# Tokenized Voucher Investments

Non-Equity Investments in Production

Whitepaper

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# Abstract

Social Enterprises need options to raise capital without giving away equity. Impact investors need data driven investment opportunities. Tokenized Voucher (TV) Investments proposes a way for enterprises to issue vouchers against their production as a token on a distributed ledger (blockchain) along with transactional data - such that they can be bought and sold on decentralized markets. Thus creating a data driven investment into the production of social enterprises without the purchase of equity.

# Background

Enterprises creating vouchers is an ancient practice, going back as far as the Silk Road in China. In their basic form vouchers are simply promissory notes against goods and services. But when tokenized and incorporated into an impact investment framework vouchers, created by social enterprises, begin to take on the the shape of an investable utility token. Tokenized vouchers enable social enterprises to issue credit against their future production and use it to develop local circulation, customer loyalty and accept investments.
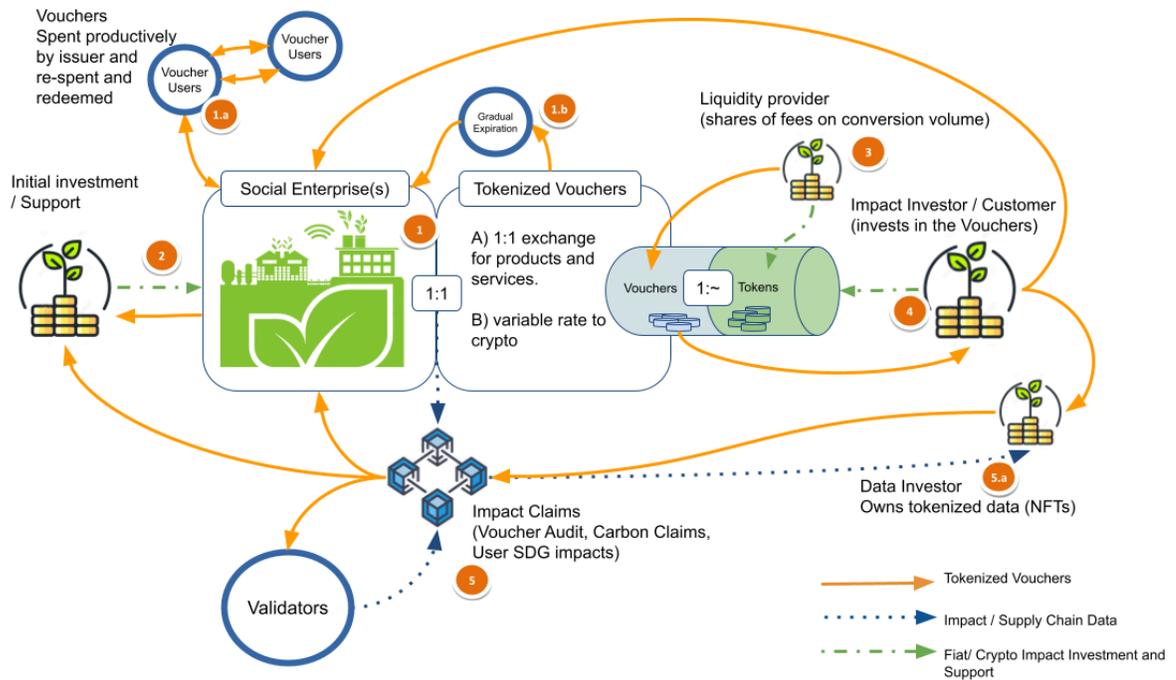


**Figure A.** Impact Investment Stages. This diagram shows the various ways Tokenized Vouchers can be invested in and is described throughout this paper.

# Tokenized Voucher Issuance

The Social Enterprise, possibly through a special purpose vehicle, issues a token (TV) against their future production (Figure A.1) - valued in national currency. e.g. 1000 TVs can be redeemed for 1000 Shillings worth of recycled paper products. TVs are a way for a social enterprise to take out a zero interest loan against future production - the loan is given by anyone purchasing the voucher.

In order to ensure that the voucher is accepted by the public and as well as investors the following authentication process and information is made publicly available:

## Publicly Visible Authentication

1. The enterprise must show they have the capacity to redeem the vouchers for goods and services in a timely manner. The audit process and report is signed by a company official and an independent auditor.
    a. The TV creation process involves the signing of a legally binding contract. TVs constitute a legally binding credit obligation against equivalent national currency valued goods and services. I.e. if 1000 vouchers are created against vegetable produce - then they should be redeemable for 1000 Kenyan Shillings of vegetable produce
    b. The amount of vouchers to create should be a fraction of the enterprise's sales capacity. Relating the vouchers issued to a portion of the enterprise's profit margin is advised.
    c. Should additional vouchers be created it must be on a clear schedule with an additional audit. An audit may also recommend the enterprise retire a portion of their vouchers.
2. There should be a limit to the voucher's expiration rate - no more than twice the inflation rate on the national currency is recommended.
    a. Note that expired vouchers are automatically deducted from all accounts and directed toward a sink account.
    b. The sink account should be decided by the enterprise.
3. Note that the voucher creation contract, total supply of voucher and their trade volume and distribution is publicly available


## Spending Into Circulation

TVs are used to pay for labour, suppliers, marketing (e.g. loyalty programs) and redeemable for goods and services (Figure A.1a). They enter general circulation and can be re-traded and expired gradually (in the form of a directable tax).

## Expiration

TVs expire gradually over time (Figure A.1b) in order to reduce liability and ensure they are not being hoarded. This gradual expiration is in the form of an automatic holding tax to ensure that the 1:1 peg of CIC to products and services is held stable and valued in national currency.

# Technology

Inorder to ensure that voucher can be more than simply illiquid promissory notes backed by goods and services and more attractive as a medium of exchange and investment. We propose their creation on distributed ledger technology combined with liquidity pools and NFTs described below.

## Blockchain

Tokenized Vouchers are issued on a distributed ledger (blockchain) so that they are secure and transparent. The blockchain enables anyone to potentially see where these vouchers are and what their total supply is. People can also view the contract that created them and assess it's viability and security. For instance as a blockchain based token TVs would enable you to see what the expiration rate of the vouchers was. Blockchains generally have a transaction fee

## Interfaces (Wallets)

Blockchains enable anyone to build interfaces to them - meaning that users can have a variety of options on how to interact with their TVs. In Kenya Grassroots Economics developed a USSD interface so people without the internet could trade their tokens. Point of Sales devices and marketplaces can just as easily integrate with a blockchain backend.

## Liquidity Pools

Liquidity pools are automated market makers between various tokens. Anyone holding two different tokens can create a contract that allows people to trade between those two tokens. A network of liquidity pools like Uniswap create a decentralized exchange where many TVs issued by Enterprises can be traded with each other as well as with other tokens redeemable for national currencies. This network of liquidity pools gives

## Signed Data - NFTs

*A non-fungible token (NFT) is a unit of data stored on a digital ledger, called a blockchain, that certifies a digital asset to be unique and therefore not interchangeable. NFTs can be used to represent items such as photos, videos, audio, and other types of digital files. Access to any copy of the original file, however, is not restricted to the buyer of the NFT. While copies of these*

*digital items are available for anyone to obtain, NFTs are tracked on blockchains to provide the owner with a proof of ownership that is separate from copyright. - [Wikipedia](#)*

A NFT related to a TV holds all the data about it's issuance policy, endorsements, auditors, supply, trade volume and distribution. This NFT would be viewable by anyone wishing to know more about the TV before investing in it.

Other NFT types include supply chain data, carbon offsets, sustainable development goals and many other possible data packages. These NFTs should be considered as one of the products that can be purchased using TVs.

# TV Investment Types

## Initial Investment

Supporting a social enterprise to increase their production or the quality of their goods and services in exchange for vouchers against those goods or services (Figure A.2) is a way for an investor to help support an enterprise without buying equity.

For instance a bakery selling vouchers against their bread may raise enough money to build a better bakery and the investors can use those vouchers to buy bread in the future. Getting back 1000 Shillings worth of bread at a later date after buying 1000 Shillings worth of TVs is more of a savings rather than an investment, but if in exchange for an investment the enterprise was willing to give a preferred rate for their TVs - the investor could make a return on investment by using the vouchers for bread or reselling them.

By utilizing blockchain technology the market for these TVs can be expanded.

## Liquidity Provision

*In Decentralized Finance (DeFi), liquidity pools are pools of tokens that are locked into a smart contract and that facilitate efficient asset trading while allowing investors to earn a return on their holdings - [Medium](#)*

An investor or anyone holding both TVs and some other tokens (with national currency value), creates a liquidity pool (a contract like Uniswap that holds the TV and some other token like USDC) and charges fees on conversion between the TV and other tokens (Figure A.3). Note that the liquidity pool will have a variable exchange rate depending on the amount of TVs and other tokens in the pool.

## Impact Investment

An investor can now add more tokens to the pool in order to invest in the Social Enterprise's production - pulling out some TV and also making TV more valuable in the pool (dynamic exchange rate) (Figure A.4). When TV holders (like the Social Enterprise themselves) convert/liquidate their TVs to national currency or other tokens using the pool, they will then reduce the relative value of their TV to national currency. When the price is low, an investor or a customer of the social enterprise can inject tokens / money to get the TVs cheaply in order to buy products 1:1 (Beneficial arbitrage stabilizes the exchange rate).

## Data Investment

Data from TV usage, including user information and validators is collected and packaged into signed data objects (NFT Impact Claims) (Figure A.4). These can represent all kinds of supply chain information, SDG impacts, carbon offsets, and audits against the value of the TV itself.

Anyone holding TVs can access / support these NFTs. Note that TV payments on such a data marketplace can be divided automatically back to the enterprise, investors and validators.

# Acknowledgments

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Grassroots Economics open source code repository on GitLab here.

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