayed although the TOS coin was developed. The delay was inevitable because we needed to maintain the security of our principle. The principle is to establish a commercial payment system by utilizing a digital currency, for the first time in history. Further explanation about this principle will be introduced in the text.

Before the official registration of the patent for our BM(Business Method) which is to establish a payment system that allows customers to buy products or exchange services in real-time transaction by using a blockchain-based digital currency, we could not make a public announcement about it. But now, we have officially registered the patent for our BM and we are very happy to present this paper.

Once again, we truly thank our supporters for waiting for us and giving us a great support.

Business Outline

Data. The amount of mined coins and how the coins were used



The amount of
mined coins
1.8 Billion

For ablut 80 years

**Total scheduled
amount of issue
6 Billion**

► **500 Million**

For Pre-sale and ICO

- Payment system, iOS wallet and ElectrumX server, Hardware wallet etc.
- Development and operating costs of essential elements for TOS's system.



► **300 Million**

For operating costs for introducing and establishing payment system



► **1 Billion**




Deposit money for more stable payment system operation

- The deposit money cannot be used except for the purpose written below.**
- We keep a certain amount of TOS coin as payment reserves so that we can pay to our customers whenever they ask TOSP exchange and prepare for possible financial accidents, as commercial banks do.



Business Outline

1. Specification

| Features |  BitCoin |  Ethereum |  TOS Coin |
|-------------------------|---|--|--|
| Core feature | Financial Transactions | Smart Contracts | Payment Transaction |
| Coin limit | 21M | - | 6B |
| Decision Making Process | Non-systematic | Non-systematic | Non-systematic |
| Consensus Algorithm | Proof of work | Proof of work | Proof of work |
| Algorithm | Sha256 | Ethash | Script |
| Mean block time | 10 min | 15 sec | 1 min <i>4 sec for payment</i> |
| Transaction Speed | 7tx/sec | 25tx/sec | 70tx/sec <i>1000tx/sec for payment</i> |
| Creation date | 2009 | 2013 | 2017 |

[Figure 1] TOS coin specification compared with Bitcoin, Ethereum

TOS coin was developed in the form of an Alternative coin, using script algorithm. A block is created every 1 minute and each block is able to process 420 transactions. Figure 1 shows the specification of TOS coin, compared to Bitcoin and Ethereum. (Figure 1).

A large amount of TOS coin with mining limit

Those 3 coins all take POW as a mining type. The amount of minable TOS coin is limited at 6 billion, larger than that of Bitcoin which is 21 million. The limit of the minable amount of TOS coin is higher because it needs to be spent for developing and operating essential elements of the coin as a means of payment, for business purposes such as customer promotion and for reserve in case of risk compensation. Detailed information about the use of coin will be described in the following chapter 'Development background'.



Business Outline

Fast data processing in real time

TOS coin's performance is 10 times greater than Bitcoin both in terms of mean block time and transaction speed. (Mean block time is the average time per block creation. The shorter the mean block time is, the faster the transaction is authorized. Transaction speed is the number of handled transaction per second. The larger the transaction speed is, the faster the transaction is handled). In other words, TOS coin is developed to be used as a means of payment in real payment system that requires fast data processing in real-time.

Both mean block time and transaction speed show two different types of data. Both of them show TOS coin data in the upper part and TOSP (Payable TOS) coin data in the lower part which will be explained later.

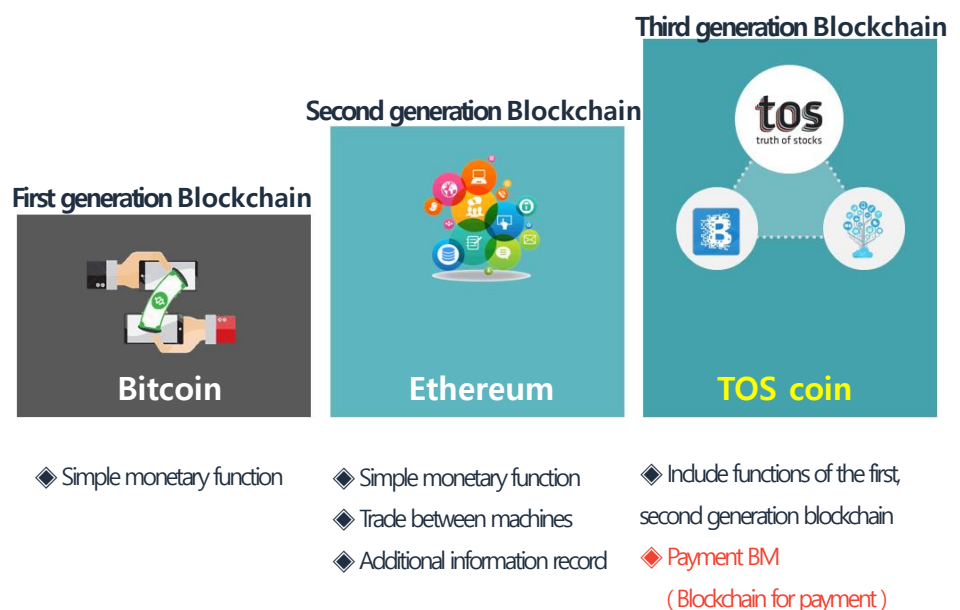
TOS payment system applies TOSP(Payable TOS) coin in a separate manner in a private blockchain system which is linked to TOS, in order to facilitate transaction and authorization process at the touchpoint of the payment system.

This TOSP coin is the core factor that makes TOS a best suited digital currency for future payment systems. It will be explained in detail in the following chapter 'Development background'.

2. Development background

Existing digital currencies failing to become a means of payment

As shown in Figure 1, Bitcoin is the first digital currency that was launched in 2009. 4 years later, the 2nd generation digital currency Ethereum was launched applying the concept of IoT (Internet of Things) and business contract, by putting not only data but other functions in the block chain. 4 years later, a 3rd generation digital currency 'TOS coin' that can be used in real life like an actual currency has emerged.





Business Outline

For the last 8 years, however, a variety of digital currencies have emerged but they have failed to play a role as an actual currency. In order for a digital currency to function like an actual currency, it must be used as a means of payment in commercial transaction, making it available for customers to purchase or exchange a product or a service as they do using a credit card or a debit card. If the value of a digital currency is only recognized in digital coin exchanges and not valued as a means of payment in the market, it cannot be called as a currency.

A currency that cannot become a means of payment in real life is no longer current and cannot be deemed as a currency. The same applies to salt, for example. We no longer call salt as a 'currency', although it was paid to soldiers as wages in ancient Rome.

There was a news report that some countries in Northern Europe are planning to use Bitcoin as a means of payment. However, Bitcoin is not an attractive means of payment since it must go through 6 POW (proof of work) in order for the transaction to be fully authorized. Each block would take 10 minutes, taking up a huge amount of time in total. This means that when you buy a cup of coffee and pay for it using Bitcoin, you have to wait for transaction authorization after drinking the coffee, and even after the cup you used is washed clean.

Then, why the numerous alternative coins that overcame weaknesses of Bitcoin cannot be used as a means of payment?

What is also required to be accepted as a means of payment is 'Value Stability'.

The transaction speed of Ethereum is 3 times faster, and its average block creation time is 40 times faster than Bitcoin. Then, why can't Ethereum be used as a means of payment in real life?

Let's look at an example of a simple payment.

When customers pay with ETH (Ethereum) at a store, the owner of the store would want to sell all ETHs earned during the day to the exchange, for daily calculation. The value of ETH, however, drops to less than \$200 per unit at the selling point, compared to \$300 per unit at its peak business hours. Then, the owner of the store would not be able to secure operation capital for the next day, and would no longer want to deal with digital currencies. Of course, the opposite can happen and the owner may get a marginal profit when the price of the digital currency soars at the selling point compared to the purchasing point. But still, a means of payment that fluctuates easily is not attractive to business owners.



Business Outline

TOS payment system through private coin with unchangeable values

TOS coin may face volatility if it is introduced in the market exchange, just as existing digital currencies. That is why TOS payment system has adopted TOSP(Payable TOS) coin which is an inner private coin with unchangeable value in the whole payment process of “payment → settlement → purchase → exchange (selling)”. By adopting TOSP, the value of TOS will be maintained at the same level at the selling and purchasing point.

TOSP coin is only used in the internal process of TOS payment system, not traded in exchanges. Thus, TOSP coin is free from volatility that may occur in transactions. Customers can purchase TOSP coin to use TOS payment system only in designated TOS exchanges and business owners can convert TOSP to TOS coin or to cash only in designated TOS exchanges.

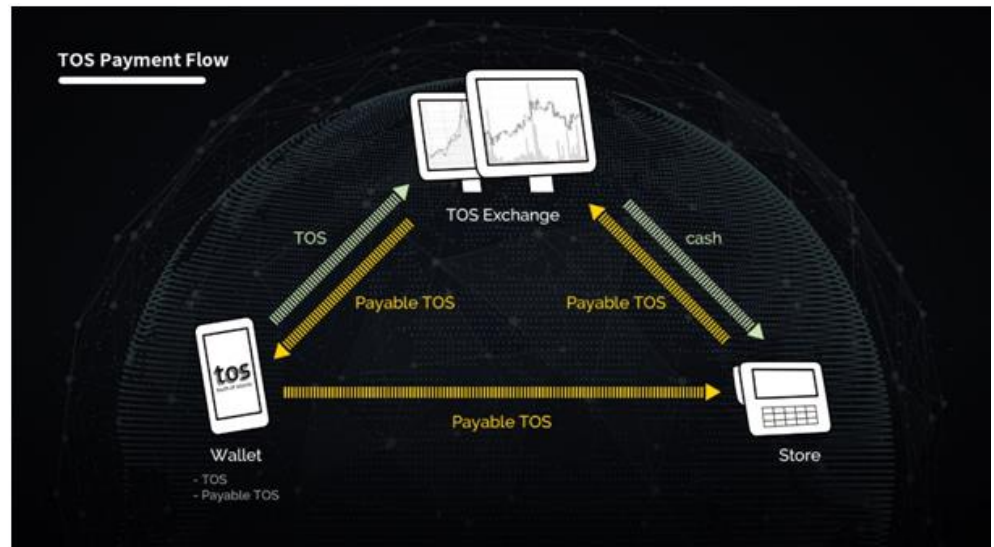
Bold Italic part of the ‘figure 1’ shows mean block time and transaction speed of TOSP coin. As shown in the table, TOSP is an optimized private coin and a fast and stable means of payment. TOSP is not traded in the market so there is no risk of being exposed to hackers. Thus, using TOSP coin in commercial transactions will be safe both for customers and business owners.

Technical instructions and diagrams shown in the next chapter describe TOS payment system more in detail.

Payment system outline

TOS Payment System

1. Payment flow



TOS payment system consists of TOS wallet, a store and TOS exchange. Users can convert TOS in their TOS wallet to TOSP which then can be used in commercial transaction. of change and then the TOSP will be sent to the user's wallet. Users can choose how much TOS they want to convert. Then the TOS will be sent to TOS exchange and will be converted to TOSP based on the market price at the point

The price of TOSP is fixed. For example, 1 TOSP equals to \$1 in the U.S., and 1 TOSP equals to ¥ 1 in Japan. However, the price of TOS is not fixed and can be traded in all countries in the world.

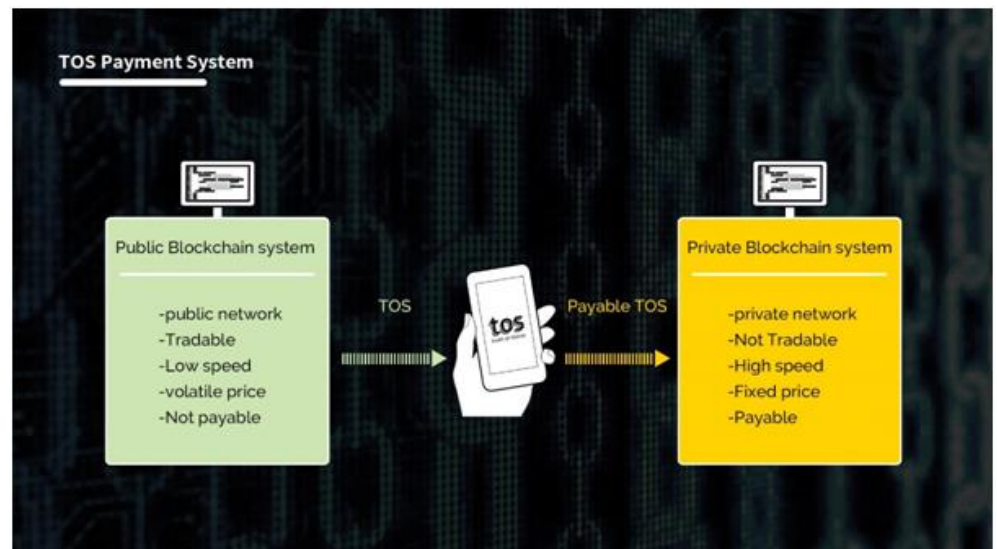
While trading TOS is available everywhere in the world, trading TOSP is only available in a TOSP exchange of a certain country. This means that you can use TOSP issued in the U.S only in the U.S TOSP exchange. The price of TOS fluctuates based on the market price so the price of TOSP will be the same as the TOS price in the market at the point of change. For example, if a user converts 1 TOS to TOSP when the price of 1 TOS in the U.S market is \$15.5, then the user will receive 15.5 TOSP

If a user pays with TOSP in a store, then the TOSP that the user needs to pay is sent to the wallet of the store and the payment is completed. When the store calculates its revenue, it simply needs to send TOSP to the TOSP exchange and convert it to cash.

Payment system outline

TOS Payment System

2. Payment system composition



TOS payment system consists of public block-chain, and private block-chain. TOS coins flow in the public block-chain system. The ledger is disclosed and TOS coins can be traded in exchanges. The price of TOS may fluctuate in exchanges. The transaction speed is relatively slow and cannot be used for real payment system.

Payable TOSP coins flow in the private block-chain. TOSP has fast transaction speed and a fixed value. Thus, it can be used for real payment system. Unlike TOS, TOSP is not traded in exchanges and only can be converted to cash. TOSP is not minable because individuals cannot join the network and the ledger is not disclosed.

Public block-chain is decentralized, minable through POW and the ledger is disclosed. It takes 1 minute for a single block to be created, and its transaction speed is from 1 minute to 5 minutes (may take longer based on the network circumstances). In contrast, private block-chain is centralized, not minable and the ledger is not disclosed. It takes 1 second for a single block to be created, and its transaction speed is from 2 to 5 seconds (may take longer based on the network circumstance).

TOS payment system has strengths in terms of payment process, since it utilizes transparency and openness of public blockchain while applying fast speed of private blockchain.

Payment system outline

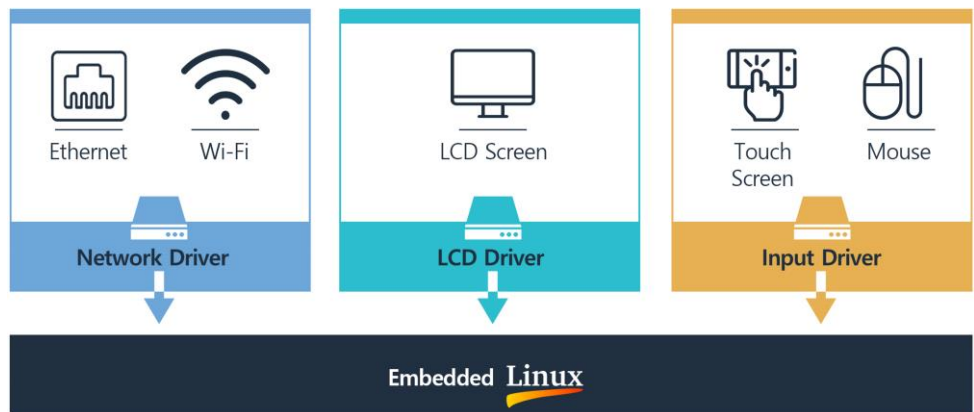
TOS Payment System

3. Off Line payment process

Console



CONSOLE ARCHITECTURE



The console is run on the embedded Linux, and its supporting network is Ethernet or Wi-Fi. The size of display is 7 or 10 inches. Touch screen or a mouse can be used as an input driver. Employees at offline stores can check whether a payment is completed in the console for payment. They can provide customers with a QR code that contains information about payable amount of coins and wallet address of the store.

NFC QR Code Panel

If it is difficult for stores to operate the system with a console, they can use a panel that displays NFC module or QR code stickers.

NFC module and QR code have wallet address of the store. Users can find out the wallet address by scanning NFC or QR code and send the payable amount.

Stores may have trouble immediately checking whether customers paid the amount of coins they ought to pay.



Payment system outline

TOS Payment System

Smartphone or Tablet PC

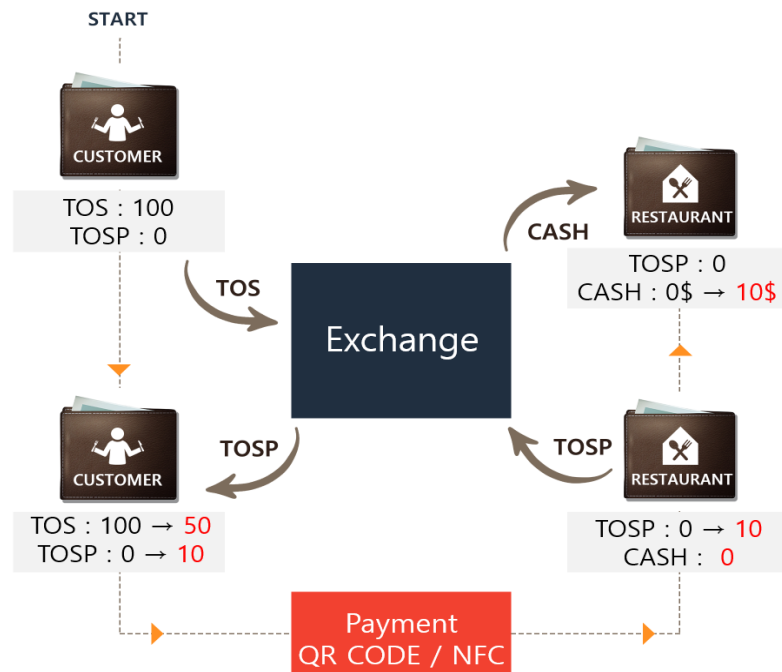


Applications for smartphones or tablet PCs are provided. The applications provide functions for creating QR code that displays wallet address of the store and the payable amount of coins. Stores will be able to use this payment system with their smartphones.

Payment system example

TOS Payment Example

1. Restaurant



Users can convert a certain amount of TOS in their wallet to TOSP. The price of TOSP will be set based on the TOS price in the market. (1 TOS is assumed to be \$0.2 in the example.)

TOS will be converted to TOSP in 5 to 10 minutes. Then the user can pay with TOSP through QR code or smartphones in the store. The value of 1 TOSP is fixed at \$1.
(The value of TOSP differs by country but is the same within a country.)

If a customer needs to pay for a \$10 meal, then he or she can pay 10 TOSP to the restaurant. Then the restaurant can convert the 10 TOSP into \$10 in TOSP exchanges.

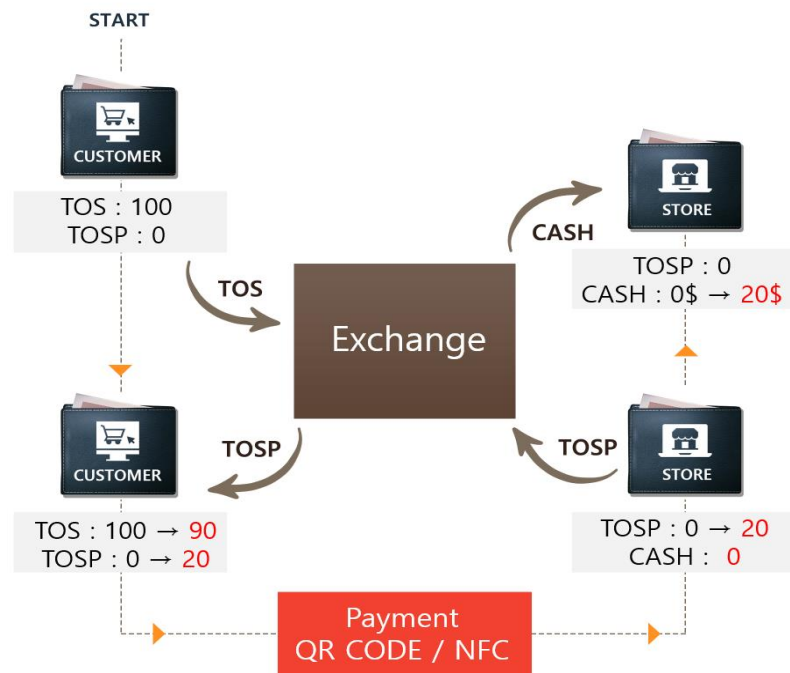
Conversion from TOSP to cash is available in exchanges located in each country and the exchange rate is 1:1.
(0.1% ~ 1% commission may occur in this process, based on the exchange policies.)

Stores can use QR code or NFC for payment. They can also use their own smartphone or tablet PC with TOS application. After a customer pays his/her meal with TOSP, store owners can check the payment within 5 seconds on their smartphones or tablet PCs.

Payment system example

TOS Payment Example

2. Online stores



Users can convert the payable amount of TOS to TOSP based on the market price of TOS. (1 TOS is assumed to be \$2 in the example.)

When users want to purchase products online, they need to check the payment wallet address on the online payment page. Then they can send the payable amount of TOSP from their wallet to the payment wallet address. The value of 1 TOSP is fixed at \$1. (The value of TOSP differs by country but is the same within a country.)

If a user needs to pay \$20 for a product, he or she can pay 20 TOSP to the online store. The online store can use QR code to display its wallet address. After receiving the TOSP, the store can convert 20 TOSP to \$20 in TOSP exchanges.

Conversion from TOSP to cash is available in exchanges located in each country and the exchange rate is 1:1. (0.1% ~ 1% commission may occur in this process, based on the exchange policies.)

Once a customer pays with TOSP and the payable amount of TOSP is sent to the online store, then the store can check the payment through API (Application Programming Interface) provided by TOSP exchanges within 5 seconds. Online stores must add the API to the payment system for automatic payment.



Payment expansion plan

Payment Expansion Plan

1. How to attract users/customers

Provide TOSP for those who register for TOS payment member.

If a user registers to be a TOS payment member during a promotion period, a small amount of TOSP is provided.

For example, for new members who completed user authentication during a promotion period in Japan, 100 TOSP is provided.

(The amount of TOSP is only an example and it may differ by country depending on expected costs.)

As explained above, users can use the TOSP they received as cash.

Provide discount when users make payment with TOSP

Users can get a discount during a promotion period. If a user needs to pay 100 TOSP, then at the point of payment, only 90 TOSP is paid from the user's wallet and the TOSP exchange pays the rest 10 TOSP to the store. Thus, the store can receive 100 TOSP.

Promotions may be held in the early stage of opening of the payment system and the promotion period may differ by exchange.

(The scale of support also may differ by country depending on expected costs.)

2. How to expand partnership with stores

Provide discount or exemption of commission in a certain period.

In general, credit card companies impose 1.5~5% for payment commission. However, TOS payment system is available 24 hours with less than 1% of commission.

Exchanges may provide discount or exemption of commission in order to attract more partners. When or how to hold these events may differ by country depending on expected costs.