CLOVERDEX

MODULAR HYBRID DECENTRALISED EXCHANGE

WHITEPAPER V1.2

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WHITE PAPER
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EXECUTIVE SUMMARY

Cloverdex will provide a modular hybrid decentralised exchange and secure multi-currency wallet (implementing multi-signature technology) with strong focus on cryptocurrency market analysis and knowledge sharing, user accessibility and friendliness, social trading, and best practice regulatory and legal compliance.

Since the inception of Bitcoin in 2008 amidst the global financial crisis, the value and adoption of cryptocurrencies have exploded and with it has gained enormous media, political, and public attention. Yet with such increased exposure, there are still many challenges facing the adoption and every day practical use of cryptocurrencies beyond what many perceive as simply a speculative investment.

My team and I at Cloverdex aim to address the following seven problem areas that currently impede acceptance and adoption of cryptocurrencies; accessibility of funds in the real world, usability, security, liquidity, compliance with regulations and laws, education, and transparency.

To address these problems, Cloverdex aims to offer a cryptocurrency trading platform for both beginner and advance traders by incorporating innovative crypto economic concepts, technological technical knowhow, and educational concepts.

Ultimately, in addition to tackling the seven problems, Cloverdex is focused in building a strong business model that is economically sustainable benefitting the cryptocurrency community and investors in our vision and mission.

To realise our vision and mission, Cloverdex will create its own Ethereum (ERC20) based functional token that will provide members discounted trading fees, free EFTPOS debit card, access to advanced market analysis tools, early Beta access to the platform, increased trading limits, and more (to be announced).

Pre-sale of the Cloverdex tokens (CLDX) will launch in mid December 2018 for a limited group of contributors. Funding raised as part of the pre-sale will mainly fund initial start-up, marketing activities, negotiations with payments processor and recruitment of technical talent leading up to the public crowdsale.

The public crowdsale will start in January 2019.

1. INTRODUCTION

Mainstream adoption of cryptocurrency is hindered due to high barriers of entry to purchase because of complexity in purchasing, selling, spending, and storing of these assets. Cloverdex aims to alleviate these barriers by introducing an advanced cryptocurrency exchange that focuses on user-friendliness (by implementing a 3-step ethos, whereby any action by the user should only take at most 3-steps) and cryptocurrency education. We strongly believe investors in cryptocurrency should be fully informed when making buy/sell decisions, and as such, our platform will incorporate real-time supplementary market data (and analysis) and links to relevant news for each available cryptocurrency for trade.

An intuitive user experience will be central to our 3-step ethos allowing quick registration, buying, selling, research, spending, and storing crypto assets all within 3 steps. By ensuring the users' needs is the top priority and focus for the exchange we are then able to tailor the experience towards beginners and expert traders like no other cryptocurrency exchange before us.

We firmly believe that mainstream adoption of cryptocurrency and the long-term sustainability of the crypto ecosystem hinges on the ability for users to not only easily invest and trade assets, but also make use of these assets on a day-to-day basis. By offering large number of fiat pairs (AUD, USD, and more) this will allow seamless integration of cryptocurrencies and traditional financial markets whilst opening up doorways to more customers and liquidity. To improve cryptocurrency use in day-to-day life, Cloverdex will be offering all users access to an EFTPOS debit card that we plan to integrate with a number of mobile wallet applications such as Apple Pay and Google Pay. As such, users will be able to access crypto funds readily and make everyday purchases online and at millions of EFTPOS terminals around the world.

In order to fund this project, Cloverdex will create an Ethereum based cryptographic token (CLDX) which will allow holders to gain premium services/features such as discounted trading fees, access to advanced market analysis tools, early Beta access to the platform, increased trading limits, and more (to be announced).

We understand that the cryptosphere is still in its infancy with much political risk in the form of regulations and laws. The privacy of our users is of utmost important, and often we understand that the need for regulation is in conflict with the needs of user privacy. Having said this, we believe that for the cryptocurrency market to be fully ubiquitous there is certainly a need to work with Governments and the law. To deal with this, Cloverdex will ensure the product and services on offer are fully compliant with all regulatory and legal requirements by working closely with our lawyers and financial regulatory bodies in Australia such as the Australian Securities and Investments Commission (ASIC).

Cloverdex and its core team are based in Canberra and Melbourne, Australia. We consist of five core members and two advisors. Our experience is diverse and spans areas of Financial Frameworks, regulatory and corporate governance, software development and engineering, financial technology, economic modelling, blockchain and smart contract development, marketing and sales, cyber security and website design.

The next sections will discuss in detail the seven challenges, Cloverdex core product offering and how we address each of the challenges, our business model, project roadmap, ICO details, and breakdown of the team.

2. CHALLENGES

Cloverdex have identified the following seven major challenges that creates a high barrier of entry for investors and in turn stifle the market acceptance and adoption of cryptocurrencies.

- Lack of accessibility of funds in the real world – current solutions to bridge traditional payment infrastructure and blockchain based assets are not seamless and involves high transaction fees either through upfront fees or currency conversion rates, both of which form a disincentive for use.

- Lack of Usability – current exchanges involve too many steps and are tailored for advance users or assumes that the user has pre-existing knowledge.

- Lack of Security – cryptocurrency exchanges have been susceptible to hacking and internal fraud because of lack in security focus and funding.

- Low Liquidity – having not enough people trading on an exchange results in greater difficulty to trade, higher asset costs for investors, and difficulty in withdrawing funds in fiat.

- Low Transparency – Hidden trading fees and commission charged results in higher investor cost and lack of trust.

- Inadequate Compliance – customers are hesitant to enter the cryptocurrency market due to perceived uncertainty in regulations and laws.

- Lack of Education – most exchanges cater to advance traders and lack proper education and easy to use tools for beginner investors.

2.1 ACCESSIBILITY OF FUNDS IN THE REAL WORLD

The asset value of a cryptocurrency as viewed by investors is still heavily reliant on its value compared to fiat currency. However, trying to bridge the gap between the value of cryptocurrency and fiat currency in traditional financial markets in a seamless and instantaneous manner has been a major challenge for many service providers and exchanges. The current solutions available are not instantaneous, and are often fraught with high upfront fees and non-favourable currency conversion rates that deters users from using such service and ultimately hindering the use of cryptocurrency value in the real world for the purchase of goods and services.

Traditional financial systems offer limited accessibility and services to people around the world. According to the World Bank's Global Financial Inclusion database[1], it is estimated that over two billion people worldwide do not have a bank account or access to a financial institution.

However, internet access is now ubiquitous worldwide and with it access to blockchain based financial services technology. Decentralised information distribution through the web is the major premise of blockchain technology which allows for information (such as financial data) to be transferred at low cost compared to traditional banks. As a result, Cloverdex sees a future world whereby anyone who has an internet connection can have quick access to funds at low cost and obtain services beyond what traditional banks can offer.

We see this as a perfect opportunity to increase the adoption of cryptocurrencies through bridging and strengthening the link between cryptocurrency and traditional payment systems.

[1] https://globalfindex.worldbank.org/

2.2 USABILITY

Increasing the adoption of cryptocurrencies will involve greater market and population acceptance beyond those that are tech-savvy, professional traders, and early adopters. Currently available cryptocurrency exchange user interface (UI) designs cater to advance users and traders because the cryptocurrency market is still young and being driven by highly technical and innovative approaches to blockchain technology. Blockchain technology is technical in nature and we see these elements leech into design choices and elements in many exchanges[2]. A good example of this is the need for many of these exchanges to employ lengthy trading tutorials to teach traders on the one thing that should be easy to do, which is to trade.

At Cloverdex we believe that this is not the right approach. For cryptocurrencies to gain mainstream adoption, it is imperative that we cater for all users in a manner that that is highly user-intuitive and user friendly. By focussing on usability, we aim to cut down on information overload in the UI, whilst emphasising the elements that most matter to users that is; buying, selling, research, spending, and asset storage in as little steps as possible.

To achieve all this, our design philosophy will follow a 3-step ethos. What we mean by this is that for every user objective such as registration, trading, storing of assets, and research, it will only take at most 3 steps from the user.

In addition, instead of requiring each user to have a wallet for each different cryptocurrency, we aim to provide a multi-currency wallet that will enable the user to access to all their funds with one simple login credential. In effect, we will ensure all users from beginners to advance traders.

2.3 SECURITY

There are two types of exchanges available on the market: centralised and decentralised. The decision to build a decentralised or a centralised exchange is a difficult one as there are many pros and cons with either approach such as liquidity (to be discussed in next section) and security. Cloverdex have found that the most liquid exchanges are those that are centralised[3], providing speed of transaction and transparency however due to their nature of having custody of user's funds and historically low investment and internal corporate focus on security for these platforms, many of these exchanges have been susceptible to hacks[4].

As a result of the security flaws in centralised exchanges, there is now an emergence of decentralised exchanges that work on a private on-chain wallet for all users, however the main issue with current decentralised exchanges is the speed of transaction and trade matching.

In balancing the need for greater liquidity, speed of transaction, and transparency, Cloverdex will introduce a centralised exchange at first with a migration plan (made possible due to the modular design of the exchange) for a fully hybrid decentralised exchange with enhanced security features in our proposed multi-currency wallet utilising multisig technology. We will also be tapping into the liquidity of other major centralised exchanges through the use of their API's.

At Cloverdex, we will allocate sufficient budget on security measures and internal/external audits to ensure the integrity of the system and the funds of our users are protected.

[2] Examples of UI catering technical and advance traders can be seen in IDEX, EtherDelta, Bittrex.
[3] These include Binance, OKex, and Huobi. See https://coinmarketcap.com/exchanges/volume/24-hour/
[4] Mt Gox (2014), Bitfinex (2016), Bitstamp (2015), Coincheck (2018), BitGrail (2018).

2.4 LIQUIDITY

For an exchange to be successful and attract more customers, it is important that there is enough liquidity so to allow users to freely trade in an efficient manner (quick settlement of orders) and be able to obtain the best price available (efficient pricing).

A major problem we see in every cryptocurrency exchange available currently is that they are designed as a closed market system, each acting independently of each other. Coupled with the low aggregate value of the cryptocurrency market compared to traditional markets, liquidity and illiquidity are spread throughout the market across different exchanges.

Cloverdex will tackle this challenge by tapping into external exchanges using API's to initiate trades therefore bringing the liquidity of larger exchanges into the Cloverdex exchange. As our exchange will have access to a great number of external exchanges, our internal engine will be able to make trades based on the best prices and offer our customers the best competitive rates available.

Limited selection of fiat currency pairs on offer by exchanges is also another barrier to widespread cryptocurrency adoption. Most exchanges offer popular fiat pairs such as USD and KRW, as such using fiat currency deposits other than these often result in high currency conversion costs which disincentives users outside those countries to participate in the cryptocurrency market.

Cloverdex aims to offer many different currency pairs and offer low currency conversion fees/commissions (close to spot rate) by carefully selecting a preferred payment processor.

2.5 TRANSPARENCY

There is very little transparency in terms of fees charged to users when using existing trading platforms. Many of these platforms may include a combination fees and commission at multiple points of the trading process such as:

- Hidden commission percentage built into the currency conversion process for fiat-based deposits and withdrawals. In effect, this means users are unknowingly charged twice during entry and exit of the market.

- Unreasonable trading fees.

- Additional fees for cold storing cryptocurrency funds.

- Hidden fees attached directly to the cryptocurrency price that may contribute to the large spread of cryptocurrency values between exchanges.

All the points above reduce customer trust in the cryptocurrency market contributing to reduced adoption.

Cloverdex aims to solve this problem by tackling the issue of transparency and disclosure head on. We are under no illusions our exchange will be free as we have a responsibility to ensure to ensure we build a strong business model that is economically sustainable benefitting the cryptocurrency community and investors in our vision and mission.

What we promise is there will be no hidden fees/commissions, fees charged will be fully disclosed, and finally, any fees/commission will be reasonable. See section 4 for further details on our business model.

2.6 COMPLIANCE

Blockchain based currencies by nature are decentralised in that there is no one party/person that has full control. Cryptocurrency works through distributed ledger technology, typically a blockchain that serves as a public transaction database[5]. Instead of putting trust in a government to back a currency and maintain its value, cryptocurrency's value comes from the network of people using it.

For governments around the world that are accustomed to maintaining control of monetary policy, cryptocurrencies by its nature poses a significant risk due to the inability for a central authority to take control. Many regulators and lawmakers see cryptocurrencies being used in a way to launder funds and avoiding taxation and as such, many countries have either banned cryptocurrencies[6] or have laws and regulations that are ambiguous and open to interpretation.

Because of ambiguities and the uncertainty in Government's future direction in respect to cryptocurrencies, many investors are reluctant to enter the market and see it as an unacceptable risk. In addition, there is a lot of ambiguity of the taxation implications of cryptocurrency trading.

Cloverdex will address the compliance problem by ensuring our product and services on offer are fully compliant with all regulatory and legal requirements by working closely with our lawyers and financial regulatory bodies in Australia such as the Australian Securities and Investments Commission (ASIC). We will ensure that regulatory Know Your Customer (KYC) and Anti-Money-Laundering (AML) requirements are met.

Furthermore, Cloverdex intends to leverage the skills and knowledge of its core team and advisors whom have extensive experience working in the Australian Public Service in areas of regulatory frameworks and reforms. With our experience, we aim to inform Government to make the right decisions around compliance requirements and work towards a cryptocurrency friendly regulatory environment.

2.7 EDUCATION

In early market formation and growth, knowledge and education are often low quality, fragmented and difficult to source. Cryptocurrency exchanges currently cater to asset trading, however offers very little educational facilities to enable beginner traders to make educated and informed purchasing decisions. As a result:

1. Traders become reluctant to make trades; or

2. Traders purchase cryptocurrency but do not understand when to sell or buy other currencies; or

3. Traders are not willing to participate in the cryptocurrency market.

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[5] https://en.wikipedia.org/wiki/Cryptocurrency
[6] A list of countries that have banned cryptocurrencies:
   https://en.wikipedia.org/wiki/Legality_of_bitcoin_by_country_or_territory

The above three outcomes lead to reduced adoption of cryptocurrency and low participation rate of users who are already in the market.

At Cloverdex we aim to tackle this challenge by offering an advance cryptocurrency trading platform integrating aggregated market data, statistics, and news from reputable sources for each cryptocurrency into a user-friendly interface.
Our belief that everyone should make informed trading decisions means that we will provide most educational and research data and news free to all users with advanced market analysis tools available to holders of CLDX tokens.

In addition, our platform will offer social trading functions whereby high performing traders who opt to have their trades available for others to mimic/follow will be rewarded with CLDX tokens. Users who follow these traders will have a portion of their portfolio traded automatically based on the trades of the user they are following.

3. WHAT IS CLOVERDEX?

Cloverdex product offering will consist of three elements: an advance cryptocurrency trading platform, a secure multi-currency wallet, and an EFTPOS debit card. All three of these elements combine to provide a unique platform offering forming a one stop shop for all cryptocurrency trading needs.

Firstly, the advance cryptocurrency trading platform will allow quick and simple trading of many popular cryptocurrencies allowing trading to/from fiat and between different cryptocurrencies. The platform will focus on usability and user-friendliness, education and knowledge, and regulatory compliance.

Secondly, a secure multi-currency wallet will allow users to store, access, and manage their cryptocurrencies in one single location. Users will no longer be required to track multiple wallets across multiple currencies.

And thirdly, an EFTPOS debit card allowing users to seamlessly spend their cryptocurrencies (with the best available rates on the market) for day to day purchases across millions of EFTPOS terminals around the world and make online purchases. Instead of being limited to retailers that natively accept cryptocurrencies, users can now make purchases anywhere a normal debit card is accepted.

3.1 CLOVERDEX MISSION & PRODUCT VISION

Our mission is to facilitate widespread acceptance and adoption of cryptocurrencies by making it easier and simpler for beginner and advance users to participate in the cryptocurrency market.

Our product will support this mission by offering a singular platform incorporating three main elements: cryptocurrency exchange, secure multi-currency wallet, and an EFTPOS debit card service. We envisage that this product will become the main hub for both beginner and advance users to trade, share knowledge, and increase day to day use of cryptocurrencies by becoming the bridge that links traditional payment systems and blockchain based assets/ currencies.

3.2 CRYPTOCURRENCY EXCHANGE

The purpose of the cryptocurrency exchange is to allow trade between fiat currency and blockchain based assets, and between different types of blockchain based assets. The exchange will act as the broker between buyers and sellers and arrange transactions between parties for a small transparent fee.

A key differentiating feature in the Cloverdex exchange will be its focus on ease of use and friendliness via our 3-step design ethos and its ability to provide timely and relevant news, information, market analytics and statistics to better educate users and encourage their market participation. This feature will be further explored in section 3.5.10.

The exchange will offer a large number of cryptocurrencies and alternative coins (altcoins) including but not limited to Bitcoin, Ethereum, XRP, Bitcoin Cash and more. As the platform matures and we begin integrating external exchange trades, users will have seamless access to hundreds more altcoins.

Furthermore, in partnership with our payments processor we will be supporting a wide range of fiat currency pairs at attractive rates. At first, we will support a number of dominant currencies such as USD, KRW, GBP, and AUD, with more to be added later based on customer demand.

To increase acceptance and adoption of our cryptocurrency exchange, accessibility across a number of devices and platforms will be a top priority. We aim to have a native android and iOS application soon after main launch, with the main trading exchange site being compatible with mobile browsers from the start.

Ultimately in line with our product vision, the platform will form a hub for all traders of cryptocurrency with support for hundreds of altcoins, access to a large number of fiat trading pairs, and accessible across all major operating systems and devices.

3.3 SECURE MULTI-CURRENCY WALLET

Security is an ongoing theme for cryptocurrencies and we understand without user's trust, our platform will fail. Our focus on security is not only in the exchange, but also through all products/services we offer including the multi-currency wallet.

The multi-currency wallet is a software program that stores the private and public keys that allows a user to interact with various blockchains and make transactions. It is therefore extremely important that the wallet is secure enough to keep the private keys away from prying eyes.

The Cloverdex multi-currency wallet will allow a large number of different cryptocurrencies to be stored and will employ a number of security features such as two-factor authentication and multisignature (multisig) technology which will require at least two users (i.e. wallet owner and exchange) to sign a transaction before it can be broadcast onto the blockchain.

The main benefit of the multi-currency wallet application is to simplify the user experience in storing and transacting cryptocurrency. No longer will a user be required to know the unique private keys of each individual cryptocurrency they own. One username and password will allow users to have full secure access to all their cryptocurrency funds.

Furthermore, the wallet application will offer a cold storage solution whereby users are able to define an amount of cryptocurrency they would wish to store in offline storage. By doing so, the user is able to eliminate any risk loss of funds due to hacks or fraud.

3.4 EFTPOS DEBIT CARD

In our effort to increase ubiquitous use of cryptocurrencies in every day purchases and increase its mainstream adoption, Cloverdex will provide an EFTPOS debit card that can be used at millions of EFTPOS terminals around the world (linked via Google Pay and Apple Pay) and for online purchases.

Unlike existing solutions that require the user to take multiple manual steps to convert cryptocurrency to fiat and transfer to debit card for use (i.e. preload/prepaid), Cloverdex's solution in partnership with our payment processor will seamlessly convert cryptocurrency in the user's wallet to fiat (at an attractive current prevailing market rate) at point of purchase.

Users will be able to set per transaction limits and global weekly/monthly spending limits giving them complete control of their funds and how it is used.

Currently available cryptocurrency debit cards

1 — Cryptocurrency funds stored on exchange

2 — User initiate sale of cryptocurrency on exchange for fiat

3 — Fiat currency balance deposited into exchange account

4 — User transfers portion of fiat funds into EFTPOS debit card

5 — Funds available on debit card

6 — User makes purchase using debit card
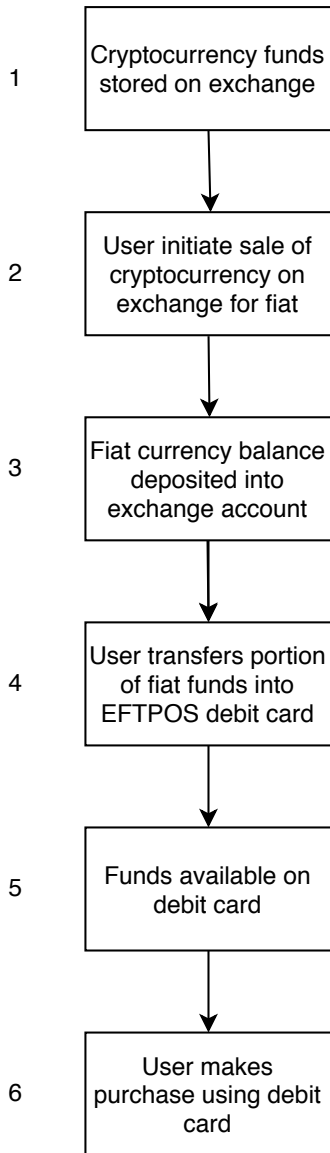
Total time: 30 mins. 6 steps

Crypto-1 EFTPOS debit card

1 — Cryptocurrency funds stored in secure multi-currency wallet

2 — User makes purchase using EFTPOS debit card

Payment request sent to payment processor. Cryptocurrency conversion to fiat is automated

3 — Successful purchase
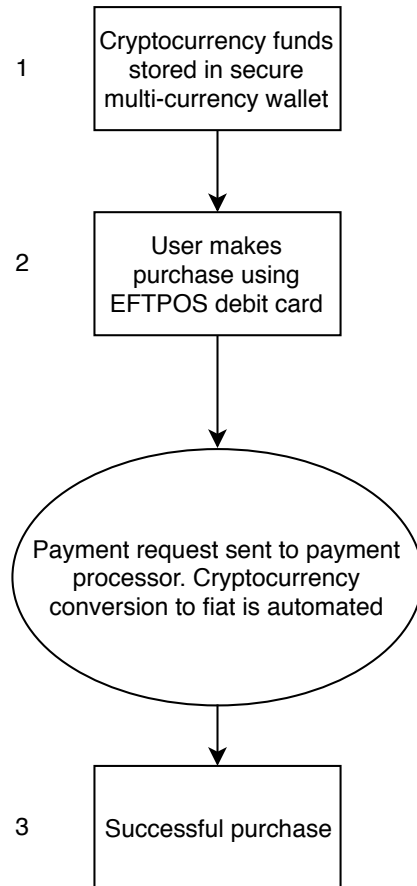
Total time: 5 secs. 3 steps

3.5 FUNCTIONAL DESIGN SPECIFICATIONS

The Cloverdex product and services is based on the following simplified modular high-level functional design specifications. Please note the following process defines how an internal trade and external trade request is completed.

3.5.1 HYBRID DESIGN EXCHANGE PLANS
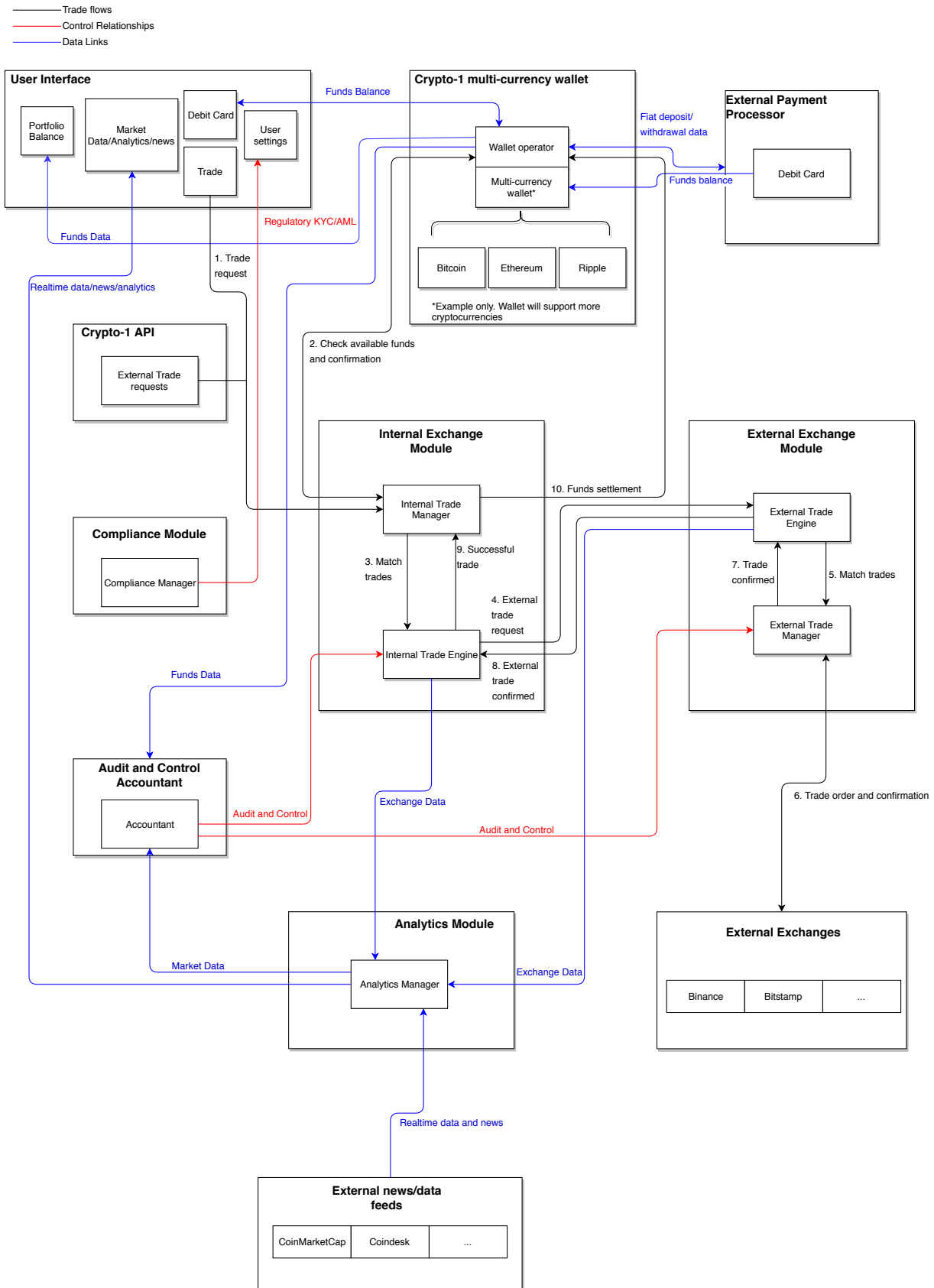
To ensure quick deployment and release of our cryptocurrency trading platform that satisfies our core criteria of speed, liquidity, and transparency, our strategy is to first release a highly secure centralised exchange. Due to the exchange's modular design, we aim at a later date to migrate users across to a hybrid decentralised exchange which will offer the highest level of security (users own their wallet private keys).

The transition to a hybrid decentralised exchange will be seamless in that users will not notice any differences from a usability and user-interface perspective.

3.5.2 USER INTERFACE MODULE

The user interface will act as the main portal to which users engage the Cloverdex trading platform and will consist of four main elements: portfolio, research (Market data/analytics/news), trade, and settings.

As outlined in our introduction, our main target audience for the exchange is both beginner and advance users by incorporating user intuitive and friendly design elements through our 3-step ethos (3 user steps for any action).

The portfolio page will display useful information about the user's current portfolio balance and performance based on real-time market data, cryptocurrency portfolio spread, biggest gainers and losers, and other useful information. In a way, this page will provide an easily digestible snapshot view of the user's portfolio.

The research page is a hub whereby all cryptocurrency news, analytics and data can be accessed. The purpose of this hub is to allow users to research and filter certain cryptocurrencies, markets, and make informed investment decisions. CLDX token holders will have access to enhanced reporting and analysis such as real-time technical analysis on their chosen market or cryptocurrency.

Trade portal will allow users to purchase and sell cryptocurrencies to and from fiat, and crypto-to-crypto trades. There will be two types of trades available; over the counter (buy/sell cryptocurrency instantly based on best prevailing market rate), or via order book (user defines buy/sell price to which trades will be initiated).

Debit card page will allow users to control their EFTPOS debit card settings such as daily limits, per transaction limits, active or deactivate, and view list of debit card transactions made.

3.5.3 CLOVERDEX API

The Cloverdex Application Programming Interface (API) will allow external parties to access the Cloverdex trading platform to make trades. This function will have the effect of increasing volume and liquidity of our trading platform.

3.5.4 CLOVERDEX MULTI-CURRENCY WALLET

The secure multi-currency wallet will store all the users' cryptocurrency and display their EFTPOS debit card balance.

From a user design perspective, the multi-currency wallet will appear as a single wallet, however in terms of system and software design, the wallet be made up of many different wallets for each type of cryptocurrency being stored. The role of the wallet operator is to manage the multi-currency wallet that keeps track of the individual wallets.

As mentioned earlier, the multi-currency wallet will employ a number of security features such as two-factor authentication and multisignature (multisig) technology requiring at least two users (i.e. wallet owner and exchange) to sign a transaction before it can be broadcast onto the blockchain.

3.5.5 INTERNAL/EXTERNAL EXCHANGE MODULE

The internal exchange module will be responsible for matching and finalising trades. Efficient matching of trades ensures trades are done quickly resulting in a better customer experience. At all times the internal exchange module will monitor the liquidity of the exchange and the price of assets both in the internal and external exchanges. Both of these factors will decide whether a trade is completed on the internal exchange or referred to the external exchange module.

If a trade is referred to the external exchange module, the trade is translated to actionable API orders that are sent to external exchanges to complete.

By doing so, the Cloverdex exchange ensures there is always enough internal liquidity but also offer users the best buy/sell prices available on the market.

The secondary role of both the internal and external exchange modules is to share market, liquidity, and cryptocurrency data to the Analytics module for user research and audit/control purposes.

3.5.6 ANALYTICS MODULE

The analytics module role is to record and organise exchange/market/cryptocurrency data and form the backbone of user research data, technical analysis capability, and allow the Audit and Control Accountant to monitor trades to perform trade and trust intermediation and regulate/balance Crypt-1's risk exposure.

3.5.7 AUDIT AND CONTROL ACCOUNTANT

The role of the Audit and Control Accountant is to keep track of all steps of the transaction settlement process. The accountant will monitor the liquidity levels of cryptocurrencies and fiat currencies and rebalance if necessary to ensure the smooth running of the platform. As such, its main role can be characterised as a manager of asset flows within the platform.

As part of its asset flow management role, the audit and control accountant will manage the amount of cryptocurrency in cold storage (i.e. offline storage) to minimise risk and ensure enough funds are available for trade on the platform. This security feature will be further discussed in section 3.5.9.

3.5.8 COMPLIANCE MODULE – REQUIREMENTS

To satisfy all regulatory and legal compliance (now and in the future), we will require all users of our platform to provide at a minimum satisfactory identification and proof of residence. This requirement is to ensure we adhere to existing know your customer (KYC) and anti-money laundering (AML) requirements.

By working with lawmakers and regulators, Cloverdex hopes to improve mainstream/ institutional trust and credibility of cryptocurrencies.

The Compliance Module will be responsible for recording the user's KYC and AML status that will be used to update the user's settings and allow trading.

3.5.9 SECURITY AND AUDIT

A focus on security will be paramount to the reputation of our trading platform. Our security approach is three prong and consist of:

- Ensuring the platform is secure from a systems/technical perspective;
- Ensuring the platform is secure from human mistakes/fraud; and
- Periodic external validation of security measures and the platform via an external security audit.

The following are a number of system security measures we will employ (full exhaustive not provided, as this would be counterproductive to securing our platform from hackers):

- Mandatory two-factor authentication (either SMS or software based) for user logins and major changes to user settings.
- Use of multisig technology which will require at least two users (i.e. wallet owner and exchange) to sign a transaction before it can be broadcast onto the blockchain.
- Cloverdex API's will be token based with timed expiry.
- Securing all internet communication using HTTPS with SSL.
- Use of HTTP Strict Transport Security (HSTS), Cross-Site Request Forgery (CSRF) protection.
- Internal intranet connections are secure.
- Protection against Denial of Service (DoS) attacks through constant monitoring of the network.
- Prudent firewall settings.
- Staff training and clearly defined system roles so to limit access to systems. Regular audits of staff system access privileges.
- Keeping updated with the latest security advisories and bulletin boards.

In addition to the above security measures, the exchange will also be protected using cold storage (offline). Users will be able to define how much of their assets are in cold storage or simply rely on our global dynamic cold storage policy as defined by the Audit and Control Accountant. Generally, we will allow only a very small percentage of available funds available in the hot wallet, with the rest in cold storage therefore eliminating any change of theft/fraud.

3.5.10 EDUCATION, KNOWLEDGE, RESEARCH

Education, knowledge and research is a key feature of the Cloverdex exchange. A major failure in current market exchange offerings and broadly within the cryptosphere is the inefficient distribution of education and knowledge. Far too often people will invest in crypto assets based on the advice of others without doing any prior research on the product, team, and technical aspects of the offering.

The Cloverdex cryptocurrency exchange will have a Market Data/Analytics/news portal to which users will gain access to basic and advance research tools to better understand their portfolio performance, benchmark to the market, identify market trends, and find the latest data/news of their favourite cryptocurrencies.

The analytics module will be responsible for collecting data from many sources such as the internal/external exchange module and external data/news sources. Advance research tools will include automated technical analysis (TA) via a press of a button. Users will be able to define a date range and set specific parameters which will be used to calculate indicators such as moving averages, relative strength index, stochastic oscillators, and key support levels.
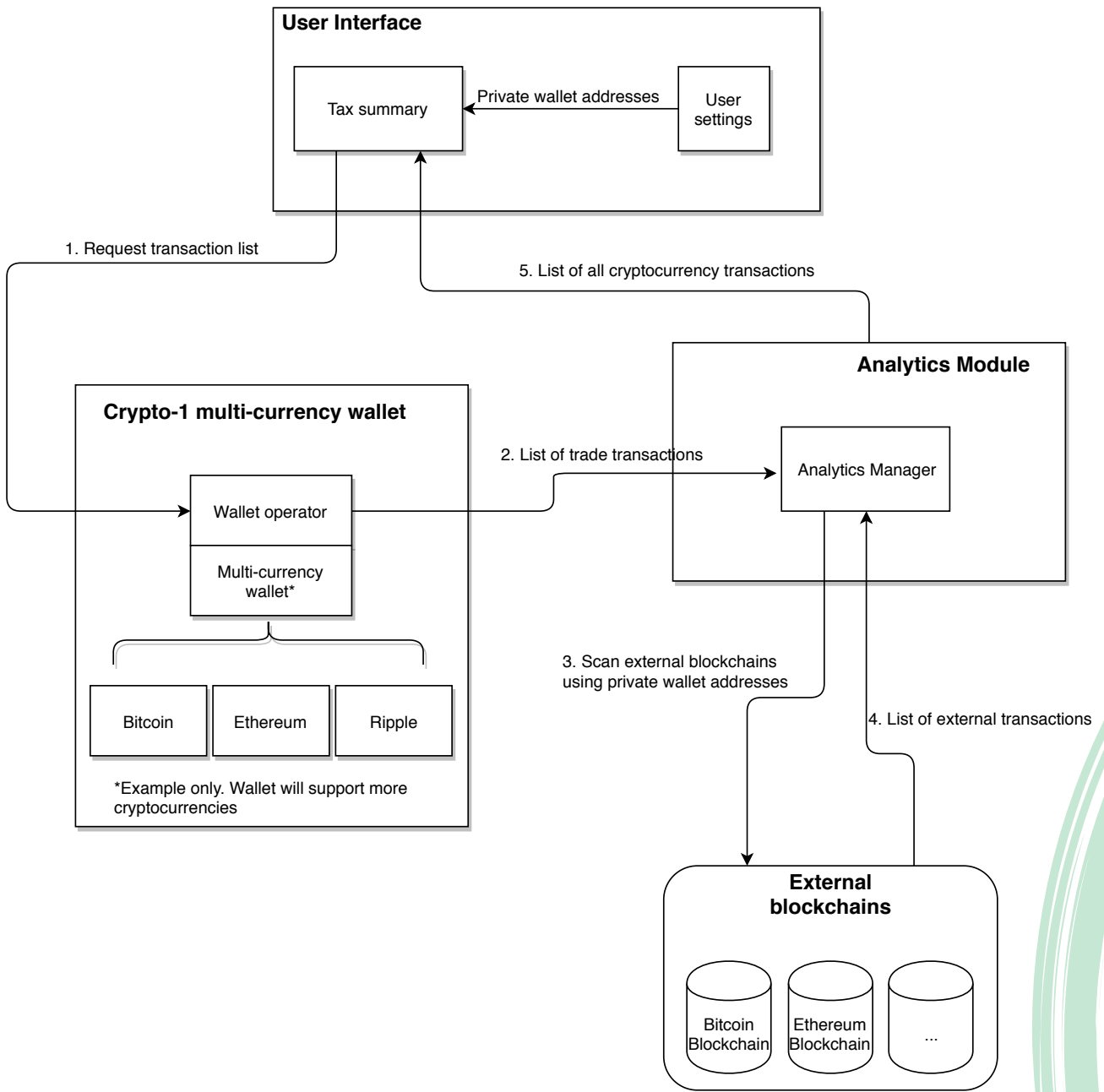
The analytics module will also be responsible calculating an objective quality rating for specific cryptocurrencies based on their TA, trade volumes, and social activities (i.e. twitter, Facebook, Medium, reddit, Telegram, etc). These tools will only be the start as we aim to bring to market more powerful tools as the market matures and develops.

Taxation law compliance is another weakness identified by many in the cryptocurrency market. The cryptocurrency market is still in its infancy and many jurisdictions around the world still have not disclosed clear guidance on the tax implications of cryptocurrency trading. What we do know however is that made jurisdictions view cryptocurrency loss and gains as capital in nature. Transfers from crypto-to-fiat and crypto-to-crypto are often viewed as taxable events and as such it is very important to keep track of all trades. An optional feature of the Cloverdex exchange is the ability to track all transactions to form an indication of a user's tax liability (as defined in the user settings).

The ability to track transactions will not be limited to transactions performed within the exchange, it will encompass all transactions made per cryptocurrency. As an example, users will be able to define their personal wallet address (i.e. Ripple, Bitcoin, Ethereum) they would like to track. The Cloverdex exchange will then scan the blockchain for all transactions tied to those wallet address and compile a report of all incomings and outgoings which is then used to calculate tax liability.

The functional diagram on the following page will illustrate how the taxation function will work.

We understand that privacy is a central concern for many users and as such we have made the tax calculator an optional feature for users.

User Interface

Tax summary ← Private wallet addresses — User settings

1. Request transaction list

5. List of all cryptocurrency transactions

Analytics Module

Crypto-1 multi-currency wallet

Wallet operator

2. List of trade transactions → Analytics Manager

Multi-currency wallet*

Bitcoin | Ethereum | Ripple

*Example only. Wallet will support more cryptocurrencies

3. Scan external blockchains using private wallet addresses

4. List of external transactions

External blockchains

Bitcoin Blockchain | Ethereum Blockchain | ...

3.5.11 SOCIAL TRADING FUNCTIONALITY

At Cloverdex we understand that many beginner traders lack the inherent trading skills and cryptocurrency market knowledge compared to advanced traders. As such, our platform will allow social trading (or copy trades) whereby users are able to follow the activities of high performing traders (who opt to have their trading decisions made available).

CLDX tokens will be used as the transaction fee for each copy-trade and these fees are passed directly to the user they follow (as commission).

An example of how this will function are as follows:

Before Trade

John   Stephanie

- John: BTC 50%, XRP 50%
- Stephanie: BTC 100%
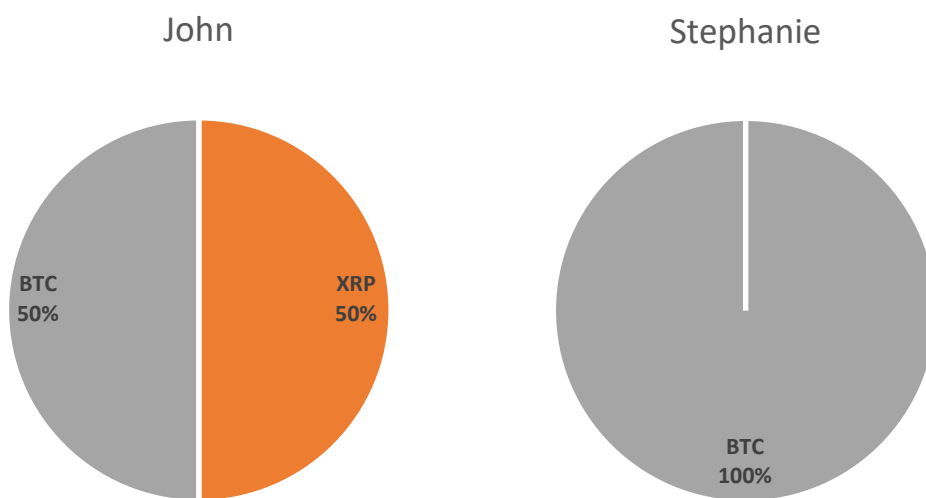
Stephanie decides to sell 50% of her Bitcoin balance to purchase Ethereum. John decides to allocate 50% of his portfolio to follow Stephanie's trade behaviour.

John   Stephanie

- John: ETH 25%, XRP 25%, BTC 50%
- Stephanie: ETH 50%, BTC 50%
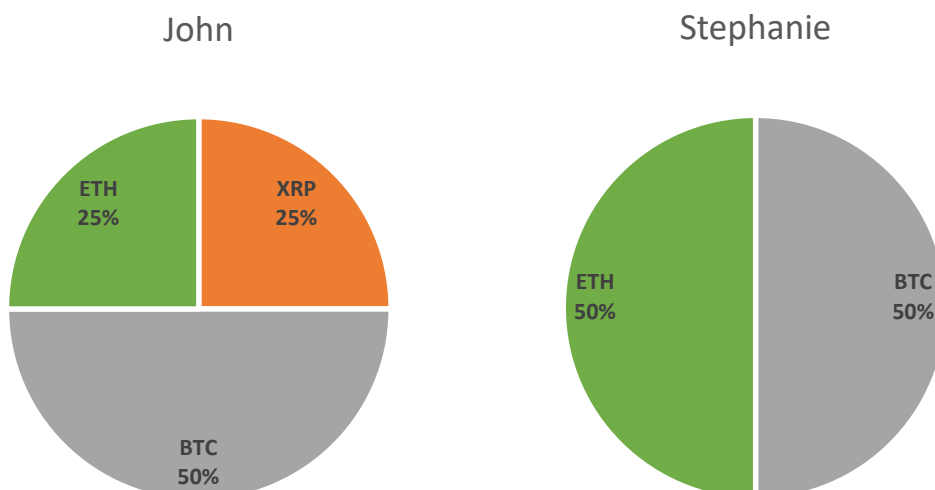
Having sold half of his portfolio (25% XRP and 25% BTC), John's portfolio automatically purchases 25% Ethereum and another 25% Bitcoin.

4. BUSINESS MODEL

Cloverdex exchange needs to be economically sustainable for long term growth and viability. Our business model is to provide a user intuitive platform where users can buy/sell, store, spend, and research cryptocurrency. We envisage a premier platform whereby users do not need to enrol in multiple platforms to cater to their trading needs. This will be accomplished by tapping into external exchanges when needed and by offering a large selection of fiat pairs, cryptocurrencies, and tokens for trade.

4.1 REVENUE MODEL

The following revenue model will support the platform:

- Trading fees:

Trading fees will be scaled in a way that will motivate users to trade. Trading fees will start at 0.1% and will scale downwards as users trade volume increases and if they are a holder of CLDX tokens.

- Listing fees:

New cryptocurrency and token listings on the exchange may require a fee. Selection of these listings will be dependent on a number of factors such as maturity of product, quality of team and project, and community support.

- Crypto asset withdrawal fees:

Holding crypto assets in our secure multicurrency wallet will be free of charge. We want to encourage users to make use of our secure multicurrency wallet but also providing maximum flexibility and as such for users who want to withdraw assets to their own wallets, there will be a small fixed nominal fee regardless of amount being withdrawn. This fee will cover the cost of the transaction on the blockchain and our system costs. As such, we anticipate this fee will be minimal.

- EFTPOS Debit Card fees:

Fees associated with the EFTPOS debit card may include but not limited to card issuance fee, Automatic Teller Machine (ATM) cash withdrawal fees, and lost card fees. Final fees will be determined based on our agreements with our preferred payment processor.

- Other revenue streams

In the future, Cloverdex reserves the right to introduce other additional revenue streams. We will however engage the cryptocurrency community and consult on best ways forward.

4.2 TARGET CUSTOMERS AND FUTURE GROWTH

At Cloverdex, we see immense potential for future growth within the cryptocurrency market. In March 2017, it was estimated that the number of cryptocurrency users was between 2.9 and 5.8 million[7].

Since then, proportional to the market price of Bitcoin, the number of cryptocurrency users have grown exponentially and is projected to exceed 200 million active users by 2024 driven by increased mainstream and institutional adoption.

Cloverdex aims to capitalise on this opportunity while the market is still in its infancy by catering our products and services to beginner and advance traders, with a view to attracting institutional investors because of our core focus on security and regulatory compliance.

[7] https://www.jbs.cam.ac.uk/faculty-research/centres/alternative-finance/publications/global-cryptocurrency/#.WiY1OxOgeUk

5. ROADMAP

Please note that although we will make every effort to deliver by these dates, please note that these are indicative only. Our community is our top priority and will be informed throughout the whole process of any new developments and partnerships.

5.1 WHITEPAPER (AUG 18)

- Whitepaper
- Development of high fidelity wireframe
- Development of promotional material (video, website)
- Community engagement and building

5.2 PRESALE (DEC 2018)

- Pre-sale will start early December 2018.
- Start Selection and negotiations with payment processor
- Intensify Marketing initiative

5.3 TALENT PROCUREMENT (DEC 18/JAN 19)

- Technical talent and development team formed.
- Intensify Marketing initiative

5.4 PUBLIC CROWDSALE (JAN/FEB 19)

- Public crowdsale commence
- Audit of crowdsale results.

5.5 BETA EXCHANGE & WALLET LAUNCH (Q1-19)

- Closed Beta launch early in the year.
- We plan to be listed on at least two major token exchanges early in the year.
- Public Beta launch with external exchange trading support and support for more fiat pairs March/April 2019.
- First major security audit by external service provider.

5.6 FULL RELEASE (Q2-19)

- Full public release of Cloverdex exchange and secure multi-currency wallet – includes up to 10 fiat pairs.

- Debit Card support added and shipped to customers.

5.7 MAJOR ENHANCEMENT RELEASE AND INTERNAL TESTING OF HYBRID DECENTRALISED EXCHANGE MODULE (Q3-19)

- Increase number of fiat pairs based on customer demand.

- Support for over 100+ cryptocurrencies and tokens. We will be conducting a vetting process so to ensure only quality cryptocurrencies/tokens are available on the trading platform.

- Internal testing of hybrid decentralised exchange module.

5.8 HYBRID DECENTRALISED EXCHANGE MIGRATION (Q4-19)

- Seamless migration of trading platform to a hybrid decentralised model.

6. CLOVERDEX TOKEN ICO

6.1 CLOVERDEX TOKEN KEY FACTS

Token Symbol	CLDX
Token platform	Ethereum ERC20 token
Total token supply	Total token supply is 100,000,000 tokens never to be increased. 80,000,000 tokens for sale (including bonuses) + 20,000,000 tokens (20%) company allocation for core team (vested over a 3-year period).
ICO Tokens for sale	80,000,000
Tokens reserved for promotional activities and airdrop	6,666,666
ICO soft cap	$5,000,000
ICO hard cap	$15,000,000
Pre-sale token allocation	15,384,615 + 30% bonus (unsold tokens will be made available for the public crowdsale)
Public crowdsale token allocation – first 20 million tokens allocation (15% bonus)	17,391,304 + 15% bonus
Public crowdsale token allocation – second 20 million tokens allocation (10% bonus)	18,181,818 + 10% bonus
Public crowdsale token allocation – Final 20 million tokens allocation (5% bonus)	19,047,619 + 5% bonus
Price per token (excluding bonus)	USD $0.2143
Ethereum/Bitcoin conversion rate	subject to change dependent on ETH/USD price closer to the sale
Unsold Tokens	Unsold tokens at the end of the crowdsale will be burned

Any tokens unsold at end of public crowdsale will be burned.

A certain proportion of tokens will be reserved for the purposes of promotional and marketing activities. These tokens will be used but not limited to reward early community supporters, supporters spreading word of mouth via social media channels, community airdrop to ensure diverse distribution of tokens to increase awareness and eventual trade volumes.

Tokens reserved for core team will be vested over a 3-year period based on the following unlock schedule. Use of these tokens may include additional promotional activities and platform development work.

- Token release: 25%

- 1 year after token release: 25%

- 2 years after token release: 25%

- 3 years after token release: 25%

The core team token vesting structure provides an incentive, support, and reward for the core team members to continue work on the exchange platform and product/service offerings.

6.2 TOKEN UTILITY

Based on the Howey Test, Cloverdex tokens should not be deemed as securities and do not need to be registered as a security. Cloverdex tokens are classified as utility tokens that can be held or used within the exchange and are not intended for speculation nor does it represent company shares. The value of CLDX tokens are not derived based on the exchange's future revenue streams and performance, rather it is derived strictly from platform use.

6.3 TOKEN PRIVILEGES

Cloverdex tokens will allow holders to gain premium services/features such as:

- Discounted trading fees:

  Holders of CLDX tokens will be afforded highly discounted trading fees depending on the number of tokens the user holds and their monthly trade volumes. This approach ensures users are rewarded for holding CLDX tokens.

- Social Trading (copy trades) features

  Holders of CLDX tokens will have access to the exchanges' social trading functionality. This will allow holders to automatically copy trade the actions of advanced traders.

- Free EFTPOS debit card

  Users who hold 3,000 tokens be given a free EFTPOS debit card when it is made available.

- Participation in community discussions and votes

  Holders will be able to expend their tokens in community votes relating to cryptocurrency/token listings and new platform features. Larger holders of the token will have a greater influence in these discussions.

- Access to advanced market analysis tools

  Ordinary users without tokens will have access to a number of research tools such as relevant news feeds, historical performance data, social media feeds, and notifications.

  Token holders will have additional tools such as automated technical analysis and cryptocurrency/token quality indicators which the Cloverdex platform will calculate based on a number of metrics such as but not limited to quality of product, team, volume of trades (liquidity), roadmap tracking, and volume of social media chatter.

- Early Beta access to the trading platform and mobile wallet

 Token holders will have beta access to the trading platform and multi-currency wallet.

6.4 ICO FUNDS USAGE

The following sections will detail how the tokens will be distributed and used.

6.4.1 TOKEN DISTRIBUTION

Eighty percent of all tokens will be allocated to the community (20% presale and 60% crowdsale). The remaining 20% will be allocated to the core team vested over a 3-year period.

The presale allocation was strategically modelled to ensure fairness for all contributors so that no one single part would hold a significant portion of tokens before the public crowdsale.
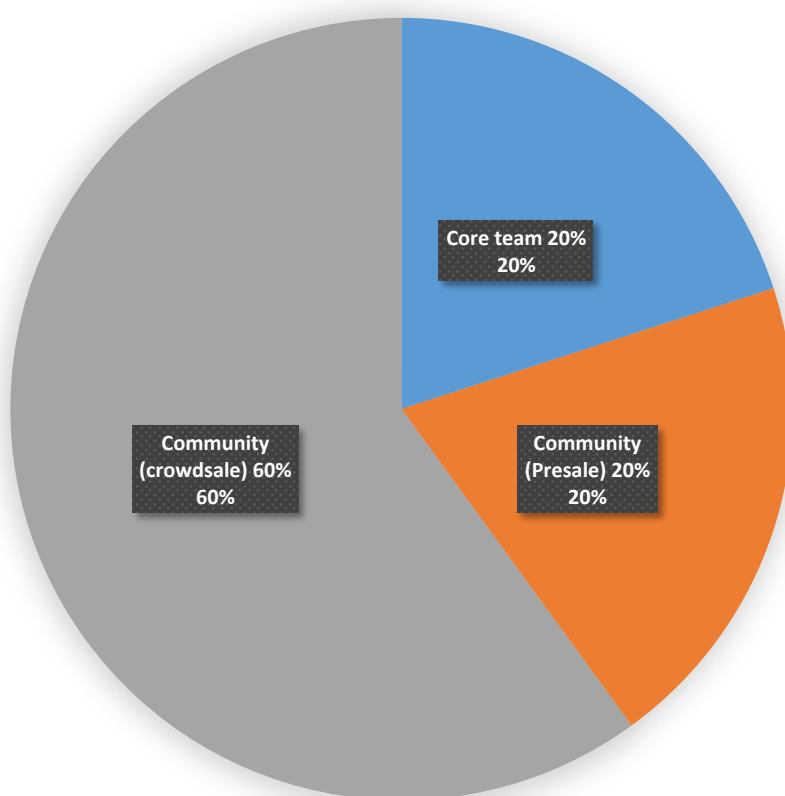
6.4.2 FUNDS USAGE

Funds raised during the ICO will be for the following purposes:

- Exchange platform reserves (40%): these funds will serve as trading reserves to provide the necessary initial liquidity.

- Development (20%): development of the trading platform, secure multi-currency wallet, and EFTPOS debit card functionality. Funding for security is bundled into the development cost.

- Operations (10%): Day to day operations of the platform and corporate expenses.

- Legal (10%): regulatory and legal compliance.

- Marketing (20%): Funding will be for advertising, media content creation, community building and engagement, promotions and prizes, and website design.

Legal
10%

Exchange platform
reserves
40%

Operations
10%

Marketing
20%

Development
20%
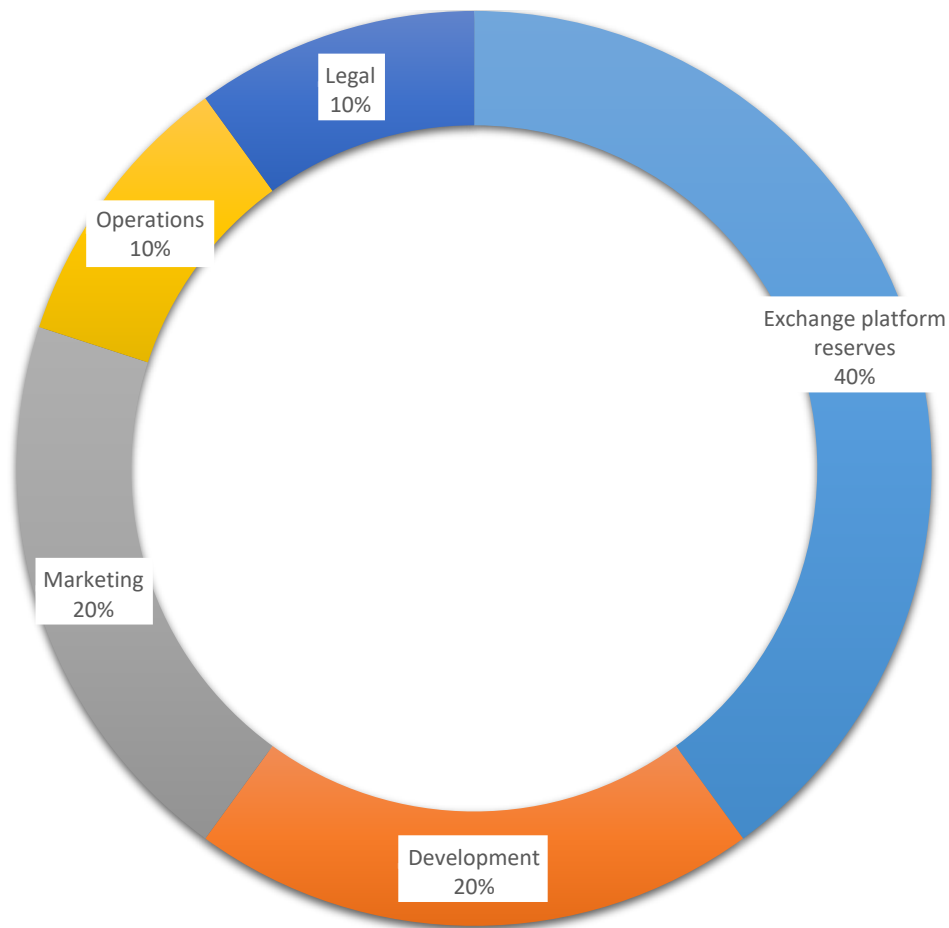
6.5 TOKEN PARTICIPATION - PRESALE & PUBLIC CROWDSALE SALE

The ICO will be run via a two-stage process. Presale will be open to whitelisted participants in December 2018 and funds raised will fund initial start-up, marketing activities, negotiations with payments processor and recruitment of technical talent leading up to the public crowdsale.

The public crowdsale will commence January 2019 and only participants that have been whitelisted will be able to participate. Any unsold tokens in the pre-sale will be available in the crowdsale. At the conclusion of the ICO unsold tokens will be burned.

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7. TEAM & ADVISORS

7.1 CORE TEAM

Leung Lau
Co-founder and CEO of Cloverdex

With over 10 years experience in private and public sector management positions spanning areas across software engineering, corporate finance and budgeting, business planning, and financial analysis, Leung has the ability to identify gaps in the market and needs of investors and customers to achieve successful innovative solutions.

Leung has worked at IBM specialising in enterprise-level system architecture, frontend design, Java and .Net programming. Having a passion to serve the public and better understand corporate finance and governance, Leung then sought experience within the Australian Commonwealth Government and have held management positions in a number of departments and agencies. These include the Australian Institute of Family Studies (AIFS) as Deputy Chief Financial Officer, and a number of managerial positions at the Department of Social Services including Director for Financial Reporting, Assurance, and Costings.

Besides being a passionate blockchain enthusiast and crypto investor, Leung enjoys spending time with his family and staying fit. He strongly believes a health body results in a healthy mind.

Shing Lau
Co-founder and Chief Technology Officer

With over 8 years' experience working as an IT professional in primarily management positions spanning across both government and the private sector, Shing has the ability to work with clients and businesses to convert their vision into an innovative solution which helps them achieve their goals.

Shing has worked with many large corporations within different industries such as government, retail, banking and utilities which provides him with a wealth of knowledge in regards to policies and a inner workings of different business models for each industry. He has implemented big data platforms and large enterprise architectures which allowed businesses to progress to the next level of data usage and analysis.

Other than being the swiss knife of consulting and technical know-how, Shing enjoys spending time with his family and travelling. He keeps his mind sharp by building large Lego projects & jigsaw puzzles in his spare time.

Sasha Dordevic
Operations Director & Chief Financial Officer

With over 18 years' experience working across many areas in the financial and corporate divisions in large Australian Government agencies/departments, Sasha has demonstrated his strong skills in financial management and best in class corporate governance practices. His work requires him to provide strategic financial advice and assurances of financial well being to allow better decision making and management of resources. This includes assuring over $100 billion per year in Government funding as part of the Federal Budget process to now managing the much publicised transition of existing National Disability service providers to the National Disability Insurance Agency.

Sasha also championed and spearheaded the development and implementation of a new major Financial Management Information System for the Department, demonstrating his ability to influence key stakeholders and manage large implementation and change management projects.

Over the years, Sasha's growing interest in distributed ledger technology led him to the first mass adoption of such technology in the form of crypto currencies. Today, as a hobby he invests in a number of crypto currencies and projects that have strong fundamentals, vision, and team.

Christopher Andrew
Product and Platform UI/UX Director

Christopher has worked in the technology education sector for the past 10 years, with another 10 prior to that in the multimedia design industry.

He has experience in both the private and government sectors, working on large scale programs with international reach.

Christopher has led many successful project teams from a greenfield status, as well as coming onboard to a number of halted projects to steer them towards success.

Some notable areas of experience have been working for ACMI (The Australian Centre for the Moving Image) as the lead web designer and systems engineer, and for the AIG Financial and Insurance Corporation as the project manager.

More recently Christopher has been working for the Victorian Department of Education, overseeing a number of IT projects.

In his spare time Christopher enjoys video games and spending time with his family.

Siris Kunwar
Communications Director

Throughout his 10 years plus years working in corporate finance and government management, Siris has established his unique brand of financial analysis and stakeholder engagement.

Siris has a storied history in both the corporate finance world and working on large public sector initiatives. Over the years he has successfully leveraged his keen ability to satisfying the communication needs of one of Australia's premier superannuation and investment company into negotiating multi-million dollar contracts on behalf of the Australian Federal Government with multiple multinational NGOs.

Much like the dichotomy of his work life, Siris likes to balance his keen interest in media and technology with engaging in the arts, music and history.

7.2 ADVISORS

Keely O'Dowd
Legal and strategy advisor

Ms. O'Dowd is an experienced lawyer with a focus on technology and sourcing projects. She advises on a broad range of technology transactions, including procurement, outsourcing and software licensing. This work includes drafting and advising on a range of IT procurement and supply agreements. Ms. O'Dowd advises a range of corporations on privacy and cybersecurity.

Rohit Bhattacharya
Crypto advisor and trading analyst

Rohit's experience involves utilising analytics and quantitative methods to solve client problems, provide strategic insights, and drive the decision-making process. Working in consulting has honed his problem solving and logical thinking skills where he approaches things with a sense of creativity and practicality. Rohit has a Master's in Engineering and is still very active in academia with numerous publications that he presents at conferences around the world.

Outside work Rohit takes a keen interest in building Machine Leaning models, that he uses for trading stocks and Cryptocurrencies.

8. COMMUNITY

Visit and contact us via the following avenues:

- Website: https://www.cloverdex.io
- Telegram: https://t.me/cloverdex_community
- Twitter: https://twitter.com/cloverdex
- Facebook: https://www.facebook.com/officialcloverdex/
- Medium: https://medium.com/cloverdex
- Email: cloverdex@cloverdex.io