UnUniFi
~Layer1 blockchain protocol for providing efficient NFT lending through an internal NFT marketplace with Auto DeFi Yield on the Cosmos ecosystem ~

Yu Kimura   Takeru Shimojima

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Abstract

UnUniFi is a Layer1 blockchain protocol for providing efficient NFT lending through an internal NFT marketplace with Auto DeFi Yield on the Cosmos ecosystem. UnUniFi creates solutions to problems such as a "Lack of liquidity for NFTs, forcing the NFT holders to wait for capital gains" and "Other NFTFi services not giving users an accurate valuation based on solid demand for the NFTs that the users own." UnUniFi will be the first NFTFi platform to create a proprietary NFT valuation algorithm calculated using real demand data, while allowing its users to generate automatic DeFi yield on borrowed assets.

UnUniFi aims to be a dApps platform with NFT price information at its core, with the internal NFT marketplace serving as the NFT price discovery function.

Our mission is to "Give all NFTs the opportunity to DeFi".

1. Introduction

1.1. Problems faced by NFTs

Once regarded as a fad (for some, it still is), NFTs, digital assets that depict real-world objects, are becoming increasingly popular within and outside the crypto world.

But with large amounts of capital locked into illiquid NFTs, more people are looking for ways to unlock liquidity without selling their NFTs.

1.2. The rise of NFT + Decentralized Finance (DeFi)

DeFi is short for "Decentralized Finance", a generalized umbrella term used to describe a variety of cryptocurrency and blockchain-based financial applications geared towards disrupting legacy financial institutions. DeFi is not reliant on central financial intermediaries such as brokerages, exchanges, or banks to offer users access to traditional financial instruments, and instead utilizes smart contract-based applications that are built on top of existing blockchain-based platforms. In regard to DeFi, there is a growing movement to make finance more efficient with ideas not only limited to exchanging tokens, but also realizing existing financial products (such as corporate stocks) on the blockchain.

"NFTs are undoubtedly becoming a gateway into the DeFi space for mainstream audiences," said Lauren Stephanian, a principal at Pantera Capital. "As new collectors become more active in the NFT market, they'll seek new ways to leverage their assets through DeFi mechanisms like collateralized lending, fractionalized assets, staking and much more."

2. The tokens of UnUniFi

GUU (Governance token of UnUniFi) is a utility token for governance or commission used in the UnUniFi Protocol.

3. NFT Lending Service on UnUniFi Protocol

Detail of User Flow
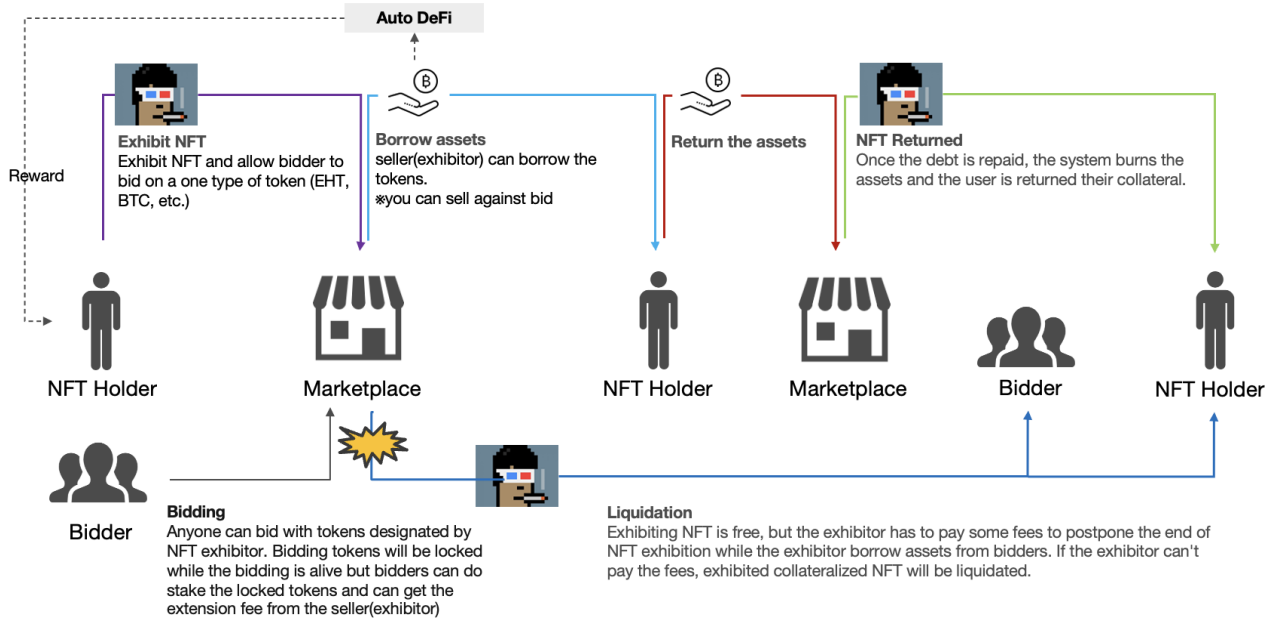
3.1. Borrowing crypto assets with NFTs as collateral

When NFT Holders deposit NFTs as collateral, the NFTs will be exhibited on the UnUniFi marketplace.

The seller(exhibitor) allows buyers to make a bid with a particular token (ETH, BTC, etc.)

The ith highest bid price is denoted as p_i.

n is a parameter determined by the NFT exhibitor. The default value is $n = 10$. In this system, bidders have to deposit their balance in proportion to the bidding price. The deposit amount of the bidder of the ith highest bid price is denoted as d_i.

We define that:

$$d_i = \frac{1}{n} p_i$$

The maximum value of using a NFT as a collateral will be denoted as q. In this system, we define that:

$$q = \sum_{i=1}^{n} d_i = d_i + \cdots + d_n = \frac{1}{n} \sum_{i=1}^{n} p_i$$

It means that, the maximum value of using a NFT as a collateral is, an average of top n highest bid prices.

Exhibiting a NFT is free, but if the exhibitor is already borrowing assets from bidders, then the exhibitor will have to pay fees to continue exhibiting the NFT. These extended listing fees (minus protocol fees) are distributed to bidders. If the exhibitor can't pay the fees, the exhibited collateralized NFT will be liquidated.

The NFT seller (exhibitor) can also use the borrowed assets for staking. To facilitate this we are developing an Interchain Yield Aggregator module, which we envision as a mechanism for automatic income gain. The Interchain Yield Aggregator allows users to find high-yielding opportunities by staking in a separate chain that supports IBC.

EXAMPLE for ETH borrowing:
- NFT exhibitor: put NFT into collateral vault.
- bidder: put ETH into bidding vault.
- NFT exhibitor: borrow ETH. If he wants to extend the end of the exhibition, he has to pay the fee in ETH.
- NFT exhibitor: interest is earned directly.

3.2. Bidding
Anyone can bid with tokens designated by the NFT exhibitors. Buyers can make a bid for the NFT they wish to buy, and can cancel their bid as needed. Buyers can make a bid anytime by adding the purchasing assets for bidding in advance. The deposited bidding tokens will be locked while the bid is live.
Instead of getting prices in a normal pricefeed, the auction pre-bid prices, bid prices, and cancellations of those bids become price change information.
The deposit of tokens for bidding will be locked while the bid is live, but bidders can stake the locked tokens for earnings and get the extension fee from the seller (exhibitor). This means that even though crypto assets will be locked for bidding, there will be no reduction in capital efficiency as a result.

Bid cancellation fee
If the bidder wants to cancel his bid, a fee may occur. The borrowed value by the NFT exhibitor is denoted as b. The cancellation fee of the bidder of the i th highest bid price is
$$\{\{d_i - (q - b), 0\} \quad 0 \quad if \ i \leq n \ if \ i > n$$
It means that, if the bidder is in bidders of top n highest bid price, their deposit may be forfeited. This bidding mechanism can be visualized as ***Purchasing an European Call option for the NFT bid***. And when the bid falls out of the active bid rank (n or higher) or when someone else wins the bid, the deposit comes back. Therefore the bidding mechanism is forced redemption with option principal guaranteed.

3.3. Settlement with the exhibitor's decision.
Naturally, the highest bidder can buy the NFTs if the seller wants to sell. The 1st highest bidder will have to pay p_1-d_1 during the period of payment. If he fails to do so, his deposit d_1 will be forfeited and he will be removed from the bidders.

3.4. Liquidation
Through the exhibition method where potential buyers need to make a bid with a particular token, note the marketplace is not affected by market fluctuations and settlement will occur only when the extension fee cannot be paid.
※If the seller does not want to lose the NFT with a time limit, he/she can buy it back at a higher price than the auction's existing maximum bid.

In the case of liquidation, the procedure below will be iterated from the settlement by p_j at j where $p_j > q$, in order of $p_j, p_{j-1}, p_{j-2}, \ldots, p_1$.

The reason for this is that for the p_j bidder, the amount of p_1-p_j is the expected profit that can be realized by the option (which can be realized by selling to the p_1 bidder at p_1 in a relative transaction later), which justifies paying d_j similar to a European Call option, thus ensuring a bidding incentive.

In the i th iteration, the i th highest bidder have to pay p_i-d_i during the period of payment. If he does so, he will receive the NFT and the iteration will be stopped.

On the above mechanism, if liquidity (i.e., bid) exists as the intrinsic demand for the NFT as far as p_1 is concerned, liquidity for the European Call option is sufficient, even if liquidity for the NFT is not the intrinsic demand for the NFT from p_2 onward. In addition to the liquidity of intrinsic demand for NFTs, liquidity for European Call options can be combined to increase available liquidity from nothing.

3.5. Proprietary NFT Valuation Algorithm

Through our unique bidding mechanism, this data can be combined with other user interactions from our marketplace to assess NFT valuations based on actionable demand. User interactions can include other pricing feed data such as active bid prices and bid cancellations. NFT valuations shall then be algorithmically generated based on described data points. By measuring these data points independent of other typical NFT valuation metrics (such as floor price), we can then deliver actionable NFT pricing data from the marketplace to external chains, operating as an NFT Pricing Oracle.

4. Describing Auto DeFi Yield with our "Interchain Yield Aggregator"

Users can easily utilize assets for yield farming through an Interchain Yield Aggregator directly integrated into UnUniFi Protocol. Yield Farming availability can be extended by deploying an adapter made with CosmWasm via third party communities. External chains can utilize NFT pricing data from the UnUniFi marketplace, providing a widespread, easily accessible, and insightful pricing model for external blockchains.

4.1. The flow of Interchain Yield Aggregator:

1. Deposit tokens into the IYA module for UnUniFi Protocol.
2. Specify a strategy based on the information provided by the data provider and select contract.
3. Start investing by sending TX from the contract to the other chain through an interchain account.
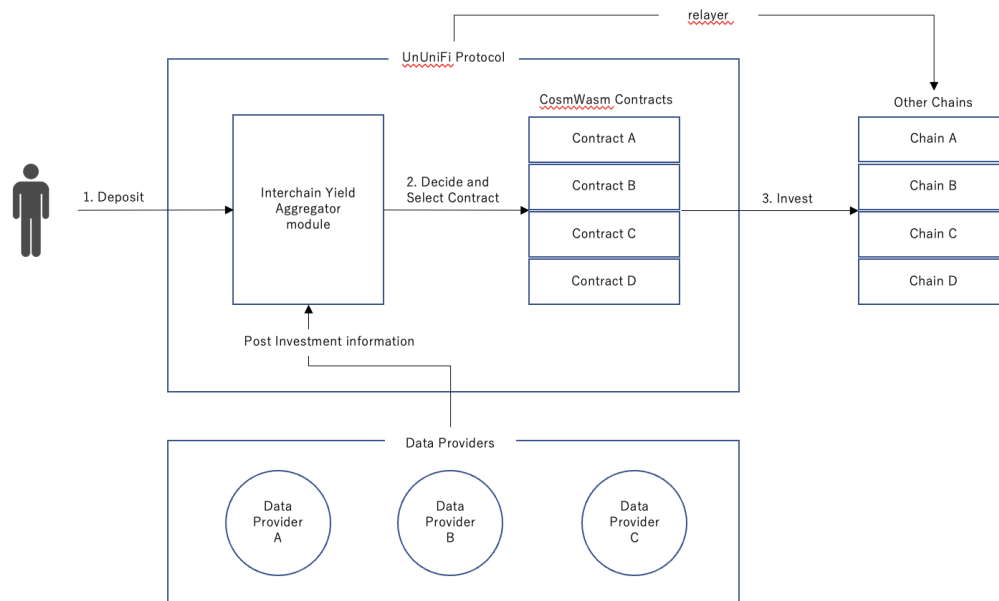
4.2. Diagram describing the process by which users receive will receive rewards:

1. Users claim rewards in the Interchain Yield Aggregator module for UnUniFi Protocol.
2. The Interchain Yield Aggregator receives rewards on the contract the user selected.
3. The contract receives rewards from the chain in which it has invested.
4. The contract sends rewards from the other chain to UnUniFi Protocol.
5. Interchain Yield Aggregator sends tokens to the user.
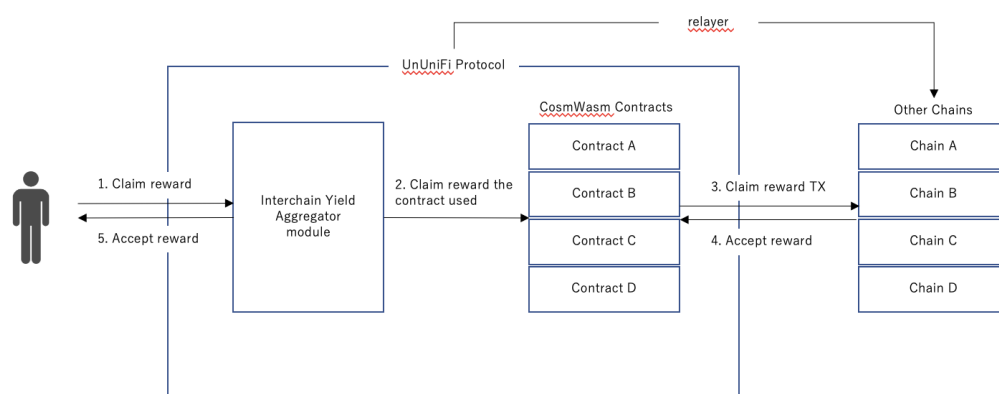
5. Decentralized Frontend

We recently analyzed the state of various Crypto and DeFi ecosystems and their applications, and asked the question, are dApps truly decentralized? If the viability of a DeFi protocol is dependent on its frontend, how can their dApp claim to satisfy decentralization concerns?

Our research indicated that the current state of dApps is that many are not truly decentralized and users must often rely on a single frontend deployment. In this scenario, reliance on a single frontend can create a single point of failure, and overall weakness in the reliability of a protocol.

5.1. Single Point of Failure

Generally speaking, users rely on the established Frontend to interact with a specific dApp or Contract. In a real world example, if a developer understands how a dApp operates, say Opensea for example, they can call the contract directly without needing to use the Frontend. Meanwhile, regular users must rely on the Opensea Frontend in order to interact with its blockchain components. If the Frontend for Opensea stopped working, most users would not know how to interact with the contract. Having one frontend creates a single point of failure. So how do we avoid this? Our solution proposes the ability to create multiple independant frontends, which in turn embodies a true "decentralized" model (eliminating the single point of failure).

5.2. Our Solution- Truly Decentralized Frontend(s)
Through our own protocol development we considered these exact same questions, ultimately allowing us to acknowledge the limitations of current solutions in hopes to create a better decentralized ecosystem.
Ultimately, this reflection directed us to create an ecosystem where our API, client library, Bubble App plugin, and frontend incentive module can be utilized by anyone; using a platform like Bubble allows anyone to create unique applications with their no-code app development tools. Through hyper-accessible frontend deployment, we can be the first ecosystem to successfully decentralize our frontend without a single point of failure.

5.3. Ecosystem Development via Community Inclusion
Normally, only experienced developers can contribute to ecosystem expansion when building dApps. However, with our Decentralized Frontend, we can expand the ecosystem to include non-developers. This contribution to community inclusion inherently furthers our ecosystem by allowing anyone to build onto it. A Decentralized Frontend will also simultaneously inspire both localization and mass adoption by allowing the creation of a Frontend that is hyper-focused for each region and category of usage.
We believe that the "Decentralized Frontend" is an effective method to expand our ecosystem. In other terms, creating a system that operates like a Wordpress for NFT market, NFTFi functionality, and Interchain Yield Aggregator deployment.

5.4. How do we Incentivize Frontend Development?
It is one thing to create an environment where our frontend can specifically be distributed and decentralized based on user needs, but how do we encourage these boutique integrations or unique Frontends? Our ecosystem incentive modules aim to reward early adopters who help to expand and realize our decentralized ecosystem.
Our latest implementation of this incentive model (in regard to the NFT Market frontend) is a system that distributes rewards to a frontend creator based on the NFT trading fee (excluding gas fee) collected when using that specific creator's frontend. For example if someone lists an NFT on A's frontend and that NFT is sold for $10,000 then A will receive $250 as a reward (assuming trading fee rate = 5% and NFT market frontend reward rate = 5%). Therefore, reward distribution is perfectly proportional to the actual trading volume.
In theory, this module will provide a competitive incentive for the parties which bring value to our ecosystem — motivating Frontend service creators (developers). Some of the various applications for custom Frontends can include NFT markets for real estate NFTs; financial instruments; PFPs; GameFi, and more... These unique Frontend service creators can then become candidates to receive the Ecosystem Incentive Reward, generated from the various fees accumulated from the NFT market.

6. GUU token distribution

We absolutely do not do initial coin offerings or token sales. Every token will be distributed in return for your actions such as being a validator.

Usage	Percentage of usage / supply	Vesting
Ecosystem Development	30%	Vesting term depending on the situation. Minimum 1-yr linear vesting.
Assignment for validators	15%	1-yr full locked, linear 12 months
Assignment for UnUniFi team	15%	1-yr full locked, linear 36 months 1-yr full locked, linear 60 months
Assignment for UnUniFi Development Fund	5%	1-yr full locked, linear 36 months 1-yr full locked, linear 60 months
Marketing	14%	VC(1-yr full locked, linear 36 months)
Treasury	10%	Vesting term depending on the situation. Minimum 1-yr linear vesting.
Advisor	1%	linear 6 months from the time of grant
Assignment for business partners	10%	1-yr full locked, linear 24 months

7. Tokens specifications

Name	Symbol	Denom in blockchain
GUU	GUU	uguu

8. GUU specifications

Initial supply	=1,000,000,000GUU
Inflation rate range	7%~20%

9. Governance specifications

Minimum deposit for voting	1,000,000uguu

	=1GUU

10. Staking specifications

Max validators	100
Bonding denom	uguu

11. About Us
The UnUniFi Protocol is owned by the team which is a leading technologist company of Cosmos blockchain technologies.

12. Legal Disclaimer
Please be aware of and accept the following risks before using GUU. Botany LLP. and CauchyE, Inc. shall not be liable for any loss or damage arising out of or in connection with any of the following risks.

12.1 Risk of Losing GUU due to Loss of Private Key
The private key itself or a combination of private key shall be necessary for the disposal of the User's GUU, and the management of the private key shall be managed under the User's own authority and responsibility. The loss of the private keys associated with the wallet in which the user's GUU is stored is the same as the loss of the GUU itself. Phishing attacks against you or the GUU on your device may result in loss of GUU due to malware attacks, DoS attacks, consensus-based attacks, or any other form of attack.

12.2 Risks Related to the UnUniFi Protocol
Since GUU is based on the UnUniFi Protocol any malfunction, failure or failure of the UnUniFi Protocol may have a material adverse effect on GUU and may render GUU temporarily unusable.

12.3 Risk of mining attacks
GUU, like other distributed cryptographic tokens based on public chain protocols, may be subject to mining attacks during the verification of token transactions on the blockchain. These attacks may pose a risk to the recording of transactions related to GUU.

12.4 Changes in Laws and Regulations and Taxation Risk
There may be future changes in laws, government ordinances, statutes, regulations, orders, notices, guidelines, or other regulations or taxation systems related to GUU. You are responsible for making your own decisions regarding the taxation of the GUU.

12.5 Risks Due to Input Errors and Other Factors by User
There is a risk of unintended transaction results due to input errors or any other actions by the User, failure, malfunction or operational status of the User's or a third party's communication or system equipment, natural disasters, cyber attacks or any other causes.

12.6 Relationship between Users

Any transactions, communications, disputes, etc., arising between users and other users or third parties in relation to the Company's website shall be the responsibility of the users.

13. Contributions
We have already made some little contributions to the Cosmos ecosystems.
https://github.com/cosmos-client/cosmos-client-ts

14. Contact
To contact us on the UnUniFi topic, please create an issue ticket in GitHub.
https://github.com/UnUniFi