

A Step-by-Step Guide on How to Create A Cryptocurrency Exchange Platform



The impressive development of the cryptocurrency industry and the increasing number of cryptocurrency holders encourage more and more businesses to invest in [blockchain development services](#).

According to Crypto Market Sizing Report 2021 and 2022 Forecast, the number of global cryptocurrency users has [grown](#) by 178% in 2021, rising from 106 million users in January to 295 million in December. In 2022, it's expected that the number of worldwide users will reach 1 billion by the end of the year. Meanwhile, Grand View Research [predicts](#) that the market for cryptocurrency exchange platforms will expand significantly between 2021 and 2028.



In this article, we will focus on the development of a Centralized Crypto Exchange, as the most common type of a cryptocurrency exchange platform in the market.

Things to Consider Before Building a Centralized Exchange

There are a number of things you need to carefully decide on before starting the development process of a Centralized Crypto Exchange.

The development of proprietary exchange from scratch with order book, order matching, settlement, and other critical components requires vast resources and years to finish it up. Thus business owners should consider integrating some of the existing system components available on the market.

Nowadays, there are numerous providers of matching systems, liquidity, payments, and other services which can be integrated as system components into a planned crypto exchange. In addition, such 3rd party services often play the role of market makers, which is crucial when you start a new trade system especially before your own users are acquired.

If you integrate an existing popular crypto exchange or several of them, your new users will experience real-market trades with a sufficient volume of crypto assets in supply and demand, and with a realistic intensity of deals. In this case, instead of dealing with the most complex technological challenges of the crypto exchange creation process, stakeholders can focus their efforts on providing a better user experience, advanced customer service, and additional financial products.

White-label solutions can be used for different types of exchange platforms. This approach usually allows you to launch your product faster and on a lower budget.

If you do not own or control a liquidity pool, you will need a Liquidity provider or even a pool of liquidity providers. Liquidity can be used not only for the settlement process but also to make your Exchange more attractive by creating platform-initiated orders.



It is important to know your target audience of the planned trading solution. It is essential to begin with identifying your target audience for the future application. It will affect decisions from front-end development to performance requirements.

Together with the local regulation applied to your users and depending on your company's jurisdiction it can affect user expectations. For example, order size and amount can be limited by applicable laws, or an advanced verification process may be required from an individual user or business.

Another important decision to make is to define the types of trading that will be available on your Crypto Exchange.

Spot trading is the basic tool you are going to provide to your users willing to trade.

Margin trading will require more reliable liquidity providers, an extremely precise risk management module, and other highly reliable components.

Depending on the platform's business model, it can provide traders different types of orders they can place. The very basic set of order types you definitely will need to implement is:

- Market order
- Limit order
- Stop limit order

You will also need to partner with payment providers to use their services for fiat and crypto payments between users and your system. Payment providers will share descriptions and credentials required for technical integration of their services. Our company also has a huge experience in development of fiat and crypto [payment services](#) and gateways.

Assets available for trading shall be defined as a certain list at the beginning of the development project. Cryptocurrency exchanges may provide a limited set of trader's instruments with only crypto-to-crypto pairs of assets due to extended legislation burden if fiat assets would be available for traders. In this case, when a trade to a fiat-pegged asset is required, then a cryptocurrency pair may include a stablecoin or tokenized asset as a counter currency. There is always a way to extend the list of available instruments when a demand for it is assured.

A clear process of Listing for new assets can catch additional attention to your crypto exchange and bring advantage to your users, who need to trade the latest and innovative cryptocurrencies and tokens. To stay in touch with your audience and with the latest market trends, a Listing Process should be available for Asset Issuers. You need also to make sure that there will be market makers for a new asset when you plan to list it on your exchange.



Cryptocurrency Exchange System Components

The development of a successful cryptocurrency exchange platform from scratch is far from being easy. It involves many critical components which require vast resources and much technical expertise. Here is what companies need to pay their attention to when developing custom cryptocurrency exchange platforms.

The following types of front-end applications are typically used to interact with a crypto exchange customers:

- Web application
- Mobile application
- System/desktop application

Nowadays more and more users bring their attention to mobile apps with embedded crypto trading functionality.

Other system components will include backend services, databases, fast cache services, storage, integrations and more.

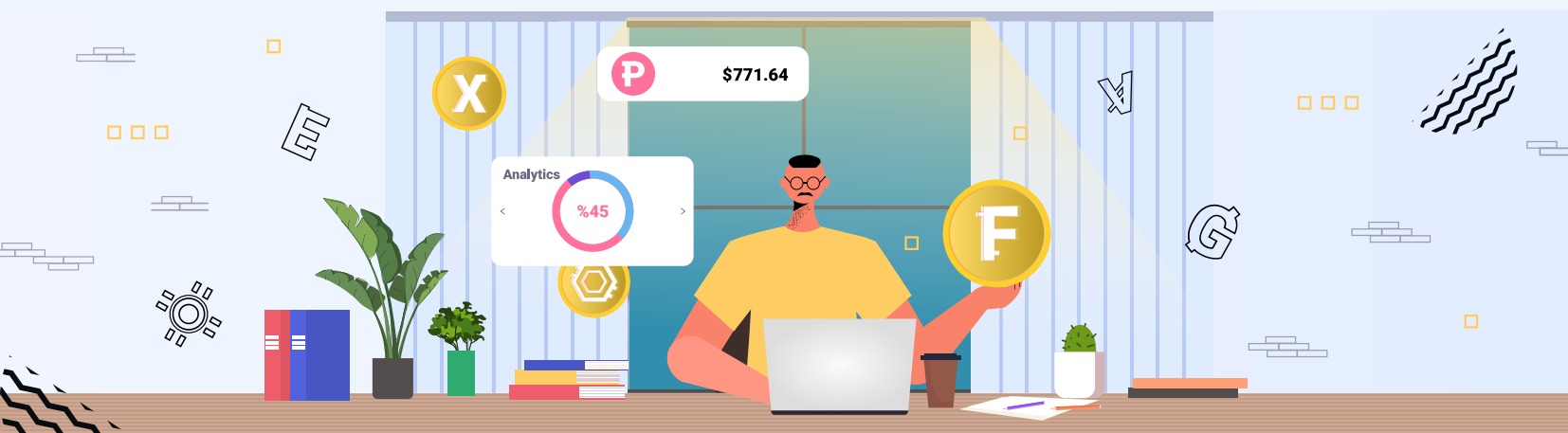
Platform tokens

When gaining a solid reputation, a cryptocurrency exchange may issue a crypto token associated with this exchange.

Initially, users and investors may acquire Exchange Tokens through an IEO, which may later be available as an attractive asset on the native Exchange and even other crypto exchanges. Some well-known examples include BNB (Binance Coin), Cronos, and others. USDC was developed collaboratively by several companies and is currently associated with Coinbase. Uniswap and Pancake are among well-known examples of DEX/DAO tokens and protocols. A platform can even issue several tokens for different purposes. Binance issued both a stablecoin BUSD and a utility token BNB, and even supports its own BNB Smart Chain network.

It is crucial to build trust around the cryptocurrency exchange you are creating. Nowadays the risk of fraudsters' activity and fake crypto exchanges is actual. Fake exchanges often begin to massively appear in particular geographical regions where the hype around crypto goes far beyond an average customer's awareness of potential risks. Therefore you should build a transparent reputation, proving to customers that your crypto exchange is reliable and therefore different from many others.

It is important to implement a risk management approach and to educate your users about existing threats.



Trading Core

Trading core is the central group of services to manage and match orders, trades and positions with strict requirements for low latency and high availability.

Options for trading core implementation:

- Integrate via API to a 3rd party crypto exchange which solves all backend tasks
- Integrate to a 3rd party matching engine
- Develop a custom matching engine and trading core
- Aggregate several 3rd party exchanges, and participate in trading with a proprietary trading core

Trader UI

In the modern days of hard competition, it is vital to provide a modern, convenient user interface for new and existing users, traders, and investors. You need to develop a smooth user experience for the user journey from onboarding to trading terminal and withdrawal options.

- **Registration**

User onboarding has to be a smooth process both for mobile and desktop devices. Various advertising and marketing techniques are important at this point, such as invitations and sign-up bonuses.

- **Authentication**

Users need to be sure that the exchange owners care about information and data security. Provide your users an explanation of why strong passwords are required, and why all personal data (such as e-mail) shall be valid.

Motivate your users to enable two-factor authentication, recovery email, phone, and other features for account recovery and security. Publish clear guidelines and tutorials for first-timers. Explain the importance of storing authentication and cryptographic data securely.



- **User verification (KYC/KYB)**

Individuals and companies are usually required to go through a verification process, which is required either by local regulations for crypto operations or by laws applied to these users.

The ability to report to authorities is a part of a strong reputation of the platform and business sustainability.

- **Trading Terminal**

A trading terminal or trading desk is the central feature which any of your users will utilize during trading.

It is crucial to put enough effort into the implementation of a custom desk or integration of an existing one. Usability and performance testing shall be undertaken during development until UI/UX satisfies the most demanding users.

- **Accounts, assets**

Users shall be able to configure trading accounts freely, including the ability to select necessary crypto assets for trading.

Several accounts can be used to separate billing, reporting, and other data, as well as to execute different trading strategies (including automated ones).

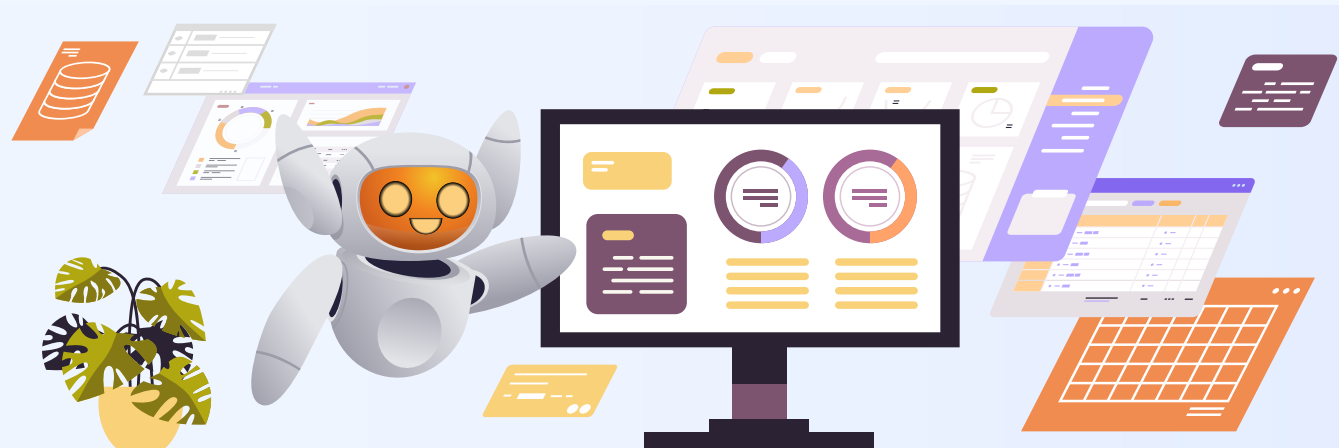
- **Order book, positions**

The core part of the crypto exchange from the customer's perspective is Orders and Trades functionality.

Opening and controlling positions must work smoothly and reliably.

Within Trading Terminal traders interact the most with Market Charts, and it is important to provide order creation features conveniently near to the Price Chart or directly from the Chart. All popular types of orders have to be easily available on the Trading Desk.

As well, all opened positions along with the user's Trading History and all past deals shall be visible. Users need to be able to edit and close Open positions with easy access to these actions.



- **Trading history**

In addition to Price and Volume Charts, users shall be able to see details of all recent trades on the exchange.

- **Payment Options and History**

Typical options for users to Deposit and Withdraw assets include:

- Fiat payments and withdrawals (using a credit card, bank payment, and other payment systems).
- Crypto payments, which at least shall provide the ability to deposit and withdraw Bitcoin to the user's account. Transactions in other cryptocurrencies may also be valuable for users and may include Ethereum, Tether, and others.
- Bonuses, such as sign-up bonuses, bonuses for active trading, etc. Such operations have to be accounted with special billing attributes and limitations.

It is important to provide users with all the history of transactions and billing details.

• Other Tools

For some types of customers, it is important to be able to use trading robots, HFT, and other professional trading tools. If you decide to provide such tools, you need to make sure to implement stiff requirements for performance, reliability and risk management.

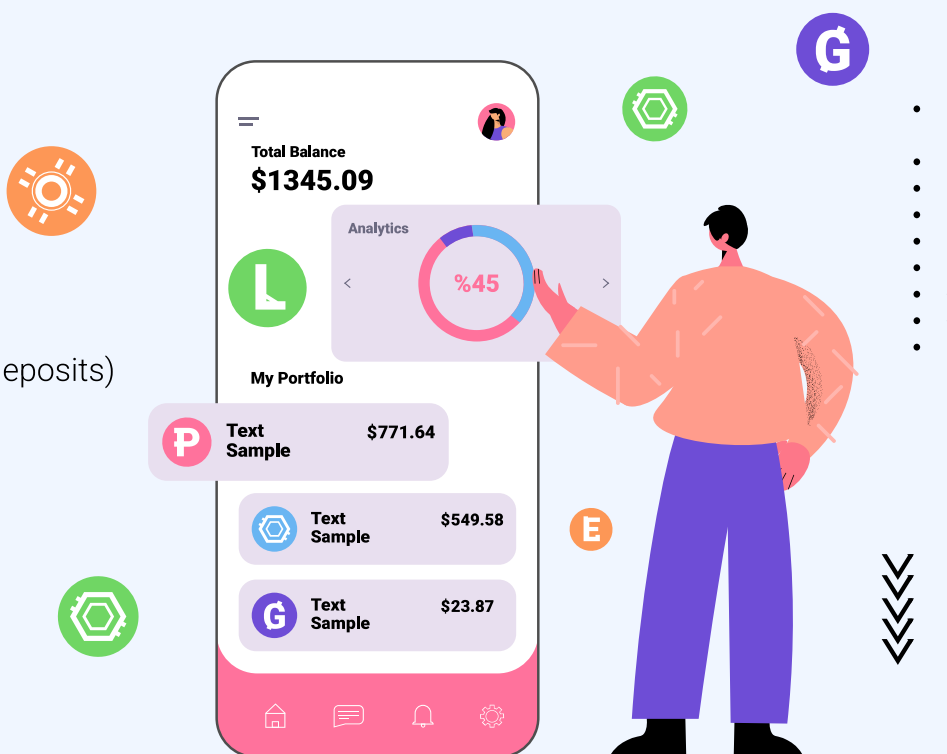
The ability to configure Alerts is valuable both for manual and automated trading.

Manager/broker/dealer UI

Crypto Exchange will require a trading management space to control trading settings, trading accounts, and other settings. Usually, there are also communication channels with customers.

UI for managers, brokers, and dealers may include various settings and features, such as:

- Authentication
- Users and accounts management
- User groups
- KYC/KYB
- Trading settings
- Fees
- Trading Limits
- Transaction Limits (withdrawals, deposits)
- Settlement settings
- Integration settings
- Orders, trades, positions
- Risk management
- Alerting settings
- Reporting services, analytics
- Customer Support



Admin UI

There is usually a number of configurations, which can only be managed by the platform administrators with the highest access level. Among them, there could be actors responsible for the technical configuration of components of crypto exchange, account managers, security administrators, risk managers, integration managers, and other highly-experienced personnel and stakeholders.

System administration includes user management (including companies, brokers, managers, etc.), configurations of roles and access, authentication settings, events audit, and much more.

Ambitious trading platforms which intend to satisfy the different needs of a wide range of users can provide a vast set of settings from trading environment configurations and user groups control to management of reports, backups, and integrations with external solutions. While a lower-budget crypto exchange project intended for a single stakeholder or even a single broker can provide just a narrow pre-defined set of the most crucial configurations.



Architecture

The stack of technologies shall be carefully selected before starting the implementation of a Crypto Exchange. Requirements for performance and services availability shall be clearly specified, as it influences a lot on the solution architecture, implementation approach, and resources required for project implementation.

Depending on the planned trading activity, amount of instruments and users activity, different implementation and delivery practices can be used to ensure the best fit with the project goals and budget.

To ensure a strong level of data protection and security configurations, it is recommended to perform white-box testing throughout project implementation, as well as penetration testing at the latest stages of the project deployment.

Infrastructure

Cryptocurrency Exchanges run 24/7 every day with no holidays. Usually, there are no closing trading sessions, unlike stock exchanges. This increases requirements for services availability and limits maintenance time slots. The incident management system shall also be in place.

Latency could be crucial for users around the world, therefore you need to consider having distributed infrastructure or replicated servers allocated closer to each user geographically.

Solution Architects have to ensure best practices for redundancy, scalability, and security of all system components and software environments, including the ones required for development and delivery purposes.

To ensure high availability of the cryptocurrency exchange services, it is needed to configure tools and establish processes for infrastructure monitoring, anomaly detection, DDoS protection, alerting, and incident management.

Some Useful Hints for Crypto Exchange Promotion and Commercialization

Product owners and stakeholders directly or indirectly should take care of product marketing and strategy. Here are a few tips:

1. It is important to involve tools for promoting the crypto exchange and motivating its users. Such tools and approaches often include:
 - Content management, frequent updates of the home page of the crypto platform, and other pages. It can also include blogs, news sections, promotions, etc.
 - Gamification. Users can achieve levels of “expertise”, earn points and other achievements which bring particular benefits, such as increasing levels of limits, lower fees, support priority, etc.
2. Motivate your partners:
 - Supporting incentives for investors, liquidity providers, and other potential partners. A particular partnership program can be established and published.
 - Provide clear asset listing rules. If you use a white-label solution, make sure you enable all trendy cryptocurrencies, tokens, and instruments.
 - Share onboarding and trading API with partners to attract more active traders.
3. There are numerous products and services which can be built around a successful crypto exchange.

Try to envision future products which can bring more value to users of your Crypto Exchange and build a community around the Exchange Platform.

4. Users shall be provided with Terms of Services and other legal documents, including among other things possible limitations of the System and particular disclaimers. User consent has to be collected where necessary. Legal terms shall be renewable, and a clear and legally recognizable communication channel shall be used to provide users with such updates.

Bottom Line

Launching a cryptocurrency exchange platform can become a lucrative and successful startup once everything is in its place and works right. Though for this cryptocurrency exchange creators have to consider a wide range of aspects they need to include in their platforms as well as elaborate on a detailed project development plan.

If you're also searching for ways to invest in [cryptocurrency exchange platform development](#), then you'll need a team of software specialists with expertise in crypto. Scand is a software development company that offers teams of professionals who have much experience in the creation of diverse crypto solutions for local and foreign businesses. Our specialists develop custom digital solutions with customer requirements and wishes in mind.

Feel free to contact us and ask any questions: info@scand.com