Zethr Platform Whitepaper

Preface & Introduction

Early 2018 brought the advent of what we like to call the “Pyramid Age”. The release of the first “Open-Source Pyramid” known as Proof of Weak Hands in January began the pyramid craze, starting with two exploited PoWH contracts and finally settling with the current Great Pyramid known as Proof of Weak Hands 3D. A few months later, the first “meme” clones appeared - starting with the failed PoWL, the 4000ETH gambit of PoWM, and at least 20 other clones in the next 7 days. All of these eventually died as early investors took profits and caused mass crashes and panic selloffs as the price of the tokens went into freefall. It was clear that later investors in these projects were incurring a high risk of losing much of their investment.

With key features such as “choose-your-own-dividend-rate”, interactive betting games, and a house bankroll that consistently pays profits to token holders, Zethr aims to ensure engagement and longevity in this project that its predecessors have not been able to achieve.

What is Zethr?

Zethr is not a lending platform, stock, or other regulated security vehicle. Zethr is not guaranteed to make you rich (though we’re hoping it does).

With that said, here’s what Zethr *is:*

Zethr is a community-driven decentralized betting platform powered by tokens that appreciate in value as token supply goes up and decreases as token supply goes down, and a house edge for the casino that pays out dividends regularly to token holders - in short:

A *gambling-powered*-dividend-pyramid.

Zethr will be divided into four phases:

1) ICO Fair-Launch Phase
2) Dividend Auction Phase
3) Pyramid Launch Phase
4) Ongoing Development of Casino Games

Phase 1 - ICO Launch

Phase one is simply an ICO with a hard cap of Zethr (ZTH) tokens. We chose to do an ICO primarily for two reasons: first, to give an opportunity for the wider community to invest at an equal opportunity (no premine), and second, to prevent the classic pyramid-clone death spiral pump’n’dump.

In order to prevent an instant dump after the ICO is over, we decided to alter the price/value formula for tokens as follows,

$$tokenPrice := \begin{cases} p_{ico} & t_{current} \leq t_{ico} \\ p_{ico} + (t_{current} - t_{ico}) \cdot t_{\Delta} & t_{current} > t_{ico} \end{cases}$$

where t_{ico} is the number of tokens sold in the ICO, p_{ico} represents the ICO token price, t_{current} represents the total number tokens currently in supply, and t_{Δ} represents the price change per-token bought in the pyramid.

Because of to this formula, the price floor during the entire life of this project can *never* go below p_{ico} (the starting price / ICO price); this also makes it impossible for a “premine” or dev early-buy-in of comparatively cheap tokens.

Of course, one should not forget that this is simply the current token value - and that selling and buying tokens will incur a fee in the form of the buyer’s selected dividend percentage.

Dividends collected during the ICO phase will be used to help fund the casino bankroll; regular dividend payouts will commence during the Pyramid & Casino Launch phase.

One perk of the participating in the ICO is that it is relatively safe. For example, if a buyer chooses the lowest div % buy-in (2%), the worst possible outcome for this buyer is to lose 3.96% of his investment - due to the price floor created by the ICO. We leave it as an exercise to the reader to compare this to PoWH3D.

Phase 2 - Dividend Auction

As the ICO ends, the Dividend Auction phase begins. This phase is similar to common “hot-potato” style games which the crypto community has seen - but with the key feature that the owner of each card (described below) receives dividends from token buys.

There will be 8 cards available to purchase: one for each possible dividend percentage buy-in (described in Phase 3), and one “master” card. Each dividend card will give a 0.5% of *all* buys of its corresponding dividend percentage to the current owner of the card. The dividend card can be bought by anyone for (1 + *x*) times the current price of the card, where *x* is the dividend percentage that it represents.

Therefore, the dividend card that represents 10% will increase in cost 10% every time someone purchases it, and the dividend card that represents 25% dividends will increase in cost by 25% every time someone purchases it. 50% of the “profit” off card flips is sent to the previous owner of the card when flipped; the remaining 50% is used to help fund the casino bankroll.

Example: 25% Dividend Card

Previous Purchase Price: 1 ETH
Current Price: 1.25 ETH (25% Increase)
Bankroll Profit: 0.125 ETH
Previous Owner Profit: 0.125 ETH

These cards will be available for purchase throughout the rest of the life of the project, and the owners of each card will receive dividends on the relevant purchases.

Phase 3 - Pyramid & Casino Launch

After the dividend auction period, the Pyramid officially launches, and the casino opens.

Pyramid

The scaling token value operates similarly to most of the common pyramids that we’ve seen so far, but with some notable exceptions. First, remember the formula we described above:

$$tokenPrice := \begin{cases} p_{ico} & t_{current} \leq t_{ico} \\ p_{ico} + (t_{current} - t_{ico}) \cdot t_{\Delta} & t_{current} > t_{ico} \end{cases}$$

This dictates the value of each token.

However, because the minimum buy-in dividend percentage is 2% (plus a 1% fee to Dividend Card Holders), the *realized cost* of buying a

token will always be at least 3% higher than the actual cost. The same is true for sells, with the exception that dividend card holder fees do not apply, bringing the realized cost down to 2%. The second major deviation from the standard "pyramid protocol" is the inclusion of variable dividend buy-ins. When a user buys tokens, he will specify at which div percentage he would like to buy in at; the contract will keep track of the user's "average div percentage" and will use this whenever the user receives dividends or sells tokens.

Thus, the user always chooses at which dividend percentage to buy-in at, but must only sell at his current dividend average percentage, and also receives dividends at his current dividend average percentage.

This opens up strategic options allowing the user to choose when to "average down" or "average up" his dividend percentage average.

The execution of the dividend calculations is made possible by a second invisible token we have deemed the "backend token". Unbeknownst (and irrelevant) to the users, each purchase of tokens credits the user a number of backend tokens according to the simple formula:

$$ZethrTokensBought \times divPercentage$$

These backend tokens are used to calculate dividend payouts to users almost exactly how PoWH3D uses *profitPerShare* to calculate dividends.

This formula means that someone who buys 100 tokens at 25% divs will receive 2.5x more backend tokens than a person who buys 100 tokens at 10% divs - which is reasonable: a person who bought at 25% and receives 2.5x more backend tokens will receive 2.5x more divs as a person who bought at 10% divs.

Of course, with higher div percentage buys, more value is lost as divs to other token holders! Thus the user must choose wisely the dividend percentage he aims to average towards.

Finally, Zethr includes a masternode system; every user that has others use his masternode link will receive 25% of the dividends normally allocated to all other token holders. Masternodes become active to users once they hold 100 tokens.

Casino

The casino will be a collection of games playable with tokens. As there is no transfer cost for Zethr tokens, users will be able to play these games at no fee.

The casino will have several different games, each with a slight house edge. As the project grows over time, the casino will continue to accumulate tokens from the house edge; as the tokens are held by the bankroll and not users, this effectively increases the minimum token supply and raises the price floor of the tokens.

Additionally, dividends received by the house from tokens it holds will be consistently reinvested - effectively distributing profits to all existing token holders.

The casino bankroll is funded by the dividend fees from the ICO, the 50% profit fees from the Dividend Auction phase, and a group of investors.

The casino bankroll will be implemented in a multisig wallet requiring several members of the dev team to access. This wallet will allow

whitelisting of casino games as we create them, allowing the games to hook into the bankroll and use it to pay out winnings.

Phase 4 - Ongoing Development

At release, all of the games will be on-chain and using pseudo-random number generation. They will block any bets from smart contracts, preventing bet-and-revert style exploitation. The maximum winnable amount will be set low enough such that it is not profitable for mining farms to re-mine a block to find a winning bet.

As we to continue develop, we will move games from pseudo-random number generation to Oraclize using methods similar to Ethroll - this will allow us to raise the maximum win amount indefinitely as the house bankroll grows.

Finally, we plan to develop games such as Ethcrash that use off-chain logic and on-chain verification to create a seamless casino experience.