



Quartex Inc.

Whitepaper

Introduction.....	3
Project Description.....	4
Mobile App.....	5
Quartex Voice Core.....	6
LSTM Details.....	8
Token creation terms. Crowdsale.....	9
QTX Token.....	11
Roadmap.....	13



# Introduction

In the beginning of **2018** (with the cryptocurrency market growing unprecedentedly fast) most of the major cryptocurrency exchanges were overfilled with inquiries which led to temporary interruptions in registering new users, a boost of the entry threshold and other inconveniences.

The following correction of the cryptocurrency market overshadowed these issues but did not solve any of them – even partially.

The arrival of a new wave of investors and new capital engaging in the cryptocurrency operations will definitely create a demand for new solutions and new trading products that comply with the highest requirements of most users.

First of all, this stands for beginner investors and users with a lack of experience that look for platforms offering maximum simplicity in handling, high reliability and operational security altogether. Providing a solution for such a complicated task is the main goal that the Quartex blockchain team has set out to accomplish.

Lately the involvement of new players in cryptocurrency trading has been growing significantly. It is highly noticeable in reviewing data from coinmarket.com: in 2017, total capitalization of all cryptocurrencies grew from 18 billion to 613 billion (more than 3400%); yearly trade turnover grew from \$130 million to \$27.2 billion (more than 200 times) in the same period. Still there is no simple solution for crypto-asset trading.

The main problems that cryptocurrency exchanges face today are delays in the input/output of fiat money and the overcomplicated interface. Today we want to introduce you to the new Quartex cryptocurrency exchange that solves all the problems mentioned above. The main goal of the project is to provide a trading instrument that can be handled by a user of any level.

# Project Description

Quartex is a cryptocurrency exchange with a voice assistant called **Quartex Voice Core** (QVC) developed for quick and plain access to all the features of the Quartex exchange.

The launch of the cryptocurrency exchange and the mobile app with an intuitively comprehensible interface and a voice assistant is planned at the last stage of the project.

With **QVC** an inexperienced user can save time on getting to know the interface and general terms of exchange trading.

**QVC** grants user access to the current price quotations, transaction history, order status, and etc. merely by voice.



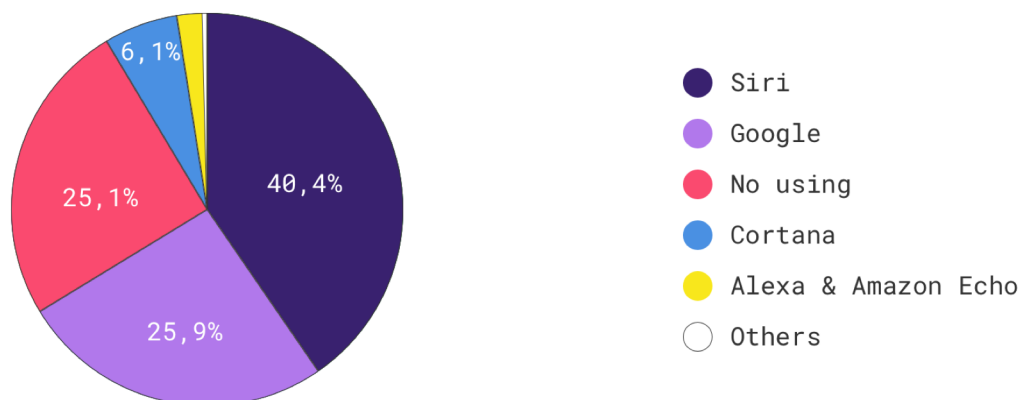
# Mobile App

The mobile app is the core element of the whole Quartex system that provides you with access to all the features of the platform.

It's high time for Voice Assistants.

According to MindMeld research, in 2013 only 15% of smartphone users reached out to voice assistants. Yet by October 2015 41.6% of 1,800 adult smartphone users in USA reported reaching out to voice assistant or search.

The most common "correspondent" is Siri; it is addressed by 40.4% of all surveyed people. Google Assistant is daily called on by 25.9% of users, Cortana – 6.1%, Amazon Echo and Alexa – 2.1%. All the other voice assistants account for 0.4%.



According to Google research, 55% of teenagers and 41% of adults use voice search more than once a day. Now about 20% of all the mobile search inquiries are voice-controlled and by 2020 this figure will have increased by 50%, according to Google forecasts.

During the development of the application, the main goal was to provide with such an interface that would free the user from picking up the smartphone. All controls are accessible through voice command.

# Quartex Voice Core

With the use of QVC one can access relevant information on any quotations, e.g. **“What is the EOS to USD rate?”** or **“Ripple to Ethereum rate?”**

In order to see the transaction history one can simply ask **“Show my transaction history”** or **“Order history”**.

The **QVC** algorithm is able to carry on a conversation with a user and if, for instance, you decide to buy EOS after learning the EOS to USD rate, you can immediately give the command **“Buy EOS”**, and the mobile assistant will specify the order you would like to place – limit or market – etc.

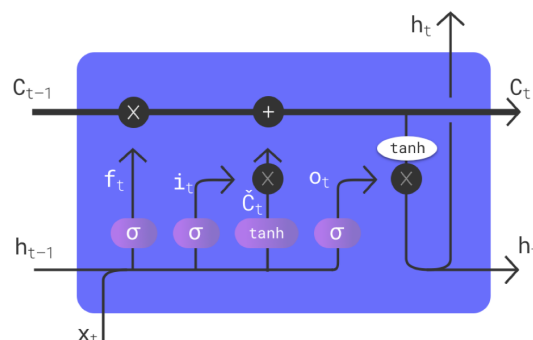
A user also has the possibility to get to hear his order status instantly. He can manage it by saying **“My orders”** or **“My orders’ status”**. It is that simple! Managing the voice assistant comes in the form a dialog as if talking to Siri or Alexa.

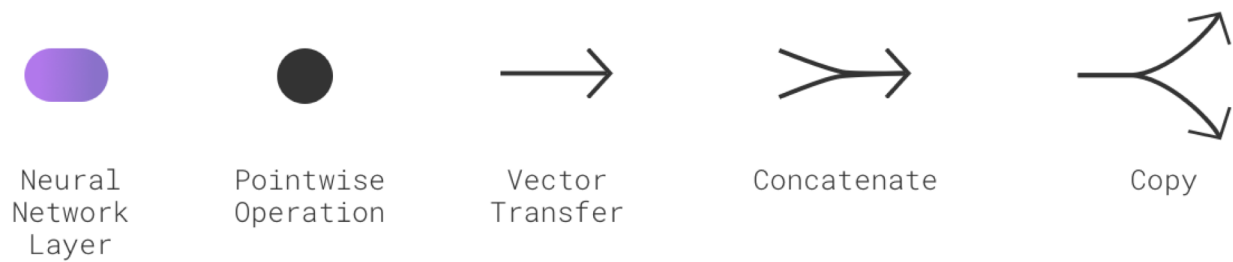
It is worth noting that a good virtual assistant should not only take care of the user’s inquiries but also respond sensibly to questions such as **“How are you?”** etc. There are many phrases with no apparent goal, and it is hard to program an answer for each one of them.

That is why we use **Neural Conversational Models** – a comparatively new way of creating a dialog system for open communication.

It is based on the networks instructed by large dialogue corpora from the Internet.

**Quartex Voice Core** is based on long short-term memory (**LSTM**) networks that solve the problems of long-term dependency. Using **Quartex Voice Core**, you can manage your trading process merely by voice. Current rates, transaction history, on-going orders and much more – just a phrase away from you.



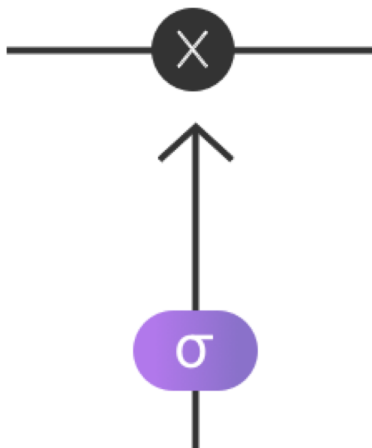


The key element of **LSTM** is cell state – the horizontal line on the top of the scheme.

Cell state is like a conveyor belt. It goes straight through all of the chain participating in just a few linear transformations. Information can easily flow through it without any change at all.

**LSTM** can still delete information from the cell state; this process is controlled by structures called gates.

Gates allow the information pass upon particular terms. They consist of a layer of a sigmoidal neural network and a pointwise multiplication operation.



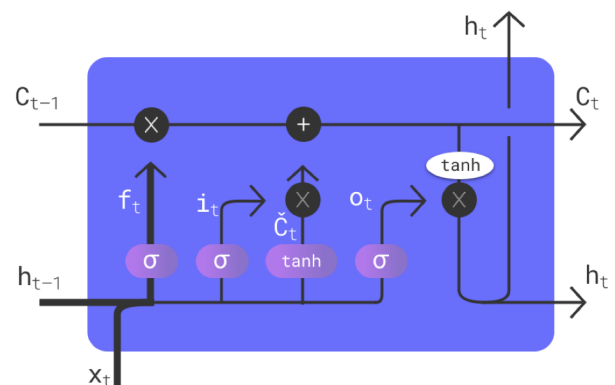
The sigmoidal layer returns a number from 0 to 1, which determine, which part of the information block should be let through the network. Zero means “let nothing through”, one means “let it all through”. **LSTM** has three gates of this nature that provide safety and control over the cell state.

# LSTM Details

The first step of LSTM is to figure out which information may be left out of the cell state. This decision is made by the sigmoidal layer called “forget gate layer.” It views  $h[t-1]$  and  $x[t]$  and returns a number from 0 to 1 for each number for the cell state  $C[t-1]$ . 1 means “keep everything”, 0 means “drop everything”.

Let us look at the model predicting the next word based on all previous. In this case, the cell state should keep the noun in order to use the appropriate pronoun later. As soon as we see a new noun, we can drop the old one.

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



The next step is to decide what new information to keep in the cell state. This step is divided into two parts. First, the **sigmoidal** layer called “**input layer gate**” decides which values should be updated. Then the **tanh-layer** constructs a vector for the new candidate values  $C[t]$  that can be added to the cell state.



# Token creation terms.

## Crowdsale

ERC20 tokens are offered for the purposes of implementing the functional features and organizing the smart system of paying for **Quartex** services. The tokens will be the main payment unit of **Quartex**. The following are the parameters for the **QTX** token offering:

Index	Value
Token name	QTX
Token standard	ERC-20
Blockchain protocol	Ethereum
Total QTX tokens offered Including	420 000 000
- Crowdsale tokens (47,9%)	201 000 000
- Project team tokens (20%)	84 000 000
- Tokens for promotion / marketing and payoff fund (5%)	21 000 000
- Bonus fund shared between key holders / service users (27,1%)	114 000 000
Hard CAP of the project	29 000 ETH / 12 000 000 USD
Crowdsale period	May - June 2018
Accepted currency during crowdsale	ETH, BTC (additional)

Conditions for participating in 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, %
<b>Early investors round (PRE-SALE)</b> <b>Event target - 4000 ETH</b>			
PRE-SALE round	8000	0,000125	60 %
<b>Main crowdsale event (ICO)</b> <b>Event target - 25 000 ETH</b>			
ICO Stage 1 (first 12 hours of sale)	7000	0,0001429	40 %
ICO Stage 2 (next 2 days after stage 1)	6000	0,0001667	20 %
ICO Stage 3 (from stage 2 until the end of sale)	5000	0,0002000	-



There will be an additional bonus for the key project partners investing large sums in the project. Such a bonus applies regardless of the amount of funds already raised. It is within accordance with the following scheme:

Investment amount from single investor in ETH	The amount of investors constant bonus %
<200 ETH	no bonus applies
200-499 ETH	+ 15% tokens according to crowdsale price
>500 ETH	+ 20% tokens according to crowdsale price

The funds raised through the token distribution will be marshalled to:

CAPEX planned	% of raised funds
R & D (research and development) - expenses of additional staff member engagement	40 %
General capital expenses - procurement of permits for the operation activities, setting up and supporting of the additional offices in Europe and Asia	10 %
Forming a working capital for the trading services launch	30 %
Marketing and Sales - expenses on the promotion and marketing	20 %

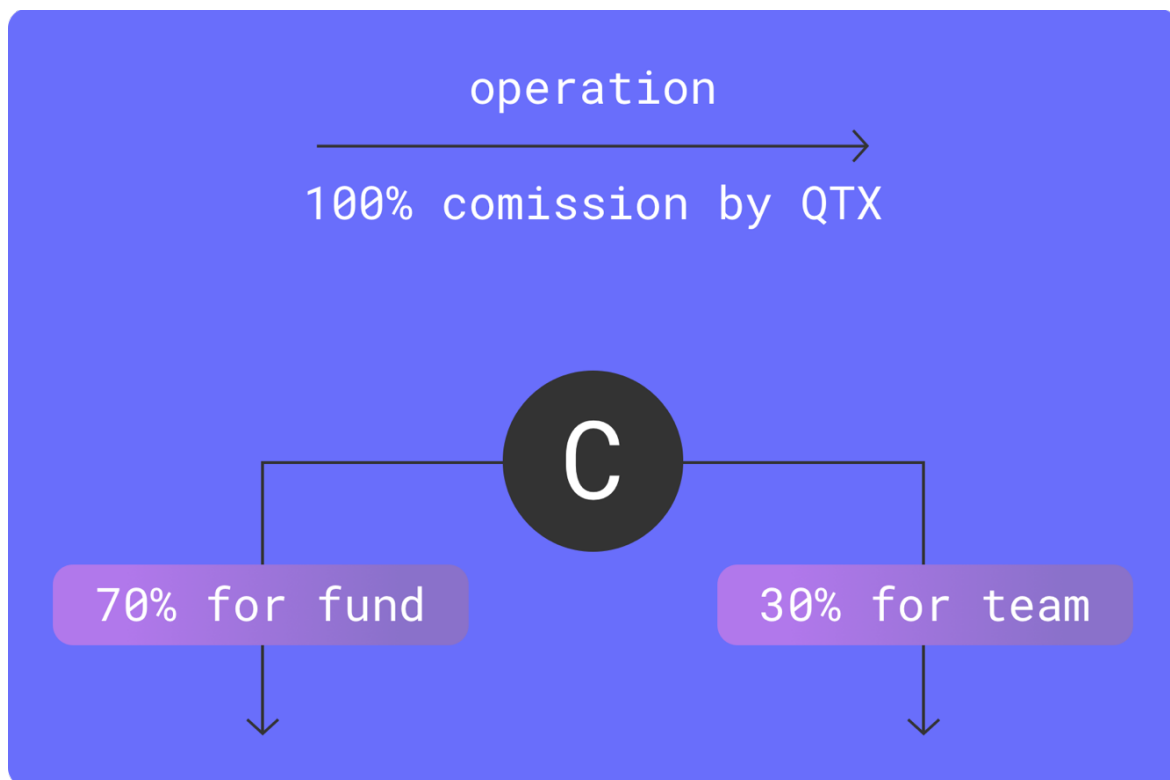
# QTX Token

We believe that community is the main indicator of any programming product and that is why we suggest that you support the **Quartex** project in its early stages of development. The QTX token that we offer can be used for commission payments in the **Quartex** exchange:

- **100%** of any kind of commission for any kind of operation on the exchange can be covered with **QTX** token (for both fiat money operations and other cryptocurrency operations)

**70%** of that amount of commission paid will be marshalled to the special bonus fund of token distribution.

The **30%** left will cover the operational expenses that include production and implementation of the product, administrative and financial expenses, and etc.



Apart from that, all the commissions for any operation can be covered with fiat money or other cryptocurrencies. In that case, the distribution of funds will be the same as if the commission is paid in **QTX** token, which is:

**70%** curated to the special bonus fund; it is then converted into QTX token from the public exchange before the bonus pay-off period

**30%** directed to cover operational expenses

In the end, the fund is formed of the following:

70% of all the commissions for all the operations +

**3 166 666 QTX** allocated monthly from the bonus fund established during token offering.

In order to raise user loyalty and reward their contribution to organizing and expanding the exchange turnover there will be a monthly proportionate distribution of tokens (from the special bonus fund) among holders with a cumulative monthly amount of **QTX** tokens exceeding **10000**.

The calculation and distribution of the bonus fund will occur regularly at the end of each month, starting from the launch of the fully functional exchange and during three years.

The distribution of the bonus fund between the holders complying with the criteria will be calculated based on the weighted rate according to the formula:

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

**t1** – the amount of tokens on the holder's account at the beginning of the first week

**t2** – the amount of tokens on the holder's account at the beginning of the second week

**t3** – the amount of tokens on the holder's account at the beginning of the third week

**t4** – the amount of tokens on the holder's account at the end of the period

# Roadmap

