White Paper

Giant.Exchange

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Introduction

A Binary Option is an option which provides either a fixed amount of payoff or no payoff at all depending on the fulfillment of the agreed terms at a specified time. Usually, an option is bought in advance at a fixed price and the result of this purchase is either positive (the difference between the premium and the cost of the option) or negative (the cost of the option). Commonly, the size of the premium is several times the size of an option.

Usually, the substance of a binary option is whether the stock price of the underlying asset will be above or below the certain level. Herewith, the premium is paid in case when option wins, regardless of the degree of a price change. In order to receive a payoff it is enough to specify the correct price movement.

Binary options provide an opportunity to accurately calculate the amount of payments and potential risks before the option is purchased. This gives an opportunity to easily manage a large portfolio of such contracts.

There are three main types of Binary Options:

- **Up/Down options (Call and Put)** - the subject of such options is the direction of the price movement relative to the price at the time of a purchase of the option. In case of price growth expectations, a call option is bought, otherwise, when a price fall is expected, a put option is bought.
- **Touch options (One-touch and No-touch)** - the subject of this kind of options is whether the price reaches a predetermined target price (One-touch) or does not (No-touch) before the contract is closed. After the first achievement of the given price level, further price fluctuations do not affect the closing result
- **Range options (In and Out)** - the subject of such options is the prediction of the range within which the price will fluctuate until the option closes (In) or within which the price won’t fluctuate, touching one of the two strike prices (Out).

Binary options are excellent financial instruments since the majority of their advantages are unattainable for other financial instruments, namely:

- **Simplicity** - the size of the binary option premium does not depend on the price difference. It only depends on the predicted direction of the price of an asset, therefore the less information is required in order to make a profit. This makes entry into binary options trading simple for non-professional traders.
- **Profitability** - the profitability of binary options can be many times higher than the yield from the direct purchase of assets.
- **Availability** - traders buy the contract, not the asset itself and this allows more traders to get income from forecasting the price movement.
- **Controlled risk** - before the purchase of a binary option, the trader already knows how much he can lose or earn.

Binary Options industry

Originally, binary options were considered an exotic financial instrument and they did not have a large secondary market. Therefore, they could not be resold to third parties. In 2008, the American Stock Exchange (AMEX) and the Chicago Board Options Exchange (CBOE) began systematic trading of binary options, and in June 2008 these exchanges standardized such contracts. This allows them now to have a continuous stock quote. By 2018, a large number of brokers have appeared on the market and they offer binary options trading under a slightly different scheme than the above mentioned exchanges do.

Nowadays, binary options is a multi-billion dollar market, the main issues of which are a bad regulation or no regulation at all. Therefore, the fate of the binary options market is entrusted to private brokers, and traders have to rely on their honesty. The above mentioned advantages of binary options attract not only inexperienced traders, but also dishonest brokers, and sometimes outright scams. The entry into the binary options market of such kind of brokers causes subsequent unfair losses for traders and exposes this financial instrument to criticism.

Since 2015, a number of media organizations from around the globe have published a series of articles, exposing the binary options industry as a big Scam.

Commodity Futures Trading Commission (CFTC) alerts that the binary marketplaces mislead users, promising huge payouts with limited risk. In reality, users sometimes lose all their money within a few days or weeks, while brokers receive large profits.

From 2016 onwards, regulators from different countries have begun to impose bans on binary options trading within their jurisdictions. Regardless, brokers focused on rapid and large profits bypass the restrictions of regulators, choosing less regulated jurisdictions and coming up with new schemes of “luring” inexperienced traders.

Obviously, in addressing this situation it is necessary to understand the main problems which regulators try to combat applying preventive measures. Trading binary options with an unregulated broker leads to the following:

- The broker plays against the trader, unlike in situations where traders play against traders, this leads to an obvious conflict of interests
- The broker manages the data source on the price of the asset and this source of data is at best incomplete, at worst unreliable or even just fictitious
- The broker controls the trader's deposits and can unilaterally decide whether to pay the trader's deposit or block the trader's funds at its own discretion
- The broker has no motivation to make his work transparent
- The broker does not accept appeals on issues related to historical data of asset prices

This allows the broker to create situations where the trader has a profit from binary options but loses all his earned money on the broker's platform. Obviously, bans from the regulators will not solve the above issues, but will only force brokers to look for loopholes for more or less legal continuation of their activities.

We believe that the solution lies not within the tighter regulation or other prohibitions, but within the elimination of the subject of regulation. This subject is the need for trust between the broker and the trader and the solution is a creation of such environment where everyone does his own business and has no opportunities for manipulation.

The solution for the aforementioned problems of the binary options market will be the emergence of such trading platforms that will:

- Introduce a third party - the Oracle which supplies reliable data on the price of the asset and which is not affiliated with either the broker or the trader
- Provide an automatic execution of a binary options contract
- Provide a decentralized storage of traders' funds
- Provide transparent information about the current market situation regarding specific binary options contracts
- Limit the area of responsibility of each user of the platform:
    - Broker - formulates the terms of a contract
    - Trader - concludes a contract
    - Oracle - provides reliable data on the price of the asset necessary for the execution of the contract

Such platforms will deprive the broker and the trader of the opportunity to manipulate the asset prices or deposits of traders. In doing so, the work of a platform will be transparent and accessible for an audit by either party.

The first platform of such kind will be the Giant.Exchange, a decentralized binary options exchange.

What is Giant.Exchange

Giant.Exchange is a decentralized binary options exchange. This definition fully describes the functionality of the platform and the details are covered below. So, what is the Giant.Exchange?

Firstly, the Giant.Exchange is a decentralized application (DApp) based on the Giant blockchain which supports smart contract technology. Technologies of the Giant are designed in such a way that the questions connected to “Smart Bets” are optimally solved. In more details the Giant blockchain is covered in the Giant White Paper (WP) https://giantpay.network/whitepaper and in the Giant Smart Contracts WP https://giantpay.network/whitepaper/contracts. It is important to understand that in the Giant.Exchange the “Oracles” and the “Binary options contracts” are smart contracts and a purchase of a binary option is a payment for a call of a smart contract method. On the Giant Exchange all the trades and payments will be only in the space of native tokens of the Giant blockchain (ticker GIC).

Secondly, Giant.Exchange is a platform for:

1. creation of binary options contracts (Broker)
2. purchase of binary options contracts (Trader)
3. creation of datasets about the price assets (Oracle)

Thirdly, the Giant.Exchange is an open platform that allows:

1. anyone to become a Broker
2. anyone to become a Trader
3. anyone to become an Oracle

Fourthly, you do not need programming skills for the creation of a smart contract neither for "Binary option contract" nor for "Oracle”. Giant.Exchange will provide a package of standard smart contracts and an interface for its step by step

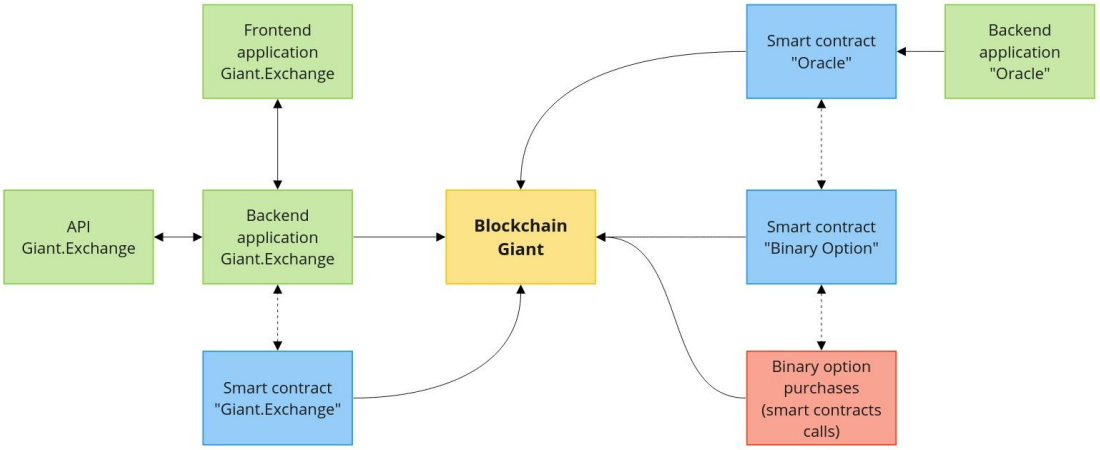
creation. In other words, Giant.Exchange is both the constructor and the framework for smart contracts. You will also have an opportunity to code your own smart contract by implementing smart contract interface expected by the Giant.Exchange.

Fifthly, the Giant.Exchange is a self-regulated system, as is the Giant blockchain . Giant community represented by masternode owners defines any significant question concerning Giant.Exchange through voting. In order to vote, a separate module will be created and it will be available through https://proposal.giant.exchange.

Finally, the Giant.Exchange is developed as an open source software with its repository available at https://github.com/GiantPay/GiantExchange. The Giant.Exchange itself will be available at https://giant.exchange. In the future, we will also implement mobile clients for Android and iPhone.

Giant.Exchange platform

Structural diagram of the Giant.Exchange infrastructure:



The choice of specific implementation technologies is based on the experience of the current members of the Giant.Exchange development team. Let's describe in more detail each of the nodes of the presented diagram.

Giant blockchain

As it was said earlier, Giant.Exchange works as a DApp on the Giant blockchain. Conceptually this means that the Giant.Exchange does not use a centralized storage (such as DBMS or NoSQL) as the primary means of storing system information. Giant.Exchange takes all the data directly from the Giant blockchain in a form of transactions or the data received from a smart contract call (in the process, Backend Giant.Exchange application will use centralized storage to cache unchangeable or almost unchangeable information).

Giant.Exchange backend application

Giant.Exchange backend application is a classic backend application, the main function of which is to obtain data from the Giant blockchain and to provide this data using the Giant.Exchange API. This application will be implemented on the universal open source framework - the Spring Framework.

The Giant.Exchange is decentralized. For the backend application, it means that anyone can launch the backend application as a separate node. These nodes can be selected by the exchange client (web or mobile) as a data provider - simply by selecting the API URL nodes. Thus, decentralization and elimination of a single point of failure are achieved for the Giant.Exchange.

Giant.Exchange API

API or Application Programming Interface is an interface of a Backend application and it is accessible via http. At first Giant.Exchange Frontend application and then mobile clients will be built on this interface. API's documentation will be available at https://api.giant.exchange and at wiki Github repository, therefore, anyone will be able to write an application which improves or complements the functionality of the exchange client.

Giant.Exchange frontend application

Frontend application is a web client of the Giant.Exchange and it is available at https://giant.exchange. This application will be implemented through the Vue.JS Javascript framework. t will be possible to create smart contracts or to call their methods directly in the browser. In order to sign a smart contract, plugins which support the most common browsers will be developed.

Any Giant.Exchange node can be selected by the data provider, by default the Giant.Exchange node with the lowest ping for the current client is selected.

"Giant.Exchange" smart contract

Giant.Exchange smart contract is a core element that fully determines the logic of the exchange. Smart contract has the following features:

1. It manages the list of relevant assets (the subject of binary options contracts)
    a. Providing a list of assets

   b. Adding a new asset (through voting)

   c. Removing an asset (through voting)

2. It manages the list of relevant oracles

   a. Providing a list of oracles

   b. Adding a new oracle (through voting)

   c. Removing an oracle (through voting)

3. It manages the Giant.Exchange voting procedure

   a. Creating voting

   b. Cancelling voting (after the expiration, through voting)

   c. Allocating funds (automatically based on the voting results)

4. It accumulates the Giant.Exchange funds out of the platform fees

5. It distributes the Giant.Exchange funds (through voting)

6. It accumulates feedbacks and recommendations from the platform users

Thus, the Giant.Exchange will be completely self-regulated. All the critical parameters and the data of the exchange will be put in the state of a smart contract, the change of which will be available only through community voting. Budgeting, voting and reputational systems are described below.

“Oracle” smart contract

The Oracle is needed to acquire data from the real world and use it in the world of the Giant blockchain. The Giant.Exchange Oracle provides information about the value of an asset at specific times, both at the request of other smart contracts and at the request of Giant.Exchange users.

Anyone will be able to create and register an Oracle on the Giant.Exchange platform. This implies that any Oracle smart contract must implement the standard

Giant.Exchange Oracle interface. This interface will be called GEOracle and will be fixed in the form of a smart contract. A definition of a random Oracle smart contract will look as follows:

```
import GEOracle from '0xaddressofsmartcontractgeoracle'

class MyOracle extends GEOracle {
 …
}
```

GEOracle defines the Giant.Exchange Oracle interface and MyOracle helps to redefine any method of this interface. A detailed description of the methods of this interface will be given in the Giant.Exchange. technical documentation.

In order to appear on the Giant.Exchange platform, MyOracle must complete the registration procedure through voting in the Giant.Exchange smart contract. To prevent any violations by MyOracle (for instance, a data falsification) we will implement a procedure of removing an Oracle from the Giant.Exchange platform also through voting.

"Oracle" Backend application

Oracle backend application is created by the Oracle smart contract owner for each such smart contract. This application has the following features:

- The call of an Oracle smart contract method at a specific time with a transfer of a current asset value
- The provision of real-time data on the price of the asset through the API

"Binary option" smart contract

"Binary option" smart contract contains the terms of the option, the methods for its purchase by the trader (the conclusion of the contract) and the methods of its automatic execution. "Binary option" smart contract can be created by anyone, which means that any binary option smart contract must implement the standard Giant.Exchange Binary Option interface.

This interface will be called GEBinaryOption and it will be fixed in the form of a smart contract. A definition of a random binary option smart contract will look as follows:

```
import GEBinaryOption from '0xaddressofsmartcontractgwbinaryoption'

class MyBinaryOption extends GEBinaryOption {
 …
}
```

GEBinaryOption defines an interface of a Giant.Exchange binary option. In MyBinaryOption you can redefine any method of this interface. We also implement the logic of the most widely spread binary options types (such as Call, Put, Touch options etc.) in the form of separate smart contracts, GEBinaryOption successors. A more detailed description of the methods of this interface will be given in the Giant.Exchange. technical documentation.

“Binary option” smart contract is inextricably linked with the “Oracle” smart contract. The latter calls the methods of opening and closing a binary option contract and transfers the value of the asset in them. Due to the fact that smart contracts are passive, the call of the “Oracle " smart contract methods initiates the Oracle backend application. The interface of the binary option contract has to also provide the withdrawal of the contract, at times when the smart contract has not transferred the necessary data after a certain time.

Binary option purchases

A purchase of a binary options contract is a payment for a call of a method of “Binary options” smart contract. The purchase rules (such as contract amount, terms, etc.) are formulated in the smart contract, therefore the purchase is an acceptance of the binary option contract. Any user of the Giant network can make a purchase of the contract.

Giant.Exchange underlying asset

The underlying asset is the asset on which the binary option contract is based. The underlying asset can be represented in the form of currencies, commodities, securities, interest rates, inflation rates, official statistical information and so on.

Giant.Exchange does not limit the list of assets, thus any asset can be added to the Giant.Exchange through the voting procedure in the Giant.Exchange smart contract.

An asset addition implies the development of a data schema (JSON Schema) which describe:

1. data format for an exchange between "Oracle" and " Binary option" smart contracts
2. data format for the API of historical data of asset value (provided by the Oracle backend application)

At the start of the project we plan to add to the Giant.Exchange the following underlying assets:

- BTC/USD
- ETH/BTC
- ETH/USD
- XRP/BTC
- XRP/USD
- LTC/BTC
- LTC/USD
- DASH/BTC

- DASH/USD
- BCH/BTC
- BCH/USD
- GIC/BTC

As a source of data for Oracles, we will use API services of data aggregators from various crypto-exchanges, such as:

https://www.cryptocompare.com/api or https://coinmarketcap.com/api

In the future, any developer will have a possibility to offer an arbitrary asset to the Giant.Exchange community. In order to do so, a developer will need to implement both the data format and the smart contract/Oracle backend app bundle for the asset.

Giant.Exchange usage scenarios

Since the Giant.Exchange platform is open and self-regulatory, any user has equal rights to access or to expand the Giant.Exchange infrastructure. The only limitations are the set of competencies and available funds.

Now, we are going to describe the most common use cases of the Giant.Exchange.

Binary options trading

Anyone can make money on binary options trading on the Giant.Exchange platform. To start trading, it is enough only to have a certain number of GIC tokens (the minimum amount required to purchase a binary option contract) at your Giant address. The storage of funds of all the users is decentralized, they are stored exclusively in their personal wallets, so the Giant.Exchange does not need to create centralized balances.

In comparison with binary options platforms of conventional brokers, Giant.Exchange provides more benefits to the trader:

Characteristic	**Regular broker**	**Giant.Exchange**
Transparency	generally, no	yes
Resistance to manipulation	no	yes
Safety of funds	no	yes
Guaranteed payments	no	yes
Safety of a platform	no	yes

On the Giant.Exchange all your transactions and funds are more secure than on a traditional platform, because it is “impossible” to hack the Giant blockchain in order to manipulate particular smart contracts or balances. Certainly, the POW and

the POS consensuses are subject to a 51% attack, but this is the attack on the entire network, not on individual GIC addresses.

“Binary options” contracts creation

Anyone can make money by creating "Binary options" smart contracts on the Giant.Exchange platform. The contract owner independently determines all the conditions of a purchase and execution of a binary option, namely he:

- selects an asset
- selects an oracle
- specifies the type of a binary option (call, put, touch, etc.)
- specifies the contract purchase price (fixed or a range with two strike prices)
- specifies the terms of opening and closing of the contract
- determines the contract earnings strategy, a game against the trader (in this case, you will need a security deposit from the contract owner) or a game when traders play against traders (in this case, the broker earns a fee from the sale of contracts)
- specifies the platform fees

A smart contract can be created from a template provided by the Giant.Exchange, or can be implemented independently. To create a smart contract, you will need an active Giant network masternode to sign the smart contract when placing it in the Giant blockchain.

“Oracle” creation

Anyone can earn money by providing reliable data on the value of assets. This is a more complicated way to earn money than the previously described ones, as in addition to creating an “Oracle” smart contract you will also need to create and maintain a backend Oracle application. “Oracle" smart contract also earns on

the fee from the sale of those binary options which include the information about the value of assets.

Development of smart contracts for the Giant.Exchange

Any developer can implement smart contracts on demand. Giant.Exchange allows the implementation of smart contracts (both binary options and oracles) with non-standard logic.

Media and information content creation

Any user who has media resources at his disposal (YouTube channel, website, blog, popular social media account, etc.) can offer an initiative to cover the news on the Giant.Exchange. In case this initiative is supported by the community, the user will receive a budget for the creation of such content.

Giant.Exchange budget

Giant.Exchange does not bet against traders and does not make money when traders lose, but it receives a fee from each sale of a binary options contract. In this case, the specific amount of fee is set by the broker when he creates a specific “Binary option" smart contract .

The fee amount affects the ranking of available sales contracts when they are displayed in the Giant.Exchange interface. The higher the fee, the higher the position of the contract in the ranking and the broader the audience of this option. Theoretically, the amount of the fee can be any, even 0.

All the income of the platform is accumulated on the balance of the “Giant.Exchange” smart contract and is not available for withdrawal by the smart contract owner. These funds form the budget of the Giant.Exchange, which will be spent on initiatives supported be the community.

Giant.Exchange reputation system

Giant.Exchange will have the feature of the accumulation of reputational information about the participants of the system: brokers, oracles, traders. You will be able to give feedback about the participants of the system by calling the methods of the Giant.Exchange smart contract. Feedbacks and ratings will remain anonymous, as the reputational information will be linked to the Giant address.

Giant.Exchange voting system

All important decisions in the Giant.Exchange ecosystem are determined through voting which takes place on the exchange platform, using the smart contract “Giant.Exchange". As a result of decision-making, usually a budget for the implementation of community initiatives, such as the development and/or maintenance of infrastructure, public relations, marketing, etc is allocated.Any user of the Giant network can take part in voting procedure, and the owner of the masternode will have a multiplying coefficient proportional to the sum of the giant network masternode bail.

Giant.Exchange airdrop campaign

Before the launch of the Giant.Exchange anyone can take part in the Giant.Exchange airdrop campaign. Registration is available on: https://giant.exchange. In order to become a member, you have just to enter your email.

At the time of X (the release of the exchange), we will send to all registered a link to activate your account at the Giant.Exchange. The first 100 users who activate their accounts will receive 100 GIC. Thus, the total airdrop amount will be 10 000 GIC.

Summary

Giant.Exchange is built around the advantages of the Giant blockchain, namely:

- all the data of the exchange is put in the state of blockchain and is managed by the community decision after the consensus is reached
- the exchange platform is open to anyone for trading, brokerage and for an expansion of exchange's functionality

In the binary options industry, competition is very intense, that is why centralized exchanges fight literally for every customer. We are sure that the decentralization is a future of the entire financial market, and especially of binary options market. Centralized exchanges cannot exist without regulation, and therefore in the coming years, they will become obsolete, giving way to decentralized ones. Giant.Exchange is the first self-regulated decentralized exchange, and we have no doubt that it will be able to become the leader of the binary options industry.

References

1. Giant White Paper https://giantpay.network/whitepaper.pdf
2. Giant Contracts White Paper https://giantpay.network/GiantContractsWhitepaper.pdf
3. Registration of the Giant.Exchange Airdrop campaign https://giant.exchange
4. Giant blockchain website https://giantpay.network