



Eterna *Hybrid* Exchange (EHEX)

The **Next Generation** of Crypto Investing

White *paper*

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Introduction

Eterna Hybrid Exchange is a next-generation crypto exchange, which combines the best features of centralized exchanges (CEXs) and decentralized exchanges (DEXs), along with margin trading and banking services. EHEX token is native to our exchange, and as such it will be one of the primary payment methods for anyone wishing to use our trading platform.

Eterna Hybrid Exchange is legally incorporated in Estonia and Lithuania, and operates under a Lithuanian exchange license. Eterna is distinguished from other exchanges by several distinct features. First, Eterna is a centralized exchange, and our AMM-aggregator provides a proof-of-concept with regards to connecting a CEX wallet to Defi platforms. Second, Eterna is developing an interoperable cross-chain swap, that will allow CEX users to trade on all the major DEX platforms. Third, Eterna enables investors to engage in leveraged margin trading of crypto, equities, forex, as well as a host of other assets. Fourth, Eterna provides

of other assets. Fourth, Eterna provides banking solutions, so that our investors can open a bank account on our exchange, while accessing the entire market with their Eterna debit card. Fifth, Eterna is the first crypto exchange to distribute 50% of its net income to its token stakers. Sixth, Eterna will provide token incubation services and will create its own launchpad and hybrid blockchain (EHEX Chain). Consequently, and for all these reasons, Eterna provides investors with a unique and sustainable underlying value proposition.

After conducting a critical survey of the market and experimenting with several prior crypto projects, Eterna's development team concluded that the highest financial revenues are generated by market intermediaries, such as exchanges and stablecoins, that are essential market-makers and without which crypto markets could not operate. However, we also identified several gaps in the market that reduce the crypto market's overall efficiency. To address these deficien-



cies, Eterna was legally incorporated, which distinguishes it from most crypto projects that possess no legal identity. Eterna also complies with all EU financial rules and regulations governing exchanges. Many of the largest exchanges are not similarly registered in a specific domicile nor do they obey regulatory guidelines. However, legal incorporation and regulatory observance are integral to Eterna's corporate identity.

Architecture

Eterna represents a new generation of exchanges. Our product's development depends on three stages. The first stage is our AMM aggregator, which provides a proof of concept for combining our CEX to PCS and Uniswap.¹ The second stage is our universal swap, which permits investors to access most Defi trading platforms across multiple chains. The third stage is our margin trading and banking services, that grant investors access to traditional financial markets and permit investors to open a bank account directly on Eterna.²

Centralized exchanges (CEXs), such as Coinbase or Binance dominate the crypto space, as 90% of crypto trading in terms of volume takes place on CEX platforms. Spot transactions on a CEX

are executed by an order book, which maintains records of all open orders for buying and selling assets in specific trading pairs. Buy-orders imply a trader's commitment to purchase or to "bid" on an asset at a specific price. On the other hand, sell-orders imply that a trader is prepared to sell or is "asking" for a specific price for an asset. The difference between buyorder and sell-order prices (the bid-ask spread) is responsible for determining the depth of the order book alongside the asset's market price.

CEXs are well known for being transparent, since there is no price impact effect and all fees and taxes are observable upfront. Nevertheless, CEXs are less secure than their decentralized counterparts, as they require KYC and store investors'

¹The term "hybrid exchange" (HEX) can be applied to several different exchange models. For instance, Robin Hood and Qurrex are hybrid exchanges, because they permit trading of both crypto and more traditional equities. There are several other crypto exchanges that use the term "hybrid" in their brand name, such as Joyso.io, Next.exchange, Pryvatex and several others, whose precise hybrid operating model remains unclear or is not very different from most centralized exchanges.

²The term "hybrid exchange" (HEX) can be applied to several different exchange models. For instance, Robin Hood and Qurrex are hybrid exchanges, because they permit trading of both crypto and more traditional equities. Here, the term "hybrid" is referring to the assets available for trading, and not the underlying exchange architecture, which is a standard order book. There are several other crypto exchanges that use the term "hybrid" in their brand name, such as Joyso.io, Next.exchange, Pryvatex and several others, whose precise hybrid operating model remains unclear or is not very different from most centralized exchanges.

private information (through presumably more secure third parties). That has not prevented most well-known CEXs from being hacked, and often on a regular basis, which exposes investor funds and records to the depredations of bad actors, whose hacking abilities are usually one-step ahead of the security protocols adopted by CEX administrators. By contrast, decentralized exchanges (DEXs), such as Uniswap, and Pancakeswap (PCS), are governed by Automatic Market Makers (AMMs), which use price oracles to obtain information from exchanges and other platforms in order to discover the prices of traded assets. Rather than matching buy and sell orders, AMM-based DEXs employ liquidity pools, in which liquidity providers must deposit the equivalent value of each asset in a trading pair, allowing traders to execute orders. However, AMM-based DEXs also suffer from a significant setback in the form of relatively high price impacts, which are caused by a lack of liquidity. Price impact is most evident when the lack of liquidity causes DEX prices to rise above the rest of the market. In such cases, larger orders are more likely to encounter higher slippage. Furthermore, liquidity providers can also face the risk of impermanent loss due to the volatility of one of the assets in their trading pairs.

DEXs are generally more secure than CEXs, as no KYC information is required

and investors retain control over their assets via their virtual wallets. However, DEXs also suffer from regulatory challenges, as no KYC or specific anti-money laundering (AML) protocols are implemented. These deficiencies create opportunities for bad actors to utilize DEXs for unethical purposes. DEXs are also famously rife with scam projects, since they don't vet the projects launching on their platforms. Anyone can deploy a smart contract on a DEX, which may turn out to be a honeypot, a strategic rug, or an outright scam, and since DEXs are not governed by a central authority, there is no recourse for investors who have been robbed of their money.

CEX + DEX: Proof of Concept

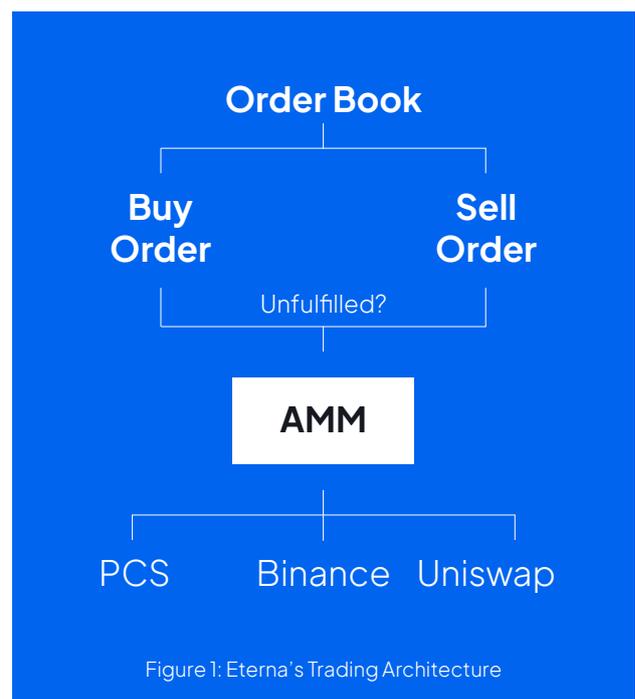


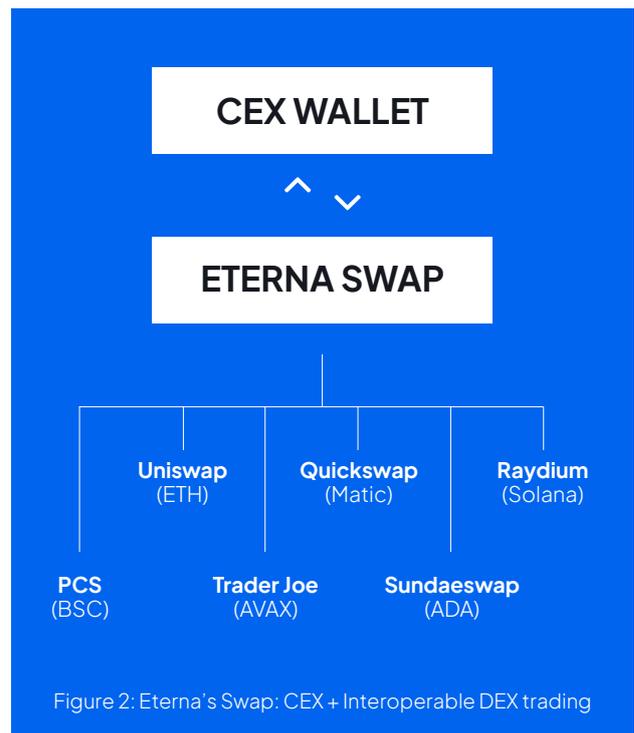
Figure 1: Eterna's Trading Architecture

Eterna’s first development involves a proof-of-concept, which proves that a hybrid exchange is feasible (i.e., a CEX can be connected seamlessly to DEXs). Initially, CEX users will be limited to buying and selling Defi assets if they are already listed on our CEX. This limitation is due to a liquidity constraint: only assets already listed on our CEX will be supported with sufficient liquidity to enable their trading on Defi platforms. Consequently, a buy or sell order on Eterna can be fulfilled internally as an order book spot transaction, or can be fulfilled via our AMM-aggregator, which executes the transaction through PCS or Uniswap. Alternatively, investors can bypass the order book and access DEX trading directly through our AMM.

Eterna Swap Conquers Defi

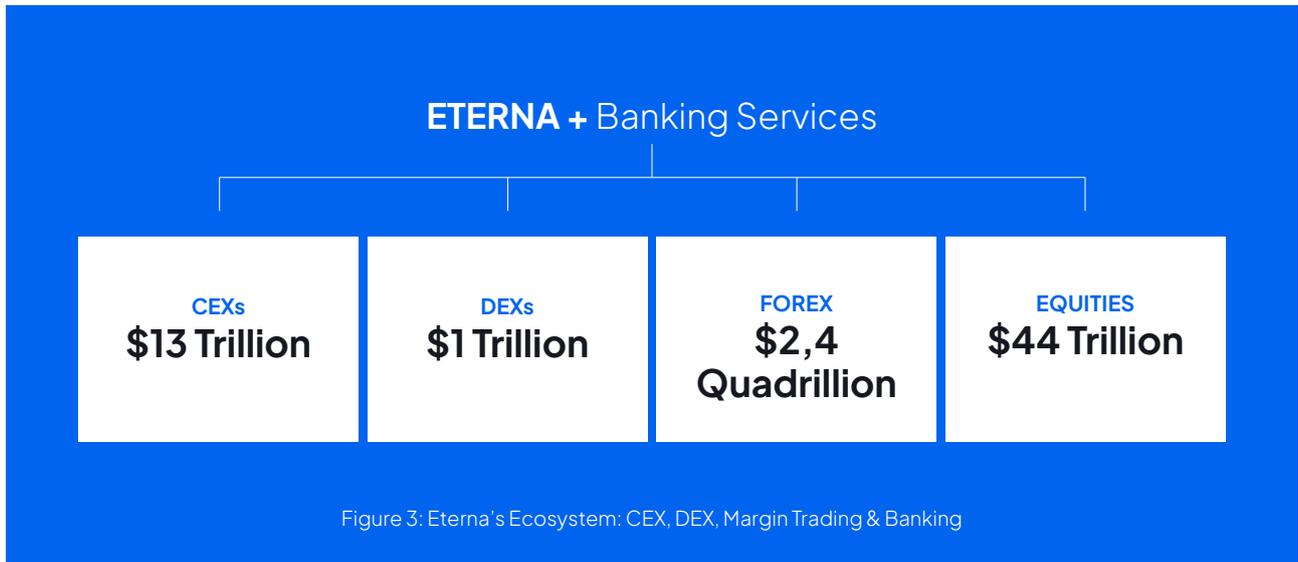
The next stage in our evolution involves the development of Eterna’s Swap, by which our CEX users can trade cross-chain across multiple Defi platform. The universal swap represents an even more radical innovation than our AMM-aggregator. First, the universal swap will not be restricted to tokens listed on our CEX. Assets traded on Defi platforms located on the BSC, Ethereum, AVAX, ADA, and MATIC will be accessible. Second, no extra liquidity will be required for those

trading on Defi platforms. For the first time in crypto history, investors holding a CEX wallet will be able to trade any asset across multiple chains. Figure 2 below depicts our universal swap concept.



Eterna Margin Trading and Banking Services

The third stage of Eterna’s development is its margin trading and banking services. By providing margin trading and banking services, Eterna unites the entire crypto market, with two of the largest traditional markets (equities and Forex), as well as alternative investments. The full articulation of Eterna is depicted in Figure 3 below.



Eterna's margin trading facilities include leveraged trading of the following markets, as well as limit order risk controls.

- > Equities
- > Energy
- > Forex
- > Indices
- > Metals
- > Derivatives

Eterna also offers basic banking services, so investors can open and IBAN bank account directly on our exchange, and access all of Eterna's investment facilities with their Eterna debit card.

Value Proposition

Eterna Hybrid Exchange offers three sources of value for token stakers. First, token stakers receive 50% of net income from all of Eterna's activities, including exchange transaction fees and listing fees. Second, token stakers receive an APY proportional to the number of tokens they stake and the exchange's daily volume. Third, token stakers gain from EHEX's price appreciation.

Eterna's value proposition is derived more fundamentally in that our exchange minimizes investor uncertainty regarding the quality of crypto projects. Perhaps the biggest problem in the crypto space is "adverse selection", or pre-contractual uncertainty that is so severe that it renders investors unable to distinguish between high-quality and low-quality crypto projects. In response, the rational investor will treat all crypto projects as if they are of average quality, which will in turn leave high-quality projects potentially under-financed and

low-quality projects over-financed.³ Indeed, if adverse selection is sufficiently pronounced, market failure may occur, which implies that at no price will supply = demand (the price mechanism collapses and market clearing will never occur). Well-managed CEXs can overcome the uncertainty problem by thoroughly vetting tokens that apply for listing, so that only high-quality projects will be offered to the exchange's client base. This is particularly important for newer projects that seek market exposure, since listing on an exchange with an excellent reputation will increase the likelihood of a project's success.

Valuation

Eterna's enterprise value should be distinguished from the market value of the EHEX token. While the value of the two assets should be related in the long run, EHEX as a token and Eterna as an exchange are subject to different

³Akerlof, George A. (1970). The Market for 'Lemons': Quality Uncertainty and the Market Mechanism, *Quarterly Journal of Economics*. The MIT Press. 84 (3): 488-500.

value drivers and distinct price discovery dynamics. Eterna Hybrid Exchange is a privately held LLC (limited liability corporation) whose shares are not traded on the open market and its value is therefore not as easily determined by the standard price discovery mechanics.

In textbook financial economics, the value of an asset can be determined in several ways, including discounted cash-flow, residual earnings, and comparing the hypothetical value of an asset to the market value of similar assets (or comparing the financial ratios of an asset with the ratios of similar assets traded on the open market). For contingent claims, or more exotic assets in which contingent claims are embedded, fair market value can be determined by dynamic replication. Dynamic replication suggests that the efficient market price of an asset of unknown value can be determined by replicating an asset's underlying cash-flow, with a portfolio consisting of cash and bonds, whose value is certain at any point in time.⁴ Once the possible price trajectories of an asset are projected n-periods into the future, the current market price can be estimated by backwards induction. Alternatively, Monte Carlo methods can be used to estimate

the current fair market value of an asset, by randomly shocking the market price n-times using a pseudo-random number generator, and by then taking the expected value of the resulting n-price trajectories in order to determine the current net present value of the asset.⁵

I. Eterna's Enterprise Value

As an LLC, Eterna Hybrid Exchange is a non-traded firm (its shares are not traded on the open market). The most straightforward method of determining Eterna's value as a nontraded asset is to estimate the (discounted) net present value of its underlying cashflows (DFCF or discounted free cash flow) over a specific investment horizon, and then adding a term for the asset's terminal value, which captures the discounted value of future cashflows beyond the specified investment horizon. For most crypto projects, the DFCF method is inadequate because cashflows are not well-defined and many projects (such as meme tokens) generate no cash flows.

Hence, Eterna's total enterprise value can be estimated quite simply:

Eterna's Enterprise Value = f{NPV[(free cashflow) + terminal value (future cashflows)]}

⁴ Campbell, John Y. (2017), *Financial Decisions and Markets: A Course in Asset Pricing*, Princeton University Press; Duffie, D., (2001), *Dynamic Asset Pricing Theory*, 3rd ed, Princeton University Press

⁵ Korn, Ralph, et. al., (2010), *Monte Carlo Methods and Models for Finance and Insurance*, CRC Press; For a less technical introduction to asset pricing and Monte Carlo Methods, see: Simon Beninga and Tal Mofkadi. (2021), *Financial Modeling*, 5th ed., MIT Press

In this formulation, NPV = net present value, which is the discounted free cashflow (or FCF, from which expenses have been deducted) generated by Eterna over a specified investment horizon. Eterna's cashflow, in turn, is a measure of three distinct value drivers, including trading fees, banking fees, and listing fees. In the future, other value drivers may include advertising fees generated by tokens and other exchanges who wish to increase their exposure to Eterna's investment community.

II. EHEX's Market Value

The market value of the EHEX token is easier to determine than Eterna's enterprise value as a firm. EHEX's market value is a function of the percentage of discounted free cashflow that is distributed to token stakers. This expectation should be qualified by the fact that a significant proportion of token holders will likely be short-term day traders rather than token stakers, who possess longer investment horizons. Nevertheless, as the total dollar value of free cashflow distributed to token stakers grows, so too should the proportion of token stakers to total token holders, which will create a stronger empirical relationship between the dollar value of cashflows distributed to token stakers and the market price of the EHEX token. As a result, we can estimate the

expected value of EHEX token's market price.

$$\text{EHEX token price} = \{ \text{NPV}[(\text{FCF distributed to stakers}) * (\text{token stakers} / \text{total holders})] \}$$

In this case, the NPV(FCF distributed to stakers) is the discounted percentage of free cashflow (from which expenses have been deducted) that is distributed to token stakers. In order to estimate the fair market value of the EHEX token, the discounted FCF is weighted by the proportion of token stakers to token holders, since token stakers are less likely to sell their tokens due to regular price fluctuations, which in turn provides a minimum floor for EHEX's market price.

Price Discovery

Are financial markets "efficient"? In other words, do prices of financial assets incorporate all available information, so that any sustained arbitrage is impossible over time? Efficient crypto markets would mean that the best forecast of future prices, is the current market price, since current prices incorporate all available information. That further suggests that prices should follow a "random walk" so that no forecasting model will give investors an informational advantage regarding the future trajectory of asset

prices.⁶ However, the empirical literature suggests, that in fact, even the NYSE and other large equity markets are not “efficient” and therefore significant arbitrage opportunities exist.⁷ If so, then opportunities for self-financing riskless profits are possible, where investors can leverage their position, sell assets trading in markets at higher prices while simultaneously buying the same asset in distinct markets at lower prices. This simultaneous selling (at a higher price) and buying (at a lower price) permits investors to pay back their borrowed funds plus interest accrued, while pocketing net profits = (the difference of the price discrepancy) x (the \$ value of their market position) – (financing costs). But even if they do exist, such arbitrage opportunities will not endure, or as the folk aphorism suggests: arbitrage in financial markets is like seeing \$100 on the ground. The moment you bend down to pick it up, it will be gone. Given the inefficiency and manipulation inherent in crypto markets, much larger arbitrage opportunities may exist, especially if the same asset is trading on different blockchains simultaneously.⁸ But unless investors are whales (or a group of colluding whales) who can push prices down, forcing leveraged traders to liquidate, so that assets can then be re-bought at much lower prices, average

investors are unlikely to benefit from this kind of price manipulation.

⁶ Fama, E. F. (1970). Efficient capital markets: A review of theory and empirical work. *Journal of Finance*, 25, 283–417

⁷ Grossman, S. & Stiglitz, J. E. (1980). On the impossibility of informationally efficient market. *Journal of Finance*, 31, 573–538.

⁸ Griffin, J. and Amin Shams (2020). Is Bitcoin really Untethered? *Journal of Finance*, vol. 75, issue 4, 1913–1964

04

Tokenomics \$EHEX

Eterna is not simply a token, it’s a full-service crypto exchange, and a percentage of its net income will be distributed to our token stakers on a regular basis. No taxes are levied on buy or sell orders of \$EHEX tokens even on DeFi trading platforms. \$EHEX’s tokenomics is outlined in Table 2 below. According to \$EHEX tokenomics, linear vesting is applied for all token allocations for a period between 1– 4 years.

<i>Token Distribution</i>	<i>% of Initial Supply</i>
EHEX Treasury	36%
Token Sales for VCs	25%
Marketing	15.5%
Exchanges	6%
Liquidity Pool (CEX + DEX)	6%
Team	5%
Advisors & Partnerships	4%
Investor Loyalty Rewards	2.5%
<i>Total</i>	100%

Table 1: \$EHEX Tokenomics

Staking & *Profit* Sharing

Eterna is committed to providing significant material rewards to \$EHEX token stakers, in the form of staking rewards and profit sharing. Staking the \$EHEX token is one of several ways that investors benefit from Eterna. An investor who stakes their tokens provides liquidity for the (proof-of-stake or PoS) blockchain network, and in return receives additional \$EHEX tokens as a reward. Crypto staking is thus similar to depositing money in the bank, and in exchange investors earn rewards in the form of additional tokens. Within the Eterna network, staking rewards are distributed in terms of a fixed APY (annual percentage yield). Staking not only enables Eterna's network to operate more efficiently, but will provide Eterna investors with an added incentive to hold \$EHEX tokens.

Most importantly, \$EHEX token stakers collectively receive fifty percent (50%) of Eterna's net income as a reward.

Net income is calculated on a monthly basis, at the end of each month.

The resulting amount is deposited into the profit pool at the beginning of the following month, and is distributed on a per block basis (with each block created on the host blockchain). The percentage of Eterna's net income each token staker receives is proportional to the duration of the staking period and to the percentage of the circulating supply held by each investor.

Future *Innovations*

Eterna Hybrid Exchange was developed by two firms. The first firm developed the initial CEX. The second team developed the more advanced CEX + interoperable DEX trading platform. The third team will develop EHEX Blockchain, and we intend to expand our talent pool to extend our technical capabilities even further.

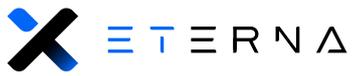
Our future plans include the development of our own stablecoin, that will play a role similar to that of BUSD on the BSC. The \$EHEXUSD will stabilize trading by providing a safe haven that is native to

our trading environment. Next, we plan to launch our own hybrid EHEX blockchain that will combine the best features of public and private blockchains in order to maximize efficiency while remaining open to all interested developers. EHEX blockchain will be a layer 2 (similar to Polygon) that will provide development solutions compatible with a host of native blockchains.

Table 2 below depicts the proposed timeline for the release of future Eterna services:

Q1 2023	Q1 2023	Q4 2023	Q4 2024
Centralized Crypto Exchange	Mobile App (Android and iOS)	Universal Defi Swap (EVM Family)	EHEX Stablecoin
Spot Trading	Copy Trading	Universal Swap	EHEX Blockchain
Perpetual Futures		(EVM + Other Blockchains)	EHEX Blockchain Scan
Token Staking		Banking Services	
Crypto Lending		Forex + Other Assets	Future developments
OTC Marketplace			
P2P Marketplace			

Table 2: Eterna's Development Schedule



As Table 2 illustrates, Eterna will evolve into a full-service crypto enterprise, manned by experienced and enthusiastic professionals, whose goal is to provide the best service possible for our clients and to maximize investor value.

Hence, Eterna is not simply a token, but a hybrid exchange and broader crypto firm with its own native token. Our goal is to provide state-of-the-art services for our clients and to maximize returns for our investors. Our team strives to cultivate a reputation for quality, excellent service and integrity. If you believe that you have the skills and experience to help us in our venture, we are always searching for new talent. Come and join our team and help us re-invent the crypto space.



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