# QCHAIN

**WHITE PAPER** 1.0

# CONTENTS:

# CONTENTS:

# INTRODUCTION.

We are likely on the cusp of a blockchain revolution. This revolution began with the emergence of a new economic reality on the Internet – an alternative currency called Bitcoin, which is issued and provided not by some state, but by the users of the Bitcoin network with the automated consensus between them. The uniqueness of this currency is due to the fact that its users do not have to trust each other. Self-regulation algorithms built into the system prevent any malicious attempts to cheat. Technically speaking, bitcoin is digital money circulating in a decentralized, peer-to-peer electronic payment system based on a publicly available ledger called "blockchain".

In fact, this is a new form of money combining peer-to-peer file sharing like BitTorrent with a public key cryptographic system. Since the very beginning of the Bitcoin project in 2009, it has got a number of imitators – alternative cryptocurrencies, typically using the same approach, but with some changes and improvements. Blockchain technology can become an organic economic shell of the Internet, serving online payments, decentralized exchange, earning and spending of tokens, receiving and transferring digital assets, as well as issuing and executing smart contracts. As a means of decentralization, this technology could be the next fundamental breakthrough in information technology, after mainframes, personal computers, the Internet, mobile and social networks. They can change the life of mankind dramatically, as the Internet did it once.

# HISTORICAL OVERVIEW OF THE INDUSTRY.

Blockchain is the technology for securely distributed storage of records of all Bitcoin transactions ever committed. A blockchain is a chain of data blocks, the volume of which is constantly growing as miners add new blocks with records of the most recent transactions, and that happens every 10 minutes. Blocks are written to the blockchain in a linear, sequential-chronological order. Each full node, that is, a computer connected to the bitcoin network with a client that verifies and transfers transactions stores a copy of the blockchain that is automatically downloaded when a miner joins the bitcoin network. The Register stores complete information about all addresses and balances, starting with the genesis block, that is, the very first block of transactions, until the very last added block.


Today many people realize that thanks to their economic, political, humanitarian, andlegal advantages, bitcoin and blockchain technologies are turning into a powerful disruptive innovation that can fundamentally change most aspects of our social life. To streamline things and to make the perception more convenient, let's divide the various, existing and potential, technological aspects of the blockchain revolution into three generations: blockchain 1.0, 2.0, and 3.0.

## HISTORICAL OVERVIEW OF THE INDUSTRY

**Blockchain 1.0** – The blockchain journey began with Bitcoin (BTC), the first cryptocurrency created by the mysterious Satoshi Nakamoto. The new technology pioneered decentralized ledgers and peer-to-peer networks for sending and receiving money, where the problem of double-spending was solved without involving trusted nodes or a centralized server. The Bitcoin network used a proof-of-work (PoW) algorithm, but scalability remains a major issue.

**Blockchain 2.0** – the launch of Ethereum, which considered blockchain as a completely separate innovative technology, it became possible to create secure smart contracts and expanded the field for using decentralized applications (dApps). Ethereum has unleashed the true potential of the blockchain beyond digital currencies. Besides, the platform has managed to achieve a speed of 15 transactions per second.

**Blockchain 3.0** – The third generation of blockchains marked the emergence of the Cardano and EOS platforms, with processing speeds exceeding 3000 transactions per second. EOS and Cardano operate on a Delegated Proof of Ownership (DPoS) consensus mechanism, which significantly reduces energy cost and generates a block for 0.5 seconds.

**Blockchain 4.0 & Next Generation Blockchain** – decentralized digital asset exchange network and real-time DPoS development platform built on an automatic, self-learning signal routing protocol. The initial speed of 50,000 transactions per second, comparable to Visa and MasterCard, is gradually increasing as more bandwidth nodes are added.

**QCHAIN** is an innovation in the blockchain platform industry that includes and surpasses all current advances in the speed of formation, security of storing, sending, and receiving encrypted data.

# INDUSTRY CHALLENGES.

Despite the huge public interest, the further development of blockchain technology is hindered by several factors at once. They hinder both the development of the technology itself and the ecosystems based on it. These are mainly low network bandwidth (typical for blockchains 1.0, 2.0, and 3.0), poor scalability, lack of support for third-party services and poor integration with other platforms, vulnerability to 51% attack (for PoW consensus), as well as the lack of a simple interface understandable for users that's easy to work with.

Although blockchain technology has already achieved notable success, there are still no sufficiently universal solutions based on it. In most cases, existing blockchain networks are financial platforms where you can work with cryptocurrencies. But they do not reveal one of the most noticeable advantages of blockchain technology – the ability to link separate processes in a single ledger: purchase of goods, transfer of copyrights, logistic accounting, storage of information in a single repository, arbitration, etc. This situation is caused by the inertia of thinking not allowing to go beyond the established stereotypes and opinions.

**The main problems of a modern blockchain are as follows:**

- Large data block size
- High barrier to entry for a user
- Lack of clear usability at the Internet banks level
- Energy consumption
- Scalability
- Transaction speed
- Organization of communication channels
- The current organization of the P2P network

- 51% attack problem
- Problem of losing keys

As a rule, almost all the existing blockchain systems use P2P networks in their operation. These networks are used for the transmission of messages and the storage of file fragments in distributed storage. In practice, this means the need to confirm delivery, extra headers in the packet body, and a great need for machine resources (mainly CPU) to assemble file fragments. Under heavy network loads, the entire network is divided into segments that interact in turn, which as a result slows down the overall work.

QCHAIN.

QCHAIN has a developed system of smart contracts describing (formalizing) any event of human life, ranging from the purchase and sale of goods and services, accounting for logistic events, to tracking copyright and interaction with legal entities, and including some self-executing transactions (smart contracts) in any field of activity.

## 4.1 – QCHAIN BLOCKCHAIN

QCHAIN is a full-fledged blockchain platform that can operate both in private and public access for government, commercial and private activities. It's a platform that can be used both with common users and with more powerful processors, base stations, as well as with the latest electronic and computer technologies, including quantum computers.

The capabilities of smart contracts allow you to create not a one-dimensional block chain, but a 4-dimensional one. In practice, this allows you to conclude a deal between several participants at once (up to 10 deals), which significantly expands the scope of this network.

Currently, modules, smart contracts have been developed, the platform is undergoing full-scale testing. The following results have been achieved:

**100 000***

Real transactions rate achieved so far, (transactions per second)

**1 000 000**

Estimated value of transaction rate (transactions per second);

**QChain uses a virtual circuit switching network as a transport.**

* – based on Tesnet results;

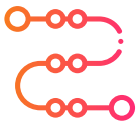
## 4.2 – NETWORK

Typically, modern blockchains are organized as peer-to-peer (P2P) networks. The QCHAIN blockchain platform uses a unique protocol based on TCP/IP, and a virtual communication channel with each node formed over the Internet. Only QCHAIN information is transmitted in this virtual channel, which increases the data transfer rate several times.

As a transport, we use a new type of network, based on the data transmission network of the fourth layer of the OSI model.

The network consists of nodes. Nodes are identical (equivalent) binary files with the ability to load and manage a shared distributed ledger. At the same time, there are several types of nodes that determine the nature of their work. At the first launch, the node itself determines its type.

**Master node**
Stores all blocks of the distributed ledger



**Light node**
Stores blocks of the distributed ledger for a certain period of time

**Private node**
Stores (and updates) the blocks that are associated with own transactions of this node

**Sleep node**
Appears when trying to connect to the network (when the network is broken, or during the first startup)

**Cloud-node**
This node is created when a new user is registered in a browser. If all the further actions go through the web page, this node remains

**Besides, a node also allows you to implement:**

- Custom ICO
- Custom decentralized exchange
- Custom token

## 4.3 – ORGANIZATION OF BLOCKS

One of the reasons causing low network bandwidth is the large block size. Thus, for example, the block size of the bitcoin network reaches 1 MB. There is no point in putting all transactions in this single block. Besides, it significantly complicates the task of finding the required data.

A distinctive feature of the Qchain network is that there is only one transaction hash in its block, which cannot be changed. Besides, this way we can eliminate all kinds of collisions. This structure minimizes the block size. In Qchain, the block size is only 120 bytes.

Also, the block structure includes the hash of the previous block (full) and the end-to- end sequence number of the block. Only the hash of the block from downstream and side smart contracts is recorded in the main blockchain, Master_Chain.

In addition to the main one, several independent side chains are formed in parallel in this blockchain – smart contracts organizing n-dimensional distribution, for example:

1

**The first one**
The generation of tokens;

2

**The second one**
The sale of goods in the store;

3

**The third one**
Crypto exchange;

4

**The fourth one**
Delivery of goods, etc.

Thus, we get a four-dimensional block distribution organization model.

## 4.4 – INTERNAL CAPABILITIES

QCHAIN allows users to confirm transactions in other cryptocurrency networks, such as Bitcoin, Ether, Litecoin, Dogecoin, etc. Despite the fact that the transaction rate on the network may be rather low (for example, in Bitcoin), you receive confirmation instantly, and you can immediately use your asset, even if it has not actually reached you yet.

Besides, the QCHAIN network has the ability to integrate third-party accounting systems, documentation, etc.

## 4.5 – EXTERNAL CAPABILITIES

The QCHAIN platform network has its own SDK for any platform on dynamic libraries, as well as API and examples for different programming languages (C/C++, Python, Modula, Delphi, etc.)

It uses its own methods of data transfer, which transmit a variety of information: blocks, individual bytes, and whole files for users outside the system. They are also used for external storage.

## 4.6 – HASHING MECHANISM

QCHAIN implements an advanced modification of the hashing system based on its own cryptographic design. Its main advantage is the increased hash (from 20 to 32 bytes), which results in high crypto resistance. This is relevant for any machine, including a promising quantum computer.

## SOLVING THE 51% ATTACK PROBLEM

Decisions are made by a single node, which acts as the main one during the time interval from 0.5 to 10 seconds. Moreover, this node does not know that it is the main one at the moment. After that, the network is updated and another node is selected as the main one. The main node collects instructions, forms blocks, and distributes them to other nodes. Then the network changes again and the cycle repeats over and over again every 0.5 ... 10 seconds (the time depends on the network load). Thus, various kinds of ambiguities, such as collisions, and double-spending are excluded. This approach allows you to completely eliminate the probability of a 51% attack, like in the PoW consensus. The more nodes are in the network, the more stable and productive is its operation.

## 4.8 – SAFE STORAGE AND MANAGEMENT OF KEYS

Another notable problem with existing blockchains is efficient key management. Nick Szabo, a computer scientist, well-known in the crypto industry (was the first to introduce the "smart contract" concept), highlights the following problems: secure storage of keys (and their management); working with keys on decentralized exchanges; lack of user-friendly solutions that consider trust minimization.

Qchain implements two-step authentication to address these issues.

## 4.9 – PAYMENTS

Qchain also implements the fast payments service, QPayments – seamless integration of on-chain with off-chain technologies. Due to the high bandwidth of the network, all operations with tokens and fiat money are carried out at the fastest possible rate.

- Instant transactions
- High-reliability thanks to a new consensus algorithm
- No internal fees in the system

## 4.10 – DECENTRALIZED EXCHANGE

QDex, an independent decentralized exchange is implemented based on this blockchain. Users can buy and sell, as well as exchange popular cryptocurrencies, with a minimum transaction fee of 1%. Qchain provides the ability to conduct instant transactions with Bitcoin, Ethereum, Litecoin, Dogecoin among the system users.

- Instant exchange in seconds
- Minimum fees for transactions
- Reliable protection against DDOS attacks
- Decentralized contracts – assets are transferred directly without intermediaries

## 4.11 – MARKETPLACE

QCHAIN offers users its own marketplace – QChain Place. If you sell goods or provide services, you can register and offer your product/service to other users of the system. You don't need to create a website by yourself, invest in advertising and look for clients. With Qchain, you already have a foundation to start your business. The QDT token acts as the currency on the trading platform.

In the future, we are going to launch an affiliate program, so that the user will receive a reward for attracting new members to the system.

- User-friendly blockchain of the latest generation
- QDT token as local currency
- Possibility of additional income for sellers and buyers

## 4.12 – QTI

QTI is a special type of digital asset intended to track current trends in cryptocurrencies (general market trend). With its help, you can track the fall or growth of cryptocurrency market capitalization through key indicators (specific cryptocurrencies). QTI is a simple and effective solution that will save you time and money in assessing the market situation. With its help, you can protect your invested funds from losses.

## 4.13 – CUSTOM TOKEN CONSTRUCTOR

For those who are going to launch their startups, Qchain offers a special construction kit. Now, in order to create your own token and attract investments from outside, you do not need any additional investments and complex technical developments. With the token constructor, anyone can easily and quickly create a token for their project and start an ICO.

## 4.14 –GAMES

Also, users can gamble in QChain. A lottery (magiclotto) and a casino (QCasino) have been implemented for now. You can make one-time or regular bets. Thanks to the algorithm implemented here, you can earn a fairly large amount by making even a small bet in QDT.

- Fair and transparent draw based on the blockchain network
- Big jackpots and good chances of winning
- Guaranteed payments thanks to the blockchain system
- Instant payouts and no fees

## 4.15 – DISTRIBUTED STORAGE

The distributed storage implemented in Qchain does not require any confirmation to receive data. Here you can very quickly find and view the files thanks to a quick search in the chains of smart contracts.

The obtained test data confirm that the access speed to distributed storage data based on the Qchain network is significantly higher than in classical file-sharing services which use P2P networks.

**Benefits:**

1. Storage of any digitized documents, data, and files of any size with instant access to them.
2. The file is divided into parts and these parts are stored in different nodes, and when you request access, it is assembled back (provided you have a key), which makes it almost impossible to get unauthorized access to your data.
3. Distributed data remains in the system for life, unlike any hosting.
4. It is possible to enforce copyright automatically with quick recognition of the original and pirated copy. Besides, the authors remuneration for the use of the product is calculated automatically without any intermediaries.
5. It is possible to earn money for those users who rent unused space on their hard drives. (A user who leases own disk space receives 30% of the amount paid for file storage).

## 4.16 – PROFIT FOR SYSTEM USERS

Qchain offers its users opportunities to earn money. At the moment, there are three options of how you can make money here.

1. Staking. By fixing more than 100 thousand QDTs to maintain the network, you receive dividends of up to 50% from all transactions in the QCHAIN network.
2. Income from the token value growth. With the growth of the network and after the burn sessions (see section "5.0 Tokenomics"), the value of the token increases, thus providing an additional profit.
3. Leasing of unused disk space. A user who leases own unused megabytes on a hard disk to others receives up to 30% of the cost of this service.
4. Wrapped tokens. Users receive a small percentage of the profits from transactions with wrapped tokens on the exchange for participating in the liquidity pool.
5. The possibility of obtaining additional income from the use of the QTI index.

The high rate of operations in the system and good scalability prospects provide opportunities for network growth and, accordingly, earnings growth for its participants.

## 4.17 – DEVELOPMENT POTENTIAL

At the moment they are not implemented, but in the future, we plan to work on the following services:

- Research and development work
- Internet of things and smart technologies
- Automated robots and vehicles
- Trading bots
- Expansion of the digital economy

All these will ensure the further growth of the network, as well as the growth of its capitalization and new opportunities for the participants to earn money.

# TOKENOMICS.

There are two types of tokens in the QCHAIN network: QDT (dynamic token) and QSTN (stable token).

The QSTN token (stable token) is intended for fast and secure operation between members of the QCHAIN network. The cost of this token is constant (equivalent of the US dollar, 1 QSTN = 1 USD). It combines the power of digital currency and the stability of fiat money.

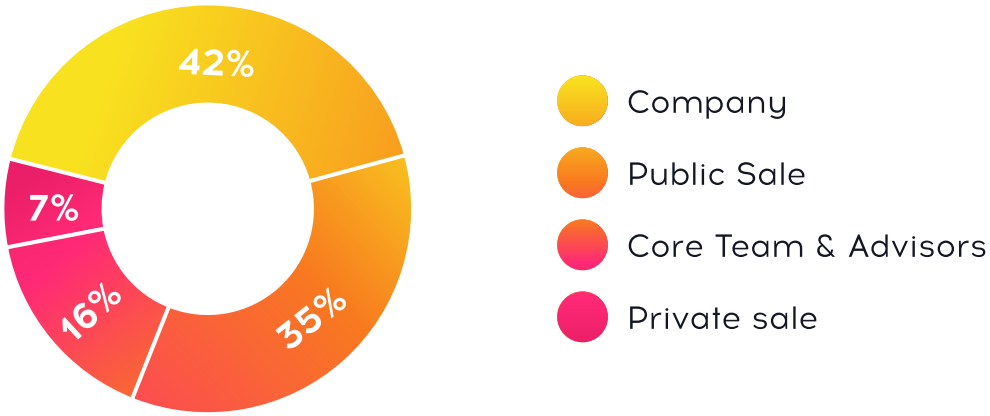
The QDT token is intended to attract additional liquidity to the QCHAIN ecosystem with the possibility of receiving dividends and additional benefits on partner platforms.

Besides, QDT acts as an internal currency (for example, for paying dividends, bets and in games, etc.)

Transactions with tokens within the blockchain ecosystem, as well as transactions with partners, are made with a minimum fee of 1%. At the same time, the theoretical transaction rate is up to 1 million transactions per second.

## 5.1 – QCHAIN TOKEN (QDT)

**QDT** are tokens expressing the property right to the intellectual property of the QCHAIN program code, issued in the amount of 2,718,281,828 QDT.




**7%** of the total amount of QDT tokens (190,279,728 QDT) will be sold on a Private Sale within the partner platform.

**35%** of the total amount of QDT tokens (951,398,640 QDT) will be sold in the open ICO/IEO format on a separate domain.

**16%** of the total amount of QDT tokens (434,925,092 QDT) will be distributed among the members of the consulting team for 108,731,273 QDT every 6 months.

**42%** of the total amount of QDT tokens (1,141,678,368 QDT) will be distributed between the members of the core development team and the management of QCHAIN to support and further develop products, conduct advertising campaigns, and other activities.

QDTs are distributed during the respective ICO/IEO rounds, among the main and advisory QCHAIN team, for early investors who believe in the mathematically sound QCHAIN concept.

## PRIVATE SALE

7% of the total amount of QDT tokens (190,279,728 QDT) will be sold on a Private Sale within the partner platform.

The initial cost of 1 QDT is 0.01 USDT.

After the sale of every 27,182,817  QDT, the price will increase by 10%.

To use tokens, you must register on the QCHAIN platform and pass the KYC.

After successfully passing KYC, tokens will be transferred to the QCHAIN platform and are subject to gradual unfreezing every week for 2% of the total QDT balance transferred from the partner platform.

## 5.1.2 – OPEN SALE (ICO/IEO)

After a closed presale within the partner platform, it will be sold in the open ICO/IEO format on a separate domain.

35% of the total amount of QDT tokens (951,398,639 QDT) will be sold in the open ICO/IEO format on a separate domain.

The initial cost of 1 QDT is 0.02 USDT

The sale will take place in 7 rounds.

After each round, the QDT cost will increase by 10%.

The blocking period for purchased QDTs will be 1 month after the end of sales. After the end of the blocking period, tokens will be unfrozen and become available for free movement between wallets.

## 5.1.3 – DISTRIBUTION OF FUNDS

All funds collected during the ICO/IEO will be stored in several wallets with the ability to conduct transactions by trusted persons.

All funds collected during the pre-sale will be immediately provided to the organizers of the ICO/IEO. Funds from ICO/IEO will be released every 3 months to cover expenses, with the possibility of flexible adjustment of the amounts depending on the current market conditions.

**The development of QCHAIN infrastructure is a major cost factor, including, in particular:**

- Construction of a blockchain network with more than 1000 nodes
- Integration of services of third parties and affiliated parties
- Creation and support of a team that will deal with dispute resolution in the market and other products of the ecosystem
- Development of an internal economic model, taking into account the partners connected to the network

During the lockdown period, the company will use its reserves to protect the market value of QDT to the best of its ability. QCHAIN will work with market makers to protect prices from artificial manipulation, stabilizing prices in the event of fraudulent activity in the market.

# ECOSYSTEM AND PARTNERS.

The QCHAIN's mission is to combine useful and interesting platforms into a single ecosystem with a flexible and transparent economy.

Such a step can create a single community around a whole line of digital, travel, financial, physical goods, and services.

At the moment, some platforms have already expressed interest in maintaining and implementing the QCHAIN network in payment methods, as well as for interacting with customers and users.

**QCHAIN ecosystem partners:**

Magic Lotto

The blockchain-based lottery entertainment platform allowing users to win cryptocurrency

## ECOSYSTEM AND PARTNERS

Qchain provides an affiliate program for partners, which allows attracting service providers by paying good fees.

In turn, the model of several levels will allow partner sites to attract service providers to increase the number of goods and services.

Thanks to new blockchain technologies within the QCHAIN ecosystem, any transactions will be made automatically and instantly between partners and users based on certain rules that will eliminate the problem of a possible lack of liquidity to pay off debt.

Smart contracts will regulate the sales process, eliminating the problem of dispute resolution. All sales data will be recorded in the blockchain, which will allow building a continuous audit of transactions. QCHAIN partners will have access to audit reports and hold service providers accountable for fraudulent behavior.

Partners and users will have to pay an entry fee for registration in the QCHAIN network by purchasing QDTs. In turn, QDT holders will receive discounts from QCHAIN partners.

Such a step will provide interest in accumulation and retention on QDT wallets, which in turn will have a positive effect on market demand and a gradual increase in the token value.

With the growing popularity of tokens, a gradual burning of QDT will be carried out to achieve the fairest inflation rate and stability of the systems liquidity.

Partners, service providers, and end-users of goods and services will form the backbone of the QCHAIN ecosystem, and we provide them with a unique opportunity to transact securely and transparently.

# ROADMAP.

**The main stages of development and launch of products on the market:**

## Quarter 1, 2023

### – QChain DEV

#### QChain Node

- Blockchain: Non-Active Account Freezing
- Documentation: Creating a QChain Wiki

#### QChain Node dApps

- QSTaking: Time Locking
- QNFT: Creating of the NFT
- QDEX: Creating a second counter
- QSTN: Creating a QTreasury client

#### QChainDot

- Team building
- Creating a concept of a EVM supporting substrate-based side-chain
- MVP

#### QChainSpace

- QTreasury: Based (USDT-ERC20, USDT-TRC-20)
- QChainPlace: Concept
- QFight: Concept, Tokensale

### QChainSpace

- Tirus: Rebranding
- MagicLotto

### – QMarketing

- Developer meetups & Connections
- Listings: DigiFinex
- Ambassador Program
- GameFI Partnerships
- QChain Hackathon 2023
- Youtube & Telegram AMA

### – QBase

- Activating the offer to freeze for 24 months

the tokens for inactive accounts

## Quarter 2, 2023

### – QChain DEV

#### QChain Node

- QChain Virtual Machine: Smart-Contract Concept, Smart-Contract Language

#### QChain Node dApps

- QDEX
- QChat
- QSTaking
- QSupport

### QChainDot

- Dev-Net

### QChainSpace

- QBridge: (QBTC, QETH, QLTC)
- QTProperties (QChain Tokenized Properties)
- QDAO: Concept
- QChain Fighting Championship: Concept, Tokensale
- MagicLotto: Public Sale

## – QMarketing

- Developer meetups & Connections
- Blockchain Conferences
- Blockchain Community meetups
- QChain Hackathon 2023 FInal
- Youtube & Telegram AMA

# Quarter 3, 2023

## – QChain DEV

### QChain Node

### QChain Node dApps

- QDEX
- QSTaking
- QSTorage

### QChainDot

- QChain Node Integration
- Test-Net

### QChainSpace

- QChain Fighting Championship: Game MVP
- QDAO: Yield Staking / Farming, Release
- MagicLotto: Public Sale END

## – QMarketing

- Blockchain Conferences
- GameFi Partnerships

# Quarter 4, 2023

## – QChain DEV

### QChain Node

### QChain Node dApps

### QChainDot

- GitHub
- PolkaStarter
- Main-Net
- Integration: Bridge Between chains
- Security audit

### QChainSpace

- QDAO Bridges
- QChain Fighting Championship: Game Release
- MagicLotto

## – QMarketing

- Blockchain Conferences
- Blockchain Community meetups
- QChain Dot Hackathon

QCHAIN