Tangle – The Whitepaper

Tangle is a token that incentivizes its own attractiveness.

Rewardable Events

Tangle incentivizes its own attractiveness by taxing certain contract interactions and then allocating those taxes as rewards for specific and desirable actions. The rewardable actions can be summed up in three different categories:

1. Market Making
2. Distributing
3. Staking

When a rewardable action is performed by a user in any of the three categories, they receive a "point" in that category known as a Rewardable Event. These Rewardable Events are one factor used to determine the quantity of rewards received by that user whenever they choose to redeem rewards.

Reflections

Tangle rewards all holders when a taxable contract interaction occurs through reflections. A reflection system keeps track of user balances in a "hidden" variable along with a special variable. The actual user balances can be thought of as "pieces" of a token, and the special variable dictates how many pieces of a token make up a whole token. A reflection then "distributes" rewards by taking some tokens away from one user, then scaling down the "pieces per token" variable, which causes the apparent balance of all users to increase. A special version of this method is used in Tangle's reflections, one which keeps the balance of tokens in the liquidity's address constant. If the liquidity balance of tokens were not kept constant, no real change in value would occur for any users during a reflection. For example, if the exchange rate between currencies A and B was 2:1 and all balances were multiplied, arbitrarily, by 2 to signify a drastic reflection, the exchange rate would fall to 4:1 as the liquidity balance is doubled as well. If the liquidity pool remains constant, then all wallets would see a two-fold

increase in tokens with the same exchange rate of 2:1. This shows a real gain in value. A reflection system that does not keep the liquidity pool's balance constant is a system that, in a roundabout way, does nothing.

The exact formula for reflections is best understood by looking at the contract's source code.

Reward Categories

Market Making

Every time tokens are transferred from a user's balance to the designated liquidity address (which for this token is the pair address

$$RE = B + S - |B - S|$$

for the primary currency to Tangle in whichever network is relevant), the amount of token pieces transferred is added to the user's Total Sell Volume, a variable in the contract. Every time tokens are transferred from the liquidity address to a user, the amount of token pieces transferred is added to the user's Total Buy Volume, another variable in the contract. Whenever an adjustment is made to the Total Buy Volume or Total Sell Volume for a user, a calculation is made to derive that user's Rewardable Events in the Market Making category. The derivation is as follows:

RE = Rewardable Events, B = Total Buy Volume, S = Total Sell Volume

Rewards for this category incentivize market activity, hence "Market Making", and a token with a more active market is more attractive than one with a stale market.

Distributing

Every time a transfer of tokens takes place, if the recipient has never before received Tangle, a Rewardable Event is awarded to the wallet whose tokens were transferred. Through this, airdropping tokens to other people is rewarded.

Rewards for this category incentivize an increase in holder count and potentially awareness. People who receive Tangle from random airdrops are more likely to investigate and possibly invest in Tangle. A token is also more attractive when it has more holders. A token with very few holders is not very attractive.

Staking

The tokens representing the liquidity pool between Tangle and its resident primary currency (e.g. ETH or BNB) can be staked, or locked within the contract. When tokens representing the liquidity pool are staked or unstaked, the amount of tokens currently staked are the user's Rewardable Events.

Staking liquidity pool tokens requires adding to the main liquidity pool of the relevant network. This increases a token's liquidity and stability, which makes the token more attractive. An illiquid and unstable token is not very attractive.

Taxable Contract Interaction

Contract interactions that are taxed are token transfers as well as reward claiming transactions. When tokens are transferred, a percentage is taxed from the transfer, and allocated to reflections, reward categories, and the founder wallet (the smallest percentage, but here to incentivize active token development). When rewards are withdrawn, taxes are sent to the *other* reward categories. For example, when rewards are withdrawn from the Distributing category, the rewards are taxed with the taxes being sent to the Market Making and Staking categories. By doing this, the least-used reward category will build up the largest amount of rewards to give, balancing the use of the various reward categories and effectively allowing the users of Tangle to decide their own price for performing a desirable action.

The Rulemaker

The Rulemaker is the work-in-progress smart contract that will allow Tangle users to change the tax rules of the Tangle system by voting with Tangle tokens. The tokens spent on voting will then be redistributed as rewards to the rewardable categories.

The flow of tokens through Tangle is then best described by its own name.