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BITs: Decentralised Self-Regulating Economy.

UBI and Commons

Abstract.

We present a simple economic model based on UBI as incentive to reevaluate and reallocate common property. A ledger of participants and assets can be deployed on a public blockchain. (U)BI-Tokens - BITs are issued virtually by each participant at the same rate. Token distribution requires no further blockchain transactions.

Model.

There are 2 basic entities in the model - Actors and Assets. Both can be Public or Private.

1. Public Actors - Verified identity gives these Actors the right to issue BITs. BITs are issued virtually after the Actor is verified. A verification timestamp VT is stored instead of balance in public addresses. The current balance CB of a Public Actor is determined by subtracting it from consensus time CT and adding all transactions. Sum of all transactions ST is also stored in the ledger. Verifying a pending transaction only requires simple addition $CB = CT - VT + ST$.
2. Private Actors - Public Actors can create private accounts. These can send or receive BITs and interact with Asset contracts. Privacy of these transactions depends on support for confidential transactions on the blockchain platform. No BITs are created.
3. Public Assets - When an Asset is public it can be appropriated by any Actor. The appropriation transaction burns BITs and issues new Asset tokens. Owners must agree on ownership and governance models for each Asset, which are attached to the Asset Address.
4. Private Assets - Owners have full control over ownership and governance models. Don't have to provide an appropriation transaction.

The base supply of BITs grows at a predictable rate and is distributed evenly to all participants. The ledger of all participants and public assets is accessible to everyone.
Given this information, each actor can trade BITs for goods and services, or decide to claim ownership of any public asset.
At any time, each public asset has a clear set of owners, a base value (total amount of tokens burned + ownership model), and a market value. Each actor has a clear account balance.

As the unspent amount of BITs grows, actors are incentivised to claim ownership of assets. Actors that can predict profitability of assets can leverage this skill by trading. Actors that can't can sell or delegate BITs to such traders. Or spend them directly. Profit seeking is used to regulate the amount of BITs in circulation.

The value of a BIT is thus derived from the total utility of public assets. And assets are constantly reevaluated and reallocated according to subjective value judgments. Various ownership and governance models can be tested. Participants are incentivised to identify best assets and models and contribute to their appreciation.

Implementation.

This model can run on any blockchain with support for basic contracts, or on a simple extension of it. There are 4 requirements:

1. Address types
   1. Actor
      1. Verified Public Address - Each participant needs to have exactly 1 verified address. This can be achieved by a centralised 3rd party.
      2. Private Address - Standard transactions.
   2. Asset - Each asset is connected to a contract.
2. Consensus Time - The blockchain platform needs to securely provide a current time. This doesn't need to be precise.
3. Ownership and Governance models - Asset addresses need to have attached contracts that determine their behaviour. These can be either built-in, or extensible via smart contracts.
4. Custom transactions
   1. When processing a Verified Public Address a difference to current Consensus Time is considered and stored instead of the balance.
   2. When processing an Asset Address its contracts are invoked.

Applications.

The goal of this model is to provide a minimal evaluation framework that aids actors in their decisions. At any time it provides him with an estimate of his acting power, and valuation of all assets relative to it. If the economy can sustain his standard of living without additional income, he is free to pursue arbitrary goals. Otherwise he needs to seek actors willing to trade for his goods or services.

It can be applied when a group of participants needs to decide on their roles in managing and developing common assets. Subjective value judgments converge to clear asset ownership, governance, and individual acting power.

But what are common assets? We propose 2 applications:

1. Intellectual Property - Patents, Copyrights are already considered common, but monopoly rights are granted for a limited time. This incentivises innovation and content creation, but also hinders cooperation. If ownership of these intangible goods can be claimed by new actors, they are incentivised to further develop them. And opening this market, where any such good can be traded and claimed, leads to better estimates of potential value. Which can be used for guidance in directing individual creative endeavours.
2. Land - The common status of land is currently expressed by explicit land taxes, collected centrally by most governments. This exerts subtle pressure to transfer ownership to actors who predict they can derive more value from its use. High costs are usually associated with these transfers. In our model, this pressure can be more focused, and can happen gradually in small increments. The Tax/Rent isn't collected centrally, but is distributed to all stakeholders according to their asset agreement. Previous owners can't be excluded from participating in the increased profitability. Resulting in quicker allocation of unused or under developed land to new actors. The transition to the new model can happen gradually. Given our system succeeds in providing better value judgments on which lands to purchase and how to use them, it can be the basis of a growing land trust.