



Whitepaper

2018

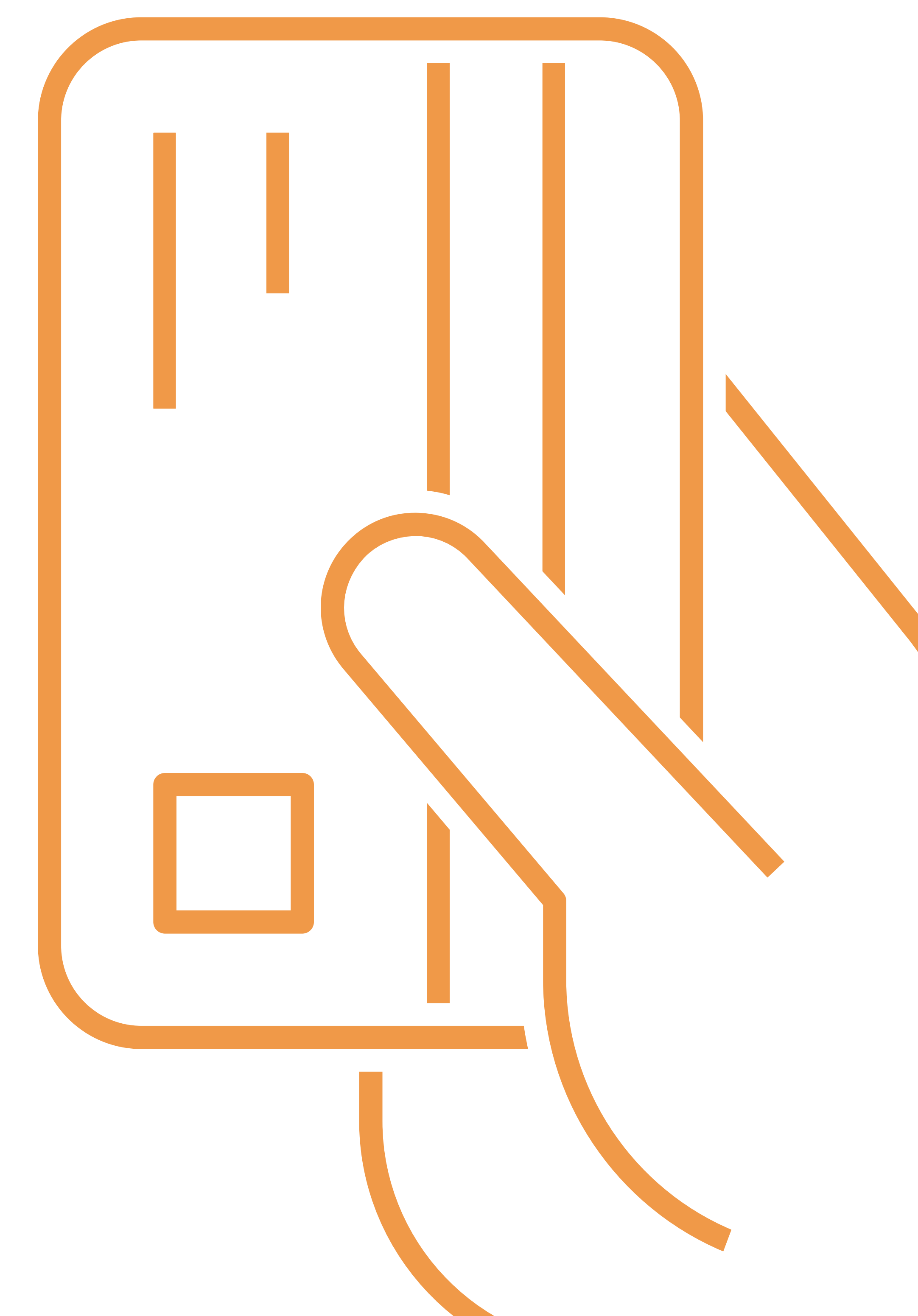
www.usdx.cash



Nowadays 85% of purchases are made using cash, although almost 70 years have passed since plastic cards were introduced, according to MasterCard.

However, in a number of countries the percent of cash payments is practically reduced to zero.

According to the data from the World Payments Report, presented by Capgemini and BNP Paribas, only 3% of payments were made with cash in Sweden in 2011. In 2015 this number dropped to 2%. It is expected to become 0.5% by 2020.

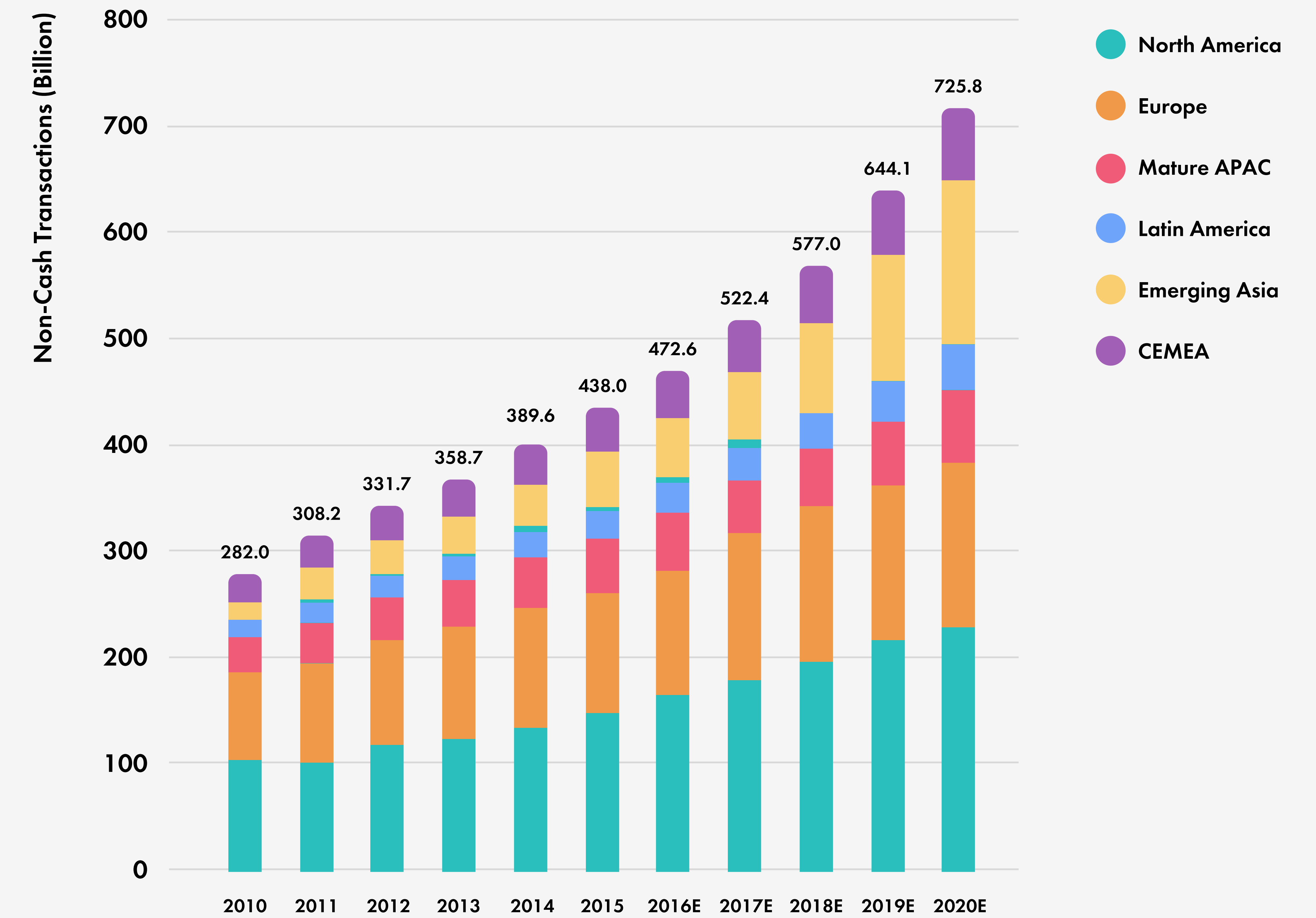




MARKET ANALYSIS OF ELECTRONIC FUNDS TRANSFERS

The same situation can be currently observed in Denmark and Iceland; while one of the biggest banks – DNB – urged the Norwegian citizens to stop using cash altogether a couple of years ago. The United Kingdom has not yet decided to abandon cash payments; however, in 2015 cash was overtaken by non-cash payments. 52% of all payments were made electronically, whereas only 48% were in cash. And this trend is unlikely to be disrupted in the future. Developing countries like India and China follow suit of Europe and the US, when it comes to switching to e-payments.

According to the World Payments Report an amount of e-payments grew 54% (433 billion transactions) from 2010 to 2015, where 55% are made up of plastic cards. Moreover, the number of cash withdrawals has gone up by 33% at the same time. Currently annual growth of non-cash transaction volumes amounts to 9,1 – 11,2%. By 2020 it is projected to reach 725.9 billion transactions. The research shows that cash turnover keeps slowing down, while non-cash transactions become even more popular among consumers.

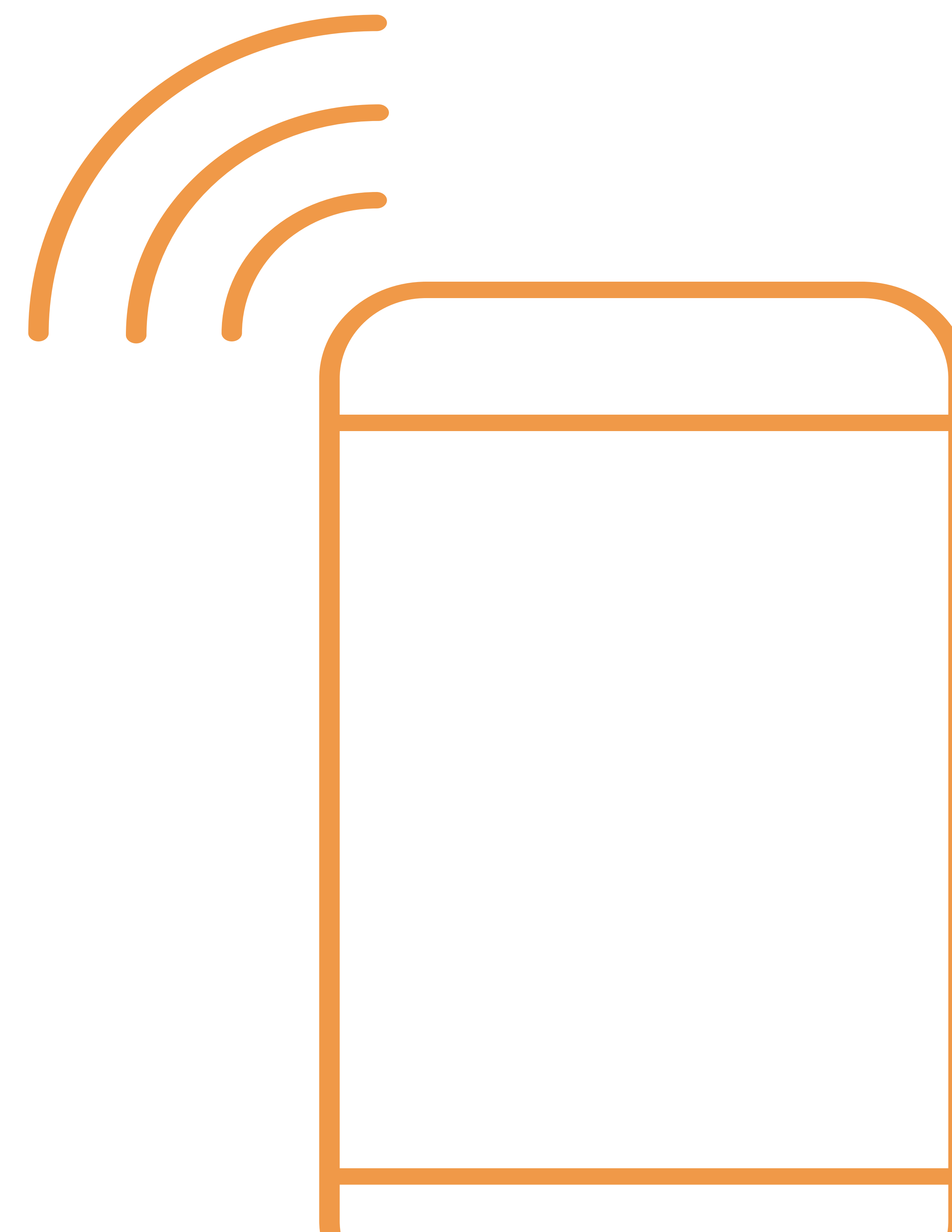


	CAGR '15-'20E	Growth '14-'15	Growth '15-'16E	
Global	10.9%	11.2%	9.1%	
CEMEA	10.2%	16.5%	8.9%	} Developing 19.6%
Emerging Asia	30.9%	43.5%	28.6%	
Latin America	7.1%	4.8%	7.2%	
Mature Asia-Pacific	7.6%	9.6%	8.8%	
Europe (incl. Eurozone)	6.5%	7.5%	6.5%	} Mature 5.6%
North America	4.3%	5.4%	4.4%	



Contactless payments systems, that connect plastic cards to apps installed on a user's smartphone, are rapidly gaining popularity.

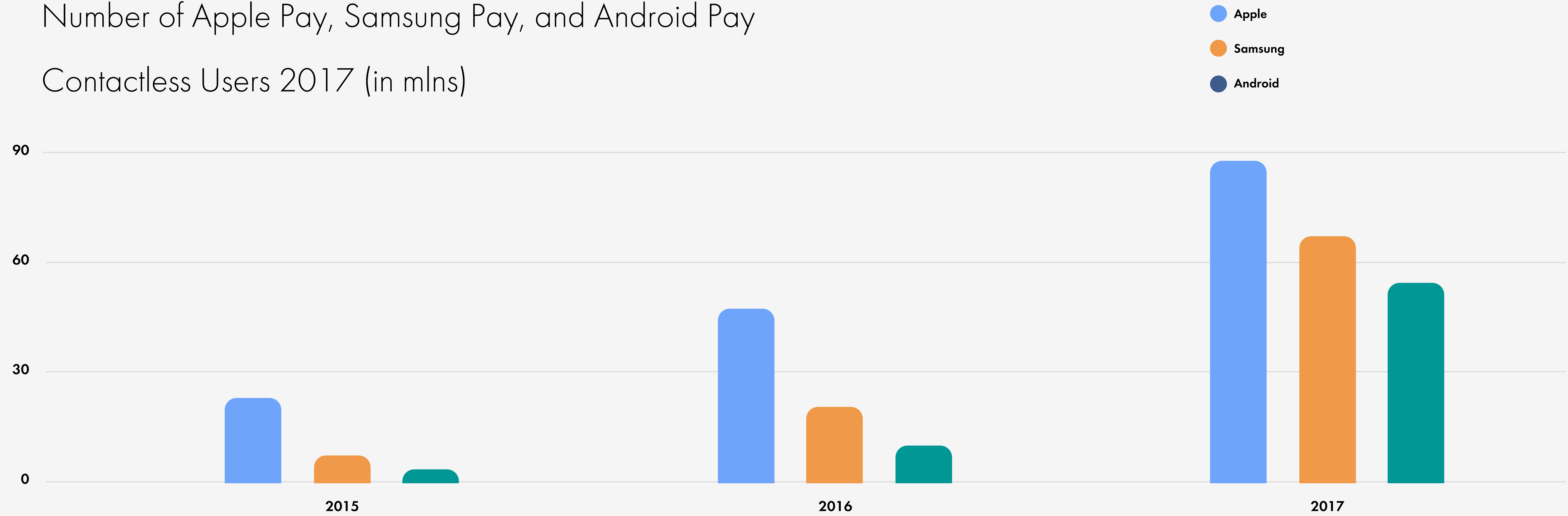
The continuous growth of user base of such contactless payments systems as Apple Pay, Android Pay and Samsung Pay is displayed in the chart below.





MARKET ANALYSIS OF ELECTRONIC FUNDS TRANSFERS

Number of Apple Pay, Samsung Pay, and Android Pay Contactless Users 2017 (in mlns)



According to the latest research total amount of users of mobile payment systems is going to exceed 760 million in 2020 compared to approximately 440 million in 2018. The number of people who use Apple Pay, Samsung Pay and Google Pay is going to reach 450 million in 2020, which is about 60% of total amount of users of mobile payment systems.

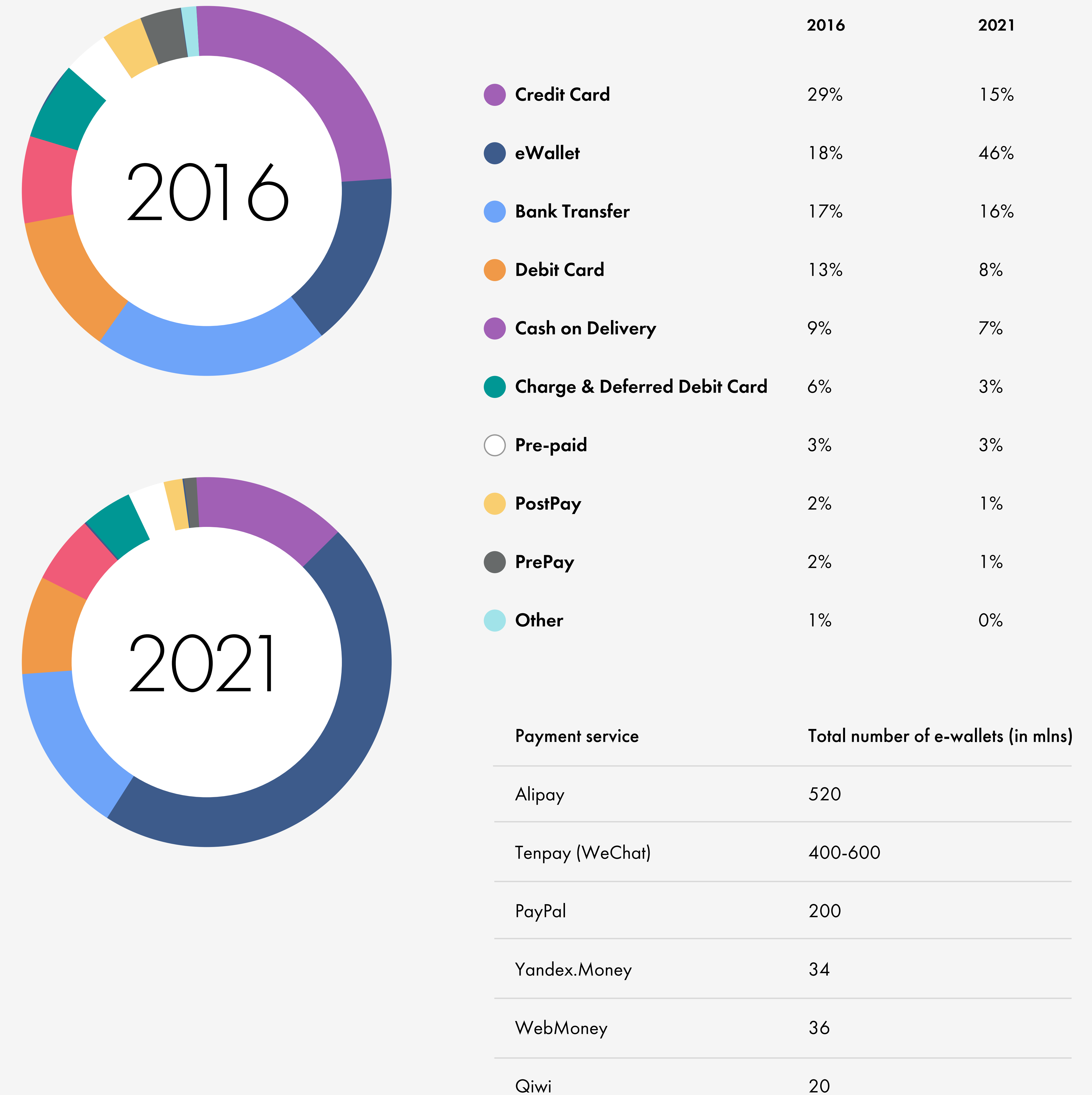


MARKET ANALYSIS OF ELECTRONIC FUNDS TRANSFERS

Worldpay estimates that e-payment volume is going to amount to \$3,265 billion in 2018, reaching \$5,411 billion by 2022.

The usage of eWallet is going to grow the most (46% of the total transaction volume). This simple, convenient and relatively secure payment method keeps gaining popularity on the market. Goods can be purchased by using either available e-wallet balance or other sources of funds, which are connected to it.

Global payment methods breakdown



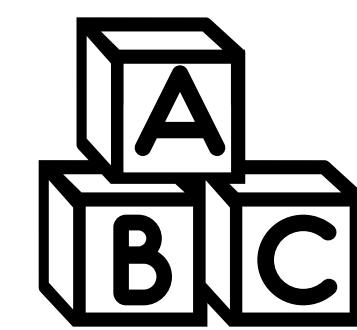


MARKET ANALYSIS OF ELECTRONIC FUNDS TRANSFERS

Among the advantages of e-wallets and cybercurrencies are:



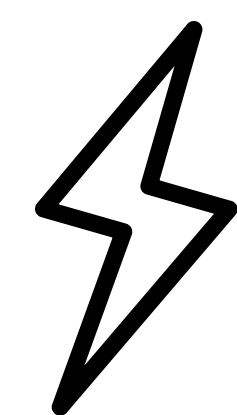
Opening an account is free of charge and there is no account maintenance fee;



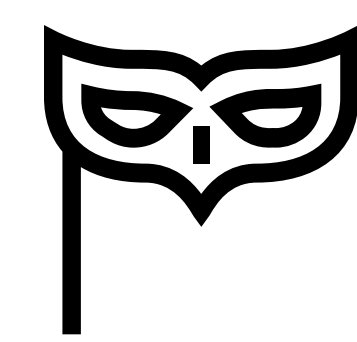
Simplicity and convenience of depositing money;



Independency from banks;



Account management and transactions are quick;



No personification if transaction amount is small.

The disadvantages are:



Internet connection is a must;



Transactions limit;



Fees for depositing and withdrawing funds;



Sharing personal information is compulsory for large transactions;

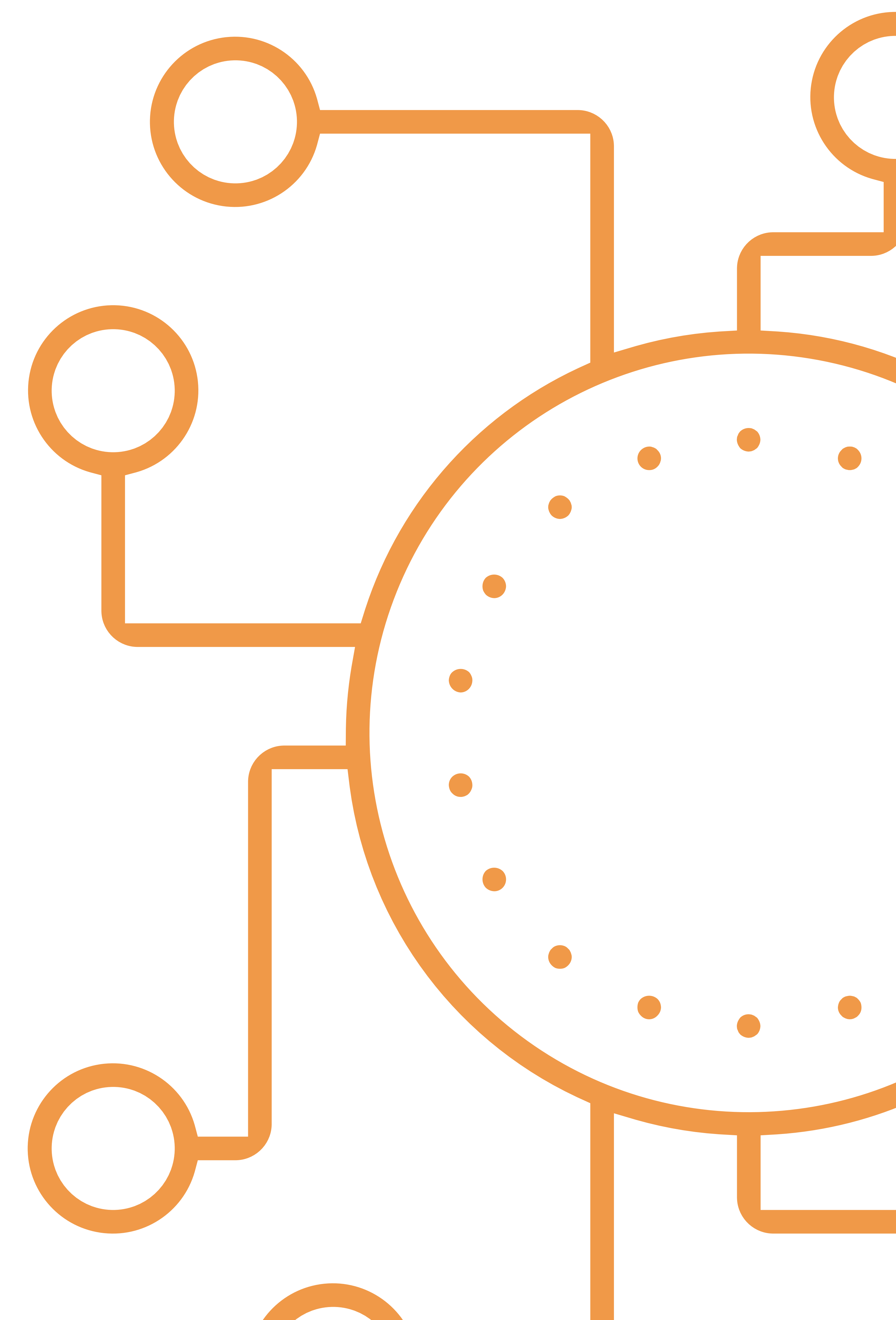


Accepted by a limited number of sellers.



Blockchain-based wallets have been gaining a lot of traction recently. They are used in order to deposit money and make non-cash transactions.

Nowadays there are around 2,000 cryptocurrencies globally, according to Coinmarketcap.com. The number of Blockchain wallet users has surpassed 25 million people in the second quarter of 2018 based on data provided by statista.com and blockchain.com.

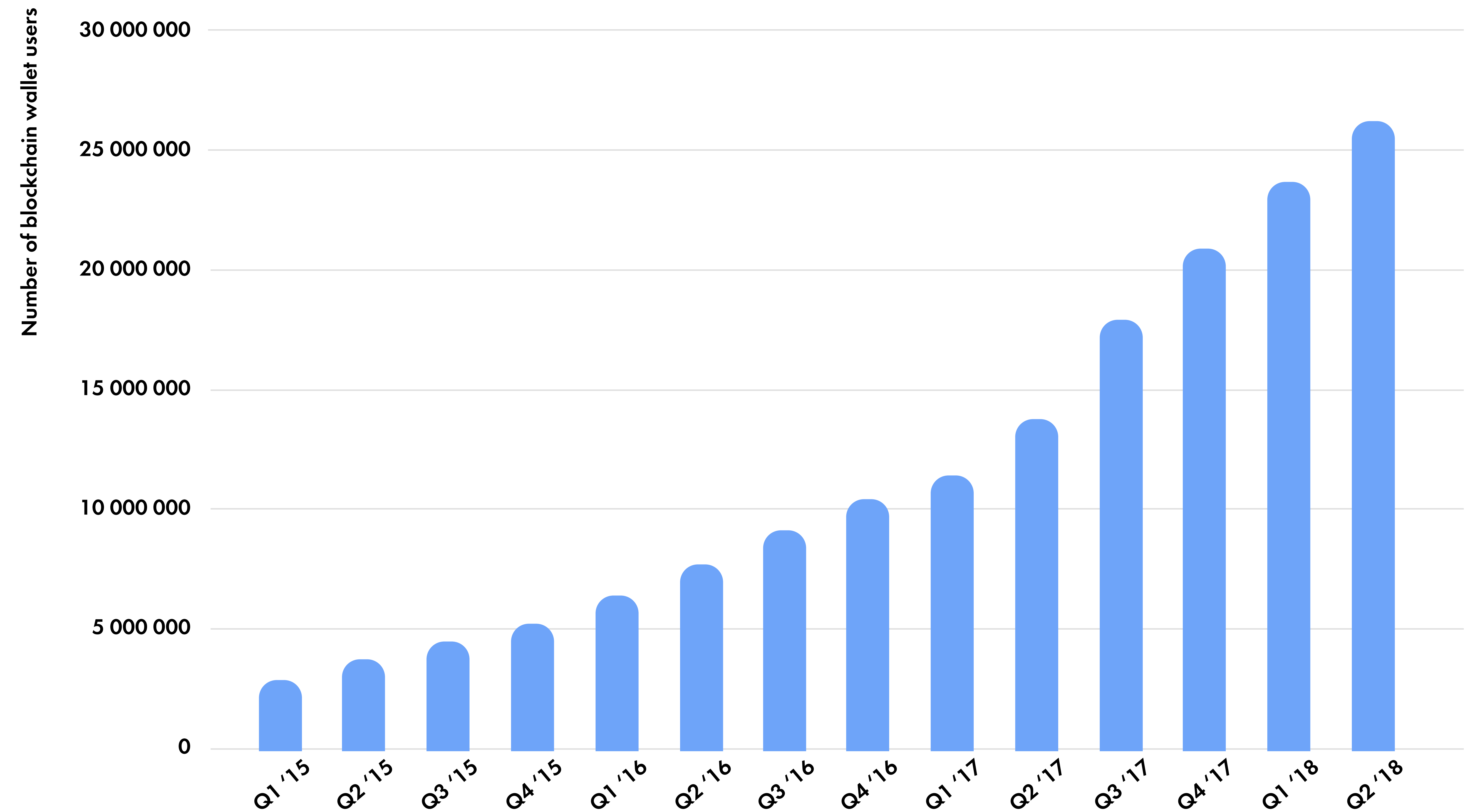




MARKET ANALYSIS OF ELECTRONIC FUNDS TRANSFERS

An exponential growth of a number of Blockchain-based wallets makes it necessary to create a convenient solution for cryptocurrency transactions.

Initially development of cryptocurrencies was left in legal limbo, given that states did not regulate it by limiting their policy only to general recommendations for central banks. However, seeing that cryptocurrencies kept growing popular, state governments were made to review the legal base. Some of the more progressive countries view Blockchain as an alternative to existing technologies and have adopted amendments which allow the usage of decentralized payment systems.

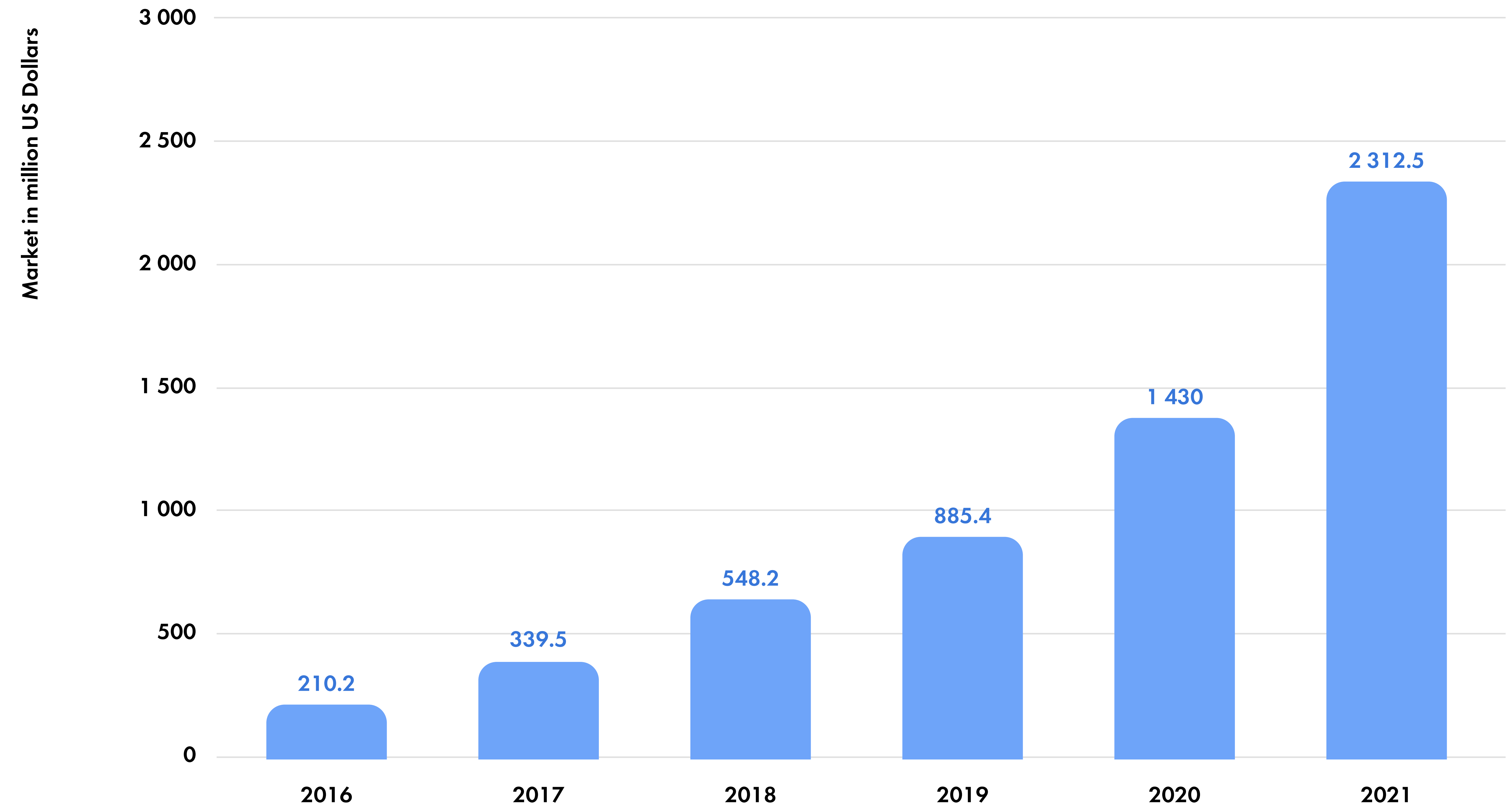




MARKET ANALYSIS OF ELECTRONIC FUNDS TRANSFERS

The market volume is expected to reach \$548.2 million in 2018 and \$2,312 million in 2021.

Countries, where cryptocurrencies are already legal, stand a chance to take the lead in the tokenization of economies that is predicted by a number of experts (Japan, Switzerland, Singapore, the USA, Canada, Denmark, Sweden, Germany, the Czech Republic, Norway and Venezuela).





Today one of the predominant problems of cryptocurrency holders and users is the lack of a convenient tool for regular crypto payments and transfers.

The volatility of existing cryptocurrencies constitutes a major part of this problem.

Moreover, the lack of the convenient and cost-efficient tool for everyday payments is still a problem for a noticeable portion of fiat money holders. We suggest an economically proven payment solution based on a stable cryptocurrency, to solve these problems.

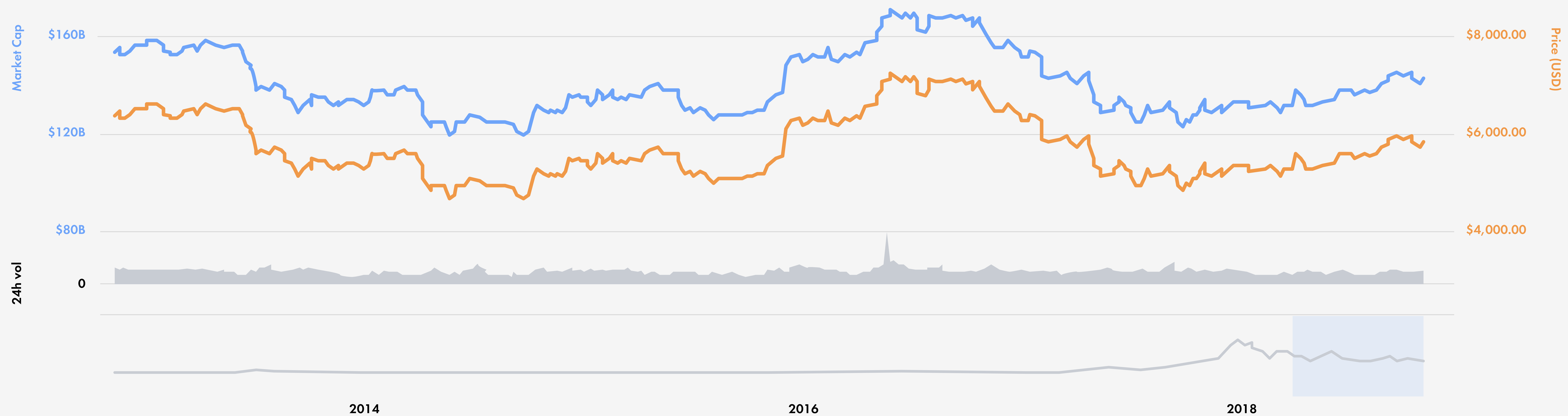




MARKET ANALYSIS OF ELECTRONIC FUNDS TRANSFERS

Since the advent of cryptocurrencies, people have set themselves free from governments and got the reliable means for cheaper, faster fund transfers (including cross-border transfers) without the need to trust any third party.

Blockchain technology with its distributed, tamper-proof ledger gave this trust to cryptocurrencies. As we have already noted above, volatility is one of the main factors preventing cryptocurrencies from worldwide adoption and popularity.



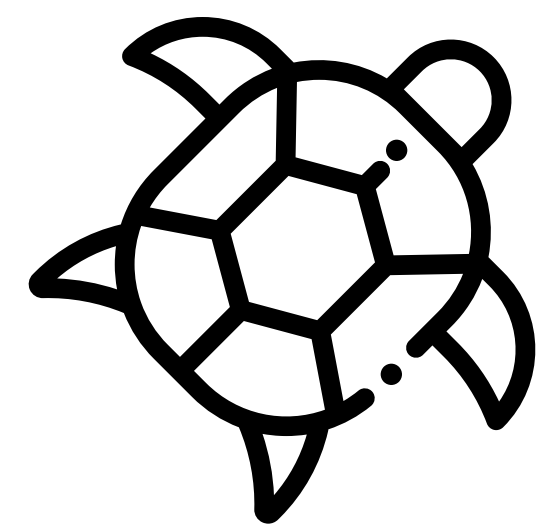
Though volatility helped to gather the capital for cryptocurrencies development on the early stage, now it needs to be controlled in order to provide further development and achieve a comfortable means of crypto wealth exchange (i.e. payments) and preservation.

This diagram shows the volatility of Bitcoin throughout the second quarter of 2018, which was ranging between 5,866 and 8,404 USD.



MARKET ANALYSIS OF ELECTRONIC FUNDS TRANSFERS

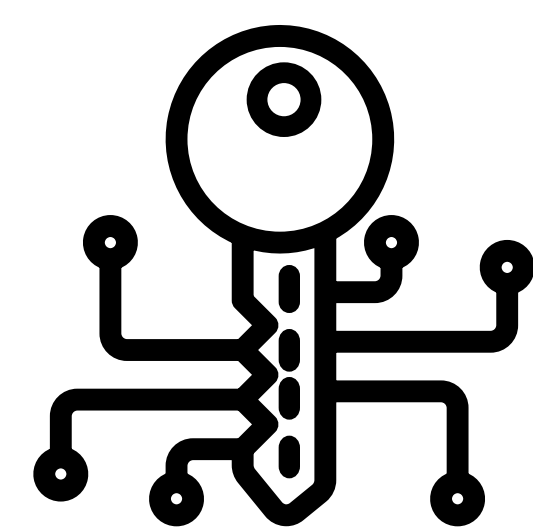
Besides volatility more clogs are keeping existing cryptocurrencies from comfortable usage:



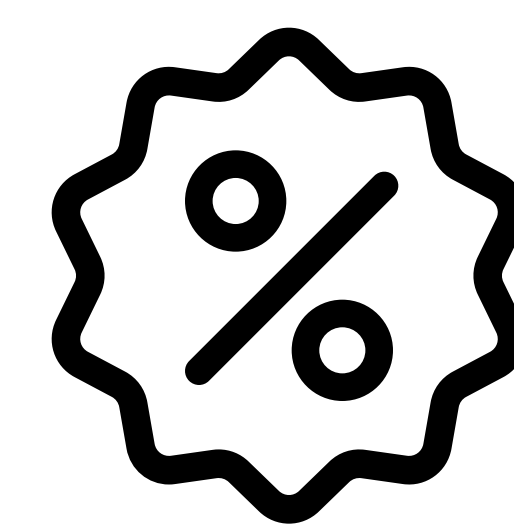
Low transaction speed;

**7WS
XM56
63P**

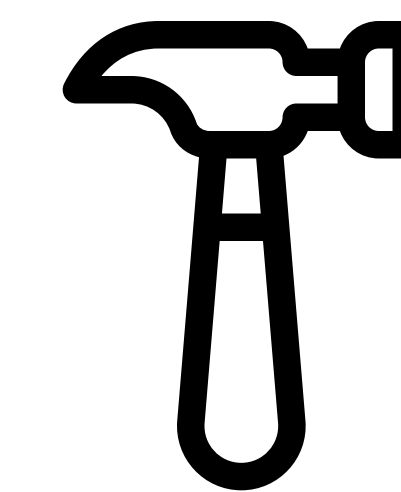
Long and complicated wallet addresses that are subject to mistakes and typos;



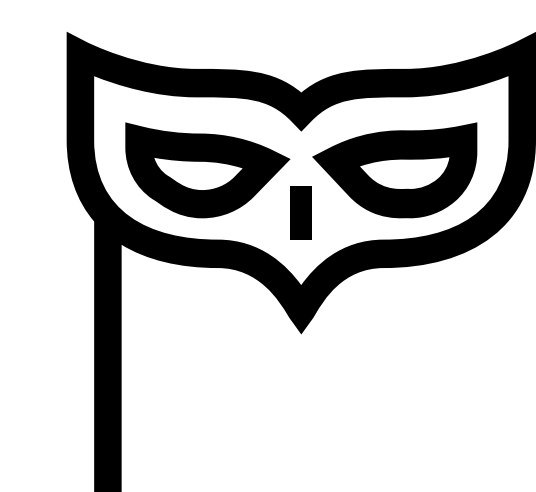
Problems with private keys — keeping private key secret causes too much hassle;



Intolerance towards small transactions — they are impractical due to excessively high fees;



Lack of handy apps and services to interact with blockchains;



Pseudo anonymity of Bitcoin and other open blockchains: in fact users can be traced, yet these blockchains claim to keep privacy.

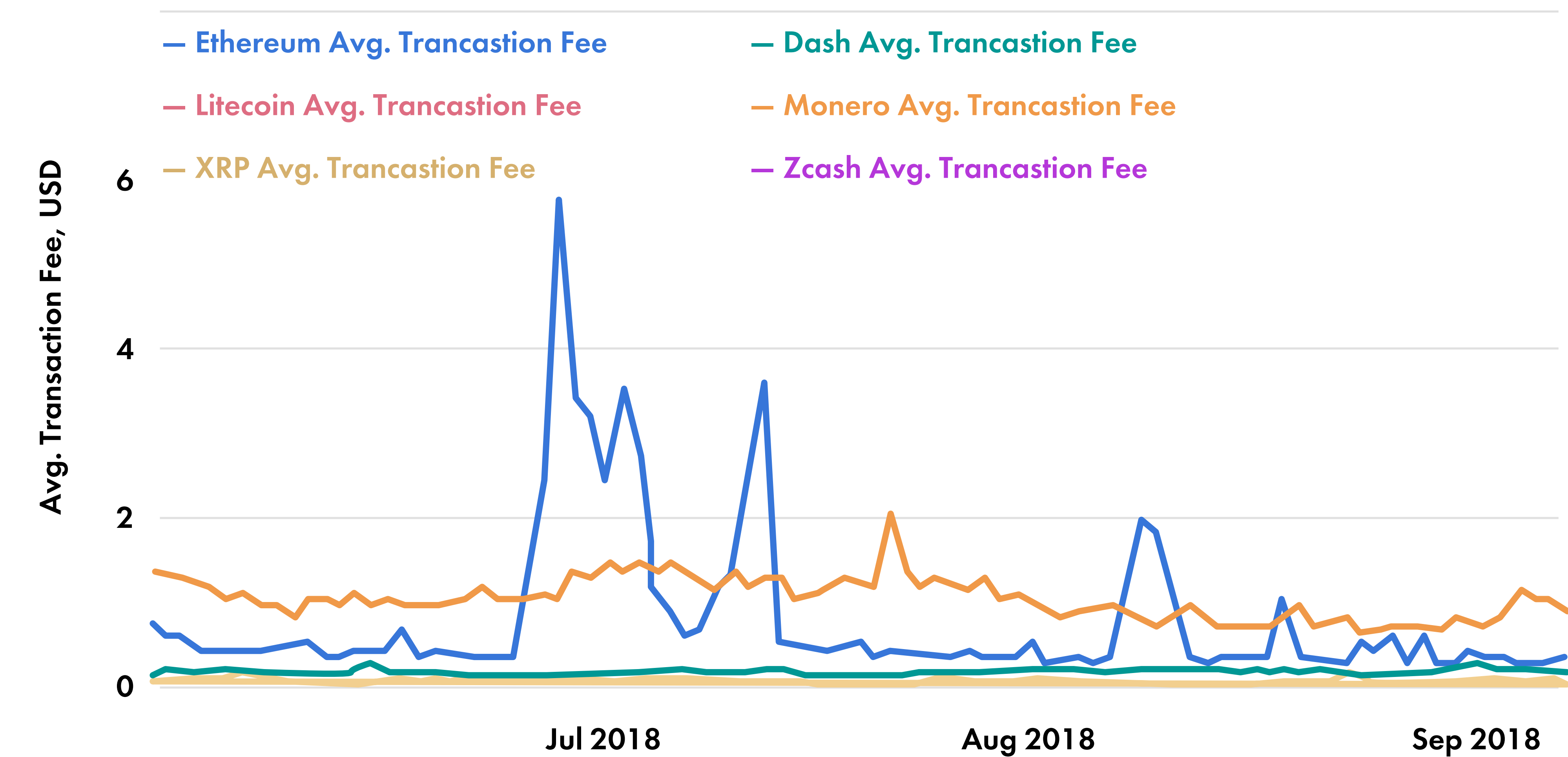


MARKET ANALYSIS OF ELECTRONIC FUNDS TRANSFERS

When it comes to Bitcoin, transaction fee is anywhere between 0,489 USD and 6,852 USD per transaction.



Average transaction fee for other cryptocurrencies is between 0,0001 USD (Zcash) and 5,528 USD (Ethereum).





MARKET ANALYSIS OF ELECTRONIC FUNDS TRANSFERS

To sum it up, there are several advantages of cryptocurrencies:

- **Transparency of transactions;**
- **Transboundary;**
- **Instant transactions;**
- **No intermediary;**
- **No time limit for conduct of operations;**
- **Adjustable transaction fee;**
- **Security;**
- **Anonymity.**

Considering all pros and cons of existing products for non-cash transactions, one can conclude that currently there is no product on the market that has all of the following qualities: convenience and simplicity of usage, transboundary, security, stable exchange rate, no transaction fees for end-user.

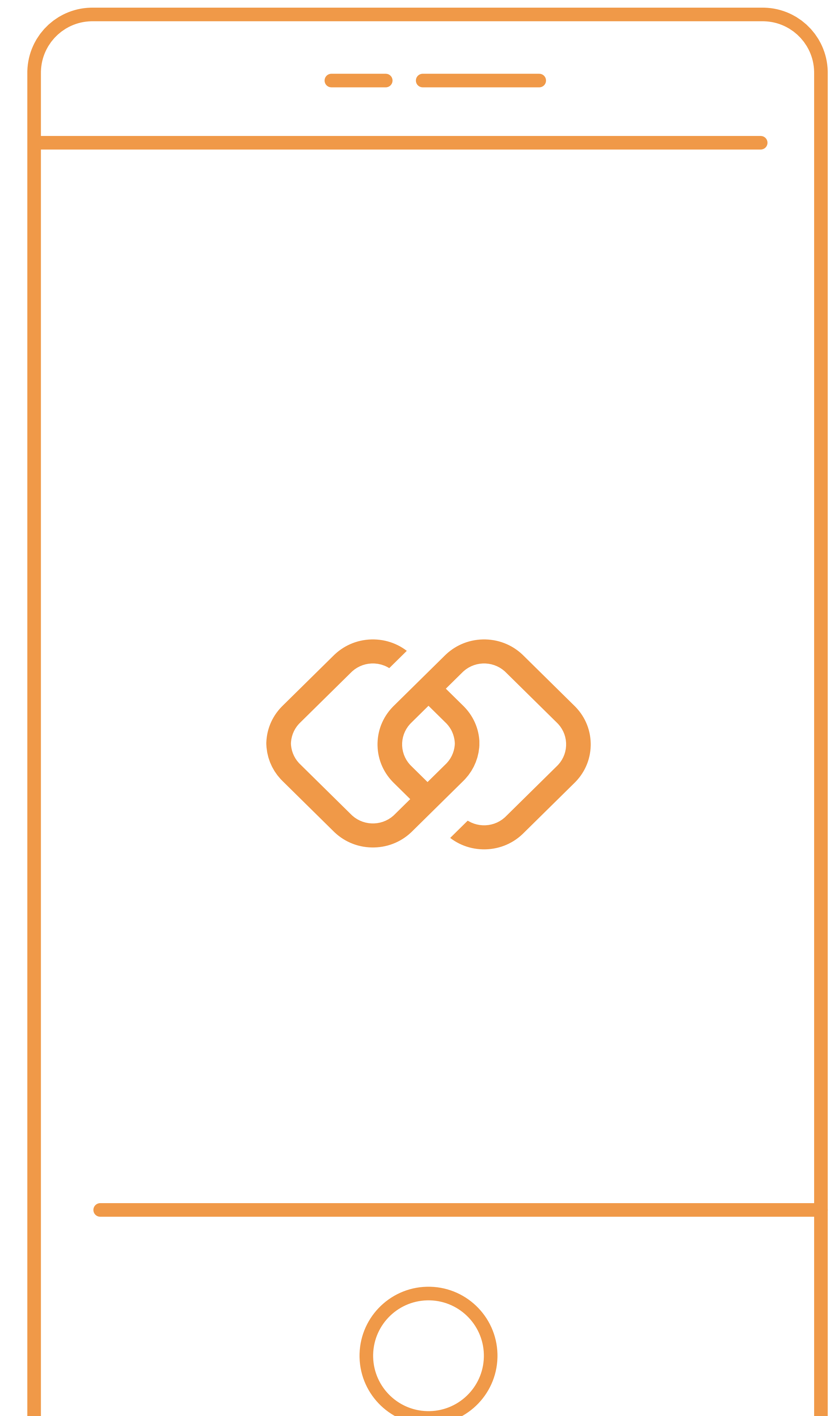
Among the disadvantages are:

- **High volatility;**
- **Not widespread;**
- **Immaturity of technology;**
- **On average transactions fees are higher;**
- **Software is not adapted to the needs of common users.**



To minimize and eradicate the above-mentioned disadvantages we offer a secure payment solution with a stable crypto asset.

Our solution features two cryptocurrencies, USDx token, and LHT coin. Based on an exclusive Lighthouse Blockchain, LHT coin serves as a collateral for USDx. The total amount of LHT coins is limited to 1 billion.





USDX token works on top of Lighthouse Blockchain and is designed as a stable cryptocurrency. In other words, USDX is a stablecoin, which price is pegged to the US Dollar at a 1:1 ratio and which peg is controlled by a smart contract. USD was chosen for the peg as the most traded world's currency with highest global acceptance.

The price of the core cryptocurrency of our payment solution, LHT, is defined by the market demand. According to a smart contract, each USDX token is backed by at least 200% worth of LHT coin. This allows the price of LHT to drop by half (i.e. decline from \$10 to \$5) to still back USDX stablecoin to the full.

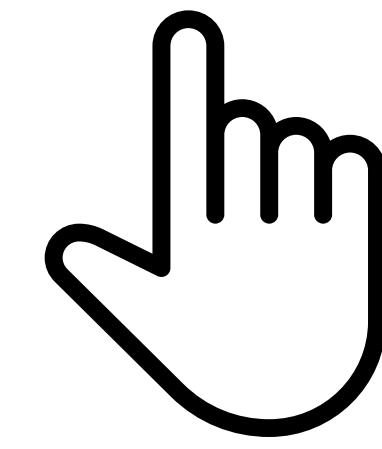
The payment solution we offer is available and distributed via a mobile app called USDX Wallet. We designed USDX Wallet to have zero fees for peer-to-peer payments, which favors even tiny transactions. Still, we will charge businesses and merchants with a small commission to make our system sustainable.

Already available for both iOS and Android devices, USDX Wallet is ready for use by ordinary folks. Once a user exchanges his/her crypto to USDX currency via a built-in converter, he/she can start making payments.



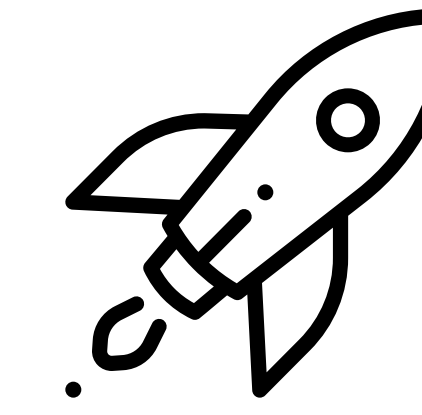
Designing and developing the USDx Wallet app we have performed the following features:

In a nutshell, USDx Wallet is a seamless and secure way to pay without banks, borders or fees. We believe it will be helpful not only for cryptocurrency holders, but also to the owners of unstable fiat currency, the unbanked and underbanked, and people who often make cross-border payments.



Intuitive interface easy for beginners.

The slick and simple mobile app incorporating best UX practices lets anyone set up an account in less than a minute and easily start making payments.



Instant transactions.

The Lighthouse Blockchain backing USDx Wallet can process 100,000 transactions per second, which is the speed of Visa and MasterCard combined.



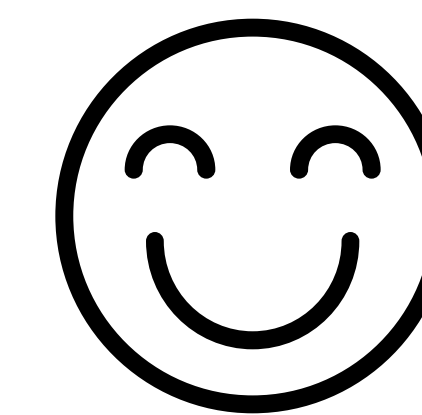
High-level security.

User data is encrypted and stored securely; all transactions are verified with two-factor authentication; the app itself is protected with a passcode.



Privacy, not anonymity.

Account confirmation via a mobile phone helps to identify users (and thereby perform KYC) and reduce the risks of the illegal activity.



Friendly usernames.

While registering an account in USDx Wallet, users choose an easy-to-remember username to further communicate with other users. No need to store, pass and enter awkward addresses like 3J98t1WpEZ73CNmQviecrnyiWrnqRhDNLy.



Effortless payments.

Funds can be easily sent using a friend's name, mobile number or QR code. The app syncs with user's contact list allowing him/her to find friends by familiar names.



No fees for individuals.

No-fee transactions in USDx currency favor small casual payments. Large P2P payments are processed without fees as well.



LHT is a digital asset with a limited supply: The maximum amount of available LHT coins is one billion coins.

This is reflected in Lighthouse Block Explorer. LHT coins will be gradually sold on exchanges and via the USD X Wallet app to prevent extreme LHT volatility. A smart contract ensures each USD X token is collateralized with at least 200% worth of LHT coins, according to LHT's current market price. Please refer to the monetary policy section of the white paper for a more detailed description of LHT coin functionality.





LHT’s market price is calculated as a median value across all LHT prices on the exchanges it’s listed on.

LHT coins (as well as USD X tokens) are based on Graphene, a third-generation software for the cryptographically secure decentralized ledgers. This technology has been delivering high performance, stability, and security for over five years. Furthermore, Graphene outperforms other blockchain in terms of speed and can process 100,000 transactions/second (please see the tech section of the white paper).

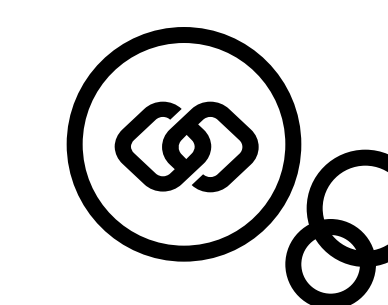
LHT coins are available via the USD X Wallet app. The app allows for their purchase with Bitcoin, Ethereum, and 50+ altcoins. LHT coins are sold according to the mid-market price without any additional fees.

The most amazing feature of the LHT token is how its behavior opposes that of the overall cryptocurrency market. This makes it a valuable cryptocurrency trading instrument. Here’s how it works:



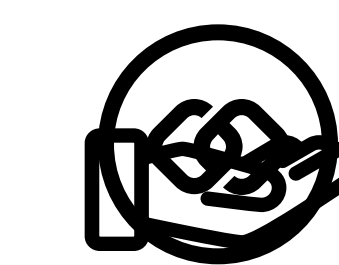
The cryptocurrency market drops

During the bear trend, every crypto holder wants to convert his or her assets into a stable currency. Conversion into fiat may take a long time; moreover, exchanges often charge considerable withdrawal fees.



High demand for USD X

Unsurprisingly, in a situation such as this, there will be a high demand for USD X (see p 22 for information about the USD X token) as it is a stable cryptocurrency. Eventually, all the available USD X will be sold.



Buying LHT to get more USD X

To get more USD X, people will need to buy LHT. This is the only means of forcing the blockchain to issue more USD X.



Making a profit or saving funds

People then can exchange the LHT they have bought for USD X; or if they want to make a profit from the situation, they can keep their LHT and sell them later at a higher price.



USDX is a stablecoin that is issued on top of Lighthouse Blockchain. The blockchain is able to issue USDX tokens by using LHT coins as a collateral.

A smart contract ensures that each USDX token is collateralized with at least 200% worth of LHT coins according to LHT's current market price. In other words, at least 200% backing of each USDX by LHT is made secure. If the price of LHT drops, Lighthouse Blockchain will add more LHT coins to comply with the terms of the smart contract. If the price of LHT increases, it means that collateralization of USDX will be more than 200%.



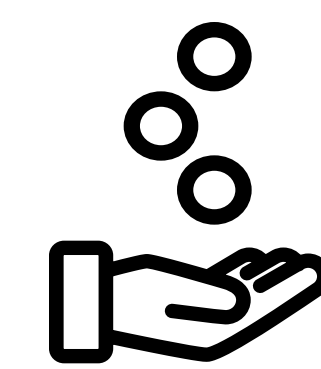


The main purpose of the USDX token is to be used as a means of payment. That's why it has been made stable with its price pegged to the U.S. dollar. Person-to-person transactions are fee free and easy via the USDX Wallet app.



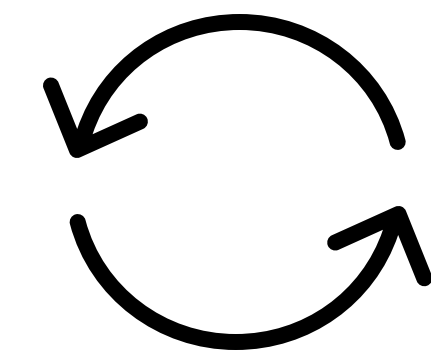
Predictable

As a stablecoin, USDX is immune to the swings and speculations common to the cryptocurrency market. It's pegged to the U.S. dollar at a 1:1 ratio via a smart contract.



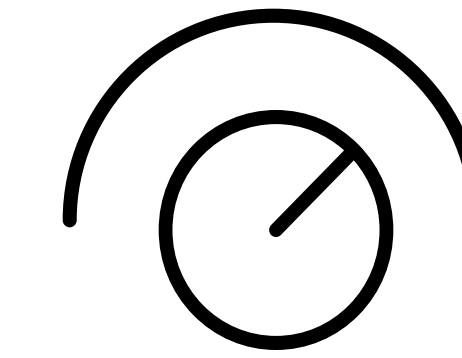
Stable and safe

Due to its stability, the USDX currency is particularly useful as a means of payment and savings. Unlike cash, it can't be lost or damaged.



Exchangeable

USDX currency can be bought with BTC, ETH, and 50+ altcoins and can be sold at online exchanges after listing on crypto exchanges.



Accessible

USDX can be bought directly from the USDX Wallet app, which is a quick and safe alternative to traditional methods of transactions and payments.

USDX stable currency could be used for:

- Person-to-person payments;
- Buying goods;
- Payments for services and content;
- Sending funds;
- Hedging.

All of these operations are accessible to everyone thanks to the user-friendly and stylish USDX Wallet app.

USDX tokens are not mineable. The issuance of our cryptocurrencies (both USDX and LHT) does not consume terawatts of electricity. Instead, the total amount of LHT coins is set by Lighthouse Blockchain initiation; then USDX tokens are issued using LHT coins as collateral.



The maximum amount of LHT coins in the Project is established from the beginning and amounts to 1,000,000,000 coins.

The price of LHT is calculated as a median market value based on an average daily exchange rate. One LHT coin is worth \$10 on the app before it is listed on exchanges.

LightHouse estimates that the minimum value of 5% of LHT is no less than \$10 million.

Consequently the price of LHT coin on the app cannot be less than \$0.2.





USDX tokens are issued as requested by a user provided that there is necessary collateral (LHT coins are used as one).

USDX token is collateralized with at least 200% worth of LHT coins, which is subject to change by the decision of the committee. On the app USDX is always pegged to the US dollar at a 1:1 ratio. Considering that USDX can be converted into LHT at the mid-market rate at any time, the price of USDX tokens is going to tend to \$1 on exchanges.

LHT coins are put into circulation annually starting from 27.03.2018 in the amount of 10% (100 million) of the total number of tokens in two equal parts of 50 million LHT each. They increase following funds:

- Distribution fund (needed for circulation of LHT and USDX);
- Collateral fund (needed to maintain the collateral).

If some LHT coins remain available for purchase by the time new LHT coins are ready to be put into circulation, then this action is postponed by a year. That being said, the tokens that are ready to be put into circulation in the future are not utilized in the system in any way.



Options to buy or exchange assets on the app

1

Buying LHT with cryptocurrencies

This transaction is only possible when there are unsold tokens in the distribution fund.

2

Buying USDX tokens with cryptocurrencies

In this case first LHT coins are technically bought in the amount requested from the distribution fund, and then USDX tokens are issued equivalently. 100% of collateral is formed by initially bought LHT coins; the rest of the collateral to the current fixed level (another 100% by default) is reserved in the collateral fund. This transaction is only possible if there are unsold tokens in the distribution fund (also not utilized in the collateral).

3

Buying LHT with USDX

USDX tokens that are being exchanged are withdrawn from the circulation and nullified; a user receives an equivalent amount of LHT tokens from USDX collateral. The rest of the collateral (another 100% by default) gets unlocked in the collateral fund.

4

Buying USDX with LHT

An equivalent amount of USDX tokens is issued. That being said, 100% of collateral is formed by LHT coins that are being exchanged. The rest of the collateral (another 100% by default) is reserved in the collateral fund.

Events of default

If the market is too volatile, then LHT coins may not serve as collateral to all of the issued USDX tokens. In that case all sales of LHT and USDX on the app are terminated. Tokens are stopped being sold, once the default exchange rate of LHT reaches \$0.2. It should be noted that trading on exchanges continues according to the policy of exchanges no matter what.

Once the market is stabilized, all sales of LHT and USDX on the app are resumed. If the price of LHT coins drops due to speculation, LightHouse can buy back LHT coins on exchanges in order to stabilize the market rate and to maintain the level of collateral.

It is important to note that one can still buy USDX with LHT and vice versa when there is an event of default. The only stipulation is the existence of LHT coins in the system in order to collateralize transactions.

By using the mechanism of token purchase on the market and maintaining the level of collateral, Lighthouse can control various events of default.



How individuals and organizations can benefit from USDX Wallet?

USDX Wallet is designed to be a solution for everyday payments. Providing a bank for those without one, it features global availability, multi-level security, an immutable ledger of transactions, and extreme convenience along with lightning-fast remittances. The presence of a price-stable currency and zero in-system fees encourage wide adoption of USDX Wallet.

Discover the most critical benefits of the USDX Wallet solution for various types of users:





Traders

Let's admit it. One of the main reasons people use cryptocurrencies is for trading and trying to get a profit from it. These people still need a stable cryptocurrency to hedge volatility risks and park their earnings. Moreover, a stable currency, if listed on numerous exchanges, helps to earn from an arbitrage (exploiting the imbalance of the price of a financial instrument on different markets).

Traders can also use USDX tokens to diversify their portfolio of stablecoins and will get a return on investment in the volatile LHT coin, which plays the role of collateral for the USDX token.

Long term investors

These people research and analyze the projects thoroughly before investing. They know the details and the technology behind it, and they keep themselves informed of the situation inside and around the project. They focus on the future and make informed decisions. Support and advice from such investors is of critical importance for us.

Merchants and marketplaces

Although USDX Wallet's model assumes a fee for merchants, it still can be much more cost and time effective than cash payments and the existing e-commerce solutions. We are cultivating our solution for businesses and greatly appreciate feedback from sellers.

Those who want pay in crypto

Today, there are few, if any, tools for easy crypto payments processing. Yet many people would like to experience the power and reliability of blockchain technology. USDX Wallet is a solution that meets this need and delivers cryptocurrency remittance into an easy-to-use form for a broad range of consumers. With the help of the USDX stablecoin, people can transfer funds quickly and in a cost-effective manner without the tough restrictions and excessive requirements that are imposed by banks. At the same time, USDX Wallet removes the middleman, allowing people to make fee-free, person-to-person transfers.

Cryptocurrency exchanges

As many people strive for a stable cryptocurrency in the highly volatile crypto market, exchanges with stablecoins are becoming much more attractive for traders. In addition, stable currency allows for arbitrage. As developers, we are committed to making the integration with exchanges as seamless as possible to be able to deliver our payment solution worldwide.



ROADMAP

2017

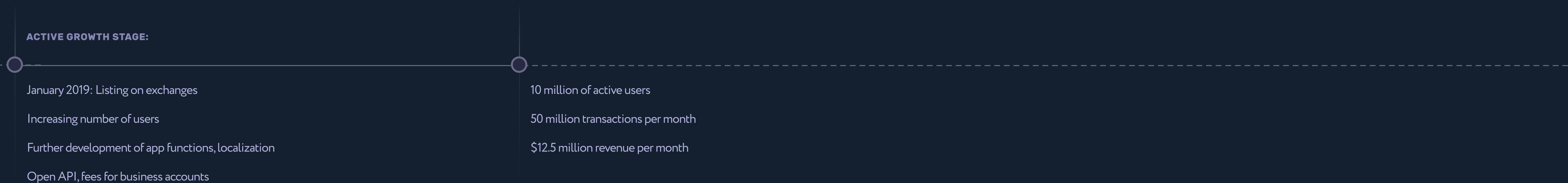


2018



2019–2021

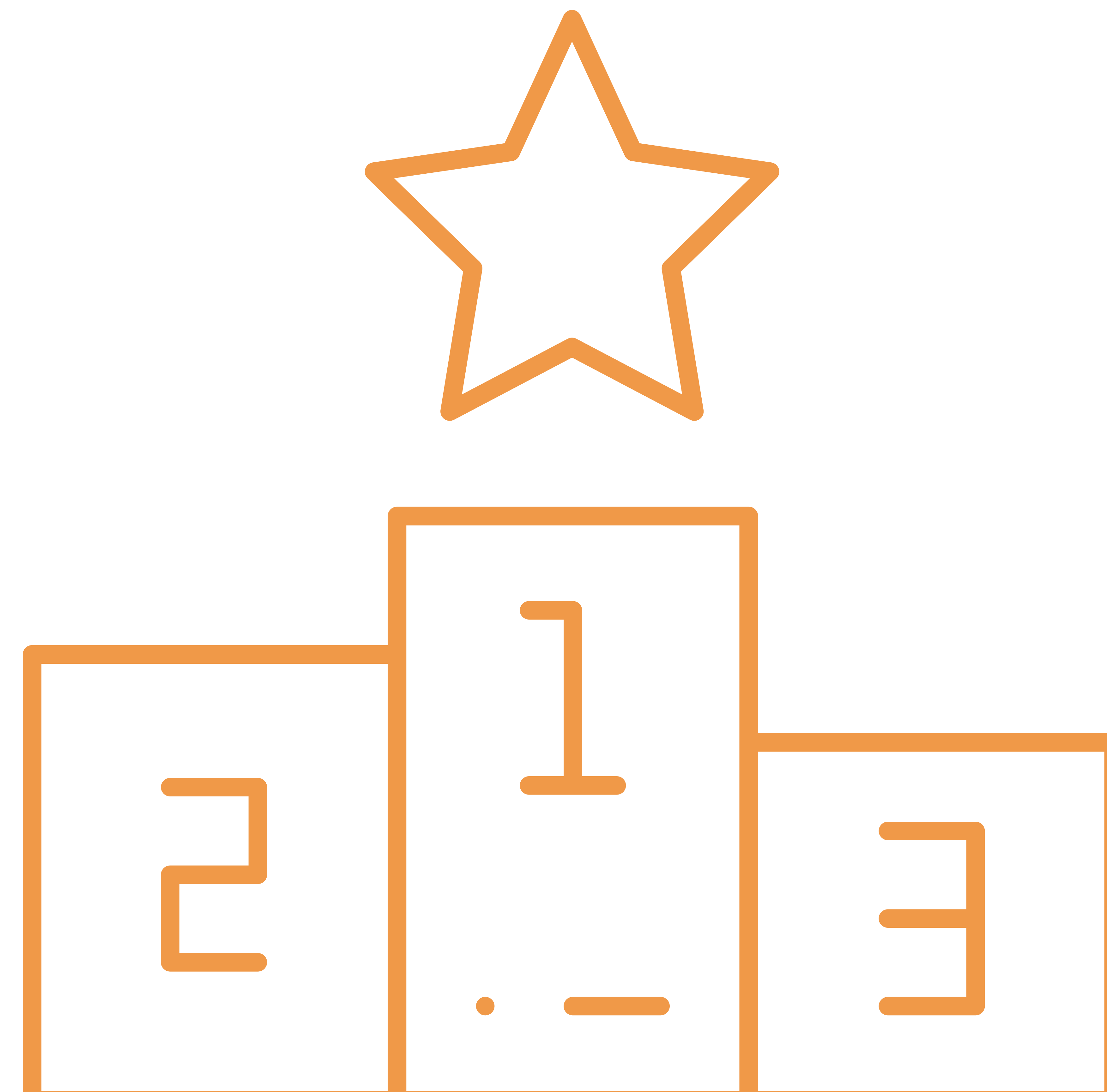
2022





There are quite a number of stablecoins in the making and currently on the market. New projects are always appearing too.

This is a positive and inspirational sign and means that stablecoins are getting the attention and appreciation they deserve. Here is a brief overview of our main competitors.





Tether

The oldest stablecoin, Tether, claims the biggest market cap (for now). It is built on the Omni blockchain and is characterized as an ERC20 token. Tethers are backed by real USD deposits, and it maintains pretty close parity with a \$1 peg. The company that runs Tether stores one dollar in its reserves for each coin it mints.

Why is it stable?

There is a strong belief among users that Tether equals fiat USD and that they will receive real USDs for their assets in case of an “emergency.” This eliminates the need to “play” with the price with lower or higher trading.

Main features:

- Converts cash into digital currency;
- Every Tether token is always backed 1 to 1 by traditional fiat currency, which is held in the company’s reserves (U.S. dollar, euro, yen);
- Transparency: reserve holdings are published daily;
- Widespread integration (buy, sell, and use tethers at multiple exchanges);
- Fast transactions;
- Workability for cryptocurrency newcomers;
- High degree of liquidity;
- For cryptocurrency newcomers;
- High degree of liquidity.

Tech:

- Currency type: stablecoin backed by a fiat currency;
- Backing of currency: fiat currency holdings in USD/EUR on a company’s bank account;
- Platform: bitcoin blockchain with Omni Layer protocol + Ethereum support (added later);
- Decentralization: centralized.

Disadvantages:

- Transactions fee;
- Constant audits to prove cryptocurrency backing;
- Centralized assets;
- Strict regulations.



COMPETITORS ANALYSIS

Dai

The Dai stablecoin was created by the Maker Dao company, and the coin is pegged to a USD. A dollar-pegged stability is backed by Ethereum-based collateral (with more assets to be used as collateral in the future). However, the main feature and advantage of Dai is its transparency.

Why is it stable?

The system remains stable thanks to the early supporters who have subsidized a stable price for the coin. There is also an incentive to deposit reserves.

Main features:

- Collateral-backed crypto;
- The value is stable relative to the US dollar;
- MakerDao enables owners of ETH assets to generate Dai on the Maker Platform. Once generated, Dai can be used as any other crypto;
- Dai is backed by decentralized reserves;
- Own decentralized exchange.

Tech:

- Currency type: Stablecoin backed by a cryptocurrency;
- Backing of currency: Smart Contract backed by oversecured Ethereum (secured debenture CDP) and decentralized reserves;
- Platform: Blockchain Ethereum;
- Decentralization: Decentralized.

Disadvantages:

- Ethereum GAS commission + Ethereum volatility;
- Too complicated for newcomers;
- CDP is costly, which leads to additional commission costs for users;
- Usage is rare.



Havven

Havven has created two stablecoins: nUSD and eUSD.

An eUSD stablecoin is an Ethereum-based USD-pegged coin. The “n” in the second coin stands for “nomins,”

Havven’s unit of account. Both stablecoins are mainly for use within their own ecosystem, which is one of the reasons why an EOS version of nUSD is in the works.

Why is it stable?

Collateral providers are stimulated, which leads to regulated trading volumes.

Main features:

- A decentralized payment network where users transact directly in a price-stable crypto;
- Users of stablecoin pay fees to those that collateralize the network (collateral providers);
- Collateral providers control the money supply, and fees are distributed in proportion to each individual’s stabilization performance;
- nUSD: Cross-platform stablecoin operating on two blockchains, EOS and Ethereum

Tech:

- Currency type: Stablecoin backed by a collateral;
- Backing of currency: nUSD is backed by Havven. In order to create a nomin, the user should reserve Havvens, which are blocked on the account. The sum blocked could be increased if the rate changes;
- Platform: Cross-platform (EOS and Ethereum), with more platforms to be added;
- Decentralization: Decentralized.

Disadvantages:

- Too complicated for collateral providers since they have to consider “Havven to nomin” correlation to keep the benefits;
- Fees for users.



Basis

In order to keep basis pegged to the U.S. dollar (or any other currency that is planned to be supported in the future), Basis protocol introduces an additional token called a “bond,” which is not pegged to anything.

Bonds come into account when the system needs to reduce the amount of basis tokens to raise basis’ price. Basis incentivizes speculators by auctioning off bonds for basis tokens for a price less than 1 basis (i.e., you will receive 1 bond + “delta” for each basis). The system promises to exchange bonds on a one-to-one rate at some point in the future, when certain conditions are met. Speculators will be able to earn profits during bond redeem.

Tech:

- Currency type: Stablecoin collateralized by “promise” (future);
- Backing of currency: Bonds;
- Platform: Not yet in existence;
- Decentralization: Decentralized by design.

Disadvantages:

- Fees for users;
- Absence of a ready-made solution;
- Potential problem finding buyers of bonds.



COMPETITORS ANALYSIS

While our competitors have their own beneficial features, their shortcomings are the following:

- Most of them have fees;
- Most of them are web-based;
- Not all of them have a working product;
- Some of them have a complex operation system that is equivalent to a traditional bank.

Furthermore, we focus on cryptocurrency transfers, while our competitors prioritize fiat into crypto conversions. We offer a universal payment solution for everyone, from a crypto newbie to an experienced crypto investor.

We address these issues and offer the following:

- A working product;
- Easy-to-use mobile wallet app;
- No fees;
- High-speed transactions;
- A system based on Graphene, a third-generation software for cryptographically secure, decentralized ledgers. It's a preferable solution for many projects thanks to its proven stability, security, and agility.

We're not aiming to become the only stablecoin, but we're aiming to become the best and the most used payment solution within the crypto transfers market.



Blockchain

Network properties

Our project uses blockchain technology, which is based on the core of open-source Graphene/Bitshares projects. Due to its features we chose to use existent solutions, rather than the development of the in-house system. The decision was influenced by the fact that the mentioned technology offers high flexibility, mature and time-proven code base. Frequent improvements provided by the active community are also an important aspect. These improvements bring periodic security patches, bug fixes, and new features that keep the network secure and reliable.

The Bitshares project has several benefits that separate it from other solutions. Most important of these are:

- A Delegated Proof of Stake (DPOS) consensus algorithm allowing:
 - reduced resource requirements for verifiers;
 - environment-friendly;
 - fast transaction processing;
 - decentralized network management solution.
- 100,000 TPS (transactions per second) possible due to the technology of input/output disruptors and single thread ordering;
- Multi-signature transactions and hierarchical key structure that provides a means for flexible account management.
- A selection of the listed possibilities will be detailed below.

Network Topology

The network consists of eleven verifying nodes (witnesses). Access to nodes is provided through a special gateway that ensures network and user data security (see details in the "Security" section).

Network management (decisions to change fees, issue assets, reserve fund management, etc.) are carried out by eleven members of the committee; the number of committee members could be increased by a committee decision too.

Committee and witness management is delegated to partners of the network. Witness and network management privilege distribution among several partners helps to avoid problems of centralized solutions and provides reliable protection against network members collusion.

This structure, unlike public (permissionless) networks, ensures the security of user's sensitive data while providing sufficient flexibility for the further development of the network.



TECHNOLOGIES

Security

Our first priority in product development is the safety of users personal data. Many of the security threats inherent in legacy solutions are successfully neutralized by the mechanisms of blockchain technology (cryptographic signatures, transaction history immutability, multi-signature approach). To guarantee the further safety of our network, we apply a number of additional practices, which will be discussed later.

SSDL

We follow the principles of Secure Software Development Lifecycle, in which the infrastructure and source code are constantly monitored at every development stage. This is done to prevent vulnerabilities and sensitive information disclosure. We collaborate closely with the company, which is a leader in the information security industry.

Our developers, architects, and infrastructure engineers work closely with information security mavens, coordinating all changes in the source code and infrastructure.

We scan the project for possible vulnerabilities using automated tools and manual analysis for every product update. Before release, the product undergoes approximately forty types of checks, including static & dynamic code analysis, dependency, and load testing.

CI / CD

In the development process, we adhere to the principles of Continuous Integration and Continuous Delivery, automating infrastructure changes propagation, product build, and delivery. These approaches, which have already become standards of safe and reliable development, allow us to:

- dramatically reduce the human error;
- promptly deliver new versions of the product, including bug and security fixes;
- conduct continuous testing of the new features and identify problems in the early stages.



TECHNOLOGIES

Security

Monitoring

All services of our product are under constant supervision. We track the following current indicators of their "health" every sub-second:

- CPU usage;
- Memory consumption;
- Network activity;
- Service events;
- etc.

The data is then aggregated and analyzed to identify potential problems such as an unexpected increase in resources consumption or suspicious activity. Our team of system administrators works 24/7 to resolve incidents and involves other members of the team (information security specialists, developers) when necessary. As a result, problems are resolved during the early stages, which ensures service reliability.

Infrastructure

In our infrastructure, we actively use the solutions provided by the Google Cloud Platform and AWS. These provide many security tools to prevent a wide class of threats out-of-the-box. For example, these platforms update operating systems and components on a regular basis, preventing the possibility of the exploitation of known vulnerabilities.

Our infrastructure is built on the technologies of Docker and Kubernetes. Their containerization tools and flexible access policies allow us to isolate services safely and prevent threat escalation in case of service compromise.

Changes in the infrastructure are also subject to constant monitoring by information security specialists. Our approach to Infrastructure as Code (IaC) makes it easy to track any changes in the infrastructure. This is typically not available for most legacy products.

Authorization

To guarantee the safety of user data and funds we use two authorization mechanisms. The first is a digital signature mechanism based on private and public keys described below. To make a transaction, the user must have both his private key and access to the device where he can get the authorization code. This separates our solution from other blockchain projects, in which compromising the key leads to the loss of all assets.

The second is a two-factor authorization (2FA) using the phone or push notifications. Obtaining the 2FA one-time code includes several stages (the next step is performed if the code was not entered after the previous one):

1. The code is sent as a push notification if this function is enabled by the user.
2. The code is sent in the form of an SMS message to the phone number specified during registration.
3. The code is delivered using an automatic phone call.



Key Management

In the blockchain networks, each time the user makes a transaction he "signs" it using his own private digital key and methods of asymmetric cryptography. Without a signature, a transaction won't be accepted by witnesses (verification nodes).

Principle of Asymmetric Signature

When the user creates an account he generates a pair of keys (public and private). As a rule, the private key is always generated on the client side and is never left in raw. It is very important to keep the private key secret, as it gives full control of the user's funds and account. On the contrary, a public key is simply a derivative of a private key; it could be distributed publicly without any limitations. During the registration process, the public key is stored in the blockchain bound to the user's account.

Later, when the user makes a transaction, he uses the private key to make a digital signature for the transaction, signing it along the way.

When a transaction request is received, blockchain performs several checks to make sure that the transaction is correct. It checks whether a user has enough funds to make a transaction, whether the transaction expiration date has passed, etc. and the most important is whether the transaction has been signed. Knowing the user's public key blockchain could establish whether or not this transaction was made on behalf of the given user. Essentially, the private key is used to create the signature and must be kept in secret, and the public key is only suitable for verifying the signature and can be distributed openly.



Key Management

Key storage problem

The current level of computer technology provides strict requirements for private key length. A short key can be picked up by an attacker, and a long key is not convenient for storage. For example, our network uses keys with a length of 256 bits. Such a key is difficult to write down and impossible to remember. To solve this problem, the brain key methods are often used, in which the key is divided into blocks and each block is matched with a word from a sufficiently large dictionary. In this case, the user needs to remember not 256 arbitrary symbols, but merely 12 words. This simplifies the task but is still too complex as compared to standard methods of password authorization. Another approach is to store a key as a file on a computer or a mobile device. It's really simple, but how can this file be protected, so that a hacker or a malicious program could not access it?

In our system, keys are generated when a user registers an account and are never left in the raw (unencrypted). To solve the key storage problem described earlier, we use a strong encryption algorithm that allows the user to securely save his key on a mobile device with a password of his choice. Reasonable questions may arise about whether a password of 10-15 characters is capable of resisting a brute-force attack as efficiently as a 256-bit key. If powerful encryption is used, then the password will certainly be capable.

In our application we use the Scrypt algorithm, which was created specifically to make it as difficult as possible to guess the password, even using specialized hardware (ASIC). The Scrypt algorithm places a great demand on both the amount of RAM and the processor's performance when compared to the popular SHA algorithm, for example. This is not noticeable when the algorithm needs to be executed once, as in the case of creating an account on a mobile application, but it becomes a significant problem for the brute-force attack. It makes the process of password brute-forcing unprofitable in terms of cost. When using ASIC, it is possible to easily scale the computing power, but not RAM; and in the case of brute-force attacks using conventional computers, the amount of RAM can be increased quite simply, but it is much more difficult to scale performance.

Therefore, we get the same level of brute-force attack resistance as with a 256-bit key, and the user gets access to their funds using the usual password authorization. To further facilitate the authorization process, we have introduced the ability to login using a PIN. That is, after the first authorization, the user can create a PIN code and then securely log in on the same device using the code without having to enter the password every time.



Marketing and promotion

We completed the beta testing stage in January 2018, MVP was launched in March 2018, and the app was released on Google Play and the App Store in March and April 2018. Until January 2019, our main goal is to grow a community of dedicated users that will share their views on the product and spread the word about it. We're currently targeting crypto owners, although the target audience will gradually broaden. We're building our network via Twitter, LinkedIn, and Telegram and posting company/app news and long reads on Facebook and Medium. We're also reworking our website to streamline it with our current philosophy and business.

We already had advertising campaigns on several platforms and in crypto-related apps. We plan to continue with ads on LinkedIn, Facebook, and dedicated media sources, such as ccn.com, techcrunch.com, and inc.com. We also started a series of referral and bounty programs.

After the launch of a new version of the website, we plan to increase our marketing campaign, including activation of the Bitcointalk and Telegram channels. Our target is to gain 10,000 active users by the end of 2018.



Financial plan is represented by a financial model which reflects an anticipated project implementation described in this **Whitepaper.**

All of the initial indicators used in the financial model are chosen based on both a professional opinion of the team members and publicly accessible information.

General indicators:

- Intended number of wallet users – 10 million people;
- Average number of transaction a month per one active user – 5;
- Discount rate – 20%.

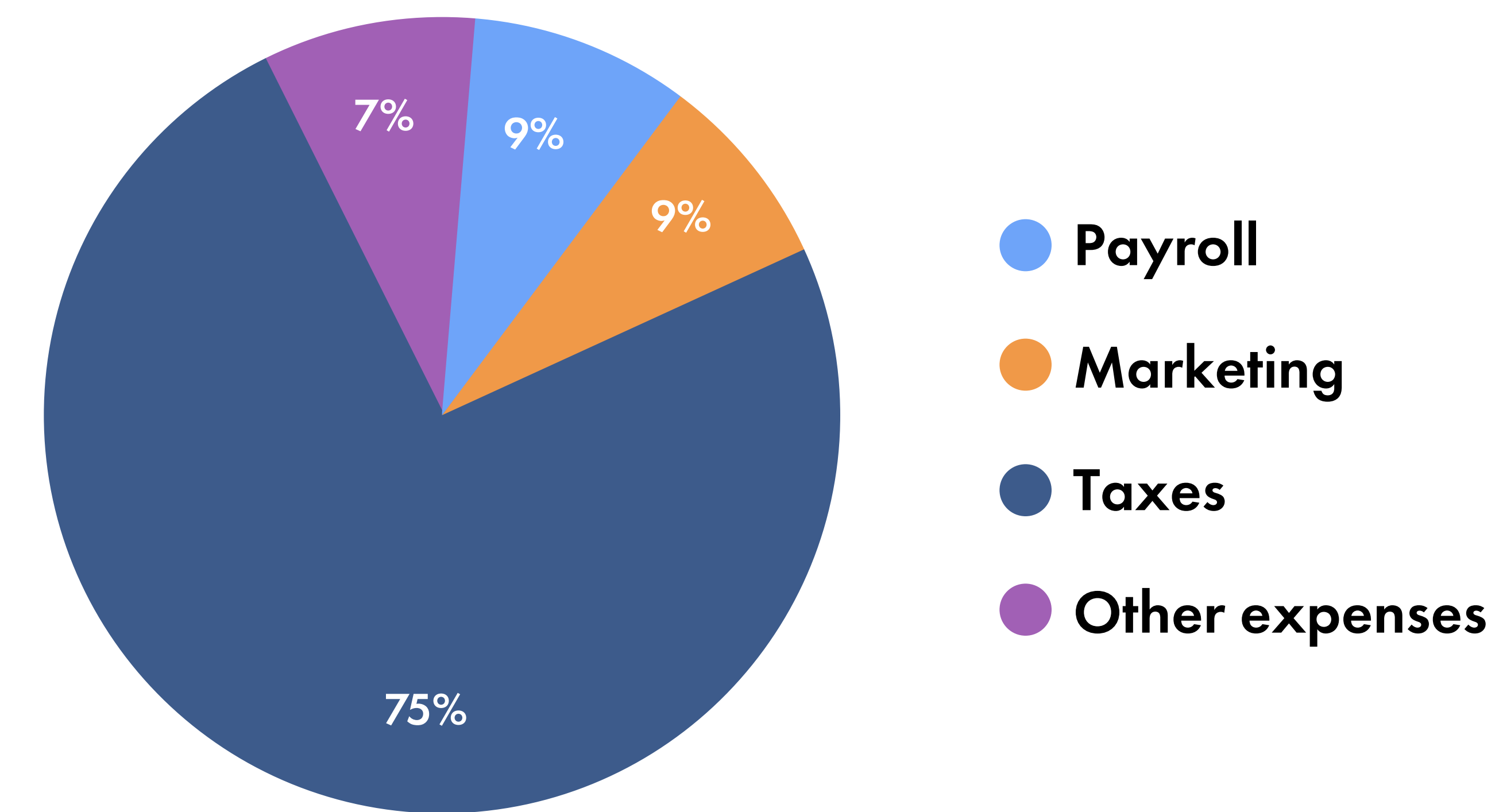
Financial model covers a period from 01.10.2017 to 31.12.2022.



FINANCIAL PLAN

Expenditure patterns

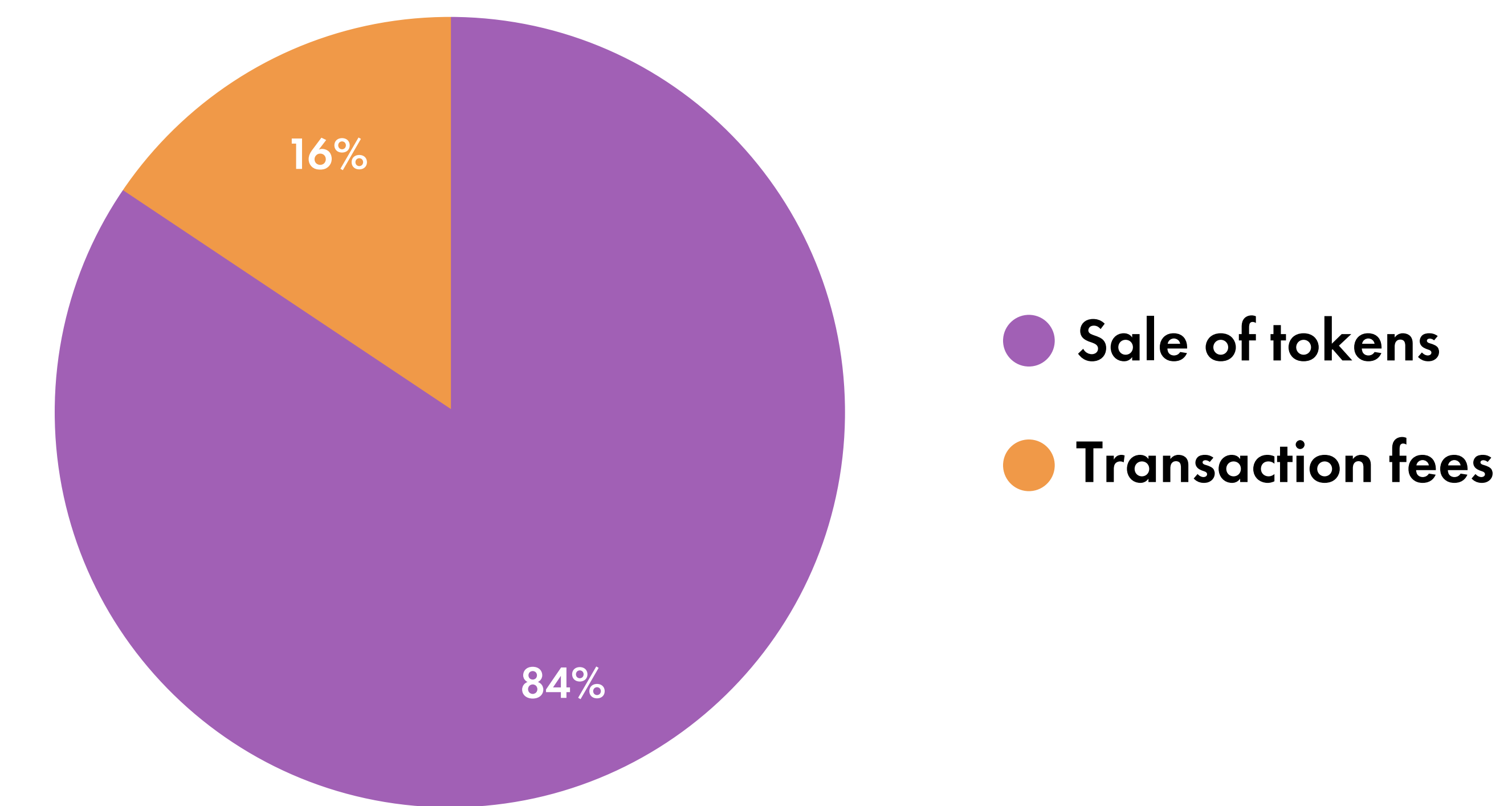
Expenditure patterns consist of the following items:



- Payroll (taxes and insurance included) in accordance with a manning schedule: as the project is developed and goals are achieved, staff expansion is planned in 2019 and 2020;
- Marketing and promotion;
- Infrastructure costs: network equipment and services, software and licensing;
- Taxes (profit and income taxes are not included);
- Office rent;
- Cost of working space arrangement;
- Other expenses.

Revenue patterns

Revenue patterns consists of the following items:



- Sale of USDX tokens and LHT coins: based on an average bill of \$10 a month per one user;
- Transaction fees for corporate entities: \$0,1 for 10% of a total number of transactions.



FINANCIAL PLAN

Project key financial figures

Key financial figures of the project are presented in the table below:

Company value, \$ ths	406 640
NPV (without terminal value), \$ ths	46 985
IRR (without terminal value), %	292%
NPV (with terminal value), \$ ths	226 438
IRR (with terminal value), %	335%
Payback period, years	3
Discounted payback period, years	3
Discounting rate, %	20%

Funding

Project is implemented at the expense of private investments.

Sensitivity analyses

NPV	Number of operations per user per month					
Target number of users of the wallet, persons	46 985	1,25	2,50	5,00	10,00	20,00
	2 500 000	7 406	7 931	8 980	11 078	15 275
	5 000 000	18 516	19 565	21 663	25 857	34 243
	10 000 000	40 696	42 792	46 985	55 371	72 143
	20 000 000	85 045	89 238	97 624	114 396	147 940
	40 000 000	173 720	182 105	198 877	232 421	299 508
IRR	Number of operations per user per month					
Target number of users of the wallet, persons	292%	1,25	2,50	5,00	10,00	20,00
	2 500 000	115%	119%	126%	139%	160%
	5 000 000	187%	191%	199%	214%	238%
	10 000 000	278%	283%	292%	308%	336%
	20 000 000	403%	408%	418%	436%	468%
	40 000 000	580%	586%	597%	617%	654%



Risk mitigation

Project implementation is associated with certain risks, including team risks, financial risks, product risks, competition risks, regulatory risks, and management risks. Risk evaluation is conducted based on Delphi method.

Characteristics of possible risks, their influence on the project development and mitigation measures are presented in the following table.

Type of risk	Characteristics	Impact assessment	Mitigation measures
Team risks	Voluntary resignation; shortage of staff	Low	Division of tasks; finding a replacement; maintenance of favorable working conditions.
Financial risks	Lack of funding for product development; cash gap; security breaches and thievery; volatility of cryptocurrency exchange rate.	Medium	Attraction of investors; budgeting; application of security systems; pegging USDX to the US dollar, using LHT coin as a collateral for USDX.
Product risks	Failure to meet the development deadlines; weak security; low demand for the product.	Medium	Compliance with development deadlines by focusing on key elements of the product and working overtime; review of the code, participation of external experts, active testing; working with focus groups and partners, getting feedback, promotion.
Competition risks	A large number of projects that address the same issue and offer similar functionality.	Low	Competitor analyses; implementation of best practices and ideas; this risk encourages the popularization of cryptocurrencies in general.
Regulatory risks	Risks related to changes in current legislation and regulatory procedures, additional requests and demands of the acting government, changes of contracts and performance targets, time frames of carrying out regulatory procedures and making amendments.	Medium	Keeping track of changes in current legislation; consulting services usage.
Management risks	Responsibility for the implementation of managerial decisions taken by the project management without total confidence in the success of the final result.	Low	Maintenance of a high level of expertise by the project management; consultations with various advisors.



ABOUT US

Lighthouse Blockchain Technology GmbH

is a company made up of entrepreneurs and crypto enthusiasts united in their aim of boosting innovation in the digital economy. We possess extensive experience in implementing complex, tech-savvy solutions. Our team consists of professionals in finance, project management, software development research, design, and marketing.

Our vision

We believe that blockchain technology and cryptocurrencies will continue to play a critical role in the future. They will make us less dependent on governments and banks and will give us more control over our finances. In fact, cryptocurrencies have already made transactions faster, safer, and less costly. Even so, there is still a great deal of work to be done. To that end, we have dedicated our expertise to the development of an efficient and trusted payment solution. Our key priorities are mitigating volatility, providing quick transactions, and meeting users' needs. We want to reinvent money and make payments as easy as sending a text message. Our motto is "Instant payments without banks, borders, or fees."

We will operate responsibly in accordance with all applicable laws and are eager to build relationships with financial institutions and local governments. Therefore, we are always open to discussions and collaborations. For any business or partnership inquiries, please email us at partners@usdx.cash.

Our principles

Clients: We make people's lives better and save them time.

Product: We always strive for innovation since there is no limit to perfection.

Partners: We base our relationships on trust.

Team: Only happy, free, and responsible people can build a great company.

Culture: Our company is made up of people connected by common values and aims, while



ABOUT US

Our team



Andrey Peshkov

Founder, Chief Executive Officer

Before becoming the founder and CEO of Lighthouse Blockchain Technology GmbH, Andrey spent more than 10 years managing financial divisions of large companies as CFO. He has proven experience in the fundraising of more than \$300 million and has completed M&A deals totaling over \$500 million. Andrey has been managing and implementing projects for the integrated development of the territory (nine projects totaling more than \$35 billion), the power industry (eight projects totaling more than \$5 billion), and the real sector of the economy (more than 50 projects totaling over \$400 million) as well as high tech and health care. Mr. Peshkov holds accredited investor status.



Evgeny Sapunov

Co-Founder, Head of Growth

Serving as Head of Growth at Lighthouse Blockchain Technology GmbH, Evgeny has in-depth experience in managing the IT departments of major Russian corporations. From 2011 to 2013 he held the position of IT Department Manager in the Russian Direct Investment Fund. Working for Renaissance Group from 2006 to 2011, he worked his way up from an engineer to a deputy director of the IT department. He successfully managed the development of high-load data processing systems, mobile apps, and CRM systems of various levels of complexity. In recent years, he became interested in marketing and completed a number of courses to develop and enhance his marketing skills.



Dmitri Zhuravlenko

Chief Technology Officer

Dmitri has over 10 years of experience in software engineering, including web and mobile application development, hardware projects, and high-load solutions for fintech, logistics, and education. He uses agile practices and process automation, and he maintains principles of clean code and architecture. Throughout his career, he has worked at major U.S. and Russian companies, including PwC, GridUnity, Pixonic, Commersant, and PIK Group.



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Sergey Sivochalov

Chief Operating Officer

Sergey has held managerial positions within financial divisions of large Russian companies since 2014. His areas of responsibility include business planning, financial modeling, and consulting as well as investor and government relations. He has also performed financial analysis of many investment projects. He has impressive experience in obtaining tax privileges in priority investment projects of the Government of Moscow. Earlier in his career, Sergey handled the deployment of accounting and management reporting systems.



Roman Gaidaenko

Chief Financial Officer

Roman has over seven years of financial management experience in real estate development. He currently serves as Head of the Analytical Department at KORTROS (Renova Holding Limited). Previously, Roman was the head of the investment department at a major Russian company and a finance analyst at the VTB-ARENA project. He has years of experience in building financial models, budgeting, investment analysis, and fundraising. At the beginning of his career, he worked as an engineer in the telecom industry.



Sergey Elagin

Financial Analyst

Sergey has worked his way up from an economist to Deputy Director for Investments in a major Russian company. He has worked extensively in financial and economic activities analysis, budget planning, relations with government bodies, and financial institutions. At the start of his career, Sergey worked in the energy sector, where he was responsible for reconciliation with counter-parties as well as for the issues of energy efficiency and energy saving and calculation and justification of tariff rates for energy resources.



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Anastasia Bryukhina

Project Manager

Anastasia has been managing projects and teams for high-tech companies since 2013 and has been responsible for meeting project deadlines, delivering results within specifications, and hiring new team members.

She has spent much of her career launching projects for large corporate clients. Her expertise includes negotiating with counter-parties, scheduling tasks, and monitoring progress. She has also worked on a number of successful projects in education, VR, architecture, insurance, logistics, and the travel industry.



Renat Mustafaev

Investor Relations Manager

Working in investor relations at Lighthouse Blockchain Technology GmbH, Renat also holds the position of Director of Strategy at a premier Russian company. Previously the head of the Foreign Economic Relations Department of the Ministry of Industry and Trade of the Republic of Tatarstan, he was also the Deputy Head of Resident Relations Office of SEZ Alabuga as well as the assistant to the first Vice Prime Minister of the Republic of Tatarstan on International Relations. He has vast experience in international economic relations and the promotion of investment projects. Throughout his illustrious career, Renat had also successfully attracted investments to the projects of the Government of Moscow.



Evgeny Epifanov

Business Development Manager

While managing business development at Lighthouse Blockchain Technology GmbH, Evgeny has also held the position of Vice President for Relations with Corporate Clients and Financial Institutions at Commerzbank AG (Frankfurt am Main, Germany) for Russia and Belarus since 2016. From 2009 to 2016 Yevgeny worked at Commerzbank AG to promote various banking products and to develop a strategy for cooperation with CIS clients. From 2005 to 2009 he completed numerous internships and worked in various banking structures in Moscow, New York, and Frankfurt am Main. Graduating with distinction from the Moscow State University of Management, he holds a master's degree in finance from the Frankfurt School of Finance and Administration.



ABOUT US

Our team



Natalia Mosiaikina

PR & Marketing Manager

Nataliya has over 10 years of experience in digital marketing & PR for IT projects. Some of her most notable contributions include photo editing services, content management systems and world-famous mobile apps with hundreds of millions of users. She helped projects get featured on Mashable, TechCrunch and other popular media.

Nataliya has years of experience in launching web services and mobile apps from scratch, along with strong SMM, SEO and ASO skills.



Victoria Kuzmina

Online Content Manager

Victoria has over 10 years of marketing experience in internationally renowned corporations (Intel, Nike) and European startups. She has also developed expertise in market research (Euromonitor), social media/content strategy (gaming, fashion business, travel industry, consulting services, blockchain and cryptocurrency markets), and e-commerce. She holds an MBA in Luxury Management.



Kirill Afanasyev

Head of Design

Kirill has been developing a UI/UX design for mobile and web applications as well as brand identity and graphic design for over nine years. He participated in the creation and successful launching of products for companies from Russia, Europe, and the U.S. while working in the fintech, strategic foresight, education, and logistics industries. Kirill pursues a phased approach to UX design, performs deep market studies, and identifies conceptual problems in the earliest stages.



ABOUT US

Our team



Taras Stotsky

Site Reliability Engineer

For more than six years, Taras has been building information systems architecture along with operating and administering high-load, failure-proof solutions. He has delivered critical projects for governmental bodies and companies working in healthcare, logistics, and retail industries. He works skillfully with various operation systems, databases, applications, and cloud-based technologies. In his work, Taras uses modern DevOps/SRE methodologies.



Vyacheslav Kovalenko

Lead Frontend Developer

During his 13 years of working in the IT industry, Vyacheslav has excelled at building web and mobile applications with human-centered design. He has comprehensive experience in developing iOS and Android native, hybrid, and React Native apps. Vyacheslav has worked in established companies and has participated in successful startups. Earlier in his career, he worked as a coach for the Internet Initiatives Development Fund. He regularly attends professional developer conferences like CodeFest, DevDay and Webready.



Konstantin Shpachenko

Lead Backend Developer

Konstantin has over nine years of hands-on experience in high-tech projects in the air transport, logistics, and mass media industries. He has also built architecture and developed operational solutions for industrial automation systems, math modeling systems, cross-platform mobile apps, and web services. Over the course of his career, he has participated in the development and technical management of projects for enterprises from the U.S., the Netherlands, and Germany. Konstantin is a Certified Java Developer.



ABOUT US

Our team



Alexander Alexandrov

Backend Developer

Alexander has over eight years of experience in the IT industry and four-plus years of experience as a Java developer. Since beginning his career, he has participated in key product development for major telecom operators and banks.



Victoria Stratulat

Quality Assurance Engineer

Victoria has worked actively in the software testing field with a focus on mobile and web applications testing for over three years. Her expertise includes drafting scripts for automated tests. She strictly adheres to agile principles of software development and supports a release early, release often philosophy.



Ksenia Zavalova

Quality Assurance Engineer

Ksenia has more than three years of experience in testing web and mobile solutions. Qualified in mobile applications testing automation, Ksenia has worked on large-scale projects from the banking, e-commerce, fitness, and gaming industries.