Decentralized Lending Network Autonomous Organization DLN-DAO

Lite Paper

10/06/2020

The Path to End Financial Slavery

By the community for the community

Abstract

“Modern slaves are not in chains they are in debt”

In the 21st century, the current form of slavery is a financial one, that enslaves a significant portion of humanity in a never ending cycle of poverty for them and their children. The linchpin of this catastrophe is the lack of direct socially backed lending to allow the people to help themselves. This situation benefits a whole network of intermediaries involved in the current financial system which was designed a few centuries ago. The current system can not scale and is held back by benefiting from the status quo.

We envision a decentralized microlending network protocol that utilizes a novel concept called social staking to enable free, zero interest loans to those that need them while providing a return to those backing them.

Background

The current lending market is long overdue for disruption and evolution. The prevailing model is for banking institutions to charge individuals to keep their deposits and then charge for lending out their said deposits. This model worked well in the middle ages when rule of law was not very well established and “Protection Moneys” needed to be paid. This is an untapped market, estimated to be between $12 to $129.4B. Examples of successful projects such as Prosper, which is the OG peer-to-peer lender in the market, has been established. Prosper was founded in 2005 as the very first peer-to-peer lending marketplace in the U.S. According to their website, they’ve coordinated over $12 billion in loans to more than 770,000.

Crypto-based loans only provide over collateralized loans based on the borrower staked crypto assets. The need for a new evolution allowing for a new financial freedom model by the people for the people is huge.

The market consists of two segments:

Developed countries low income (payday loans)

Developing countries (Life changing loans)

Goals

1. Enable Free 0% interest micro loans backed by social staking.
2. Provide rewards to the backers.
3. Utilize liquidity pools to separate the Crypto from Fiat.
4. Utilize projects like DMM to provide returns on CDPs.
5. Power the entire system on a DAO.
6. Provide a road map for independent projects to address specific comercial niche.

Overview

The main goal of the system is to encourage and incentivize participation and maintenance of the system.

The role of the DLN token is clear as a utility token that allows for bookkeeping and isolation from the fiat liquidity pool.

The role of the DLNG is also well understood in the DAOs that employ a governance token which is used to vote on operational aspects of the system such as

Rewards,

The capitalization,

Adopting new functionality,

Approving a liquidity pool,

and Approving a DeM.

For those tasks, the DLNG holders are entitled to a reward from the generated profit.

The innovation in our system also introduces a third token representing the actual asset that system users tokenize into the system.

When the users wish to withdraw the asset from the system, the DLNG is burned as it is not just by holding the DLNG that the user is entitled to receive a participation reward. If the user backs a proposal, the user will get issued DLNG for the life of the proposed loan. The DLNG allows the users to receive both the participation and governance rewards while holding the DLNG. This mechanism incentivizes the asset holding users to actually deploy their assets as a backer for a proposal. Meanwhile, just by bringing your assets to the network, you are still incentivized.

Benefits for the borrower

The borrower can get free loans, no fees, and no interest for the duration of the loan.

Benefits for the backer

The backer can get rewards by just committing their assets to the system as we believe in making everyone’s assets work for them.

However, the main objective of the system is to incentivize the backer's participation in backing proposals so that more borrowers can break the poverty cycle and build a better life. When the backer backs a proposal, they are given DLNG governance tokens which entitles them to additional rewards and allows them to shape the system.

The more participation, the more rewards and more chances to improve the system.

Benefits for the team

The team and network fathers will be given DLNG at the start of the network to operate the network until sufficient system backers. DLNG entitles the original team to getting rewards as the system progresses.

Benefits for Liquidity pool

The liquidity pool allows the conversion from DLN to other forms such as fiat.

The risk in deploying the funds is minimal since the actual proposal is backed and fully qualified. In return for deploying the fiat funds, the liquidity pool receives rewards from the DeM.

Main System Definitions

To understand the system we must first go over the main concepts used in the system, as outlined in Figure 1.

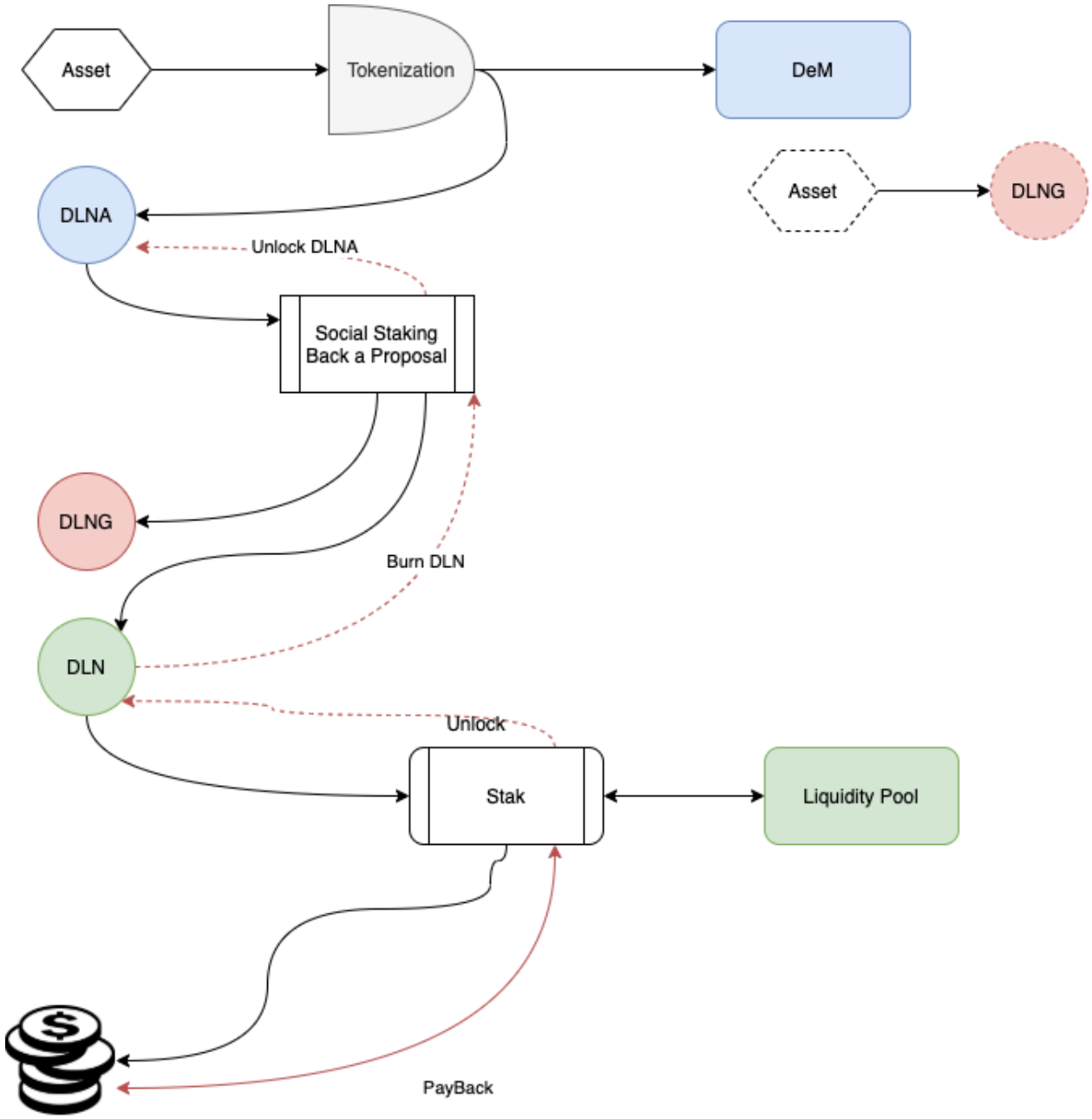


Figure 1 System overview

The Borrower

The borrower is an entity that has a financial need to fund a certain goal. The borrower may or may not have adequate funds or assets to borrow the required amount.

The Proposal

The borrower must create a proposal outlining what the financial needs are and what the funds will be used for. This could be simple or elaborate to help solicit other backers that may not otherwise identify with the borrower.

Proof of Repay Rating (PoR)

Proof of Repay Rating is designed to measure the user's trustworthiness and weedout bad actors. Each user starts with a blank rating, every time the user concludes a loan on time, the rating is adjusted to reflect this fact.

The PoR Oracle

An oracle takes into consideration different factors to adjust the PoRR for each user. The design to have an oracle instead of a fixed design allows flexibility for future adoption.

The Backer

The backer can be one or more entities that are willing to back the borrower’s proposal using their assets. Normally, the backers normally start as the borrower’s inner social circle friends and family.

Social Staking

Social staking is a backer collection that agrees to back a borrower’s proposal by providing the assets required for the borrower to receive the loan.

The Backed Collateralized Debt Position (BCDP)

The BCDP is unique because it operates with multiple constituencies at the same time. Unlike traditional CDP, where two parties enter the position, namely a borrower and a lender, in the BCDP allows three parties or more to enter into the CDP.

Each approved proposal results in a balanced collateralized debt position that is backed by the creation of a DLNA token. The BCDP is used as a trustless bridge between the crypto and non crypto assets to ensure full separation between both. The BCDP is created by a smart contract where a certain amount of DLNA is staked by the backers and the borrower

receives an asset (DLN), which effectively operates as a debt instrument with no interest. The BCDP user has posted collateral in excess of the value of the loan in order to guarantee their debt position.

The BCDP locks in the DLNA tokens from the backers and generates DLN tokens for the borrower. The BCDP can only be liquidated when the DLN tokens are returned at which point, the DLNA tokens are released and the DLN tokens are (Burned)

Liquidity Pool

Liquidity Pool is a fiat pool of hard currency that is ready to be deployed into proposal contracts once they are fully staked. The main purpose of having the liquidity pool is to provide a complete isolation between the staked assets and the lentout amount. This way, the staked amount is never sold and thus never generates a taxable event, especially if it is in a crypto currency format.

DLNG (Governance Token)

The DLNG token provides two main functionalities in the system: additional capitalization and governance for the system. Only wallets with current DLNG tokens can propose changes to the system. A consensus mechanism is adopted to evaluate and vote to approve the change proposal. DLNG holders are also entitled to rewards for participating in the governance process.

DLNG tokens are generated by committing capital to the network thus balancing the liquidity pool. Only in case of emergency, a special 66.6% vote (called the nuke option) allows the entire BCDPs to be liquidated and resolves the entire system to assure the solvency of the liquidity pool.

DLNA (Asset Token)

The DLNA token provides one main functionality in the system: representation of the colatorized assets (e.k. You have skin in the game). DLNA tokens are generated by staking assets to the network as a counterpart for a loan. DLNA holders are entitled to rewards generated by the BCDP they are backing. Those rewards are not fixed and vary by BCDP and the DeFi Market servicing it.

DLN

DLN tokens are generated when an amount of DLNA tokens are used to enter into a BCDP. DLN tokens are by nature a stable token that are redeemable through the liquidity pool. Once the borrower is done with the financial need, the borrower can return the DLN

tokens issued to be cooked (burned) when they reach the amount of each proposal. When the DLN Token is burned, the DLNA token associated with the proposal is released to the backer(s) and the BCDP is settled.

The DeFi Market (DeM)

When a BCDP is created, an amount of DLNA tokens are locked into a staking contract. The system allows for a group of community approved DeFi Market to handle the DLNA tokens, named DeM. The purpose of the DeM is to invest the DLNA tokens, and generate rewards. The rewards are then shared with the network, the liquidity pool and the backers (holding the DLNA tokens). DeM are rated based on return and risk among other factors. Those factors are judged by a DeM oracle which assigns a 1-10 rating of the DeM. The higher the rating, the more preferred the DeM to get the DLNA tokens.

The Rewards

The rewards are generated from the arbitrage function of the system. The rewards are shared between:

1. The network operation.
2. The Liquidity pool for providing liquidity.
3. The backer for backing a proposal and staking the DLNA tokens.
4. The borrower if the backer declines part or all of the reward.

Workflows

The following are a quick walkthrough of the system's different actors.

The Borrower

As illustrated in Figure, the borrower starts by creating a loan proposal. The proposal normally outlines what the borrower's intending to use the funds for and pleads the loan's case.

Next, the borrower would invite a list of backers to back the proposal. The proposal could be private only by invitation or be public for any system user to back it. This is implemented via a backer white list.

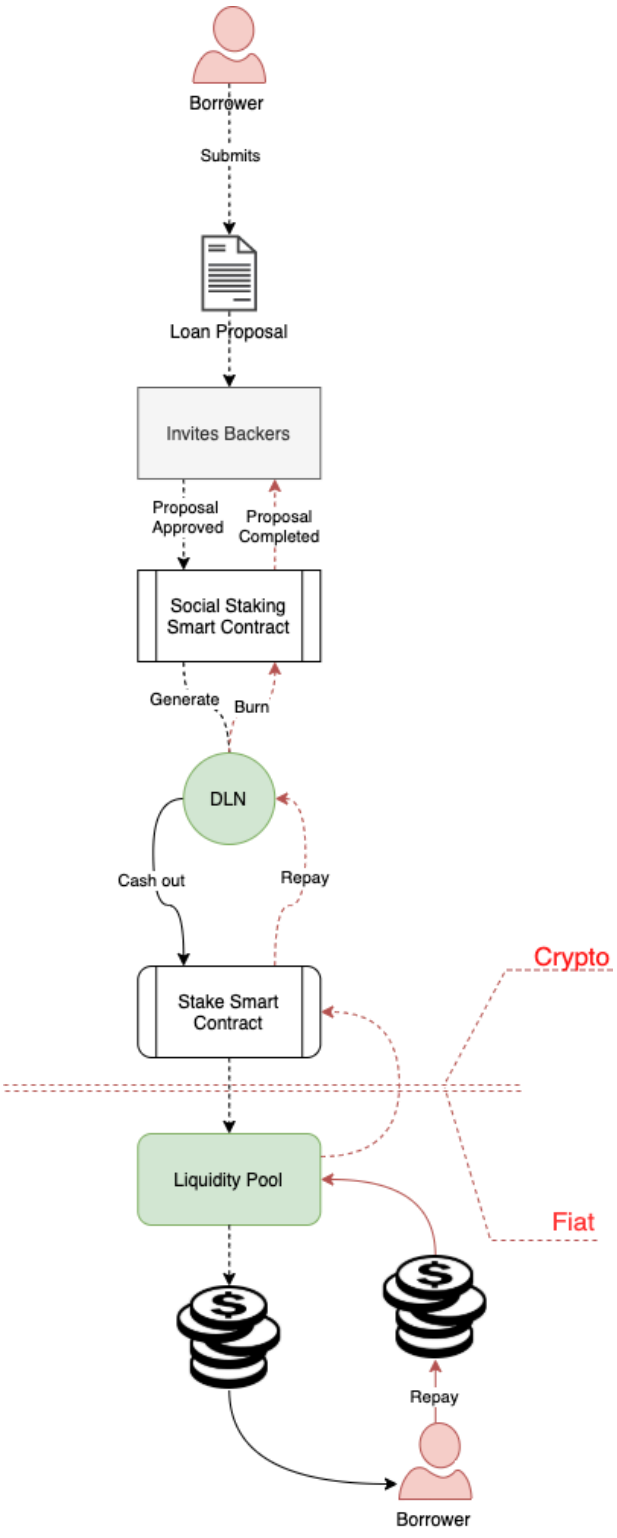
Upon approval of the proposal by sufficient number of backers, providing the required assets to back the proposal, a social staking smart contract is created to lock in the backers DLNA tokens and generate DLN tokens to the borrower.

The borrower can keep the DLN as a form of credit or exchange them for another form. The borrower can exchange them for other crypto tokens freely on any exchange or use the liquidity pool

The system provides a way to cash out the DLN through the liquidity pools. The borrower can stake the DLN to get fiat out.

There are no fees to execute the proposal or accrued interest on the loan itself, however, if the proposal terms are not met, the borrower reputation will be negatively affected.

Alternatively, the more the borrower repays on time and meets the proposal terms, the better the reputation score the borrower will have.



The Backer

The backer has two main roles to play in the system, a passive or active one.

Passive Backer

Passive backer is the first role a backer can do, in which the backer simply commits the assets to the system and receives DLNA through tokenization.

The tokenization process is designed to take into consideration future expansion of the system in which non crypto assets can be accepted as collateral in the system. This could be bonds, stocks and real estate for example. At the launch of the system, assets will be limited to stable coins and slowly expanded as the internal liquidity pools accumulate reserves.

The tokenized assets are now added to the DeM to be managed for optimal return generation. Those returns are critical for the entire network to operate and thus the passive backer is rewarded by generated DLN tokens, which the backer can cashout from the liquidity pool, Hodl, or exchange. The rewards are determined according to the following equation:

(Total Daily Generated Return) * (Asset Factor, default 0.33)*DLNA/(Total amount of DLNA)

Example:

The system generated $3M, while having $1B in assets during the same period.

A user with $1 in assets would be entitled to:

$3000’000*.33 * $1/$1000’000’000 = $0.001

The aim of the system is to generate those rewards daily. The mechanism by which those rewards are generated is when the return is generated, a DLN is created to balance it.

Active Backer

The main objective of the system is to incentivize the backer's participation in backing proposals so that more borrowers can break the poverty cycle and build a better life. When the backer backs a proposal, they are given DLNG governance tokens which entitles them to additional rewards and allows them to shape the system.

As shown in the figure, when a backer decides to back a proposal, the backer commits all or part of the backer's DLNA to the proposal. The backer can invite other backers to support the proposal. Once sufficient DLNA is committed into the proposal, a social stacking smart contract is created to lock in the DLNA. The contract would generate DLN tokens for the benefit of the borrower while it also generates DLNG tokens for the backer. The DLNG enables the backer of getting two benefits:

Participation in the governance process, since only DLNG holders can vote on proposals to update the network.

Additional rewards, namely doubling the rewards of passive backing. The reason that the backer would get additional rewards is that now the backer's assets are locked in the social staking contract associated with the proposal till the borrower repays the borrowed DLN. This process shifts a portion of the risk associated with the network operation to the backer and thus the backer would be rewarded for it.

The rewards are determined according to the following equation:

(Total Daily Generated Return) * (Governance Factor, default 0.33)*DLNG/(Total amount of DLNG)

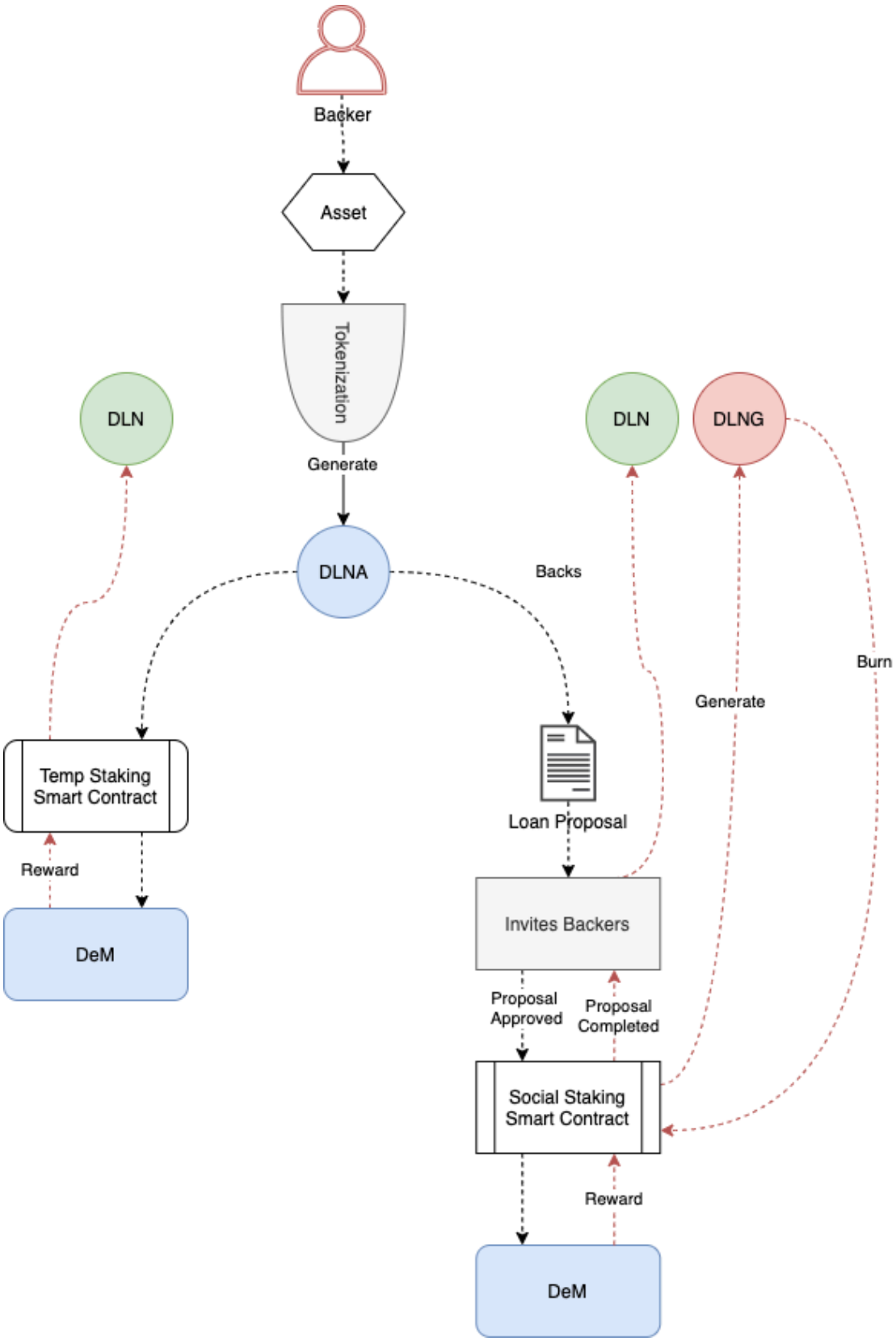
Example:

The system generated $3M, while having 1M in DLNG during the same period.

A user with one DLNG would be entitled to:

$3000'000*.33 * 1/1000'000 = $1

The backer may also lend the DLNG and get other types of rewards, however, the DLNG is required to be returned alongside the DLN to be burned when the proposal is completed for each backer to receive back the DLNA.


Backer
Asset
Tokenization
Generate
DLN
DLNA
Backs
DLN
DLNG
Burn
Generate
Temp Staking
Smart Contract
Reward
DeM
Loan Proposal
Invites Backers
Proposal
Approved
Proposal
Completed
Social Staking
Smart Contract
Reward
DeM

Delegated Backing

One of the barriers for mainstream mass adoption of blockchain systems in general is acquiring the actual digital assets to begin the cycle. Although many new facilitation has been added such as directly acquiring the assets via the utilization of a credit card, still this issue constitutes a barrier of entry and thus would become an issue especially in the developing economies where even access to credit cards may be limited.

To solve this issue, we would introduce the delegated backing concept. Simply put, delegated backing splits the backer into two entities, namely: the delegator and the beneficiary.

The Delegator Backer

The delegator is someone that has committed digital resources to the network, however they may have not backed a proposal. They can initiate a backed position on behalf of a beneficiary. They can retain the control over the backing contract in which case they can un-back and set how the contract distribution will occur. If they decide to delegate the control, then only the beneficiary will be able of un-baking and set the distribution at that point. The delegator would have the opportunity to implement their own conditions on top of the current network and thus organically extending how DLN operates for them as an individual or even as a business.

The Beneficiary Backer

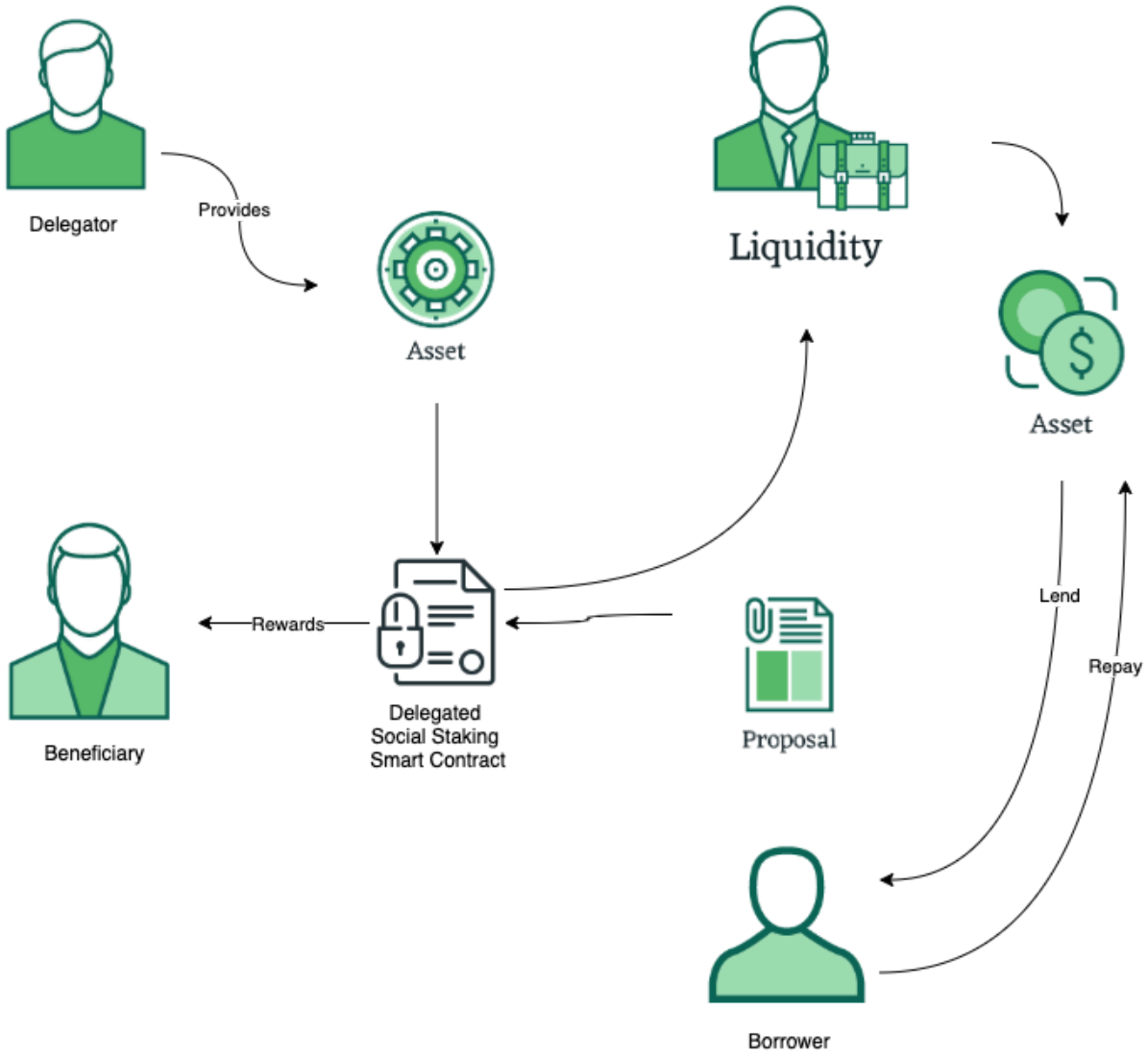
A beneficiary is someone that may not have actual digital assets, however, they may have fiat assets and would like to back a proposal. They would solicit the help of a delegator to execute the backed proposal on their behalf. The agreement between the beneficiary and the delegator is not in the scope of DLN, but rather will be handled either privately between them or by other projects or businesses building on DLN.

Delegated Control

By default, the delegated backing contract is controlled by the delegator, which means that the delegator can perform the unbaking and decide on how the contract proceeds will be distributed. This feature is important to allow for projects building on DLN to create their own blend of how the system will perform and manage the end user keys.
If the delegator decides to delegate the control, then the beneficiary will be able to unback the contract. On the contrat unbacking, the beneficiary will be able to decide the contract distribution.

Delegated Contract Distribution

On the delegated contract unbacking, three distributions will be decided, namely: The principle, the DLN rewards, and the DLNG rewards.
Each distribution can be sent to the delegator or the beneficiary as set by the delegated control.



Perpetual Income Backing

Perpetual income backing is a special version of the delegated backing contract. The main difference is in the preset monthly distribution. The perpetual income backing will automatically distribute the DLN rewards to the beneficiary on a monthly schedule until the contract is unbacked. Perpetual income backing delivers both the DLN rewards of the backer and the liquidity provider to the beneficiary thus entitling the beneficiary to receive ⅔ of the generated return. Since the PIB does not require a liquidity provider, no DLNG rewards are generated. The beneficiary can be the same as the delegator, which acts like a time based stacking contract.

The DeFi Market (DeM)

Approved DeMs will be selected regularly by voting to service the network committed assets. The DeM must be transparent and allow for daily withdrawal of the entire assets invested in the market. Each day, the DeM will accept new assets committed to the market by the backes and send the generated return to the liquidity pools.

DeMs will be rated by the return rate and the reputation via external oracle to ensure the neutrality of the network.

The Liquidity Pools

Liquidity pools play a central role in the system as they provide complete isolation between the crypto currency and fiat aspects of the system. The pool allows the users of cashing out the DLN to another crypto currency or fiat equivalent to assure the borrower can use the loan. The pool also is tasked with generating the DLNA for committed assets and DLNG for backed proposals.

DLNA generation

DLN Asset tokens represent the monetary value assigned to the asset and accepted by the pool. At system launch, this is done via external oracles and for spot price of crypto currencies. The system will have three phases of accepted asset expansion:

Stable Coin Phase

In which the system will only accept a stable coin, thus making evaluating the DLNA as simple as the face value of the stable coin.

Cryptocurrency Phase

The system will then be expanded to assign a volatility value to each cryptocurrency. An example of that could be 0.8 for Bitcoin, which means, an asset in Bitcoin is evaluated at 80% of its spot value.

This phase requires that the system allows the liquidation of the asset if the issued value drops near the actual value of the asset.

Realworld Phase

The system will then expand to realworld assets such as bonds, stocks and real estate provided the suitable legal framework is established to allow the system of liquidating the asset in case of depreciation.

Use Cases

The following are a few use cases to illustrate how the network would be used by a commercial entity.

Social Micro Lending

SML is the main use case of the system. Independent commercial entities can be established to run on the DAO so that it would offer micro loans to those that need it backed by their social network.

Student Loans

Similar to SML, however a student would create a proposal based on their college acceptance letter. In addition to the student's social network, a group of other organizations would participate as backers. The backers can specify criteria for participating such as:

Backing by gender

Backing women versus men.

Backing by minority

Offers available for specific minority groups.

Backing by discipline

Backing certain disciplines like stem cell research.

Endowments

Schools, Collages and religious institutions are funded through a huge number of endowments, however, this is a largely untapped area for crypto assets due to the fact that in order to use the assets it must be liquidated. Utilizing Chicken DAO will allow the creation of a crypto asset based endowment, in which the organization seeking to benefit from an endowment would create a proposal, the backers would commit their assets, the borrowing limit is set only to the rewards expected. At the periodic settlement time, the rewards, DLN Tokens, generated from the staked endowment, DLNA, would be automatically used to pay back the portion of the loan used.

Social Matching Contracts

In social matching contracts a group of backers would pledge to stake with a borrower if the borrower could come up with a certain percentage of the required loan. They could also choose how to be paid back:

- Paid back equally
- The backers are paid back first, or
- The borrower is paid back first.

This model can also serve corporate matching benefits.

Social Goals

The backers set goals for the borrower if the borrower archives them, then the borrower would receive part or all of the reward. Those rewards could be used to pay back the loan.

Examples of goals:

Repay the loan on time.

Achieve proposal goals.

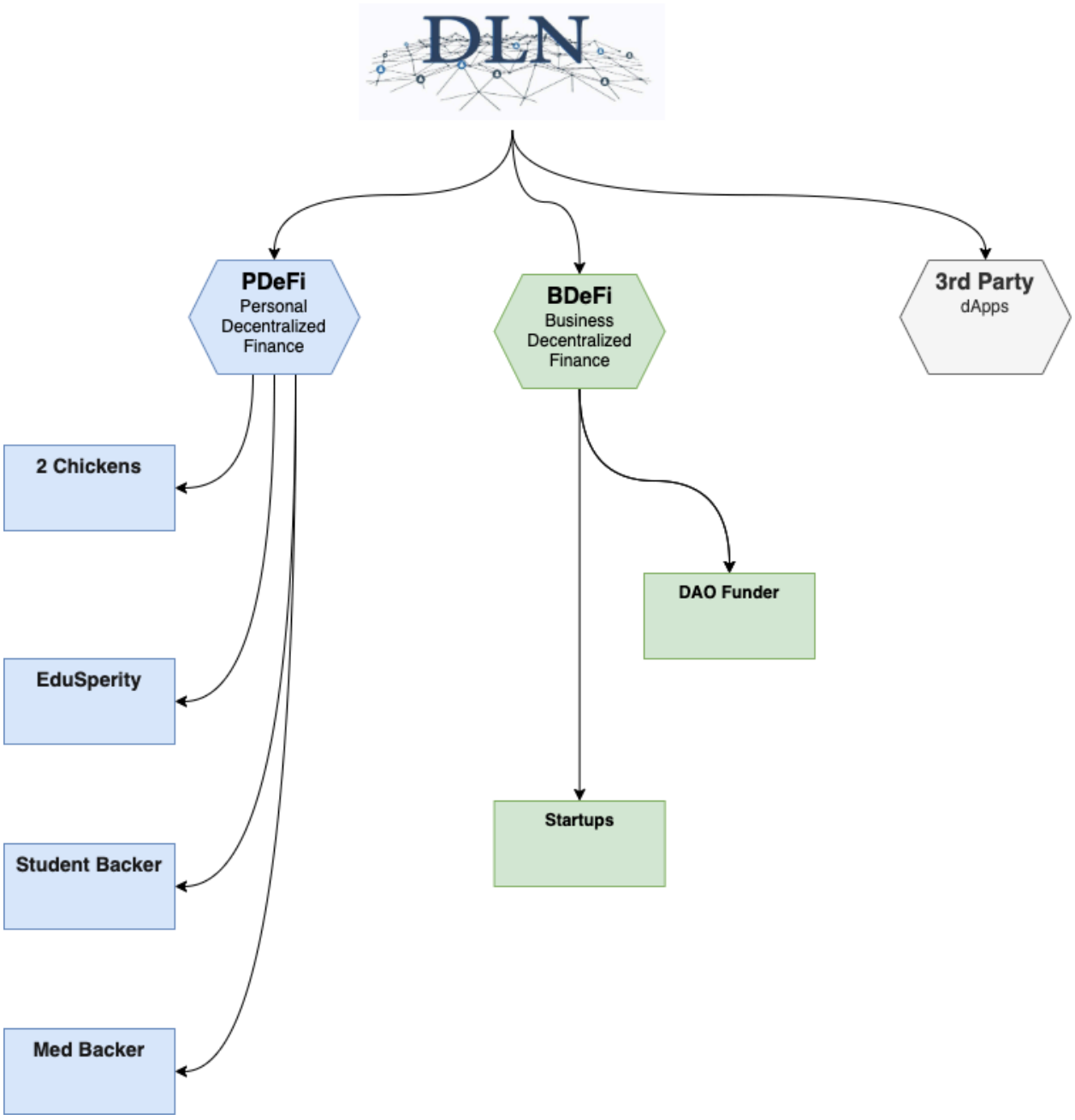
Examples

The following are a few examples to illustrate how the network would work.

Malak Starting a Sewing Business

Malak wants to start a sewing business, she needs $5000 for equipment and supplies. Malak creates a proposal on the system and invites her family and friends to support her. They pledge in and stake their funds in the system. Malak gets DLN tokens equivalent to the amount staked. She then cashs out $3500 to buy the supplies but does not need the rest. She decides to use the remaining funds for marketing. Malak starts to make profits and pays back the loan. Each time she pays back, the DLN tokens are returned back to the contract and the original DLNA tokens are released.

Ecosystem


DLN
PDeFi
Personal
Decentralized
Finance
BDeFi
Business
Decentralized
Finance
3rd Party
dApps
2 Chickens
EduSperity
Student Backer
Med Backer
DAO Funder
Startups

Tri Token Economics

The system has three distinct tokens designed specifically to make sure each aspect of the system is insulated and appropriate incentivization is added.

While the DLN is designed to be more of a utility token for internal use mainly. It acts as a voucher more than a stable coin where it entitles the user of getting funds using it. Since the token is an ERC 20 compliant, it can still be traded on a DEX, however, the arbitrage would be minimal. One of the uses could be to gain yield farming on other systems.

The DLNA token is more close to an NFT because it sets the value of the collateral committed to the system. By separating the value of the collateral from the collateral, this enables the system to accept other types of realworld assets once they have been appraised and tokenized into the system. The rewards provide a passive income stream and an incentive to commit the assets and hold the DLNA even if the user is not going to back any proposals. We envision elaborate uses for this token such as a user committing the equity on a property into the system to get rewards that could offset the mortgage payments.

The main return on the system creation is in then DLNG, which is designed to incentivize the system launch, maintenance and operations.

The current proposed structures are:

Fixed Ratio

FR aims to create a balanced pool eventually reaching a 20% team and 80% community ratio. To achieve this vision, the system will assume a total cap of 1 Billion DLNG that can be in circulation at any given time. On launch a 200 Million will be minted. A 100 Million will be sold at $0.01 to the founding team to generate the seed of $1M. The remaining 100 Million will be auctioned out in a dutch auction, then the remaining 800M are used for the backers.

Fixed Cap

FC sets a fixed supply of governance token and only auctions parts of it. This approach generates faster price appreciation but does not help with actual adoption.

Dynamic Cap

DC aims to expand and retract the actual cap of the governance token total supply based on the network participation. It will start with an initial set of tokens, minted at low price to capitalize the network, followed by a dutch auction sale for the seed capital. Following the initial seed, the system will mint governance tokens when the backer supports a proposal and thus the supply would increase by that issuance. The holder of the governance token can exercise voting and receive additional rewards until the user supported proposal is fulfilled. Once the proposal is complete, the backer would automatically return the minted governance to be burned so that the asset token is released.

The actual size of the governance token pool is dynamic based on the actual participation of the backers in supporting proposals. This would also balance the rewards generated for the governance token holders, as the supply size would be

The amount of minted governance tokens itself depends on the user history supporting the system. The more proposals the user supports, and value the user commits, the more governance tokens are issued for the user.

Conclusion

What we set to design is a way to create a decentralized lending network protocol supported by a decentralized autonomous organization that will flip the lending industry on its head and allow micro lending without any fees, interest or collateral from the borrower while still providing rewards to the backer through an innovative social staking contract. The social staking contract allows the close friends of the borrower to take a chance on the borrower by backing the borrower proposal. It is this backing that derisks the borrowing process and creates a backed collateral debit position BCDP that is enforced by the social relation between the backer and the borrower.

If we are successful, we will change the lending industry forever, eliminating shark loans and paving the way for millions of low income ordinary people towards financial prosperity.