

DION

Hybrid Decentralized Blockchain Reward System Connected to the Existing Point Services: DION

¹Jacob Hyeon and ¹Sung Min Kim
¹DIONPAY
DION WHITE PAPER (English Ver 1.5)

“The best way to predict the future is to invent it”
(Alan Kay, computer scientist pioneering on graphical user interface design)

www.dionpay.com

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Abstract

In this white paper, DionCoin has been proposed and demonstrated as a cryptocurrency in order to use in hybrid decentralized blockchain reward system connected to the existing point services. In order to achieve this purpose, DionCoin has been introduced a combination concept between real economic model and cryptocurrency ecosystems. By using this concept, DionCoin is used for the existing point services such as purchase point, mileage and game points. Dionpay team, which developed DionCoin, has created a novel business ecosystem model between the existing mileage marketing strategies and the cryptocurrency exchange market (Patent application number 10-2019-0003350 (METHOD FOR PROVIDING MILEAGE USING CRYPTOCURRENCY [1])). The liquidity of the real DionCoin transaction can be automatically generated by point distribution enterprises and users of points in the developed ecosystem. Dionpay company has made an investment of about 28 million USD, from EXTIME which is Japanese mileage distribution company [2]. In terms of traditional marketing strategy, DionCoin can prevent not only the point extinction of users but also deferred debts caused by point accumulation, respectively.

DionCoin is going to be connected with a hybrid crypto game portal platform playDion, which provides a variety of games. Unlike, other online games, users not only can keep protect their assets by holding DionCoin but also can create profits though playing games and, supporting players and developers. The proposed portal platform is operated by using centralized systems, but game points, which is DionCoin, is managed by decentralized systems. DionCoin wallet will be connected to playDion in order to transfer DionCoin among users on the proposed portal. Dionpay will develop and distribute games. Developers can also submit to their games on the proposed portal and they will earn DionCoin from the proposed portal like google store and app store with less fee of using portal.

Meanwhile, in terms of technology, the developed DionCoin uses EOS main net, which provides the fastest TPS (TPS record: about 4800), zero transaction fee and the highest program language compatibility [3]. Dionpay team have developed own web wallet for DionCoin with KYC process.

The minimum viable products of Dionpay have been registered on play store.

- MVP of DionHunter (1)
<https://play.google.com/store/apps/details?id=test.DionPay.AnDionHuntePrto&hl=ko&ah=7eujBOICy99IOLgQar46y9X-7-8>
- MVP of Dionpay point system (2)
<https://play.google.com/store/apps/details?id=test.DionPay.DionPointProto&hl=ko&ah=7eujBOICy99IOLgQar46y9X-7-8>

By using these applications, Dionpay has successfully demonstrated a transform function between DionCoin point system application and EOS blockchain. Now, playDion pre-registration website is also published (<https://play.dionpay.io/>).

Disclaimer and ICO risk

- This paper reports the concept and platform of DionCoin. This paper can be modified anytime.
- The purpose of this paper is not security or finance products sales.
- This paper demonstrates the purpose of DionCoin. While Dionpay is working for this purpose, this project can be exposed to risk elements from outside. Due to this problem, DionCoin platform cannot be realized, and the part of the proposed idea can only be realized.
- This paper is not guaranteed about the accuracy of the information and statement associated with this project.

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1. Introduction

Since bitcoin was introduced as a cryptocurrency by Satoshi Nakamoto, 2100 cryptocurrencies have been developed and listed on exchanges [4]. However, the most of cryptocurrencies have not been used as currencies, which can be used for payment, yet. Although it is easy to transfer cryptocurrency among users by using P2P (peer to peer) network, there are still few enterprises and stores to accept cryptocurrencies even bitcoin in the real economy. It means that cryptocurrency is not used as the original propose. This phenomenon is not due to technical problems of cryptocurrencies. The main reason of this phenomenon is the low usability property of cryptocurrency. A lot of developers and investors of cryptocurrency industry have tried to overcome this property of cryptocurrency by using technology innovation and finance products such as future trading. However, these methods have limitations against the real utilization of cryptocurrency since the developed solutions are not directly connected with the existing economic business model.

Meanwhile, enterprises of products and services have developed mileage and point systems in order to create repeat sales. In these days, customers can gather these kinds of mileage through the most of consuming behaviors, such as buying goods and using services. For example, customers will receive mileage when they not only buy televisions but also use telecommunication services. After internet became popular, mileage concept has been introduced to advertisement and game industries. For example, when users watch advertisements or play games, they can receive rewards, which can be exchanged with cash. Mileage is more similar to currency than cryptocurrency because it can be used for most of the economic consumption. However, the accumulation of mileage and points leads the debt of enterprises to be increased. For solving this problem, enterprises have provided mileages with expiry dates. There is huge amount of lost mileages until today. By this limitation of mileage marketing strategies, many social issues have been produced. For examples, mileage, which Korea telecommunication enterprises provided, have lapsed about 200 million USD for the last 6 years [5]. Even, some customers sued enterprises in order to return their lost mileage [6].

In order to overcome both of the low usability property of cryptocurrency and issues of mileage marketing systems, this paper have proposed and demonstrated DionCoin. The main idea of DionCoin is a combination of cryptocurrency and the existing point system platform. By applying this idea to cryptocurrency, enterprises and users can make benefits at the same time. In terms of enterprise, mileage is no longer considered as debts. On the other hands, enterprises will buy DionCoin to distribute to their customers. Therefore, DionCoin can increase the usability of cryptocurrency through the users and companies of mileage and game point market.

In order to expend the usability of cryptocurrency, Dionpay team also will use DionCoin as game money on the hybrid crypto game portal platform, which will provide a variety of games based on html 5 on the website. Player can keep their game assets and earn extra profits by using DionCoin.

Since mileage is usually provided very small amount to customers, transaction fee is not available. In order to use cryptocurrency in real economic systems, higher TPS (transaction per seconds) is more advantageous. From these reasons, DionCoin use EOS main net, which provides fastest TPS (TPS record: about 4800) among other public blockchains, zero transaction fee and the highest flexibility [7]. By using EOS main net, with low cost, DionCoin can make mileage and game point management systems more stable with cryptocurrency ecosystems.

2. Principles of cryptocurrency and definition of mileage

2.1 Cryptocurrency principles

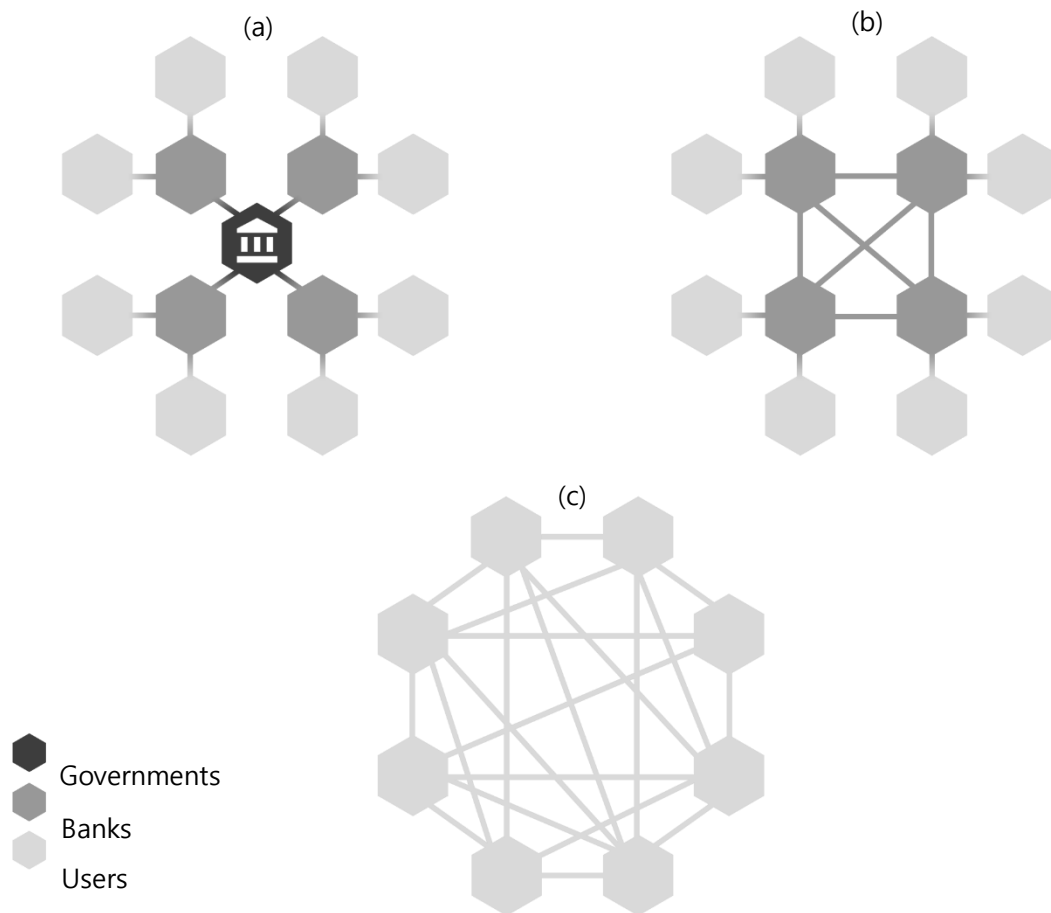


Figure 1. Three kinds of ecosystems, (a) the existing financial system, (b) bank system, (c) cryptocurrency system.

Figure 1 shows 3 kinds of currency ecosystems, which are the existing financial system, bank system and cryptocurrency system. The existing financial system can be called as a centralized system, which centers, such as governments, produce currencies and control everything, such as the flow of currencies. In this system, the major problem is not hacking of center. The major problem is that center can produce cryptocurrency and modify finance conditions, such as the interest rate and currency flow only for their benefits. Also, private information is exposed to the center. Bank system is more robust against this problem. However, cryptocurrency still can be controlled by banks, if banks colluded with each other. Cryptocurrency system is the most robust against this problem because all users can join to produce currencies and to control the flow of currencies by using P2P network systems. Also, a security of private information is very high because of blockchain [8]. In terms of technical issues, cryptocurrency provides the ideal ecosystems for currencies because cryptocurrency cannot be produced and controlled by anyone due to blockchain technology and P2P network systems.

However, cryptocurrency price can be controlled not only by ecosystems of users but also big investors, such as exchanges. For examples, bitcoin price was decreased up to 1/2 of the before price when bitcoin blockchain was about to be separated [9]. While, bitcoin price was increased up to 10 times of the before price when some groups manipulated bitcoin prices [10]. Many developers have been focusing on consensus algorithms of cryptocurrencies in order to solve big price fluctuation caused by technical issues [11-16]. However, there has been no one to innovate cryptocurrency ecosystem in terms of connection between real economic business model and cryptocurrency ecosystems yet.

2.2 Mileage definition

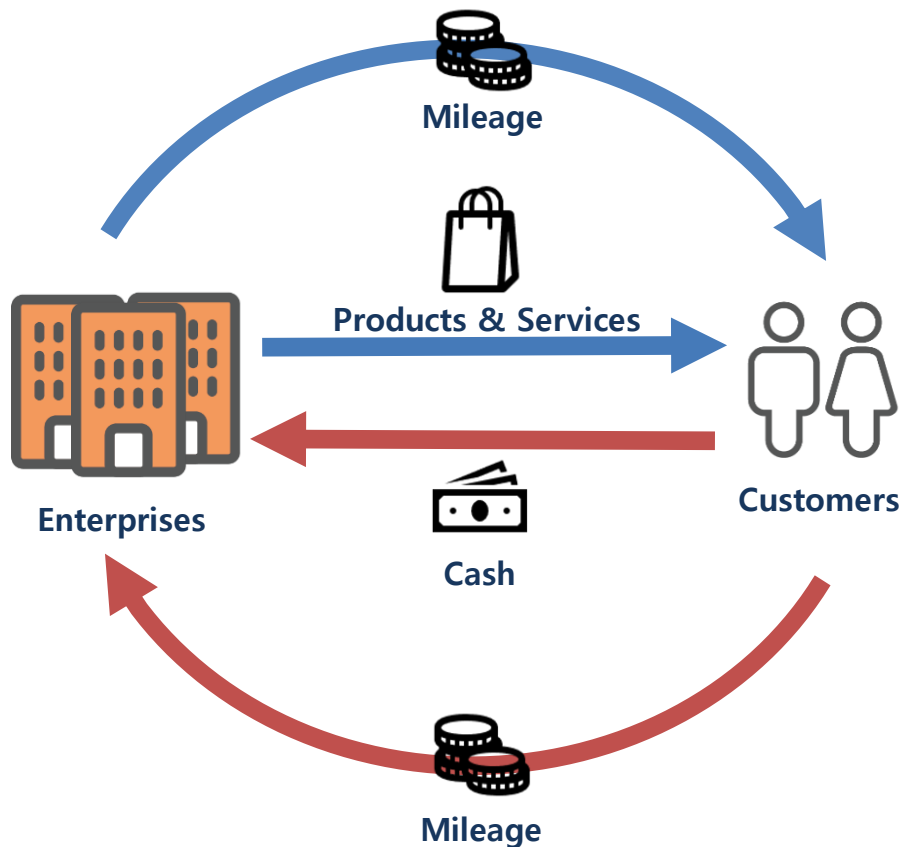


Figure 2. The existing mileage system concept

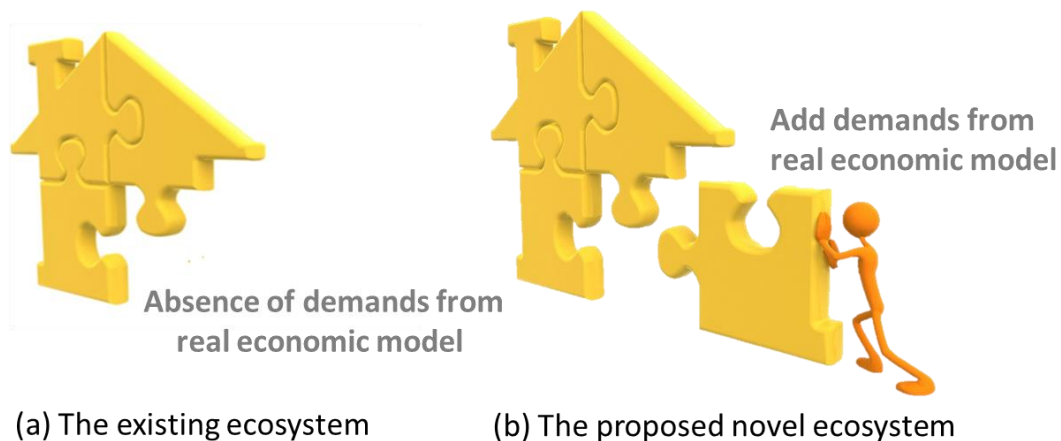
The existing mileage system concept is illustrated in figure 2. Enterprises distribute mileages to customers, who buy products and services with cash. After receiving mileages, customers can buy products and services with their holding mileages. During this cycle, enterprise can expect repeat sales from customers, who holds mileages. In these days, this mileage concept is expanded to advertisement and game industries. When users watch advertisements and play games, they will receive rewards, which can be used for buying online contents and exchange with cash. However, there are expiration dates in mileages. It makes customer lose their mileage, but enterprises cannot sustain the huge accumulation of mileage. In terms of accounting system, mileage is also considered as debts. Therefore, it is necessary to innovate the existing mileage model in order to miniaturize debts of enterprises and property damages of users.

3. DionCoin with demands of enterprises

3.1 Background of DionCoin

In 2009, bitcoin has been introduced as a cryptocurrency. In 2019, the total number of cryptocurrencies listed on exchanges, is about 2100. For the last 10 years, the industry of cryptocurrencies has been exponentially grown. However, cryptocurrencies have been still accepted by few enterprises and stores. It is difficult find cryptocurrencies, which can be used in the real economy because many developers have overlooked roles of currency for cryptocurrency. Although technologies of the existing cryptocurrencies are very fancy, they have not been used as currencies, even bitcoin. In order to realize cryptocurrency to be used in real life, DionCoin has been begun with these considerations.

1. Users do not have to buy cryptocurrency in order to maintain its ecosystem because users can use cryptocurrencies not only inside of ecosystems but also outside of ecosystems.
2. Users can get cryptocurrency without special behaviors.
3. There are many places to accept cryptocurrency.
4. After ICO, the company of cryptocurrency has a certain business model.



(a) The existing ecosystem

(b) The proposed novel ecosystem

Figure 3. A cryptocurrency ecosystem comparison:
 (a) the existing ecosystem (b) the proposed novel ecosystem

The figure 3 shows a comparison between the existing ecosystem with an absence of demands from real economic models and the proposed novel ecosystem with demands from real economic models. This figure does not mean that the existing ecosystems have no demands. However, it is not based on demands from real economic models. In the proposed ecosystems, users do not have to buy or hold cryptocurrencies in order to maintain ecosystems of cryptocurrency because demands are from real economic systems. In the figure 3(a), users can be called as investors. However, the proposed novel ecosystem of cryptocurrency of figure 3(b) distinguishes between investors and users like real economic systems. By applying the novel cryptocurrency ecosystems, users of DionCoin can be only considered as customers who spends DionCoin for buying goods and services.

3.2 Definition of DionCoin

DionCoin is connected with the existing point systems, such as mileage and game reward. In order to realize mileage cryptocurrency based on blockchain, the existing mileage reward concept is combined with cryptocurrency technology. This combination between cryptocurrency and the existing mileage reward systems, based on blockchain, provides a certain utilization model because mileage distribution enterprises will provide DionCoin as mileages to their customers. Unlike, usual mileage, DionCoin can be accepted to use over national boundaries and a variety of places by using cryptocurrency exchanges. In order to accept DionCoin as mileages by mileage distribution enterprises, Dionpay has created a novel mileage ecosystem based on blockchain [1]. DionCoin is not stable coin and security tokens.

Meanwhile, enterprises of Dionpay partners can improve their images to high technical industry enterprises with the existing management cost of mileage marketing systems. Also, enterprises can maximize the satisfaction of customers because they can use mileages in any places around the world unlike other mileages. Furthermore, enterprises can maintain stable accounting system of mileage by using DionCoin platform, because mileage accumulations, which can be considered as debts, are not generated in the traditional mileage systems, due to the independence against mileage distribution enterprises. Also, enterprises can expect high additional advertisement effects when DionCoin usages are widely expended to the world.

On the other hands, DoinCoin is also blockchain based game points. DoinCoin will be used on highbred cypto game portal platform which is called playDion. Html5 has been emerged as new game development tool. playDion will release over 50 Html5 games which use DionCoin as game points. DionCoin is used for playing games on playDion website. Users can earn DionCoin by battles among users on playDion.

3.3 Blockchain of DionCoin

In order to use DionCoin as mileage and game points, transaction fee cannot be allowed since the amount of mileage is usually very small that it is even smaller than transaction fee in the existing blockchain such as bitcoin and Ethereum. Since mileage is used for buying products or services in the existing mileage systems, faster TPS can make many advantageous for payment systems. EOS blockchain provides not only the faster TPS but also free fee for transaction. Therefore, EOS main net is very attractive to DionCoin. DionCoin has been developed on EOS main net in order to provide blockchain services with free transaction fee while keeping the faster TPS.

3.4 Dion exclusive wallet

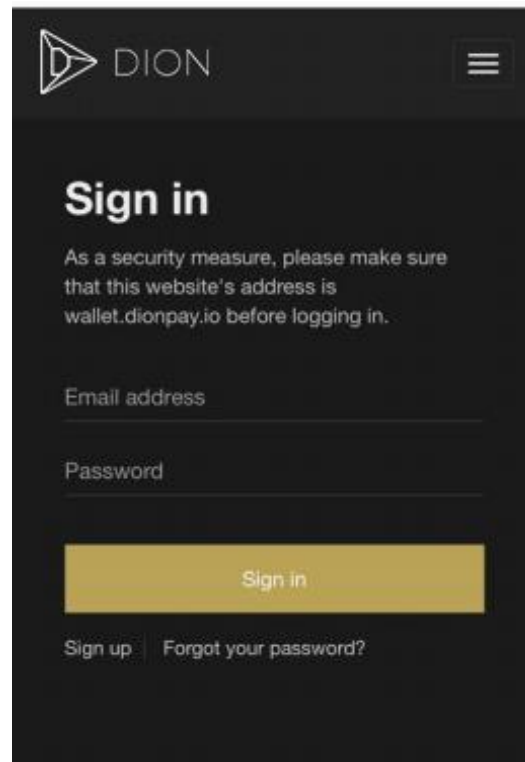


Figure 4. Dion exclusive wallet on mobile version

Figure 4 shows DionCoin exclusive wallet, which is Dionpay wallet for storage and transaction of DionCoin, on mobile version. The developed Dionpay wallet will provide switching system between mileages and DionCoin for customers. This is special function for Dionpay wallet. Users will have new experiences though this function of Dionpay wallet. DionCoin exclusive wallet will offer an efficient management system for both of enterprises and customers. A switching layer between mileages and DionCoin is one of the main technologies because users and enterprises can transfer DionCoin by using this layer.

Network systems of enterprises will be connected with DionCoin blockchain through Dionpay wallet in order to protect against an external hacking and manipulation of the inside systems. Also, DionCoin will provide API satisfied with requirements of enterprises in order to increase the number of Dion partners. DionPlay hybrid cypto game portal platform will use Dionpay wallet in order to provide DionCoin for players.

Since DionCoin is created on EOS main net, DionCoin can be used in EOS wallets such as scatter. However, players cannot be supported Dionpay user interface systems of DionCoin with other wallets.

4. Ecosystems of DionCoin

4.1 Concept of DionCoin ecosystems

The existing mileage business model is illustrated in Figure 5. Enterprises distribute mileages to customers. Distributed mileage cannot be used for buying goods. However, mileages cannot be used in exchanges and in digital contents shops in the existing mileage systems. Also, each mileage has expiration dates in order to realize stable mileage accounting management systems.

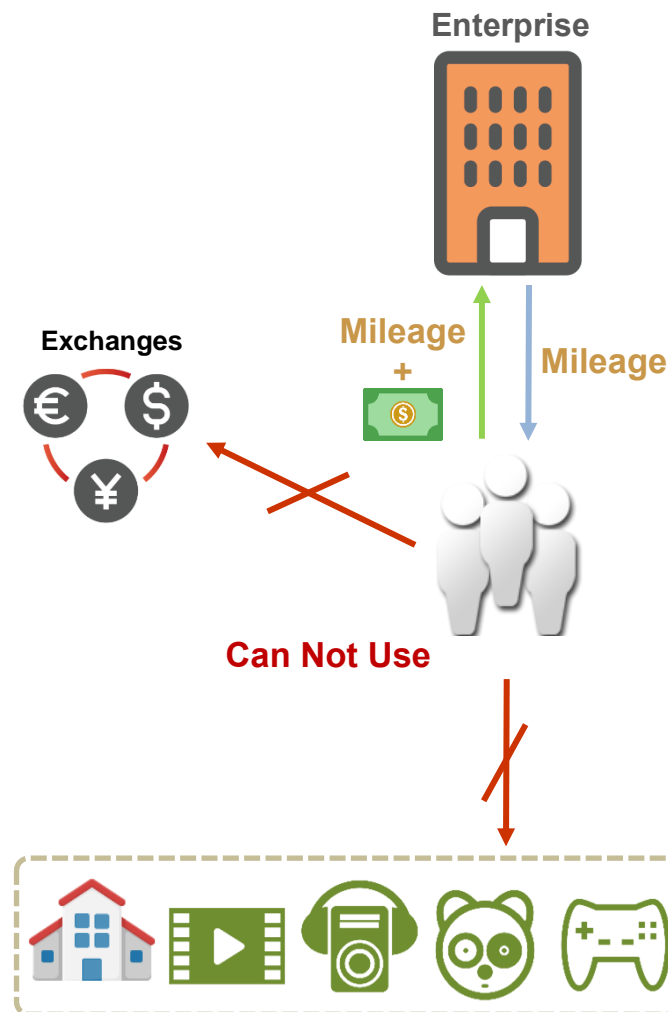


Figure 5. The existing mileage business model

Figure 6 shows the concept of DionCoin ecosystems. In the DionCoin ecosystems, enterprises do not produce DionCoin, unlike the existing mileage models. When the extinction of DionCoin is happened, enterprises must buy DionCoin in order to distribute DionCoin to their customers. In the case of DionCoin, enterprises can be considered as holders for maintaining its ecosystem. Therefore, DionCoin can maximize usability from the depreciation market through demands of enterprise.

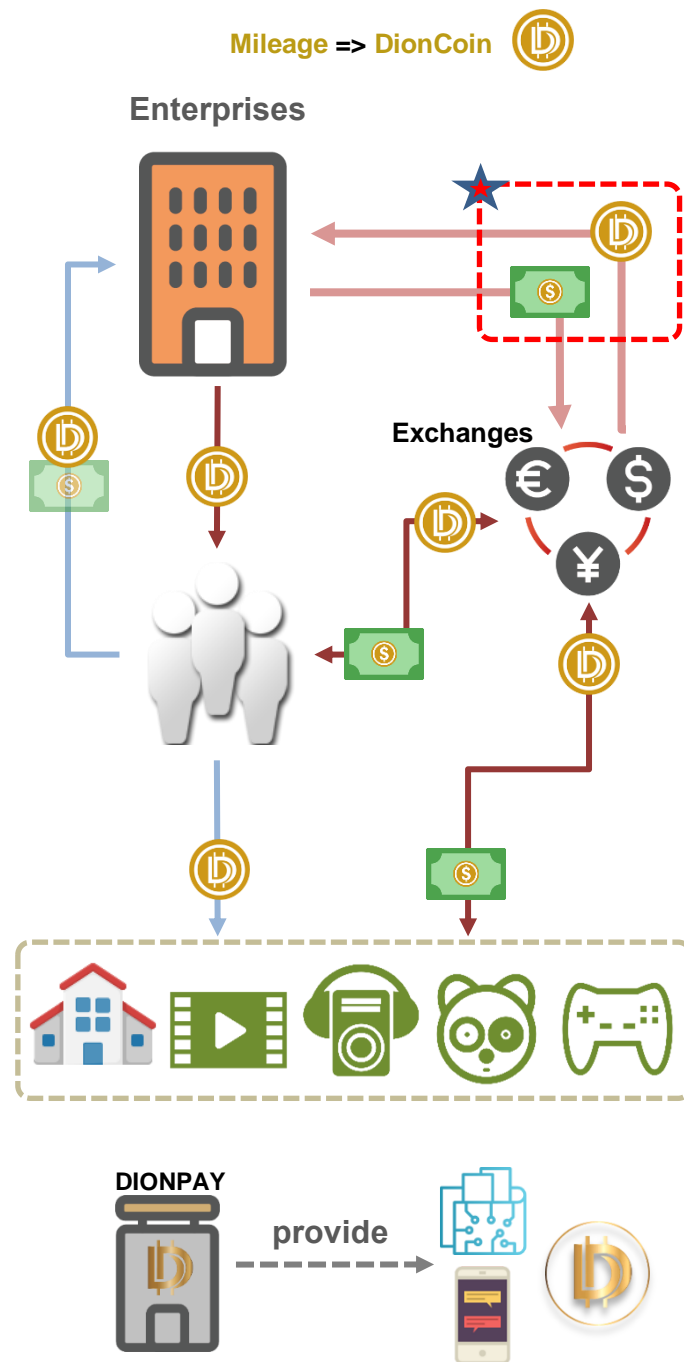


Figure 6. Concept of DionCoin ecosystem

In terms of enterprises, comparisons between the existing mileage models and DionCoin ecosystems are shown in table 1.

The existing mileage model	DionCoin ecosystem
<ul style="list-style-type: none"> • Generation of debts due to mileage • Cost of maintaining reward service • Mileage policy disputation • Fixed value of mileage 	<ul style="list-style-type: none"> • No debts due to mileage • Reduction of maintaining reward service • No mileage policy disputation • Value change of DionCoin

Table 1. Comparisons between the existing mileage models and DionCoin ecosystems, in terms of enterprises

In terms of customers, comparisons between the existing mileage models and DionCoin ecosystems are shown in table 2.

The existing model	Ecosystems of DionCoin
<ul style="list-style-type: none"> • loss of changing mileage policy • Mileage extinction due to business close • Infringement of consumer rights by exclusion of opportunity to use points such as minimum use • Use of point payment service and payment service other than merchant Impossible • Transfer of point rights and inability to inherit limitations of regional and national use • The points paid can be cashed in any case And no other use 	<ul style="list-style-type: none"> • High independence against enterprise policy • Permanent use • No limitation of minimum use • Use in other DionCoin partners • Individual transfer of mileage • Use in all countries • Additional profits • Smartphone payment function • Realtime payment and accumulation of mileage • Possibility of buying other digital assets

Table 2. Comparisons between the existing mileage models and DionCoin ecosystems, in terms of customers

4.2 Comprehension of DionCoin ecosystem

DionCoin is the world's first breakthrough ecosystem model that provides economic benefits and convenience to both companies and customers through linkage with corporate (affiliate) points (mileage) and creates an organic ecosystem by means of DionCoin.

In order to increase the stable value of the cryptographic currency, it is necessary for the market person

(customer, corporation) to be convenient to use and satisfy in the real life. This requires a clear business model that takes into consideration not only the technical aspects that complement the functional problems of the existing cryptography but also the business aspects. Only when this happens can naturally be an organically structured cryptographic ecosystem composition.

In other words, only the cipher money that can be used comfortably in organic ecosystems, shared with each other, and can cause continuous demand can be granted its true vitality and continue to be valued and stable and independent survival possible.

We have been continuously studying the best business model for this purpose, so that we can connect various affiliates to realize the following real transactions.

1. Work with several companies to transfer affiliate points (cash back, mileage, etc.) to DionCoin
2. DionCoin compensates for the cost of various advertisements
3. Payment of various rewards for online games by DionCoin
4. Purchase various digital assets (online contents, etc.) with DionCoin rewarded from partner companies
5. Investing and withdrawing funds for self-service crowdfunding

DionCoin is able to overcome the limitations of the existing cryptography used only for simple trading purposes on the exchange and to be used in the real economy to make various ecosystems and active transactions there. In other words, DionCoin itself has a virtuous circle structure, which makes it different from conventional cryptography.

Over time, the affiliated franchisees will grow exponentially, creating a more vigorous virtuous cycle structure that will ultimately drive DionCoin's value up.

DionCoin will be listed on exchanges in at least five countries, guaranteeing a global return on investment.

4.2.1 Reward Program

It is a program that allows companies to pay DionCoin as a point in exchange for customer behavior (purchase, participation, etc.). The type of program will be constantly added and expanded, and the number of participating companies will also increase.

1. Point Reward

- DionCoin pays reward points for customer purchases
- Transfer existing points (cash back, mileage, etc.) to DionCoin with the purchase price of the affiliated company
- Easily manage and use coins on your mobile device with Dion Wallet

2. Online Advertisement Reward

- A program that pays DionCoin for rewarding customers for advertising (clicks, etc.) for online advertising
- paid DionCoin in exchange for the consumption of various forms of online advertising (banners, videos, events, etc.)
- Alliance and cross-promotion for marketing synergy with various affiliates

3. Online Game Participation Reward

- DionCoin paid for online game participation and game wins
- DionCoin payment of high amount (corporate span) as reward of online league game or tournament
- Developed and provided easy-to-use API system for online game developers to facilitate participation

3.2.2 Payment Program

1. Online Contents Purchase

- A program that allows online content (apps, music, games, etc.) to be purchased at DionCoin's real-time prices

- Service developers are actively involved in the alliance strategy to reduce online content transaction fees (Google & Apple transaction fee: 30% → DionCoin transaction fee: 8%)
- Development and provision of easy-to-use API system for service developers to facilitate participation.

2. Offline Purchase

- A program that supports DionCoin in connection with POS to enable immediate offline settlement
- User will be able to use Dion Wallet to support real-time payment in conjunction with POS when scanning QR code or barcode

3. Crowd Funding

- Projects that require PF (Project Financing) by using an unmodifiable book of block chains.
- Investment support mainly for movies, games, recordings, etc. (Gradual target and business expansion)
- The investor (funding participant) is expected to have mental satisfaction and economic profit due to personal preference and reasonable investment.
- DionCoin can improve image and activate market
- DionCoin self-service scheduled

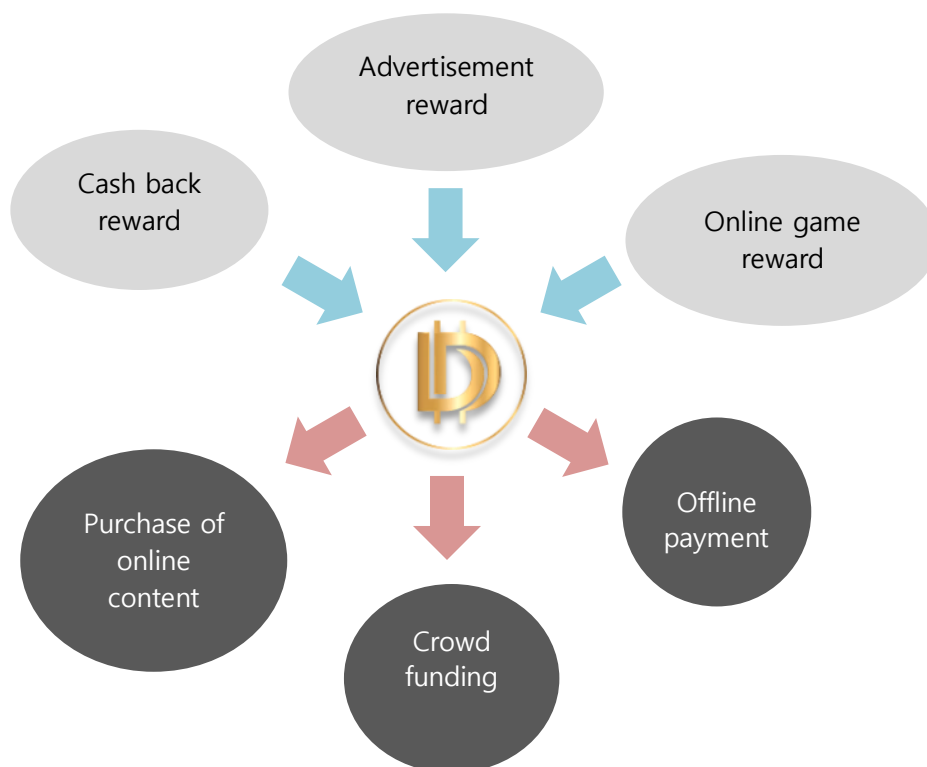


Figure 7. Concept of DionCoin self-service

5. Hybrid Crypto Game Portal

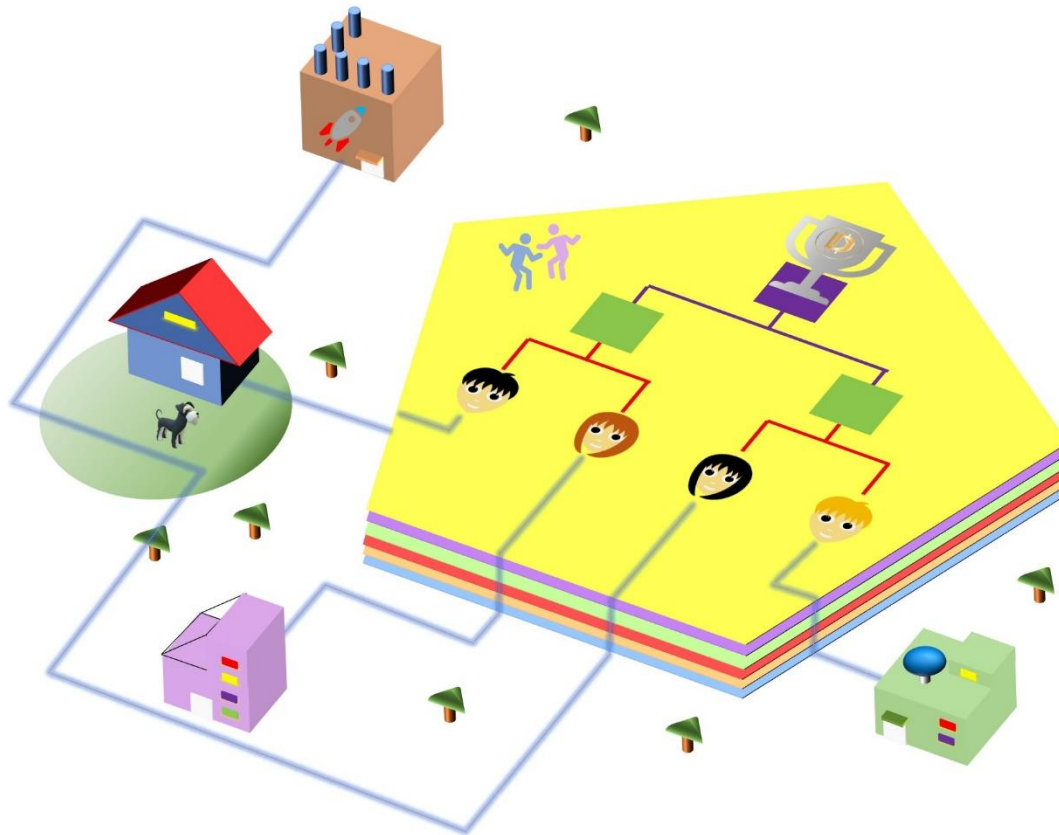


Figure 8. Concept of hybrid crypto game portal platform

Concept of hybrid crypto game portal platform is illustrated in figure 8. The proposed platform will support network play, reward systems, user rank systems, game rank systems, game leave, fund for game development, item market and coin payment. Users can play more than 50 games on the proposed platform. Dionpay wallet is connected with the proposed platform, Users can get DionCoin on the proposed platform by playing games.

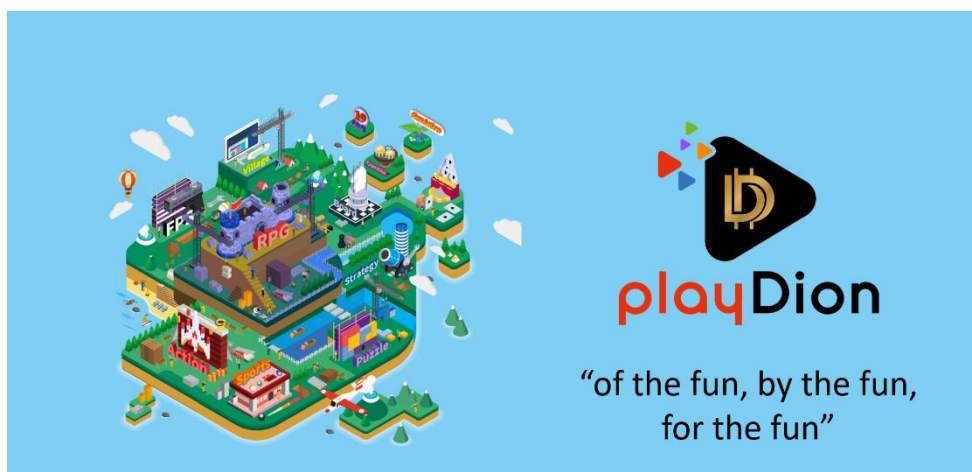


Figure 9. Example of hybrid crypto game portal platform

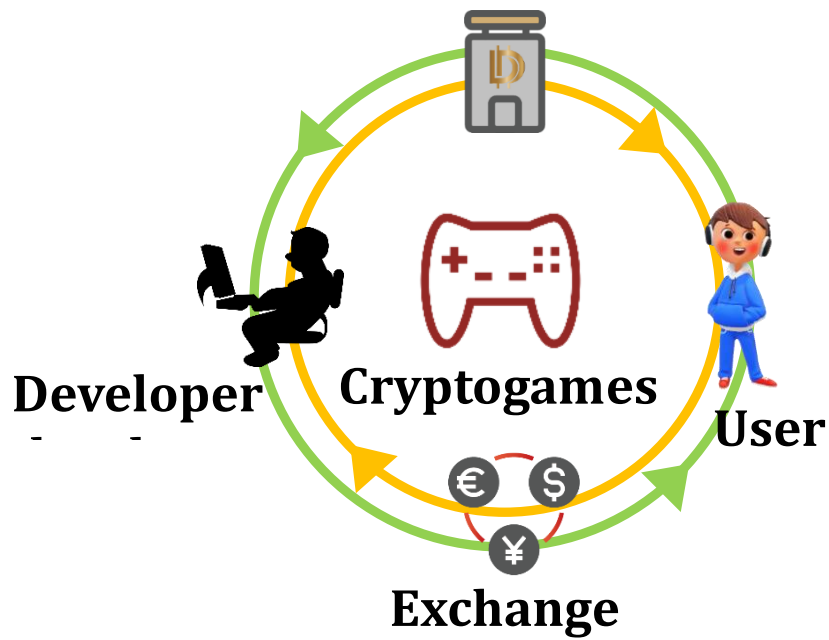


Figure 10. The proposed platform ecosystems

6. DionCoin technology

DionCoin have been created by using EOSIO, which is a free, open-source blockchain software protocol that provides developers and entrepreneurs with a platform on which to build, deploy and run high-performing blockchain applications. Diontoken.cpp and Diontoken.cpp files are created by technical members of Dionpay. DionCoin uses EOS main net which provides the faster TPS with zero fee. DionCoin have been deployed and issued by dionpaydteam as shown in EOS blockchain explorer [17]. DionCoin cpp file is based on this code.

```
/**
 * @file
 * @copyright defined in eos/LICENSE.txt
 */

#include "eosio.token.hpp"

namespace eosio {

void token::_create( account_name issuer,
                    asset          maximum_supply,
                    bool          lock )
{
    require_auth( _self );

    auto sym = maximum_supply.symbol;
    eosio_assert( sym.is_valid(), "invalid symbol name" );
    eosio_assert( maximum_supply.is_valid(), "invalid supply");
    eosio_assert( maximum_supply.amount > 0, "max-supply must be positive");

    stats statstable( _self, sym.name() );
    auto existing = statstable.find( sym.name() );
    eosio_assert( existing == statstable.end(), "token with symbol already exists" );

    statstable.emplace( _self, [&]( auto& s ) {
        s.supply.symbol = maximum_supply.symbol;
        s.max_supply   = maximum_supply;
        s.issuer       = issuer;
        s.lock         = lock;
    });
}

void token::create( account_name issuer, asset maximum_supply) {
    _create(issuer, maximum_supply, false);
}

void token::createlocked( account_name issuer, asset maximum_supply) {
    _create(issuer, maximum_supply, true);
}

void token::issue( account_name to, asset quantity, string memo )
{
    auto sym = quantity.symbol;
```

```
eosio_assert( sym.is_valid(), "invalid symbol name" );
eosio_assert( memo.size() <= 256, "memo has more than 256 bytes" );

auto sym_name = sym.name();
stats statstable( _self, sym_name );
auto existing = statstable.find( sym_name );
eosio_assert( existing != statstable.end(), "token with symbol does not exist, create token
before issue" );
const auto& st = *existing;

require_auth( st.issuer );
eosio_assert( quantity.is_valid(), "invalid quantity" );
eosio_assert( quantity.amount > 0, "must issue positive quantity" );

eosio_assert( quantity.symbol == st.supply.symbol, "symbol precision mismatch" );
eosio_assert( quantity.amount <= st.max_supply.amount - st.supply.amount, "quantity exceeds
available supply");

statstable.modify( st, 0, [&]( auto& s ) {
    s.supply += quantity;
});

add_balance( st.issuer, quantity, st.issuer );

if( to != st.issuer ) {
    SEND_INLINE_ACTION( *this, transfer, {st.issuer,N(active)}, {st.issuer, to, quantity,
memo} );
}
}

void token::transfer( account_name from,
                    account_name to,
                    asset          quantity,
                    string         memo )
{
    eosio_assert( from != to, "cannot transfer to self" );
    require_auth( from );
    eosio_assert( is_account( to ), "to account does not exist");
    auto sym = quantity.symbol.name();
    stats statstable( _self, sym );
    const auto& st = statstable.get( sym );

    eosio_assert( !st.lock || from == st.issuer, "token is locked" );

    require_recipient( from );
    require_recipient( to );

    eosio_assert( quantity.is_valid(), "invalid quantity" );
    eosio_assert( quantity.amount > 0, "must transfer positive quantity" );
    eosio_assert( quantity.symbol == st.supply.symbol, "symbol precision mismatch" );
    eosio_assert( memo.size() <= 256, "memo has more than 256 bytes" );
```

```
    sub_balance( from, quantity );
    add_balance( to, quantity, from );
}

void token::unlock( symbol_type symbol ) {
    stats statstable( _self, symbol.name() );
    auto it = statstable.find( symbol.name() );
    eosio_assert( it != statstable.end(), "token does not exists" );
    eosio_assert( it->lock, "token not locked" );
    require_auth( it->issuer );
    require_recipient( it->issuer );
    statstable.modify( it, it->issuer, []( auto& st ) {
        st.lock = false;
    });
}

void token::burn(account_name owner, eosio::asset value) {
    require_auth(owner);

    auto sym = value.symbol.name();
    stats statstable(this->_self, sym);
    auto it = statstable.find(sym);

    eosio_assert(it != statstable.end(), "No symbol found");

    statstable.modify(it, owner, [&](auto& s) {
        s.supply -= value;
        s.max_supply -= value;
    });

    sub_balance(owner, value);
}

void token::sub_balance( account_name owner, asset value ) {
    accounts from_acnts( _self, owner );

    const auto& from = from_acnts.get( value.symbol.name(), "no balance object found" );
    eosio_assert( from.balance.amount >= value.amount, "overdrawn balance" );

    if( from.balance.amount == value.amount ) {
        from_acnts.erase( from );
    } else {
        from_acnts.modify( from, owner, [&]( auto& a ) {
            a.balance -= value;
        });
    }
}

void token::add_balance( account_name owner, asset value, account_name ram_payer )
{
```

```
accounts to_acnts( _self, owner );
auto to = to_acnts.find( value.symbol.name() );
if( to == to_acnts.end() ) {
    to_acnts.emplace( ram_payer, [&]( auto& a ){
        a.balance = value;
    });
} else {
    to_acnts.modify( to, 0, [&]( auto& a ) {
        a.balance += value;
    });
}
}

} /// namespace eosio

EOSIO_ABI( eosio::token, (create)(createlocked)(issue)(transfer)(unlock) )
```

And DionCoin hpp files is based on this file

```
/**
 * @file
 * @copyright defined in eos/LICENSE.txt
 */
#pragma once

#include <eosiolib/asset.hpp>
#include <eosiolib/eosio.hpp>

#include <string>

namespace eosiosystem {
    class system_contract;
}

namespace eosio {

    using std::string;

    class token : public contract {
    public:
        token( account_name self ):contract(self){}

        void create( account_name issuer,
                    asset          maximum_supply);
        void createlocked( account_name issuer,
                          asset          maximum_supply);

        void issue( account_name to, asset quantity, string memo );

        void transfer( account_name from,
                      account_name to,
                      asset          quantity,
```

```
        string      memo );

void unlock( symbol_type symbol );

void burn( account_name owner, eosio::asset value );

inline asset get_supply( symbol_name sym )const;

inline asset get_balance( account_name owner, symbol_name sym )const;

private:
    struct account {
        asset      balance;

        uint64_t primary_key()const { return balance.symbol.name(); }
    };

    struct currency_stats {
        asset      supply;
        asset      max_supply;
        account_name issuer;
        bool       lock;

        uint64_t primary_key()const { return supply.symbol.name(); }
    };

    typedef eosio::multi_index<N(accounts), account> accounts;
    typedef eosio::multi_index<N(stat), currency_stats> stats;

    void _create( account_name issuer,
                 asset      maximum_supply,
                 bool       lock);
    void sub_balance( account_name owner, asset value );
    void add_balance( account_name owner, asset value, account_name ram_payer );

public:
    struct transfer_args {
        account_name from;
        account_name to;
        asset      quantity;
        string      memo;
    };
};

asset token::get_supply( symbol_name sym )const
{
    stats statstable( _self, sym );
    const auto& st = statstable.get( sym );
    return st.supply;
}

asset token::get_balance( account_name owner, symbol_name sym )const
```

```

{
  accounts accountstable( _self, owner );
  const auto& ac = accountstable.get( sym );
  return ac.balance;
}

} /// namespace eosio

```

Eosiocpp 1.6.1 is used for compile in ubuntu system.

7. Sales of DionCoin

Issuing amount: 117 Billion Dion

Reserve fund: 35.1 Billion Dion

Circulating supply: 17.55 Billion Dion

Figure 11 shows DionCoin distribution and fund use plan.

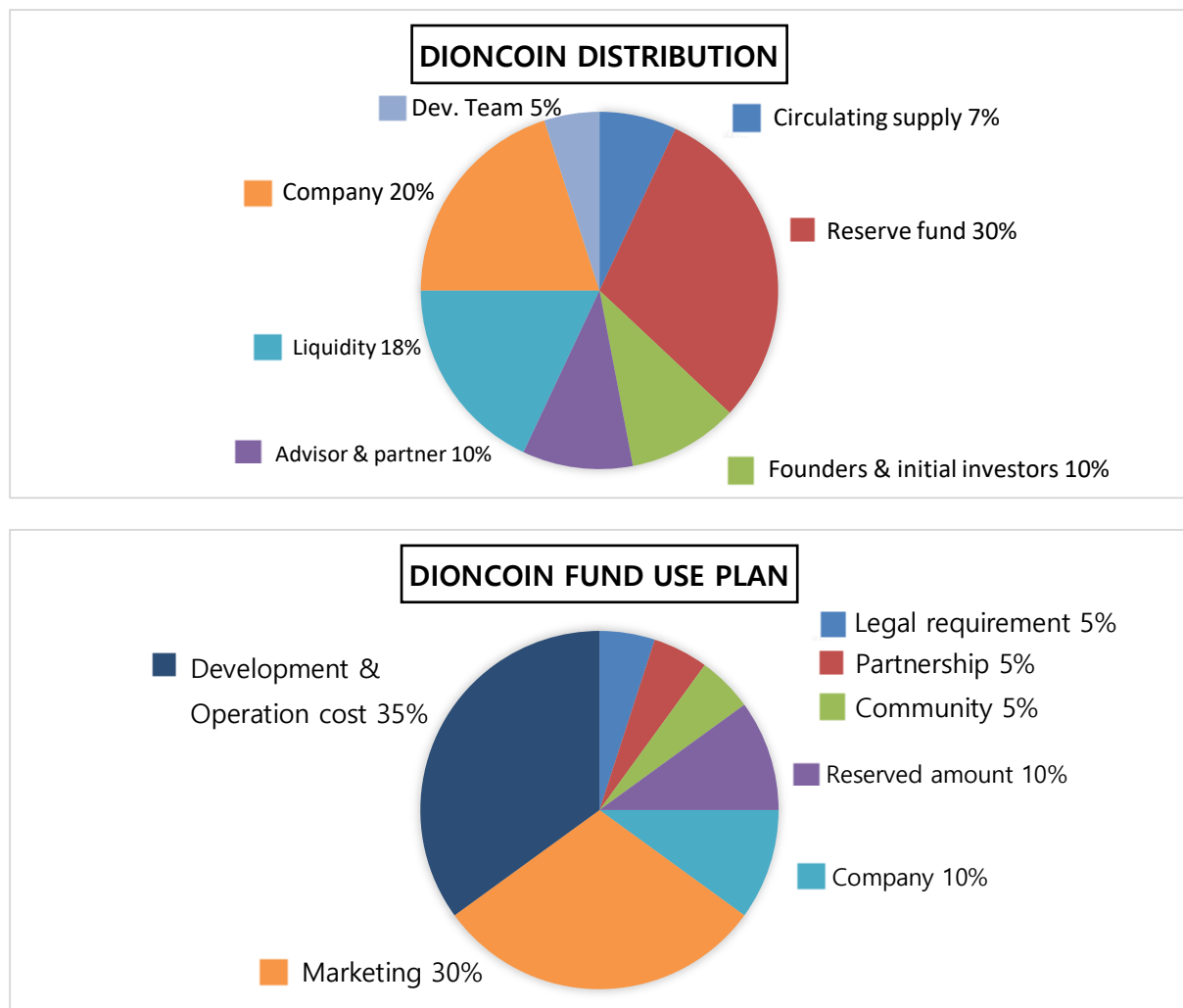


Figure 11. DionCoin distribution and fund use plan
 Lock-up condition of circulating supply DionCoin is shown in table

	Unlock rate	Total unlock rate
1 st 30 days	0.1 % everyday	3 %
2 nd 30 days	0.3 % everyday	9 %
3 rd 30 days	0.3 % everyday	9 %
4 th 30 days	0.3 % everyday	9 %
5 th 30 days	0.6 % everyday	18 %
6 th 30 days	0.6 % everyday	18 %
7 th 30 days	0.6 % everyday	18 %
8 th 30 days	One time	16%

Table 3. Lock-up condition of circulating supply DionCoin

8. Road map

July of 2016

- I. Research blockchain system
- II. Research blockchain business model

October of 2016

- I. Research ICO related market

March of 2018

- I. Research ICO related laws

July of 2018

- I. Opening DIONPAY PTE.LTD. Singapore Corp
- II. Investing contract with Japanese company.

September of 2018

- I. Complete DionCoin development
- II. Complete Blockexplorer development

October of 2018

- I. Opening Korean office
- II. Registration DionCoin to AGAMA multi wallet
- III. Completion of DionCoin mining
- IV. Wallet development for DionCoin

November of 2018

- I. Dubai R&D center open
- II. Japan office open

December of 2018

- I. Planning e-Sports for using DionCoin (Japan)

January of 2019

- I. Applied for a patent on the METHOD FOR PROVIDING MILEAGE USING CRYPTO CURRENCY patent application number 10-2019-0003350 system for exchanging, payment of mileage/point completion of smart contract

March of 2019

- II. Contract promotion with exchange

April of 2019

- I. API system test for online contents
- II. Web DionCoin exclusive wallet with KYC release
- III. Hybrid crypto game portal platform development

July of 2019

- I. Changing DionCoin blockchain to EOS main net for mileage and game point systems

October of 2019

- I. Release API system for on Hybrid crypto game portal platform test

November of 2019

- I. Hybrid crypto game portal platform service release

December of 2019

- I. Cloud funding by using DionCoin release
- II. E-sports using DionCoin (Japan) hold

DionCoin API development and publication

DionCoin crowd funding system development

*** Development roadmap can be changed due to inside situation of company.**

9. Partners

Dionpay partners are shown in Figure 11.

 <p>株式会社 電遊社 http://www.denyu-sha.co.jp/</p>	 <p>レジェンドベースボール株式会社 Legend Baseball Co.,Ltd. https://www.legend-bb.com/about/</p>	 <p>MJ E&M MJ E&M 심명귀 M</p>
 <p>PFULBRANDING,LTD http://www.gagstorymart.com</p>	 <p>Pier Corporation Inc. http://piercorp.cafe24.com/</p>	 <p>株式会社エクスタ임 extime Inc. http://www.extime.me/</p>
 <p>NES TECHNOLOGY https://www.nes.ae/</p>	 <p>JL Develop IT Solutions</p>	 <p>Andromeda games http://www.andromedagames.net/</p>
 <p>WORLDWIDE GAMES R&D http://wgrnd.com</p>	 <p>CONTENT CREATION COMPANY SANSAPICTURES</p>	 <p>AIP PATENT & LAW FIRM http://www.aiplaw.com/</p>
 <p>ONEDAYS Private Equity http://www.onedayspe.com</p>	 <p>http://www.hyundaiam.com</p>	 <p>http://alqudraholding.ae</p>
 <p>GTMC</p>	 <p>MoviGame™ http://www.movigame.co.kr</p>	

Figure 12. Dionpay partners

10. Minimum viable products and pre-registration website of playDion

The minimum viable products of dionpay are registered on play store.

10.1 DionCoin point system prototype

In DionCoin point system, one of the most important technology is to connect between functions of DionCoin point application and EOS blockchain. When user push payment button, both of transaction and payment information are generated on EOS mainnet blockchain. Dionpay used TSTDION token to show this function. DionCoin point system application and block information of DionCoin payment on EOS mainnet illustrated in Figure 12.

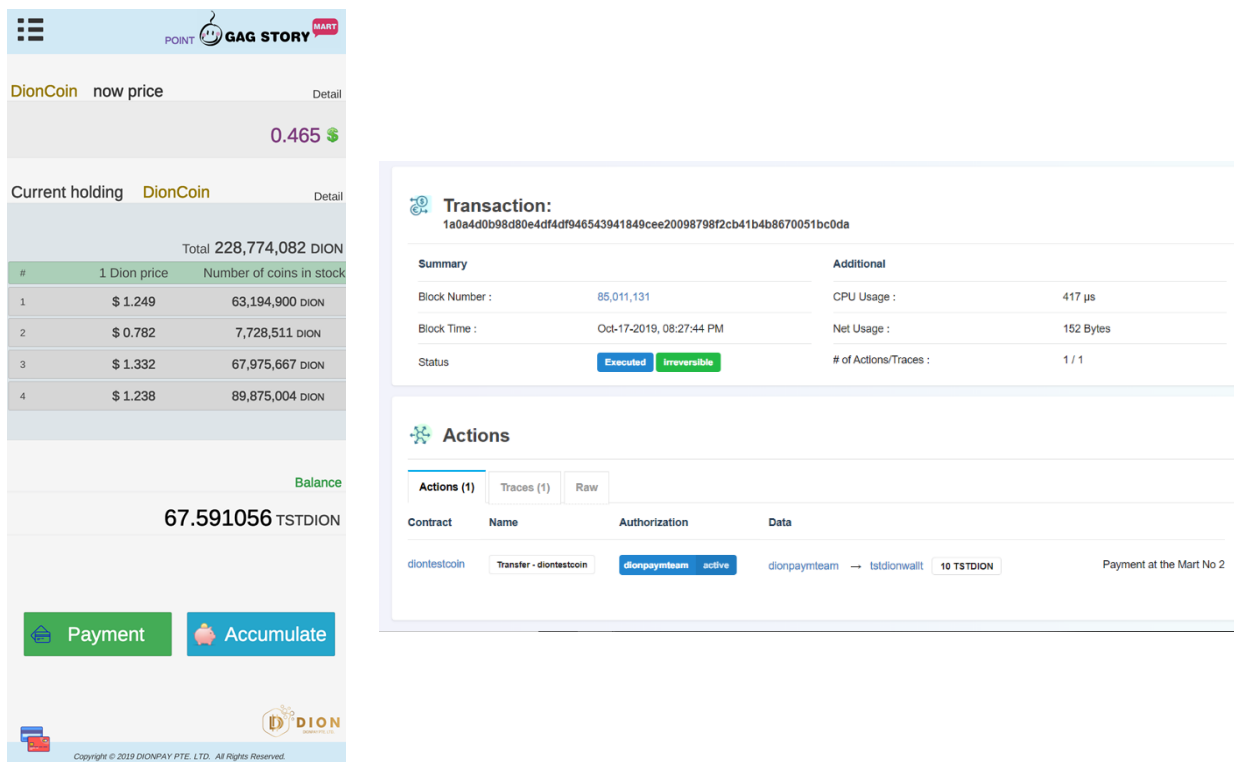


Figure 13. DionCoin point system application and block information of EionCoin payment on EOS mainnet

10.2 playDion pre-registration website

Figure 13 shows playDion pre-registration website (<https://play.dionpay.io/>)

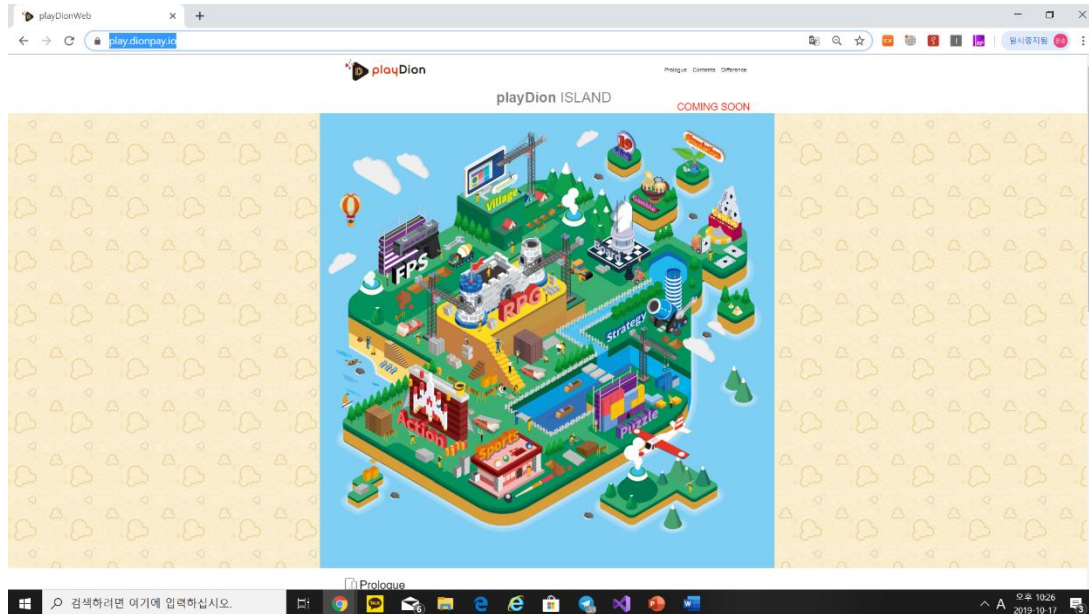
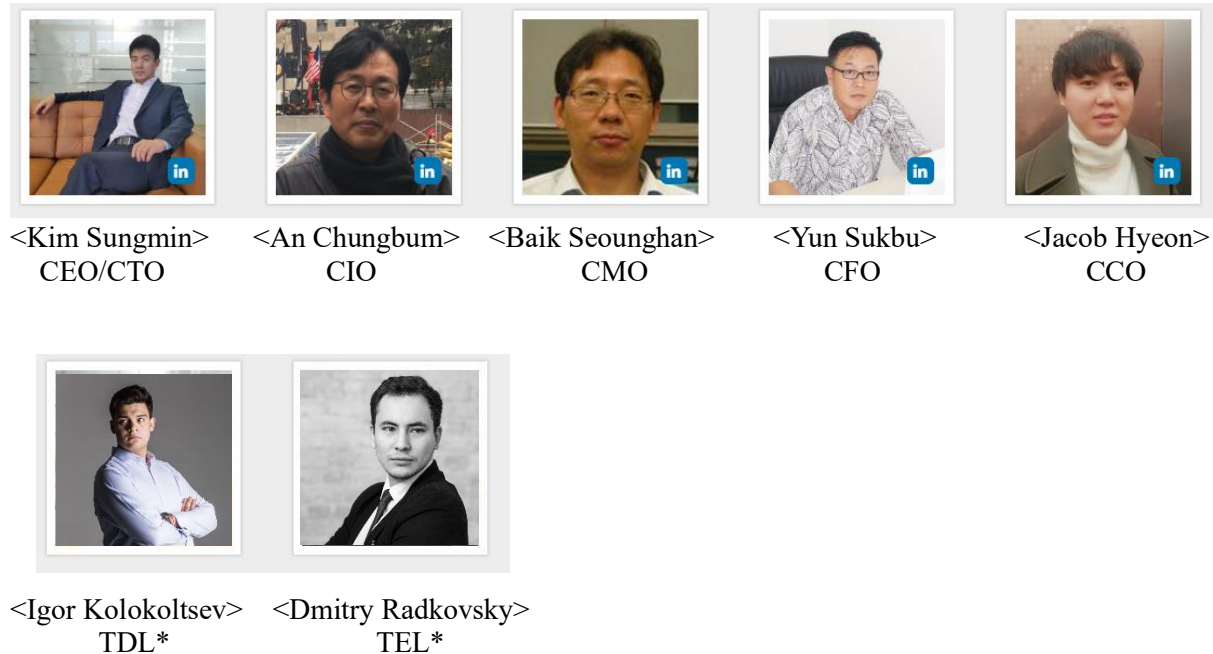


Figure 14. playDion pre-registration website

11. Members

The members of Dionpay are shown in Figure 15. They are experts from different departments from several countries.



TDL: Token design leader
TEL: Token engineer leader

Figure 15. Key members of Dionpay

12. References

- [1] S. Kim, “Dion,” Internet: <http://www.dionpay.com/>
- [2] W. Park, “디온페이 “韓 블록체인 기술력으로 日 기업에 300억 투자유치,” Internet: http://www.koreadaily.com/news/read.asp?art_id=6460457
- [3] eos.io, “EOS,” Internet: <https://developers.eos.io/eosio-home/docs>
- [4]

13. Policies & agreement

INTRODUCTION

Welcome to Dionpay PTE. LTD. (the “Dionpay”), we make a concerted effort to minimize and, to the extent possible, eliminate the exposure of personal data during the use of our interface. Dionpay does not collect and hold account information, or passwords. We do not collect data passively, do not monetize the collection of data, and do not use your data for marketing or advertising.

To the extent, we collect any personal information, this privacy policy (the “Policy”) describes how Dionpay collects, uses, and shares personal information of people who visit our website (the “Site”), use our mobile application, or otherwise use our services (collectively, the “Services”).

This Policy applies to anyone who accesses the Services. Please read the Policy carefully to understand our practices regarding your information and how we will treat it. by visiting the Site, app, and/or using

the Services, you acknowledge that the collection, use, and sharing of your information will take place as described in this Policy.

So that we are clear about the terminology we are using, when we use the phrase “Personal Information” in this privacy Policy, we mean information about an individual that (either by itself or when combined with information from other available sources) allows that individual to be identified, including, the individual’s name, telephone number, or e-mail address.

THE BLOCKCHAIN

Due to the inherent transparency of many blockchains, including the DionCoin Blockchain, transactions that individuals broadcast via Dionpay may be publicly accessible. This includes, but is not limited to, your public sending address, the public address of the receiver, the amount sent or received, and any other data a user has chosen to include in a given transaction. Information stored on a blockchain may be public, immutable, and difficult or even impossible to remove or delete. Transactions and addresses may reveal information about the user’s identity and information can potentially be correlated now or in the future by any party who chooses to do so, including law enforcement. Users are encouraged to review how privacy and transparency on the blockchain works.

WHAT WE COLLECT

We collect information about you as described below. We use this information to enhance your experience with our Services.

1. YOUR INFORMATION

We may collect Personal Information you choose to provide to us. For example, when you contact us for support through the Services, you give us with your e-mail address and any other information that you choose to provide. Also, if you participate in a Dionpay offer, give-away, or promotion you provide your name, e-mail address, and mailing address.

2. NO TRACKING

Dionpay does not track users over time and across third party websites to provide targeted advertising and therefore does not respond to do not Track (DNT) signals.

3. USE OF INFORMATION

We use the information that we have about you to provide support and certain Services to you. We may use the Personal Information we collect from and about you to (1) provide you with information or Services that you request from us, including to respond to your comments, questions, and/or provide customer service; (2) monitor and analyze usage and trends and personalize and improve the Services and your experience using the Services; and (3) for any other purpose with your consent.

4. Sharing OF Personal Information

We will not disclose your Personal Information other than as described below, and we do not and will not sell your Personal Information to anyone.

We may share the Personal Information we collect from and about you (1) to fulfill the purpose for which you provided it; (2) with your consent; (3) for legal, protection, and safety purposes; (4) to comply with any court order, law, or legal process, including to respond to any government or regulatory request; (5) to protect the rights of Dionpay, our agents, customers, and others, including by enforcing our agreements, policies, and terms of service; and (6) with those who need it to do work for us (our Service Providers, as defined below).

5. Service Providers

We may contract with third parties to perform functions related to the Services (“Service Providers”). In general, Service Providers will have access to your Personal Information only to the extent needed

to perform their business functions but may not use or share that Personal Information for purposes outside the scope of their functions related to the Services.

LINKS TO OTHER SITES

The Services contain links to other third-party websites or applications. Once you click on such a link and leave the Site or are redirected to a third-party website or application, you are no longer governed by this Policy. Any information you provide on those sites is subject to that third party's privacy Policy and we are not responsible for the privacy and security practices and policies of those third-party sites or applications.

OUR COMMITMENT TOWARDS CHILDREN'S PRIVACY

We do not direct the Services to, nor do we knowingly collect any Personal Information from children under 13. Children under 13 are not eligible to use the Services. If we learn that someone using our Services is under 13 years of age, we will take steps to remove any Personal Information from our database and to prevent them from utilizing the Services.

SECURITY OF YOUR PERSONAL INFORMATION & RIGHTS

We are committed to protecting the security of Personal Information. We have taken certain physical, administrative, and technical steps to help safeguard the information we collect from and about you. While we take steps to help ensure the integrity and security of our network and systems, we cannot guarantee our security measures.

In certain circumstances, you will also have the following rights:

1. Right to access: the right to request certain information about, access to and copies of any Personal Information about you that we are holding (please note that you are entitled to request one copy of the Personal Information that we hold about you at no cost, but for any further copies, we reserve the right to charge a reasonable fee based on administration costs);
2. Right to rectification: the right to have your Personal Information rectified if it is inaccurate or incomplete;
3. Right to erasure/"right to be forgotten": where the processing of your information is based on your consent, the right to withdraw that consent and the right to request that we delete or erase your Personal Information from our systems (however, this will not apply if we are required to hold on to the information for compliance with any legal obligation, or if we require the information to establish or defend any legal claim);
4. Right to restriction of use of your information: the right to stop us from using your Personal Information or limit the way in which we can use it;
5. Right to data portability: the right to request that we return any information you have provided in a structured, commonly used, and machine-readable format, or that we send it directly to another company, where technically feasible; and
6. Right to object: the right to object to our use of your Personal Information including where we use it for our legitimate interests.

Legal Basis for Processing

The following legal bases apply to the ways in which we use and share an individual's Personal Information:

1. We rely on an individual's consent to process Personal Information to provide support and/or carry out Promotions. This consent can be withdrawn at any time.

2. We also process the information provided by an individual in our legitimate interests in ensuring our business is conducted legitimately and to a high standard.

RETENTION

We will retain the information you provide in order to process your request, provide support, and/or carry out and fulfill our Promotions. If you request support, we will retain your information for no longer than six (6) months. If you participate in a Promotion, we will retain your information until the Promotion is carried out and ninety (90) days after any prize, reward, or offer is fulfilled. Your Personal Information will then be deleted.

CHANGES TO TECHNICAL ELEMENTS

We may modify technical elements such as protocol and blockchain network.

ABOUT AML (Anti-money laundering)

Financial institutions and closely related entities experience often attempts of money laundering and terrorist financing. Money laundering is defined as the process where the identity of the proceeds of the crime are so disguised that it gives the appearance of legitimate income. Terrorist financing is defined as the process of providing support to individual or group terrorists. Without direct terrorist financing, such activities as fund-raising, use and possession and funding arrangements also falls under the definition of terrorist financing.

Dionpay PTE. LTD. pays thorough attention to any activities that may be considered as money laundering or terrorist financing. Dionpay AML policy is designed to prevent money laundering by complying with Singapore AML legislation obligations including the need to have adequate systems and controls in place to mitigate the risk of being used to facilitate the financial crime. To minimize and mitigate the risk of money laundering and/or terrorist financing, Dionpay implemented effective internal measures and procedures:

- Establishment of the identity of Dionpay customers;
- Assessment of risk;
- Monitoring of the customer's activities; and
- Reporting of suspicious activities to respective authorities.

ABOUT KYC

KYC is done by users of dion wallet. Although, we carefully confirm KYC, there can be mistakes. We are not responsible for KYC because mistakes are from users.

CHANGES TO PRIVACY POLICY

We may modify this Policy from time to time. If we make any changes, we will change the Last Updated date above. We also may provide additional notice, as applicable, depending on the type of change. If you object to any changes, you may stop using the Services. Your continued use of the Services after we publish or otherwise provide notice about our changes to the Policy means that you are consenting to the updated Policy.

LEGAL DISCLAIMER

1. Information published on Dionpay.com

The website <https://dionpay.io/> (hereinafter, referred to as the “Website”) provides information and material of a general nature. You are not authorized and nor should you rely on the Website for legal advice, business advice, or advice of any kind. You act at your own risk in reliance on the contents of the Website. Should you make a decision to act or not act you should contact a licensed attorney in the relevant jurisdiction in which you want or need help. In no way are the owners of, or contributors to, the Website responsible for the actions, decisions, or other behavior taken or not taken by you in reliance upon the Website.

2. Risks related to the use of DionCoin

Dionpay LTD. will not be responsible for any losses, damages or claims arising from events falling within the scope of the following five categories:

- (1) Mistakes made by the user of any DionCoin-related software or service, e.g., forgotten passwords, payments sent to wrong DionCoin addresses, and accidental deletion of wallets.
- (2) Software problems of the Website and/or any DionCoin-related software or service, e.g., corrupted wallet file, incorrectly constructed transactions, unsafe cryptographic libraries, malware affecting the Website and/or any DionCoin-related software or service.
- (3) Technical failures in the hardware of the user of any DionCoin-related software or service, e.g., data loss due to a faulty or damaged storage device.
- (4) Security problems experienced by the user of any DionCoin-related software or service, e.g., unauthorized access to users' wallets and/or accounts.
- (5) Actions or inactions of third parties and/or events experienced by third parties, e.g., bankruptcy of service providers, information security attacks on service providers, and fraud conducted by third parties.

3. Investment risks

The investment in DionCoin can lead to loss of money over short or even long periods. The investors in DionCoin should expect prices to have large range fluctuations. The information published on the Website cannot guarantee that the investors in DionCoin would not lose money.

4. Compliance with tax obligations

The users of DionCoin are solely responsible to determine what, if any, taxes apply to their DionCoin transactions. The owners of, or contributors to, Dionpay are NOT responsible for determining the taxes that apply to DionCoin transactions.

5. No warranties

The information of DionCoin is provided on an "as is" basis without any warranties of any kind regarding the Website and/or any content, data, materials and/or services provided on the Website.

6. Arbitration

The user of DionCoin agrees to give up any dispute arising from or in connection with Dionpay or this disclaimer.

TOKEN SALE AGREEMENT

Last updated May 15, 2019

We are not responsible for any loss. DionCoin and Dionpaywallet are under active development. While we have thoroughly tested & tens of thousands of wallets have been successfully created by people all over the globe, there is always the possibility something unexpected happens that causes your funds to be lost. Please do not invest more than you are willing to lose, and please be careful.

CONTACT INFORMATION

We welcome your comments or questions about this Policy. You may contact us at:
support@dionpay.com