

Hub 2.5-Token Model

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Abstract

This paper describes the motivation and structure of Hub's two-and-a-half token model. Hub is building a decentralized trust network powered by blockchain to enable more trustworthy interactions. In addition to an appreciative store-of-value (SoV) token needed to build the Hub network and ecosystem, there needs to be a *stable* frictionless medium-of-exchange (MoE) to facilitate and incentivize trustworthy interactions and to reward participants for supporting the Hub ecosystem. Hub introduces a 2.5 token model consisting of a SoV token, a closed MoE token, and the use of fiat.

1. Human Trust Protocol

The Hub network is based on Hub's *Human Trust Protocol* (HTP) that leverages self-sovereign, portable, verifiable, reputation data to provide greater trust-at-a-distance. The three pillars of the *Human Trust Protocol* are decentralized identity, portable reputation histories, and trust as a predictor of future behavior in new interactions. In-depth detail about the problems and solutions that the Human Trust Protocol provides may be found at Hub's website, in its summary, and in its more in-depth white paper [1][2][3].

HTP relies on a medium-of-exchange to convey value. The role of this MoE is to act as a stake (bond) to vouch for trustworthiness in an interaction. When participants engage in an interaction (transaction) they each pledge a trust stake. When the interaction is successful, the participants retain their stakes and also earn rewards as well as positively contributing to their reputation histories. When the interaction is not successful, however, then an untrustworthy participant may lose their stake. An arbiter may award the trust stake of the non-trustworthy participant to the other participant(s) in the interaction. The results of the interaction contribute to the reputation histories of the associated participants.

Another role of this medium-of-exchange is to increase adoption and engagement of the protocol by users. The MoE provides a convenient way for users to pay others for products and services, such as messaging with other users, verifying credentials, posting jobs, becoming a member of a community and arbitrating disputes. An MoE also provides a way to reward community support of the Hub ecosystem such as the operation of protocol compute nodes and/or the development of task and application software.

2. Motivations

Building and fostering the growth of the Hub ecosystem and its Human Trust Protocol requires upfront resources and investment. One way to raise investment is through a crypto-token investment vehicle such as a private token sale or initial coin offering (ICO). Hub raised investment funds in this way, but investment vehicles are now subject to SEC regulations. The main purpose of a crypto-token in such sale(s) is to provide an appreciating store-of-value to reward investors, team members and advisors. The regulatory environment around crypto-tokens used as securities is evolving and highly uncertain since it is regulated by such bodies as the Securities and Exchange Commission (SEC), and great care must be taken to ensure compliance [4][5].

As for operating inside the network, a token as a medium-of-exchange should be frictionless, stable, and universally accessible. A crypto-token based virtual currency may be able to provide all those features. Unfortunately, anti-money laundering (FinCEN), securities (SEC), and tax regulations (IRS) impose complications that force trade-offs and increase friction. The main regulatory issues are as follows: a crypto-token used as an MoE requires compliance with FinCEN AML (anti-money laundering) regulations; a crypto-token used as an appreciating SoV to reward investors requires compliance with SEC securities regulations; conversions between convertible non-fiat currencies are taxable events (IRS). The current regulatory environment around the use of crypto-tokens is evolving and uncertain. Some care must be taken to make the right trade-offs to find the best balance of features [6].

To further complicate things, many blockchain projects attempt to combine the features of a stable medium-of-exchange and investible appreciating store-of-value into one crypto-token. This problematic approach makes the single crypto-token simultaneously subject to regulations from FinCEN, SEC, and the IRS. It also creates complex implementation issues due to the fundamental incompatibility of stability and appreciation [7][8].

The main functional trade-off is that a stable, low friction medium-of-exchange meant to facilitate high velocity interactions is incompatible with an exchange-traded, appreciating yet likely volatile store-of-value meant to reward investors. A stable MoE is also an SoV; it's just a stable SoV. The instability of an appreciating exchange-traded SoV is a burden to participants when used as a MoE to conduct business on the platform. Producers and consumers must continually adapt their economic behavior to account for changes in the value of the token. These may include re-pricing to maintain competitiveness despite upward volatility and hedging or clearing of positions to avoid risk to downward volatility. All of these activities increase friction (transaction costs) thereby slowing down network effects and the value potential of the platform.

A quick glance at the price chart for single token system ([BAT](#) for example) shows extreme volatility relative to fiat [9]. Another example is StorJ which accepts fiat but uses a pricing oracle to automatically adjust their token price for services to match a fixed fiat price [10]. A consumer does not need to buy the token in order to use the service. By accepting fiat, StorJ increased

adoption and use of their platform by consumers. While this repricing keeps the services competitively priced despite price changes in the token, it effectively makes the supply of tokens dynamic relative to the underlying economic activity. As price goes up, fewer tokens are needed. This dynamic repricing removes any direct connection between economic activity on their platform and token price. So growth in economic activity does not result in commensurate increase in token price to reward investors [STORJ](#). Moreover, it places a burden (friction) on the suppliers of products and services who get paid in tokens—not fiat—even though the platform itself is getting paid in fiat. The producers must continually hedge or clear their token positions in the event of downward volatility. Conversely, a stable token minimizes the burden on participants (friction) but also does not reward investors. Two tokens, one a stable MoE for conducting business and the other an appreciating SoV to reward investors, avoid this messy tradeoff. A much more in-depth explanation of these issues and trade-off may be found in the references [6][7][8].

To address the aforementioned challenges, Hub’s approach is practical. Separating into two tokens provides more flexibility to provide both functionality and compliance without incurring additional costs and friction. Hub uses a 2.5 token model that provides a clean division of responsibilities in order to avoid unacceptable trade-offs in functionality while simplifying regulatory issues. We summarize these below.

3. 2.5-Token Model

The 2.5 tokens in Hub’s tokenomics approach are as follows:

1. Appreciating SoV token implemented as a convertible (open) virtual currency using an Ethereum ERC-20 smart contract and called HUB
2. Stable MoE token implemented as a non-convertible (closed) virtual currency and called the *Hub Incentive Token* (HIT)
3. Digital real currency (fiat)

In this 2.5-token model, we are using the term *token* loosely to mean *a vehicle for conveying value*. In that sense, *fiat* is a “token” although not a crypto-token. In the theoretical long run, fiat is not needed for the successful operation of the ecosystem and is therefore accounted as a half of a token in the model.

3.1. The case for the HUB SoV Token

As previously mentioned, building the Hub platform takes investment of resources. To that end Hub raised funds with a token sale. Those investors deserve to see a return on their investment. The Hub appreciative token (HUB) is the vehicle for investors to realize that return. The HUB token is an Ethereum (ERC-20) token that will be tradeable but is subject to securities regulations. In order to provide a return to investors the HUB token is designed to appreciate in value over time as a function of the increase in value of the Hub market ecosystem as

measured by the total economic value of HIT. In order to drive appreciation in value, the HUB will be redeemable for HIT. This provides a terminal market for HUB tokens.

3.2. The Case for the HIT MoE Token

The core functions of Hub are to foster trustworthy online interactions using trust staking (vouching) and to foster a network market for platform participants to exchange value. Incentives and payment for the associated transactions are most convenient if they settle instantly at near zero cost. In other words, if payment is *frictionless*. A virtual currency (crypto-token) hosted on a distributed ledger is technically well suited for providing rapid and near-zero cost settlement. Unfortunately, regulatory issues surrounding *open (convertible) virtual currencies* have complicated their use and have added too much friction. Hub's practical compromise is to use a *non-convertible (closed) virtual currency* that has the desired rapidity without the regulatory complications. This closed virtual currency is called HIT. The HIT is used both as a medium-of-exchange in the HUB network marketplace and for trust staking (vouching) to modulate and shape transactions in the network marketplace. This includes trust staking (vouching) for fiat transactions as well. Consequently, the Hub fiat economy will also contribute to the Hub Incentive Token (HIT) economy via vouchers in HIT on fiat transactions.

3.3. The Case for Fiat

Currently, the world runs on fiat (real money). Hence, broad and rapid adoption is best fostered with a convenient fiat on-ramp to the Hub platform that provides instant access for potential users. The drawback of using fiat as the primary medium-of-exchange is that settlement costs may be too high, especially for micro-transactions. Fiat settlement finality also takes time. These add friction. Nonetheless, many transactions especially higher value ones will only happen if they are conducted in fiat. The practical solution is to use fiat as the on-ramp to the Hub platform and also for those transactions for which fiat is best suited. Hub intends to support conventional electronic fiat payment channels including credit cards, bank transfers, and so on.

The redemption rate of HUB to HIT will be a function of the total economic value of HIT. As the market value of the Hub ecosystem increases, so will the HUB-to-HIT redemption rate. The redemption rate will be designed to provide appreciation while minimizing its impact on the HIT economy. A variable redemption rate rewards investors as the ecosystem grows while maintaining clear separation of concerns and avoiding excessive regulatory friction within the Hub ecosystem.

Although on the surface, a 2.5 token model might seem to be more complicated, it's clear separation of concerns greatly simplifies implementation details and lowers friction for participants due to both functionality and regulatory constraints. The 2.5 tokens solve different problems with the ultimate objective being to minimize transactions cost to participants in order to create more value on the platform via network effects [10].

4. Hub Incentive Token

The Hub Incentive Token (HIT) is a non-convertible (closed) virtual currency [11]. Its major drawback is that HITs may not be converted to any other currency, they may only be used to purchase products and services on the platform. In this sense HITs are similar to “points” in conventional loyalty programs. Users that earn “points” in return for participation on a platform may redeem them later for products, services, and promotions. The drawback of non-convertibility is also its major advantage as it avoids the regulatory constraints of convertible virtual currencies [6][12]. This allows the HIT to be frictionless.

The most relevant definition with regards non-convertible (closed) virtual currencies is the 2014 FATF report [11]. FATF is an international inter-governmental body (of which the United States is party) that issues guidance with respect to international AML efforts. The definition from the report is as follows:

Non-convertible (or closed) virtual currency is intended to be specific to a particular virtual domain or world, such as a Massively Multiplayer Online Role-Playing Game (MMORPG) or [Amazon.com](https://www.amazon.com), and under the rules governing its use, cannot be exchanged for fiat currency. Examples include: Project Entropia Dollars; Q Coins; and World of Warcraft Gold.

In order to maintain HIT’s status as a non-convertible (closed) virtual currency, Hub may enforce sanctions against holders who attempt to trade or exchange the HITs outside of the platform. This may include termination of user accounts and blocking access to the Hub API.

Because HIT is closed, holders may not convert their HITs to other currencies. They may only use HITs to buy products and services on the platform or to stake trust vouchers. There is therefore no fiat off-ramp for HITs. This is one reason why Hub also supports fiat for payment. Those producers who need conversion can use fiat for their products and services while still benefiting from the higher trust of using HITs to vouch for their reputations. This is a practical trade-off.

There are three ways to acquire HITs. The first is to purchase HITs from Hub with fiat. The second is to earn HITs from Hub by supporting the Hub ecosystem or from other holders of HITs in return for services including trust staking. The third is to exchange HUB tokens for HITs at the prevailing redemption rate. Because HIT is closed (non-convertible), purchase of HITs with fiat is neither a money exchange/transmission event nor a taxable event.

The price of 1 HIT is pegged to 1 USD. Because HIT is closed, Hub is able to maintain a stable pricing structure for HIT by setting issuance and redemption rates. The price level of HIT is set by the fiat on-ramp conversion rate. This value is not market driven. This provides a stable basis for the HIT ecosystem that is not subject to the volatility that an open (convertible) virtual currency experiences. Stable valuations foster increased economic activity. Hub will issue (mint)

HIT to purchasers in return for fiat, to reward supporters of the platform, to incentivize participation on the platform, and to redeem HUB for HIT. Hub will provide products and services on the platform that holders may purchase with HIT.

At some point in the future when the regulatory landscape becomes better defined it may be possible to transform HIT into a convertible (open) currency.

5. Decentralization

Another possible criticism of Hub's 2.5-token approach is that it may not be decentralized enough. Although HUB is decentralized, fiat and HIT are not (initially) decentralized. Many consider fiat to be centralized especially where the platform operators are integral to facilitating transactions. The HIT, a closed (non-convertible) virtual currency with Hub as the administrator, may thereby be considered to be centralized as well.

Our view, however, is that decentralization at the expense of value creation may not be a good trade-off. Hub is decentralized where it matters most, that is, in giving users control over their identity and reputation. Hub's foundation is decentralized self-sovereign identity and reputation. Users control their reputation histories. These are decentralized. Where Hub is more centralized is in incentivization and payment not because Hub wants to be more centralized but because the current regulatory environment forces a trade-off between usability and the degree of decentralization. The current lack of trust in online interactions is a real impediment to value creation. The need for more trustworthy online interactions is immediate. Hub wants to boost economic opportunity, global efficiency, and financial safety now; not wait for the regulatory dust to settle. As regulations solidify Hub will adapt accordingly to provide more value and control to users through appropriate decentralization.

In the future, HIT may also become more decentralized in its implementation. The governance of the HIT supply as well as the HUB-to-HIT redemption rate may also become more decentralized and algorithmic.

6. Economies

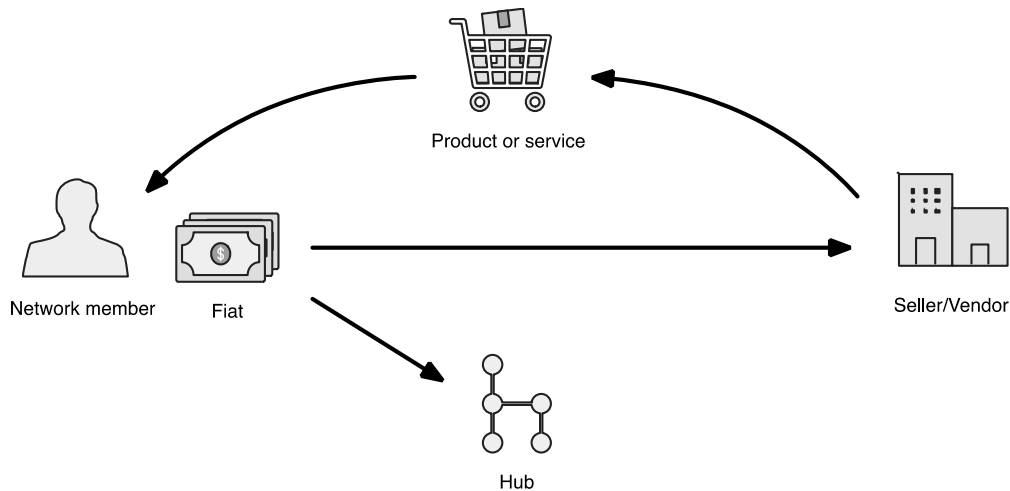
As a result, there are two related economies in the Hub ecosystem. The closed economy of the HIT and the open economy of fiat. Because HIT is closed, there is no round trip cross circulation between the two economies. They complement and support each other, however, through the possible conversion of fiat into HIT. Vouchers denominated in HIT can be used to improve the trustworthiness of fiat transactions. In addition, over time the fiat received by Hub in return for HIT can be re-invested to provide new products and services in the HIT economy, thereby sustaining the value of HIT. Products and services may be available in both economies but there is currently no off-ramp for the HIT economy. Therefore, if someone acquires an excess of HIT, their only option is to redeem them for products and services in the HIT economy. This is a workable approach that minimizes current regulatory friction.

7. Example Use Cases

The following sections describe some typical flows of the various types of tokens on the Hub platform.

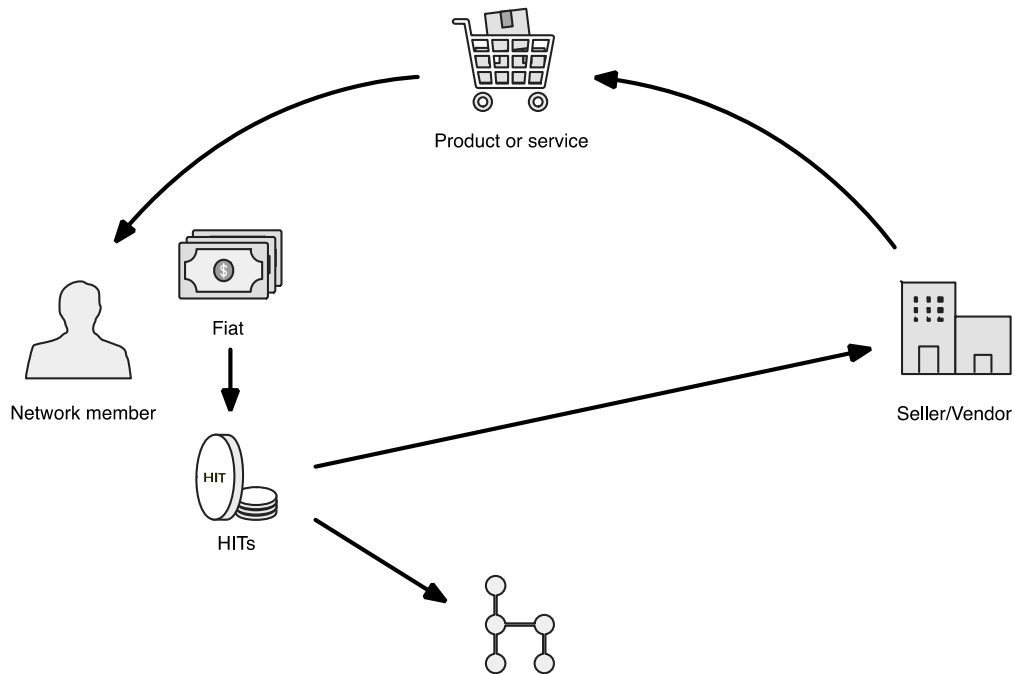
7.1. Fiat in exchange for products and services

Fiat is used to directly purchase products and services on the platform. Payments go directly to seller/vendor. Hub may take a percentage of each transaction.



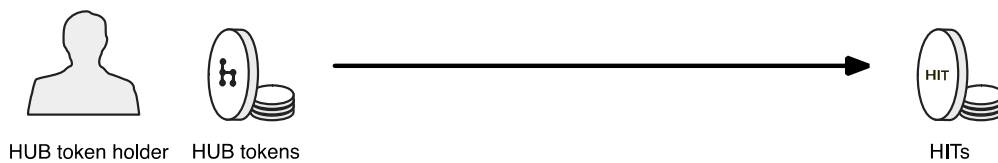
7.2. HIT in exchange for products and service or for staking trust vouchers

HITs are earned by user engagement including trust staking that the user may then exchange for products and services on the platform. Users who receive HITs in exchange for products and services they provide may then recirculate those HITs for other products and services. Hub may take a percentage of each transaction. There is currently no fiat off-ramp that allows the conversion of HIT to another currency.



7.3. HIT in exchange for HUB

Hub appreciative tokens (HUB) may be redeemed by holders for HIT. The redemption rate will be set by Hub as a function of the size of the HIT market. The resulting HIT may then be exchanged for products and services or used for trust staking. Hub may use promotions or other strategies to drive the appreciation of HUB via the HIT redemption rate, which rewards investors.



8. References

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