



Quartex Inc.

Whitepaper

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# Introduction

At the beginning of 2018 (when the cryptocurrency market showed unprecedentedly high growth rates), most leading cryptocurrency exchanges for several months were overflowed with requests, which led to temporary suspensions of registration of new users, increase of the “entrance threshold” for users and other difficulties.

The Correction of the cryptocurrency market that had come pushed these problems to the back burner, but did not lead to even partial solution.

Arrival of a new wave of investors, as well as the involvement into cryptocurrency transactions of the new capital, will undoubtedly require finding other solutions and creating trading products that meet the highest requirements from the side of the majority of users.

First of all, this statement is true for fresher investors and inexperienced users, oriented to the platforms, which offer maximum simplicity of service combined with high reliability and security of transactions.

Quartex blockchain project team set the task of solution of this important problem.

Involvement of the new players in the cryptocurrency trading has grown significantly in recent years.

You can verify it by looking at [coinmarketcap.com](https://coinmarketcap.com) data on the total capitalization of all the cryptocurrencies in 2017, and see that it grew from \$18 billion to \$613 billion (more than 3,400%), and the daily trading



volume for the same period increased from \$130 million up to \$27.2 billion (more than 200 times). Nevertheless, at the moment there are no simple solutions for cryptoassets trading.

Today the main problems of cryptocurrency exchanges are delays in the input/output of the funds and overloaded interface. Today we want to introduce you the new cryptocurrency exchange – Quartex, which will solve all of the above problems.

The main task of the project is to provide a ready-made trading tool, which the user of any skill can handle.



# Description of the project

Quartex is a cryptocurrency exchange with Quartex Voice Core (QVC) voice assistant, designed for quick and understandable use of all the tools of Quartex exchange.

In the final stage of the project, it is planned to launch a cryptocurrency exchange mobile application with an intuitive interface and voice assistant.

Thanks to QVC, an inexperienced user can save time by getting familiar with the interface and general provisions of exchange trading.

QVC allows you getting up-to-date information about quotations, transaction history, orders' status and much more using only your voice.



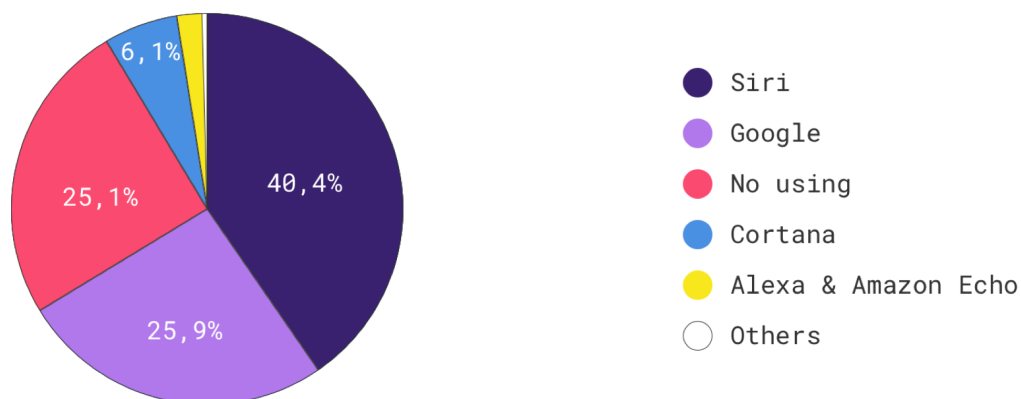
# Mobile App

The mobile application is the main element of the entire Quartex system, which will allow you using all the features of the platform.

## It's time for live voice assistants

According to a study held by MindMeld in 2013, only 15% of smartphone owners addressed to voice-assistants. And already in October 2015, 41.6% out of 1,800 interviewed adult smartphone owners in the US said that they started using a voice assistant or voice search.

The most common "interlocutor" is Siri, 40.4% of respondents talk to her. 25.9% of users use the voice assistant from Google daily, 6.1% use Cortana and 2.1% use Amazon Echo and Alexa. Other voice assistants account for 0.4%.



According to the research held by Google, 55% of teenagers and 41% of adults use voice search more than once a day. As for today, about 20% of all mobile search queries are made by voice, and by 2020 this figure will increase to 50%, also as according to Google forecasts.

When developing the application, the main task was to present an interface, which does not require the user to take the smartphone in their hand. All the management is performed by voice only.

# Quartex Voice Core

With the help of QVC, you can get up-to-date information about any quotes using just your voice, for example, "What is the rate of EOS against the US dollar?" or "Ripple to Ethereum rate?"

In order to review the history of your transactions, it is also enough to say, "Show the history of my transactions" or "History of orders".

QVC algorithm is able to conduct a dialogue with the user, and if, for example, after you learned the information about the EOS rate to the US Dollar, you command, "Buy EOS", mobile assistant can question, which order is to be set: limit or market, etc.

Also, the user has the ability to learn the status of their orders in an instant. This can be done using the command "My orders" or "My orders status". It's simple! Managing the voice assistant is made in the form of a dialogue, similar to communication with Siri or Alexa.

I would like to add that a good virtual assistant should not only solve the tasks of the user, but also answer the question "How are you?" reasonably. There are plenty of replicas without an explicit goal, and it is problematic to prepare the response for each one.

That's why we use Neural Conversational Models – a relatively new way of creating dialogue systems for free communication.

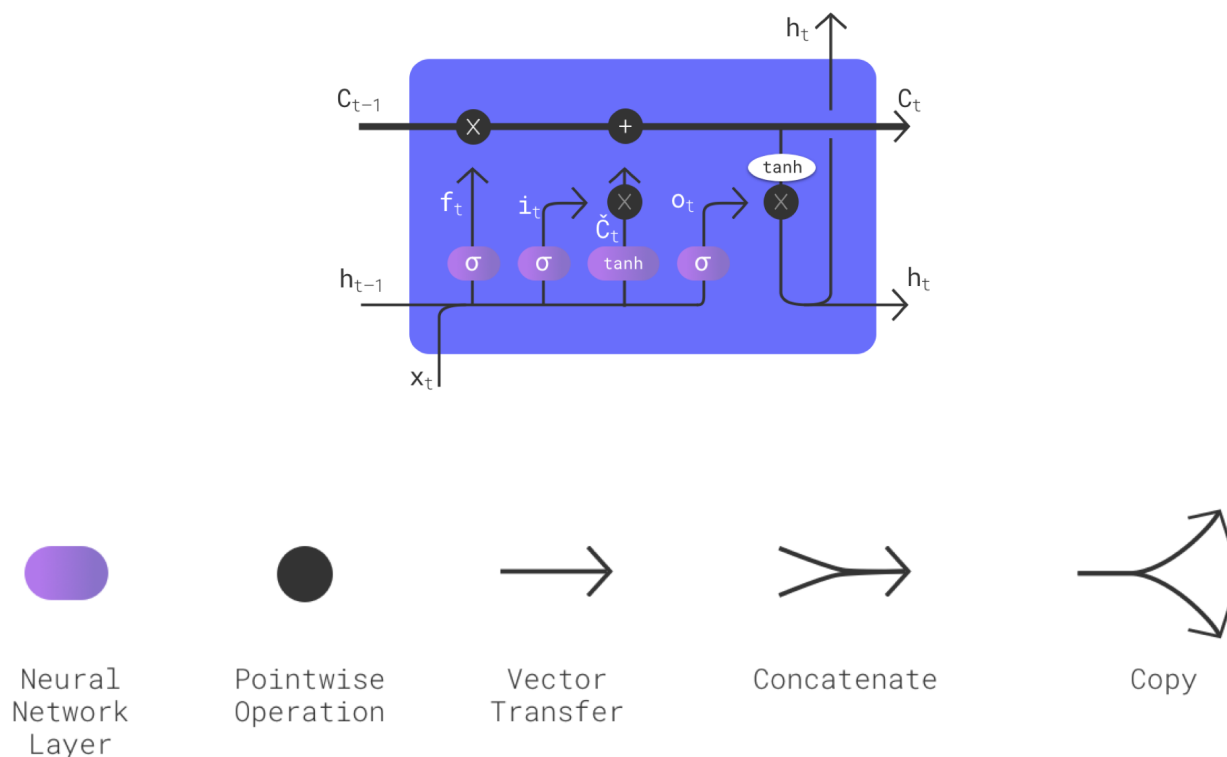
Its basis are the networks, trained on large amount of dialogues from the Internet.

Quartex Voice Core is based on Long short-term memory (LSTM) networks, which solve all the problems of long-term dependence. Using



Quartex Voice Core you can easily manage the whole trading process using just your voice. Fresh quotes, transactions history, current orders and much more are now at a distance of one phrase.

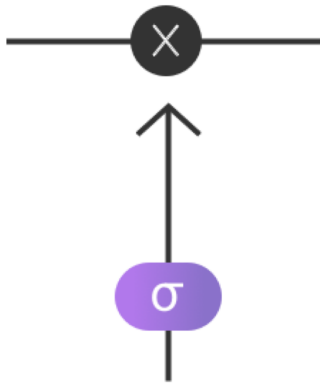
The key component of LSTM is the cell state – a horizontal line that runs along the top of the scheme.



Cell state resembles a conveyor belt. It passes directly through the entire chain, taking part only in few linear transformations. Information can easily flow through it without being subject to change.

However, the LSTM can delete information from the cell state; this process is regulated by structures called gates.

Gates allow skipping information based on certain conditions. They consist of a layer of sigmoidal neural network and a pointwise multiplication transaction.



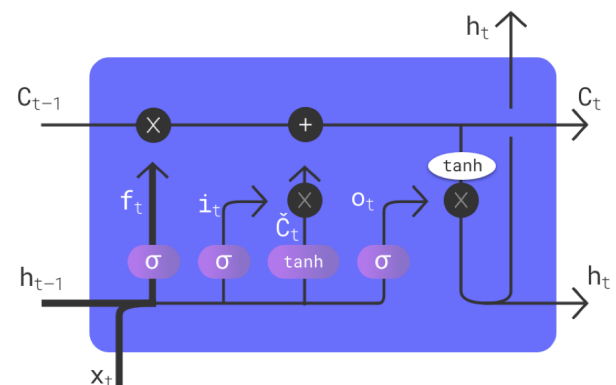
Sigmoidal layer returns the numbers from zero to one, which indicate the share of the block of information, which should be passed further along the network. Zero in this case means “do not skip anything”, and one means “skip all”. LSTM has three such gates, which allow protecting and monitoring of the cell state.

# LSTM Details

The first step in LSTM is to determine what information can be thrown out of the cell state. This solution is taken by a sigmoidal layer, called the forget gate layer. It looks at  $h[t-1]$  and  $x[t]$  and returns a number from 0 to 1 for each number from the cell state  $C[t-1]$ . 1 means "save in full", and 0 means "delete in full".

Let's consider a model that predicts the next word based on all the previous ones. In this case, the cell state must preserve the noun, so that to use the pronouns of the corresponding kind. When we see a new noun, we can forget the gender of the previous one.

$$f_t = \sigma(W_f \cdot [h_{t-1}, x_t] + b_t)$$



The next step is to decide what new information will be stored in the cell state. This stage consists of two parts. First, a sigmoidal layer, which is called Input Layer Gate, determines which values should be updated. Then the  $\tanh$ -layer builds a vector of new candidate values  $C[t]$ , which can be added to the cell state.

# Token creation terms. Crowdsale

To implement the functional features and organization of smart payment system, for the use of Quartex services, ERC20 format tokens will be issued. Tokens will be the main calculation unit of Quartex. The parameters of QTX tokens issue are the following:

Indicators	Values
Token name	QTX
Token standard	ERC-20
Blockchain protocol used	Ethereum
General offer of QTX tokens	420,000,000
Including	
- Tokens for crowdsale (47.9%)	201,000,000
- Tokens remaining in the project team (20%)	84,000,000
- Tokens for advertising purposes/marketing and payments fund (5%)	21,000,000
- Bonus fund distributed among key holders/ users of the service (27.1%)	114,000,000
Hard CAP of the project	29,000 ETH / 12,000,000 USD
Crowdsale period	April-May 2018
Accepted currency during crowdsale	ETH, BTC (additional)

Terms for participation in planned crowdsale rounds for **Quartex** investors:

Stages of crowdsale/ time from start	Amount of tokens QTX per 1 Ether	Price of 1 QTX in ETH	Bonus size, %
Early investors round (PRE SALE) Event target – 4,000 ETH			
All PRE-SALE round	8,000	0.0001 25	60 %
Main crowdsale event (ICO) Event target – 25,000 ETH			
ICO state 1 (first 12 hours of sale)	7,000	0.0001 429	40 %
ICO state 2 (next 2 days after stage 1)	6,000	0.0001 667	20 %
ICO stage 3 (from stage 2 end to sale close)	5,000	0.0002 000	-

For key project partners who investing large sums in the project, will be an additional bonus. Such a bonus is applied regardless of already raised amount. It is within accordance of the following scheme:

The amount of investment from one investor in EHT	The amount of investors constant bonus, %
<200 EHT	No bonus apply
200-499 EHT	+ 15% tokens according to crowdsale price
>500 EHT	+ 20% tokens according to crowdsale price

Funds raised from the distribution of the project tokens will be directed to:

CAPEX planned	% of raised funds
R & D (research and development) – costs for attracting of the additional staff	40 %
Total capital costs – receiving all the necessary permits to carry out activities, opening and maintaining an additional operating office in Europe and in the Asian region	10 %
Formation of operational capital required for trading services launching	30 %
Marketing and Sales – costs for the promotion and marketing	20 %

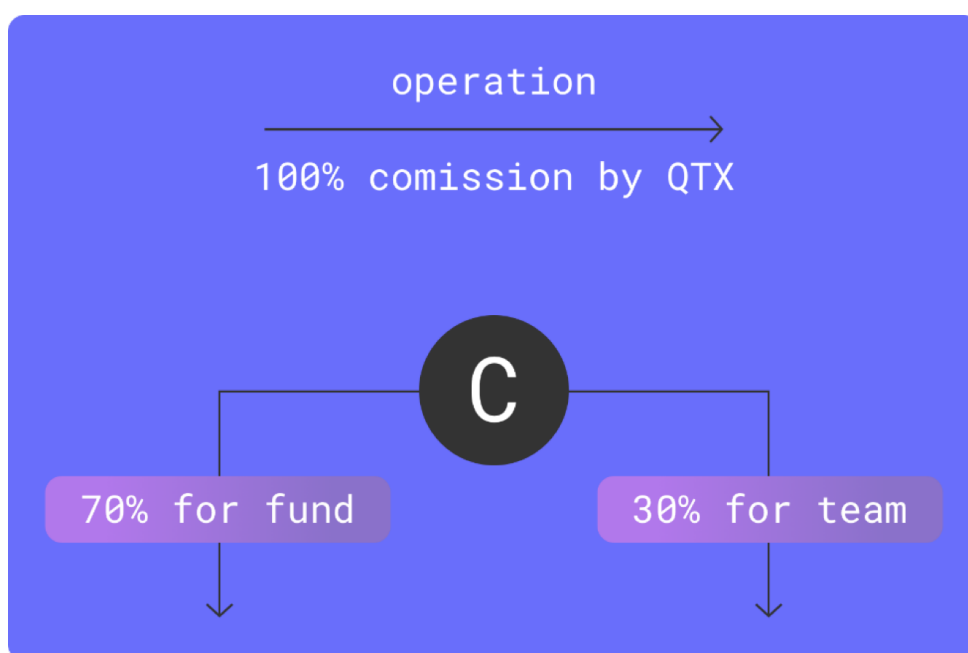
# QTX Token

We believe that the community is the main indicator of any software product, so we suggest that you support the Quartex project at an early stage of development. The QTX token issued by us can be used to pay fees on the Quartex exchange:

- 100% of the amount of absolutely all fees for all transactions on the exchange can be paid in full with the help of the QTX token (valid both for transactions with fiat currencies and with the rest of the cryptocurrencies)

70% of the fee amount paid will be sent to the created bonus fund for distribution of tokens.

The remaining 30% will go to payment of operating expenses, which will include the cost of production, product sales, administrative, financial costs, etc.:



In addition, all fees on absolutely any transactions can be paid with the help of fiat funds or other cryptocurrencies.

In this case distribution of funds will be based on the same principle that applies to paying fees using a **QTX** token, namely:

**70%** are directed to the created bonus fund, where they are exchanged to QTX token from the total turnover before the period of bonus payments.

**30%** are also used to pay operating expenses.

## Airdrop

As a result, the fund is formed as follows:

70% of all fees on all transactions + 3,166,666 QTX are monthly deducted from the Bonus Fund created when tokens were issued.

To increase user loyalty and to provide the accounting of their contribution to the organization and expansion of trading volume, every month, based on the bonus fund created by Quartex, a proportional distribution of tokens among the holders, whose total number of QTX tokens in one month will exceed 10,000.

Accrual and distribution of the bonus fund will be made on a regular basis after expiration of each month, from the moment of launching the full-featured service of the exchange and for the period of three years.

The distribution of the bonus fund between the accounts of the holders that fit the criterion will be based on the calculated weighted average indicator using the following formula:



$$QTX = \frac{\sum_{i=1}^4 t_i}{4}$$

t1 – quantity of tokens places on the account of the holder in the beginning of the week 1

t2 – quantity of tokens places on the account of the holder in the beginning of the week 2

t3 – quantity of tokens places on the account of the holder in the beginning of the week 3

t4 – quantity of tokens places on the account of the holder in the end of the period

# Roadmap

