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CRYPTO-EXCHANGES UNDER THE HOOD

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Abstract

Centralized Exchanges (CEXs) are peculiarly the most visited portal related to decentralization after their news websites. With the success stories of Coinbase and Binance capturing user attention to the tune of millions of dollars' worth of transactions, a plethora of crypto-exchanges have sprung up in the market offering competing services. Decentralized Exchanges (DEXs), the poster boys of the Blockchain-driven world have also seen several innovations that promise to take back the control from centralized authorities and give it back to the people.

The evolving nature of regulations governing exchanges and the ever-present risk of getting hacked due to faulty code are two of the major main-points faced by these exchanges. Coupled with the predatory practices of several shady exchanges for token listing, the entire ecosystem rests in a highly nascent stage and can go either way if not handled with care.

While crypto-exchanges are developed fairly similarly, it is the presence of customized tools, especially those customized for the management of tokens listed on the exchanges. These tools could be as simple as simplified vetting of tokens before listing to something as complex as automated bot-based liquidity provisioning on a daily basis for individual tokens.

Crypto-exchange development will continue and see more innovation with the rise of blockchain interoperability.

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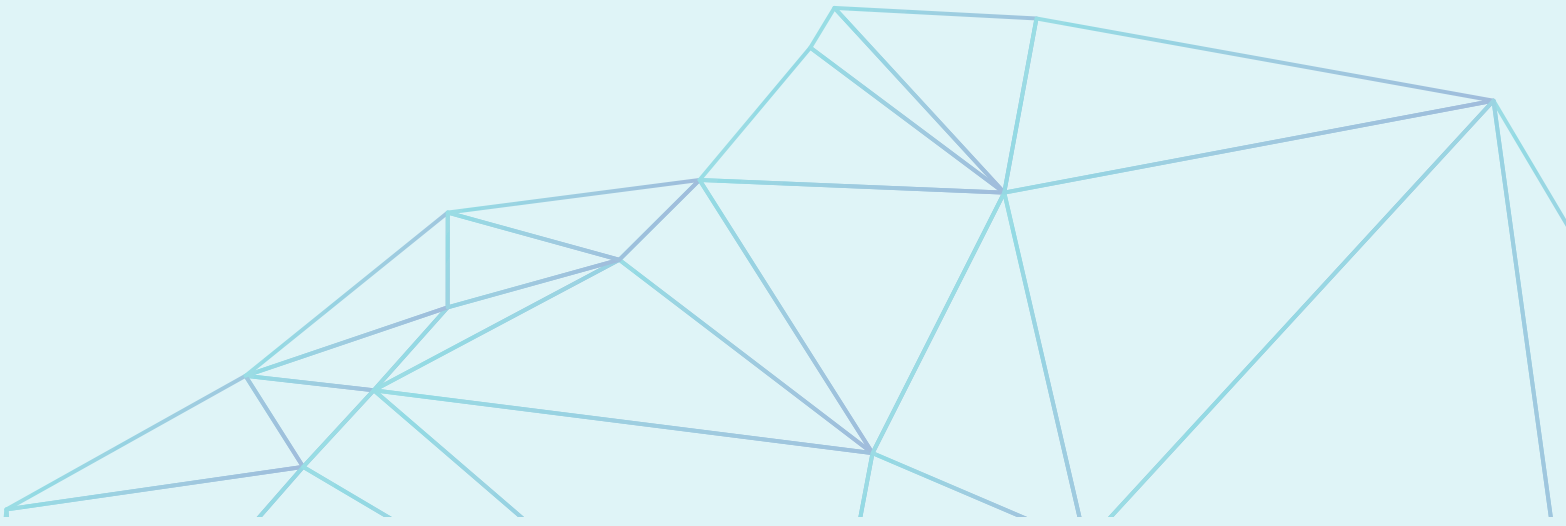
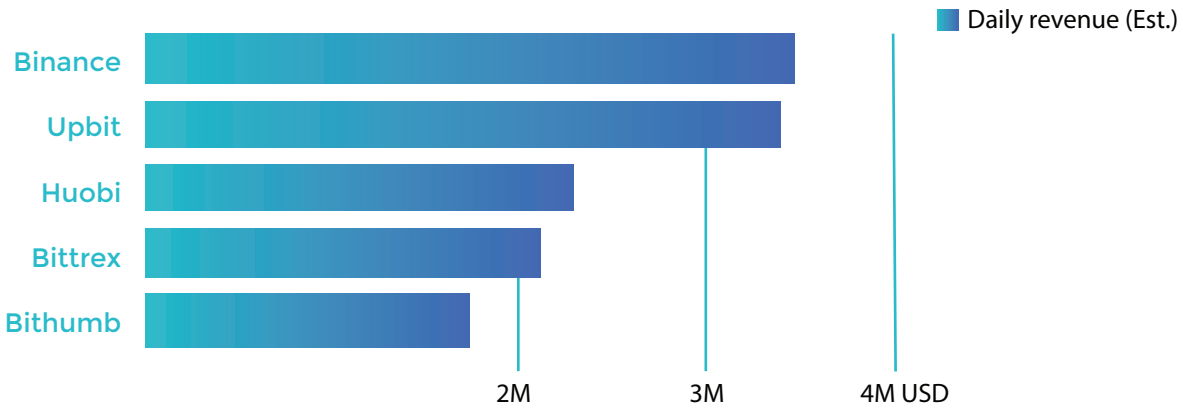


Market Potential

Cryptocurrency trades are valued near the $15 Billion mark computed daily. By comparison, the Forex trading volume hovers near the $5 Trillion mark. This reflects the true potential of cryptocurrency trading and cements the fact that despite the recent market interest in cryptocurrencies, the majority is yet to enter the field.

To put things in perspective, with all other things constant, if the cryptocurrency trading markets achieve the same trade volume as the Forex markets, each BTC would be valued at $2.4 Million. This is the reason that several big players and innovative entrepreneurs are building cryptocurrency exchanges of their own and looking to grab a piece of the pie.



Sources: Daily revenue estimated with CoinMarketCap reported 24Hr volume and fees listed on top 5 exchanges' websites.

When Binance announced that it was looking at profits valued over $1 Trillion in 2018, the race to build crypto-exchanges intensified even further. While competition is generally good for the consumer, in this case, the general dearth of Blockchain Engineers in the world has led other developers to fill in the gaps and act as Blockchain Engineers. Naturally, several flawed architectures saw the light of the day, promptly got hacked, and brought a bad name to cryptocurrencies.

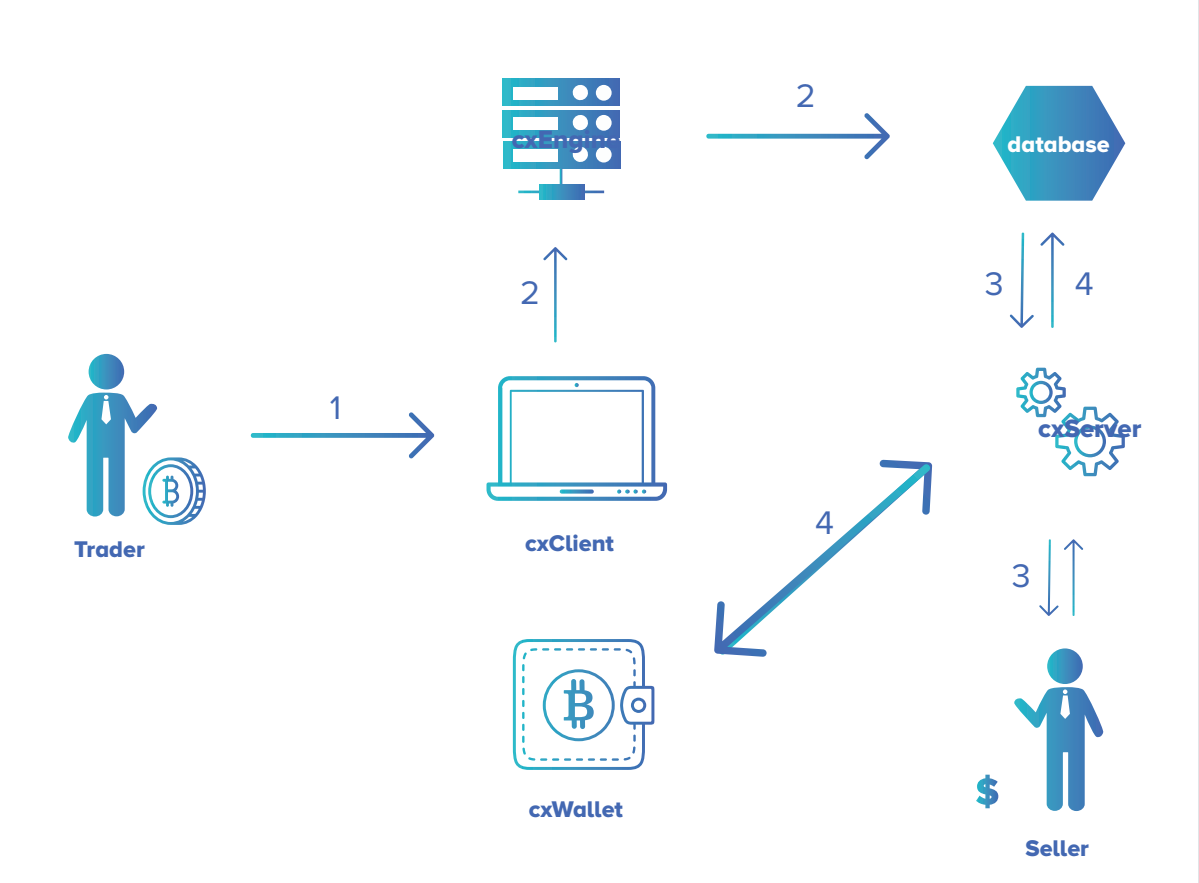
Thanks to rising awareness, the Alternate Trading Systems are more cautious in their approach which will lead to the development of better offerings and better security protocols that will end up making lives easier for the users.

Modules of a Crypto-Exchange

CEXs and DEXs have different components or modules that work in tandem to enable communications between a buyer and a seller in a controlled manner to facilitate trading between the two. Broadly, the modules can be divided into three main categories — the backend modules, the frontend modules, and the wallet module.

The backend modules, as the name suggests, run behind the scenes to protect the inner workings of the architecture from unwanted interference. These are the most important modules of an exchange from an operational perspective and determine the strength of the exchange in transacting thousands of transactions per second.

The frontend modules are the user facing components that interact with the general users and administrators, take their inputs, communicate with the backend, and display the output derived by the backend modules. Polished UI and an intuitive UX are the hallmarks of a professional crypto-exchange.



The wallet modules are the most important module from the users' perspective since they are responsible for the management of the funds of the users for trading purposes. The current trend among regulators is to promote more transparent trader ownership of the funds by reducing the role of the crypto-exchange to that of a trading platform instead of a full-blown custodial role that the first generation of exchanges had come to assume.

The Backend Modules

User Onboarding and KYC Module — It takes user input and creates an account to enable trading after the submission of KYC documents. The KYC process can be manual or automated via APIs from KYC providers. While the big exchanges have taken the automated route, several smaller exchanges, to save $2/KYC have taken the manual and self-check route which might be shady at best and illegal at worst.

DEXs, due to their underlying philosophy, do not integrate this module which has led to several legal wrangles. Jurisdictional laws require disclosure of funds flowing in and out of that jurisdiction while International Covenants require the prevention of terror financing which requires KYC. To meet halfway, some DEXs have shifted their base of operations to privacy-friendly countries while the rest have integrated this module in their exchanges.

For Security Token Exchanges (STEs), an additional feature is required for full conformation with the KYC/AML/CFT requirements. This is feature is called transaction monitoring and the exchange must duly verify the Rules Engine baked into the Security Token to ensure that fruitless transactions are not executed as they would return a failed response and waste gas charges.

Trading Engine — It receives all the buy orders, sell orders, and cancel orders from the users and passes it to the Matching Engine. It manages the orderbook which is the single most important metric for evaluating the success of a crypto-exchange.

While honesty is the best policy, several crypto-exchanges are notorious for inflating their orderbooks to attract more users who are on the lookout for the exchange with the most liquidity. Such tactics can be easily caught and reported adding no value, tangible or intangible to the business coming to the exchange. Since crypto-exchanges make money on the transactions processed instead of orders received, this tactic has a very short shelf-life.

Matching Engine — It is the heart of a crypto-exchange and determines the matching of trade orders received from both parties to the trade. The strength of the code and the data structures invoked determine the number of transactions per second (TPS) can be processed. A decent matching engine can process up to 35,000 TPS which is a remarkable feat considering the fact that the Ethereum Blockchain can transact only 15-20 TPS while VISA and Mastercard hover around the 15,000 TPS mark.

Some of the bigger exchanges boast of up to 1,000,000 TPS but that comes with the caveat of off-chain transactions. Since the technologies governing off-chain transactions, the Lightning networks and the Raiden Networks are still very nascent, most exchanges tend to opt for a low-jack technique — act as the market maker to fill orders while committing transactions to the Blockchain in batches as hashes.

These are more of a stop-gap solution and the Million TPS mark, beloved to those building exchanges is still a few months away.

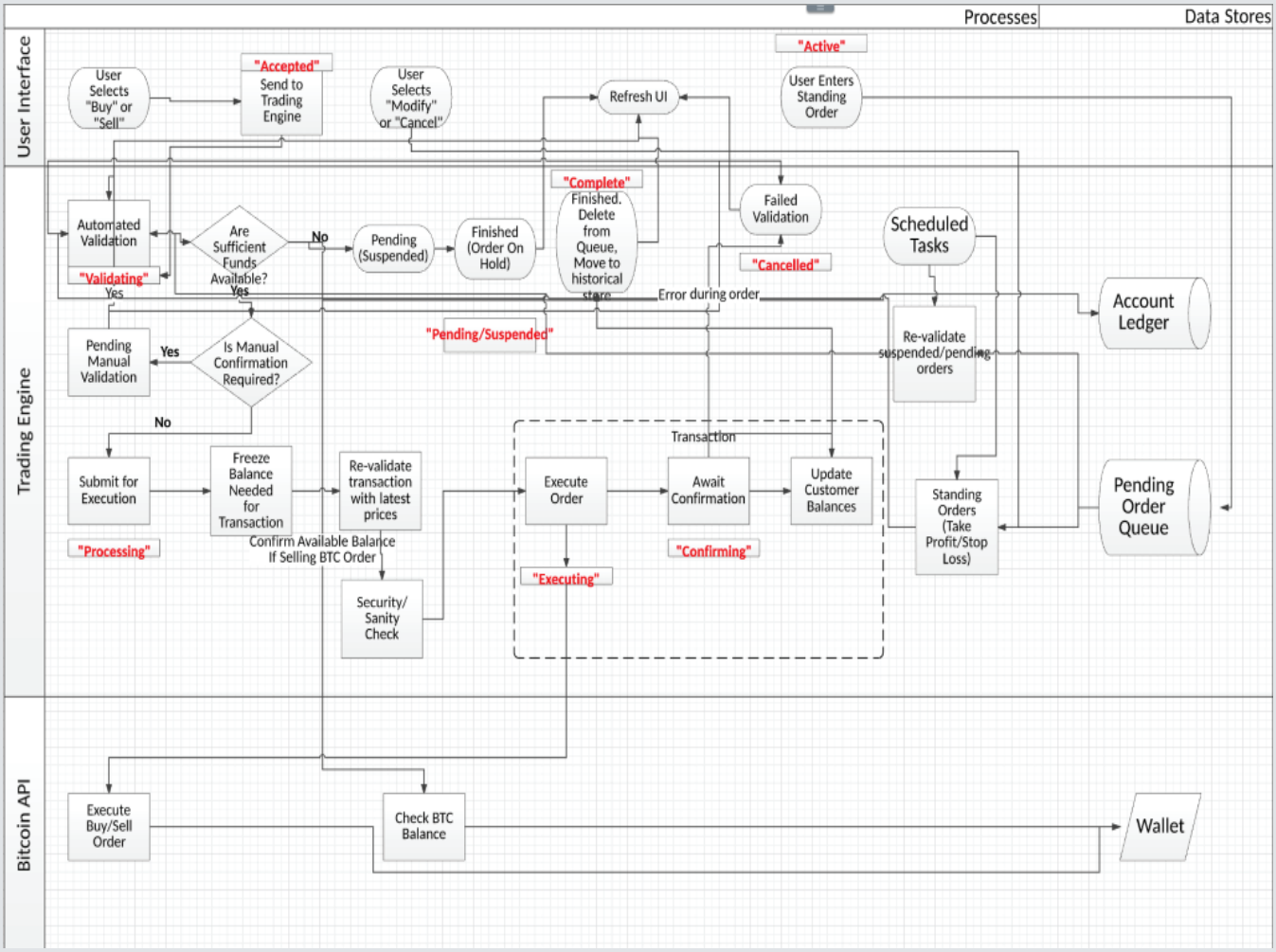
Synchronization Module — It enables seamless communication between the other modules and works to remove bottlenecks by directing processing power to modules that require it the most. The operational feature of this module is entirely ad hoc and springs into action within milliseconds of hearing the distress call of a module facing load issues.

Considered an optional module by several of the exchanges in operation today, the Synchronization Module should be skipped at one's own peril. As the transaction volumes increase, the synchronization module assumes an important position as the arbiter of workflow direction ability.

KPIs of the Backend Modules

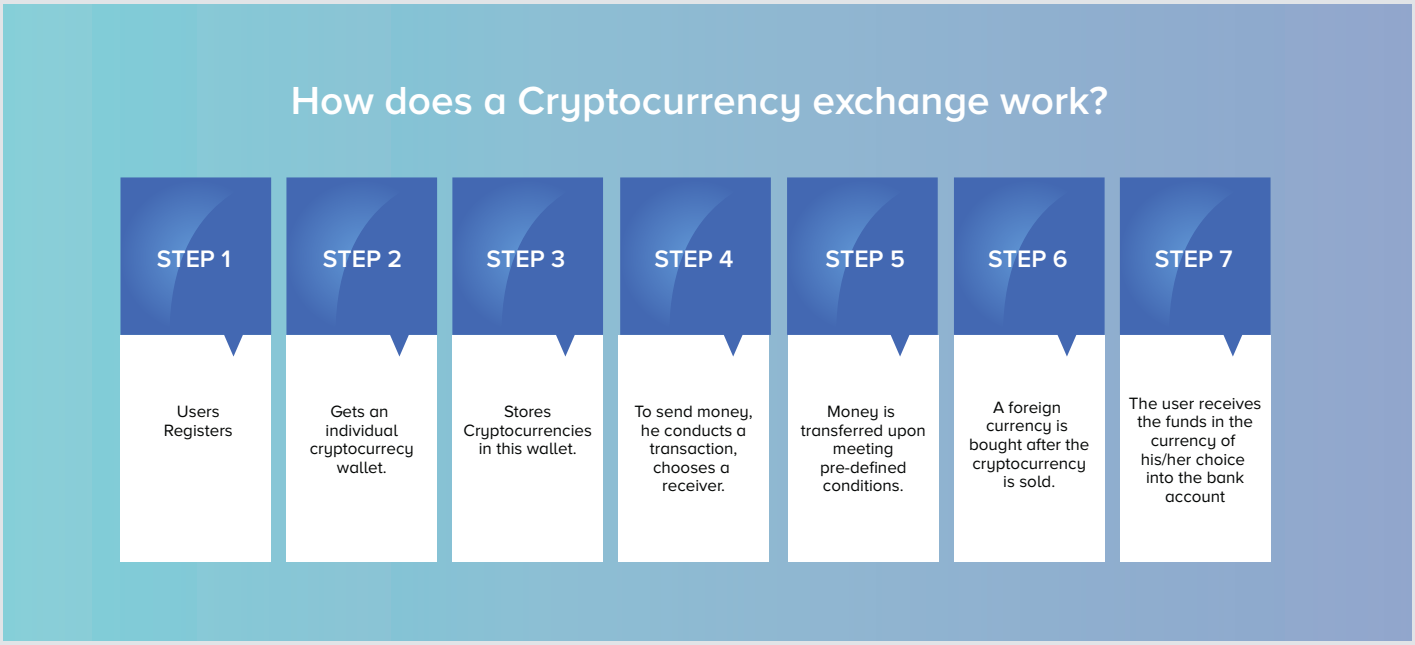
All backend modules have one key KPI — handling user data load effortlessly and processing transactions at speeds comparable to existing solutions at the very least and offer a value addition of around 10x. This is the reason behind the demand for 1 Million TPS architectures which renders Node.js based systems obsolete due to their slower compilation times in comparison to faster alternatives such as Go.

Security is another much sought after KPI and can be achieved via extensive penetration testing and smart contract security audits to find and fix flaws before they can be exploited. It is worrisome that the cautionary tale of Mt. Gox, the world's first crypto-exchange has not been heeded by the newer crop of exchanges and the news to crypto-exchange hacks have become common news.



The Frontend Modules

Client and Admin Dashboard — It is the frontend mechanism for accepting user/admin input and providing processed outputs. For the admin, it displays the consolidated transaction history for monitoring and taxation purposes, incorporates a superadmin panel to override the KYC status of new users via manual inputs, and automated checks implemented via KYC providers such as Identity Mind Global and Cygnus. The KYC provider allows your exchange to access their backend database via APIs at a fixed fee plus per verification fee.



The per verification cost comes to anywhere between $1 and $3 based on the number of verifications processed via your exchange. A smart way is to utilize the services of solutions providers such as TokenAsia that have integrated solutions with the KYC providers that lowers your cost significantly.

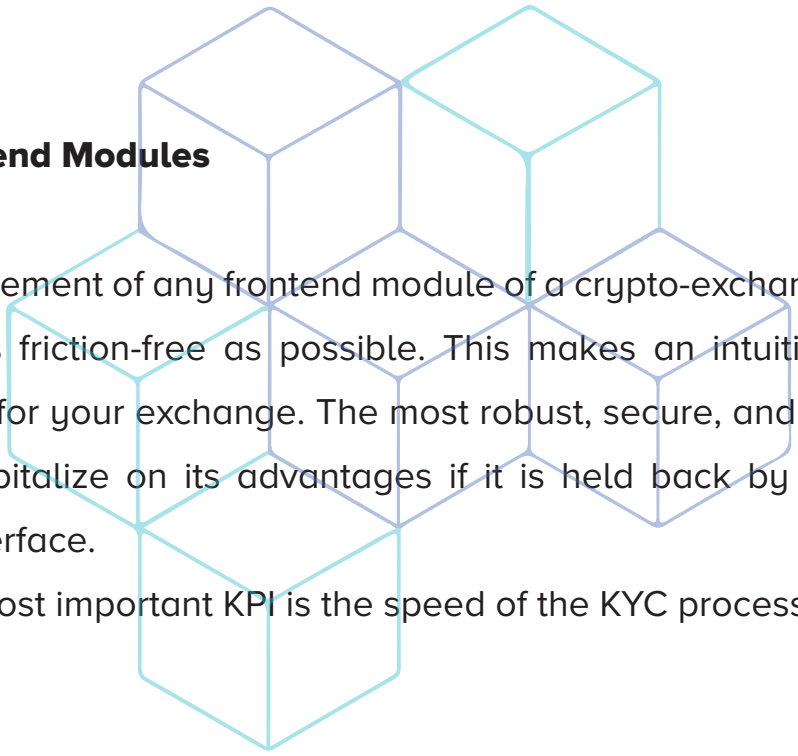
The client dashboard enables users to register as traders, perform their KYC, and view their balances, trade history, and access the orderbook for creating new trades. The intuitiveness and feature-set of your client dashboard will have a direct bearing on the number of people who sign up on your exchange and bring liquidity

.

Charting Module — It connects with the backend of popular cryptocurrency price monitors such as cryptocompare, coinmarketcap, or any other such website of your choice. These enable the technical traders amongst your user base to create trades based on their favorite trendlines such as the RSI Index, the SMA/EMA Index, the Elliott waves, and many more. The idea is to provide comprehensive solutions to your users and keep them engaged on your platform instead of making them visit external websites for these services.

Orderbook — It contains a real time list of the highest buy orders and the lowest sell orders for a particular pair trade. It acts as a simple tool for finding out the liquidity on an exchange without having to create an account on the exchange.

While the exchange might allow trades between several different trading pairs, the orderbook has to be one consolidated record of all the trades created, in real time, and arranged in the order of their suitability to get executed. For example, the buy orders will get arranged in a descending order since the higher buy orders will get filled first. Similarly, the sell orders will get arranged in an ascending order because the smaller asks will get filled first.



KPIs of Frontend Modules

The key requirement of any frontend module of a crypto-exchange is to make the user experience as friction-free as possible. This makes an intuitive interface the most important KPI for your exchange. The most robust, secure, and feature-rich exchange will fail to capitalize on its advantages if it is held back by a buggy and non-user-friendly interface.

The second most important KPI is the speed of the KYC process.

Wallet Modules

The wallet module enables users of the exchange to buy, sell, and hold cryptocurrencies. This module is can be a software frontend that displays user balance to the individual users or be completely isolated from the trading platform such as paper wallets and hardware wallets.

CLIENT-SIDE WALLET
BITCOIN STANDARD ADDRESS

Betty manages her own bitcoin software to access the bitcoin network

If her computer is hacked or crashes, she could loose all her money

WEB WALLET
BITCOIN STANDARD ADDRESS

Wendy users a web service to access the btcoin network.

If the web service is hacked or gets shutdown, she could lose all her money.

BITGO WALLET
P2SH SAFE ADDRESS

Pamela keeps one key and uses a service to keep a second key

A hacker must break-in to both Pamela's computer and the web service to access her money.

And even if the service goes down, has a handy backup key.

Before we delve into the implementations of wallet modules in crypto-exchanges, we must understand the types of wallets to choose the module most suited for our purpose.

Features of Hot Wallets

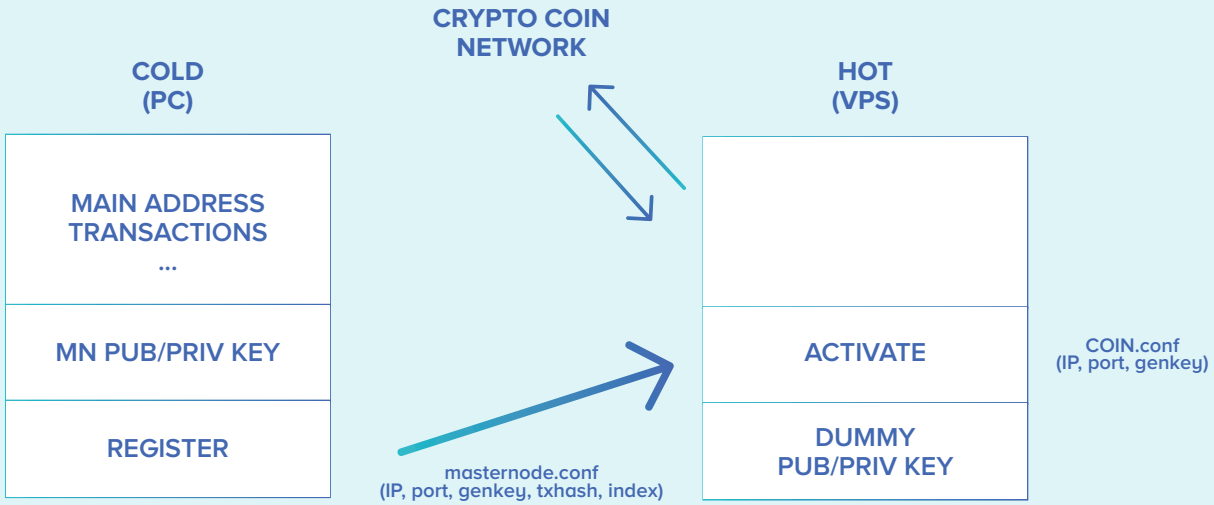
The centralized wallets are preferred by the new users who want the flexibility of recovering access to their accounts in case of forgotten passwords and key phrases. Their holdings are, in reality held by the exchanges, like the banks, and offer the same level of security, if not trust. They serve as the bridges to enhance crypto-adoption by giving the new users a familiar mechanism for trading in cryptocurrencies as the traditional banking and capital markets accounts.

The tradeoff comes in the form of convenience versus security. While the isolated wallets, also known as cold wallets offer enhanced security, it comes at the cost of convenience by adding an extra friction point for the users. While some wallets such as the ones provided by MEW and the Opera in-browser mobile wallet which provide a balance between security and convenience by giving the private key to the users, thus, making the users the sole arbiters of their wallet contents.
Another way that centralized wallets provide security from hacking attempts is the utilization of 2-Factor Authentication. While this method provides a semblance of security to the users but opens the users to phishing attacks via email-jacking and mobile-jacking and lead to full-fledged identity theft attacks.

In sum, the centralized wallets, also known as, hot wallets, are prone to several attacks due to their connectivity to the internet for transactions. The browser-based wallets are prone to Man-in-the-Middle (MitM) and Man-in-the-Browser (MitB) attacks.

Features of Cold Wallets

Cold Wallets are, by design, inherently extremely secure by implementing a disconnected device as the storage mechanism for wallet credentials such as the private keys and key phrases. The downside for such extreme control is the inability to retrieve funds from lost passwords. Paper wallets are prone to getting torn, destroyed, or burned which makes them bad candidates for storage of large amounts of cryptocurrencies.



For smaller amounts, a paper wallet serves as the most convenient and secure solution for conducting transactions.

Hardware wallets such as Trezor and KeepKey are more secure devices that can be used to secure funds. They, however, are prone to a different type of attacks — the low-jacking attacks. Hackers buy a hardware wallet, compromise its security, and then sell it on the marketplaces at discounts to get unsuspecting users to buy it and use it for storing their cryptocurrencies. Thus, it is advisable to buy only from the legitimate dealers and resellers to ensure security and privacy of funds.

Implementation of User Wallets on Crypto-Exchanges

Wallet modules are also a backend component in most crypto-exchanges but deserve a separate place of their own due to their importance. Wallet modules can and should be modified to enhance the experience of their target users.

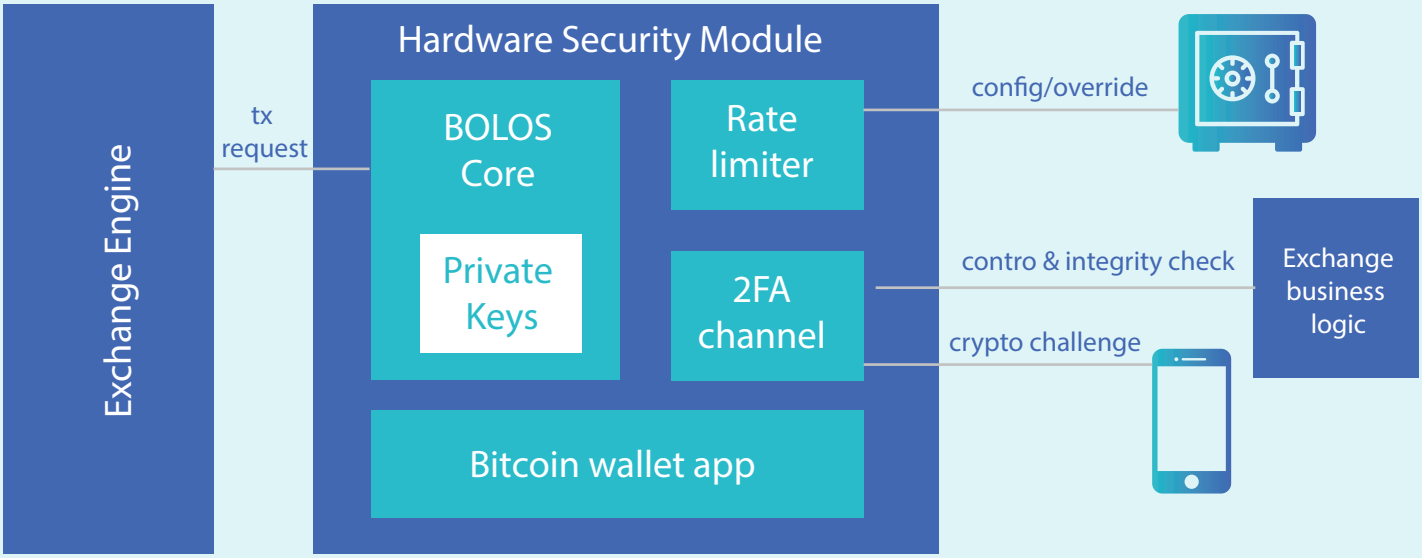
On centralized exchanges, the users are provided with a single frontend interface that displays all the coins and tokens held by that particular user. At the backend, the exchange developers incorporate the ability to automatically create new wallets when the user input mandates its creation.

For example, most exchange developers implement automatic BTC and ETH/ERC-20 wallet creation for all new users on signup. But if the user wants to transfer XLM to their exchange-wallet and if the exchange-supports it, a n XLM wallet address will be generated at the backend and be linked to that user's account. This way, the user-friendliness of the exchange increases manifold.

P2P-driven Transactions — In a Peer-to-Peer (P2P) transaction model for crypto-exchanges, there is no central wallet owned by the exchange to hold the funds as an escrow of sorts. The crypto-exchange is designed to create new wallets on the fly for transacting counter-parties to deposit the funds to. Once the funds are transferred, a smart contract verifies the contents of both wallets and automatically exchanges the private keys of the wallets with the respective counter-parties, effectively executing the trade.

The problem with this approach is that it is dependent on twin-user activity and introduces the need for a double coincidence of wants that was the drawback of the barter system of transactions used during the ancient ages.

On the decentralized exchanges, the users are provided with tutorials to create their own wallets and transfer funds to the exchange's own wallet address to commence a trade. If the user mistakenly transfers BTC to the ETH wallet address, the transaction might fail, or worse, the BTC might get lost forever. The DEXs, are thus, the exchange of choice for the experienced players in the cryptocurrency space.



Integration of Exchange-Wallet

Until blockchain interoperability becomes easier and cheaper, the go-to option for cryptocurrencies is to implement a centralized wallet that accepts payments from the users and matches the various transactions with each other off-chain through the matching engine. Despite being the default option since the invention of crypto-exchanges, they lack security by painting a big red target on their backs. Hackers target and gain access to these wallet addresses to siphon funds worth millions of dollars into their own wallets. Since Blockchain transactions are permanent and private, identifying the miscreants is a tall order and requires the cooperation of multiple jurisdictions' police personnel.

There are multiple ways to stave off such attacks and make the users' funds more secure. These ways are:

Multi-Sig Wallets — In simpler words, a multi-sig wallet has multiple private keys and a majority of the keys are required to perform a transaction. This means that in a 3 of 5 multi-sig exchange wallet, the funds can be transferred out only when at least 3 out of the 5 private keys are used to sign that outgoing transaction. Incoming transactions, on the other hand, are conducted as they normally are. While this approach is good, it renders three key resources incapable of performing any other activity since they will be stuck signing transactions all day and all night.

A way out from this quandary is to create a 'warm wallet' to serve as the intermediary layer between the exchange wallet (hot wallet) and the multi-sig wallet (cold wallet). While some funds, commensurate with the daily trading volume on the crypto-exchange are kept in the hot wallet, 50% of that daily volume is kept in warm wallets, while the rest is kept locked in cold wallets. This limits the exposure to hackers while also providing a less frantic work schedule for the exchange operators.

Types of Crypto-Exchanges

While there are two major types of crypto-exchanges, the centralized ones and the decentralized ones, however, most exchanges lie somewhere in between. This has also led to the development of newer terminologies such as 'Hybrid Exchanges' (HEXs) and 'Completely Decentralized Exchanges' (CDEs).

Centralized Exchanges	Decentralized Exchanges
Exchange controls funds	User controls funds
Not anonymous	Anonymous
Can be hacked	Cannot be hacked
Server downtime	No server downtime

The Centralized Exchanges

These exchanges have one or more modules/components residing on centralized servers. Centralization is a trade-off between convenience for the users and the principles of Decentralization. This trade-off also enables centralized exchanges to comply with almost all (if not all) of the regulatory requirements. One such centralized crypto-exchange – Coinbase even sent out tax documents to the US residents on its platform.

Address		Balance	TxCount
0xff6b1cdfd2d3e37977d7938aa06b6d89d6675e27	AllBit	7,765.30395336 Ether	34923
0x7a10ec7d68a048bdae36a70e93532d31423170fa	Bgogo_1	778.69298456 Ether	7484
0xce1bf8e51f8b39e51c6184e059786d1c0eaf360f	Bgogo_2	1,376.83161201 Ether	7111
0xf73c3c65bde10bf26c2e1763104e609a41702efe	Bibox	6,531.60101422 Ether	447659
0xd4dcd2459bb78d7a645aa7e196857d421b10d93f	BigONE_1	5,913.82557154 Ether	46602
0xa30d8157911ef23c46c0eb71889efe6a648a41f7	BigONE_2	761.29473322 Ether	117626
0xf7793d27a1b76cdf14db7c83e82c772cf7c92910	Bilaxy	554.32514666 Ether	109306
0x3f5ce5fbfe3e9af3971dd833d26ba9b5c936f0be	Binance_1	132,836.23533976 Ether	7814656
0xd551234ae421e3bcba99a0da6d736074f22192ff	Binance_2	36,639.83250931 Ether	1182359
0x564286362092d8e7936f0549571a803b203aaced	Binance_3	31,697.53218163 Ether	1089842
0x0681d8db095565fe8a346fa0277bffde9c0edbbf	Binance_4	13,115.01578735 Ether	1156622
0xfe9e8709d3215310075d67e3ed32a380ccf451c8	Binance_5	0.09273190 Ether	13397
0x4e9ce36e442e55ecd9025b9a6e0d88485d628a67	Binance_6	1,103,972.77021648 Ether	73
0xdf5021a4c1401f1125cd347e394d977630e17cf7	Bitbox	3,405.98458416 Ether	1514
0x1151314c646ce4e0efd76d1af4760ae66a9fe30f	Bitfinex_1	9.96162740 Ether	391317
0x7727e5113d1d161373623e5f49fd568b4f543a9e	Bitfinex_2	0 Ether	529483

Another aspect of centralized exchanges is the development, deployment, and securing of a centralized pool of cryptocurrencies holding large sums of money. These wallet addresses that hold such vast sums of money are even tagged on etherscan as exchange wallets that inadvertently invite the hackers to come try their luck at attempting to break the security of these exchange wallets. Till date, over 10 crypto-exchanges have been hacked and funds worth over $50 MM have been stolen by such hackers.

The centralized exchanges offset these threats by the implementation of a highly agile OPSec (Operations Security) team that monitors all activities occurring at the code level and immediately commence the counter-offensive as soon as a threat is detected. Apart from that, these centralized exchanges also undergo extensive code audits, external penetration testing, and have a lucrative offer for white-hat hackers to expose the vulnerabilities directly to them.

The centralized exchanges get a handsome return in exchange for undertaking such extensive precautionary measures — liquidity. On any given day, the number of user transactions on any centralized exchange is higher than the decentralized exchanges. On top of that, these centralized exchanges require all listed tokens to have a significant number of their tokens in a reserve pool for the exchanges and also require these tokens to meet a minimum level of trading volume to stay listed on that exchange. This ensures even more liquidity on these centralized exchanges.

Apart from the technological aspects, the centralized exchanges also differ from the decentralized exchanges in terms of legal compliance. KYC is mandatory to withdraw funds over a threshold that acts as a powerful motivator for ensuring adherence by users to the KYC requirements. Since the backend of a centralized exchange is proprietary and closed-source, the updates get reflected almost immediately and with minimal downtime and continued ability to withstand high-throughput rates. On the features side, the centralized exchanges, on the back of their vast pools and liquidity can even offer advanced trading vehicles such as Futures, Options, and Commodities-backed trading.

These features act as magnets that bring more users and fuel more liquidity on the platform. While the case of Bitcoin Futures has been hotly debated by regulatory authorities, they have entered the markets and are here to stay despite regulatory reservations.

Basically, adherence to regulations comes easier for the centralized exchanges due to the fact that changes to the codebase and policies can be implemented in a timely manner and more completely due to the absence of decentralized nodes.

The Decentralized Exchanges

These exchanges are a crypto-innovation and exist as the heirs of the torrent protocols. There is no central control or ownership involved and the exchange exists as a decentralized app (dApp) that processes transactions between counter-parties by matching them. These provide the Web 3.0 experience and are novel in the fact that they never face any downtimes.

This enables the Decentralized Exchanges (DEXs) to play fast and loose with the regulatory requirements with some even allowing users to trade without even the need to sign up. While this is something that the regulators frown at but the crypto-purists revel the freedom that is present as promised by the decentralization vision.
To achieve this level of decentralization to prevent hacking or seizure, the DEXs implement the following protective mechanisms in the architecture:

DEX cannot touch the funds — all funds are owned by the users without creating any accounts on the DEX platform

DEX does not store any private keys on any database — users control their funds at all points of time

DEX does not store any user information — to prevent the development of a centralized database of any kind

DEX does not allow margin trading of any kind — to prevent any liabilities on either side of the transaction

Atomic Swaps and Inter-Blockchain Transactions

Transactions in the crypto-verse are dependent on Blockchain interoperability for faster transactions. Since there are several different blockchains at play, in a real-world scenario, the traders, especially those on DEXs are faced with the curious case of Double co-incidence of Wants. Even on centralized exchanges, the coins of lesser known blockchains are susceptible to the same problem. The requirement of reserves to be deposited by the tokens as a ready source of liquidity is something that is disliked by the token issuers.

To offset such problems, several solutions have been proposed and exhibited as solutions. They go by the names of Lightning Network (Bitcoin), Raiden Network (Ethereum), Layer-2, Payment Channels and many more.

At their core, these solutions enable the transfer of one cryptocurrency in one form to another blockchain in another form in a seamless manner. This type of transaction is known as an atomic swap and has been in development since 2014. This makes the entire transaction process free from the requirement of liquidity pools.

The feat is achieved by designating certain nodes on compatible blockchains as the recipients of funds that will get reflected on the other blockchain almost instantaneously. The potential of cross-chain atomic swaps in revolutionizing the way transactions are carried out in current-era DEXs is enormous and it is highly recommended for exchange developers to consider its implementation.

Tokenized Transaction Fees and Token Utility

The rise of cryptocurrencies has enabled several exchanges, centralized or decentralized, to create their own tokens that provide a certain utility to the token holders which is not available to those who do not hold that token. These cryptocurrencies are also traded on other crypto-exchanges.

The most common utility of these exchange tokens is the slashing of the transaction fees applicable to the transactions. Token utilities of these kinds range from a 20% reduction in transaction fees to a complete waiver. It must be borne in mind that these transaction fees are applied by the exchange (to manage its operational costs) and are distinct from the gas charges that are applicable on all transactions.

Other forms of token utilities provided as a part of the token ownership include:

License to Trade — some exchanges can prevent all but their token holders from performing trades on their exchanges. Coupled with a robust KYC/AML/CFT check performed at the time of token offering, this vehicle can serve as a quick and easy method to enable the trading of securities on the exchange platform.

Voting Rights — to enable the listing of new coins and tokens on the exchange in the true decentralized manner — consensus. Token holders can vote on the listing applications and the one with more votes than the programmed majority gets listed after a mandatory security audit.

Security Tokens and Alternate Trading Systems

Security tokens are those tokens/coins that have an underlying asset that provides value to the token holder. They are distinct from the utility tokens that are expected to provide a utility. The crypto-exchanges that allow the trading of security tokens are known as Alternate Trading Systems (ATSs). While the legal considerations are vast due to the relative absence of regulatory oversight regarding Blockchain, the benefits far outstrip the concerns.

An ATS can remove several intermediaries such as clearing houses, depositories, and custodians from the transaction cycle. Coupled with the emergence of ERC-725 and ERC-735 protocols that promise a simplified on-chain KYC processes, the ATS is definitely going to be the Blockchain product of the future. The immediate benefits of an ATS are faster settlement times, actual ownership of the securities, and lowered cost of transactions.

Currently, the number of ATSs already developed or under development is in single digit figures. It presents a huge opportunity for the entrepreneurs and exchange operators to grab this opportunity with both hands and become the market leaders with First-Mover Advantage. The ability to enable the different security tokens to manage the transactions and monitor it independently makes the ecosystem more decentralized than the utility token based crypto-exchanges could ever be, with the added advantage of complete compliance with the regulatory authorities.

Liquidity Management Services

Most exchanges have a requirement of a minimum liquidity threshold clause baked into the coin/token listing approval. If the liquidity of that particular coin/token falls below that threshold and stays below longer than the permissible limit, it becomes liable to get delisted from that exchange and will have to begin the application procedure all over again.

Since ICOs are a newer vehicle and the funds raised are mostly denominated in cryptocurrencies, the development processes and timelines can get delayed multiple times. During these times, the token trading on exchanges serves as a more reliable barometer of the public's trust on the coin/token in comparison to the blogs and announcements that are published on the company's blogs and social media channels.

This means that the company must always keep an eye on the total daily traded volume to ensure staying out of harm's way. It is a huge waste of time since the transactions performed to meet the volume requirements must be randomized to prevent others from timing their trades accordingly and making profits on the spread.
Such activities, if performed manually take up to 3-4 hours daily and cost up to 3-4 ETH if timed incorrectly.

This is where Liquidity Management Services step into the picture
Liquidity Management Services (LMS) are an automated bot-based High Frequency Algorithmic Trading services that enable ICO companies to simply subscribe to the service on a platform such as tokenasia.com, set their trading limits and just press 'Begin' to take a step back and get those 3-4 hours of productive time back.

A good LMS will automatically fetch the volume requirements of the exchange you want to maintain the trading activities and perform multiple randomized trades at randomized times to prevent pegged counter-trading activities that can lead to loss of precious ETH.

It must also intelligently adjust the gas fees to ensure that the trade gets through as soon as possible. An improperly designed LMS simply slides the gas slider to the highest setting in the hopes that it would be picked up by the miners. However, since the block sizes and the permissible gas units within a block is fixed, a higher gas is as likely to get delayed getting picked up as a lower gas setting. Therefore, the need is to modify the gas settings on the fly for best results.

Concluding Thoughts

Crypto-Exchanges have come a long way from the times of trading on Mt. Gox. Those of us who used to trade on that Japan-based exchange will remember its clunky interface and unhelpful redressal policies. The exchanges of today have highly polished interfaces that make the trading experience not just intuitive but also enjoyable for people on the entire spectrum of trading expertise.

Some exchanges have advertised newer features such as 'Social Trading' where the new traders can simply peg their transactions to the trading gurus and make a profit without even having the knowledge of trading. The ability to offer these features can be attributed to the transparent but private nature of the Blockchain.

Such innovative crypto-specific features enable the exchanges to create additional revenue streams apart from the regular transaction fees on transactions. On the other hand, they also enable newer users to dip their toes in crypto-trading and participate in the movement to decentralize the world as we know it.

Building a crypto-exchange is a time-consuming, resource-intensive, and expertise-driven activity. Given the sensitivity of timing requirements when Go-to-Markets must be yesterday instead of tomorrow, it makes sense to reach out to development companies that have ready-made crypto-exchange code bases ready to deploy and ask for a quote. Visit tokenasia.com today and ask for a quote.

Book your free 60-Min Consultation