UnUniFi

~Layer1 blockchain protocol for providing efficient NFT lending services through an internal NFT marketplace on the Cosmos ecosystem ~

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Abstract

UnUniFi Protocol is a Layer1 blockchain protocol for providing efficient NFT lending services through an internal NFT marketplace on the Cosmos ecosystem.
There are two main pain points which UnUniFi solves. Firstly, a general lack of liquidity for NFTs forces the NFT holders to wait for capital gains. Secondly, other NFTFi services only allow small amounts to be borrowed against NFTs for short loan periods.
The value proposition of UnUniFi is to provide efficient NFT lending services by offering NFT valuations based on solid demand using an internal NFT marketplace to achieve the following benefits:
- the largest amount of money users can borrow
- the lowest interest rates
- the longest duration of the loan
for NFT Holders.
UnUniFi's mission statement is to "Give all NFTs the opportunity to DeFi".

1. Introduction
1.1 Problems Faced by NFT Illiquidity
While many people may dismiss the inherent value in NFTs, digital assets which depict real-world objects, NFTs continue to gain widespread adoption and popularity from both within and outside the crypto world.
However, with large amounts of capital locked into illiquid NFTs, many people are looking for ways to unlock and utilize this liquidity without selling their NFTs.

1.2 Problems Faced by Current Stablecoin Designs and Their Pegged Values
A stablecoin is a cryptocurrency token which maintains its value at a 1:1 ratio; pegged to a stable asset. Usually, they are pegged to an asset such as gold or a fiat currency like the US dollar. The fundamental concept of a stablecoin is to hold the stability of its pegged value while maintaining its reputation as a cryptocurrency. It combines the best aspects of the cryptocurrency market while leaving the volatility behind.
There are three main types of stablecoins designed to achieve stable prices on the blockchain: (i) fiat-backed stablecoins, (ii) crypto-backed stablecoins which are backed by cryptocurrencies such as ETH, and (iii) non-collateralized stablecoins. While many legal fiat-backed stablecoins are coming to market, they still have some risks in their execution. USDT, issued by the U.S. company Tether, is a typical example of a legal tender-backed stablecoin, but there is a risk that the issuing company may misuse the financial assets (such as dollars) that serve as collateral. Additionally, fiat-backed

stablecoins are susceptible to regulation by various countries. Separately, non-collateralized stablecoins will only work if the demand for these stablecoins increases long term. Therefore, the most reasonably likely to scale at this point are crypto-backed stablecoins.

1.3 The Rise of NFT + 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. Regarding DeFi, there is a growing movement to make financial transactions smoother, with ideas that extend beyond simply exchanging tokens, and gravitate towards realizing existing financial products (such as corporate stocks) onto 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.

JPU, EUU, or USU is a digital asset drawn from the UnUniFi Protocol on Cosmos Network. The price of JPU, EUU, or USU are nearly equal to that of JPY, EUR, or USD. A user can supply NFTs and cryptocurrencies to UnUniFi Protocol, borrow JPU, EUU, or USU, and then by leveraging those stablecoins, UnUniFi can automatically provide DeFi benefits to the protocol users.

3. NFT Lending Services on UnUniFi Protocol
(Diagram)

Detail of User Flow
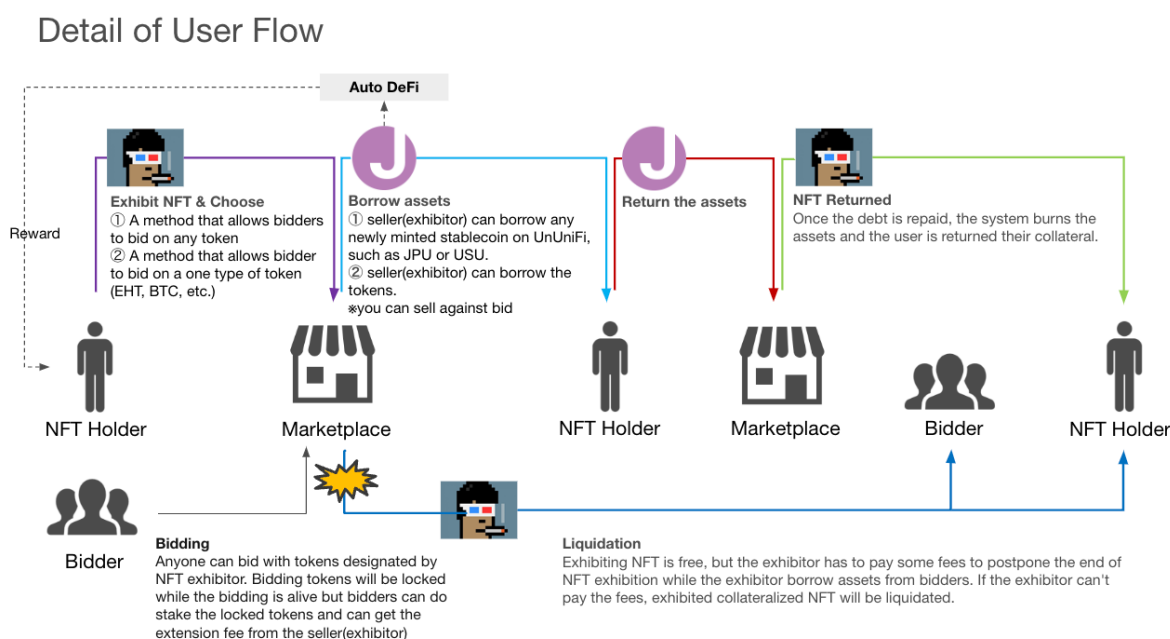
3.1. Borrowing Crypto Assets with NFTs as Collateral

When NFT Holders decide to create a CDP (Collateralized Deposit Position) with their NFTs as collateral, the NFTs will be exhibited on the marketplace of UnUniFi.

The seller (exhibitor) can then choose one of the following two methods:
- A method that allows the buyers to make a bid with any token
- A method in which the buyers need to make a bid with a particular token (ETH, BTC, etc.)

If the seller (exhibitor) chooses the former, the seller (exhibitor) can then borrow any newly minted stablecoin on UnUniFi, such as JPU or USU. As the average bid price q up to nth place, $q \times r\%$ of the synthetic asset can be borrowed. If you choose to borrow a stablecoin such as a JPU or USU, you can let UnUniFi operate it and earn rewards automatically. r is the collateral ratio. Assumed to be 50% at first.

If seller (exhibitor) chooses the latter, then the seller (exhibitor) can borrow the tokens. The seller (exhibitor) can borrow 100% of q as the average bid price up to nth place.

Why is "q" the collateral & settlement price:

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 collateral will be denoted as q. In this system, we define that

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

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

Exhibiting a NFT is free, but the exhibitor must pay some fees to continue exhibiting NFT, even while the exhibitor is already borrowing assets from bidders. If the exhibitor can't pay the fees, exhibited collateralized NFT will be liquidated.

The extension fees are not paid with GUUs, but with the tokens used for bidding/borrowing, respectively. So, various tokens other than GUUs will be saved in the on-chain treasury, which will then be distributed to the GUU token holders. This is not a deceptive compensation by dilution of GUUs, but an honest distribution of compensation. As a result, the value of the portion of the governance tokens as compensation entitlement is guaranteed by a calculation similar to the DCF of the dividend. This is due to the utility of the borrowing market.

EXAMPLE for JPU minting:
- NFT exhibitor: puts NFT into collateral vault.
- Bidder: puts any token into bidding vault.
- NFT exhibitor: mints JPU by using the bid funds as collateral. If he wants to extend the end of

exhibition, he must pay the fee in JPU.
- NFT exhibitor: mints JPU by using bid funds as collateral and earns income gains.

EXAMPLE for ETH borrowing:
- NFT exhibitor: puts NFT into collateral vault.
- Bidder: puts ETH into bidding vault.
- NFT exhibitor: borrows ETH. If he wants to extend the end of exhibition, he must pay the fee in ETH.
- NFT exhibitor: earns income gains directly.

3.2. Bidding
Anyone can bid with tokens designated by the NFT exhibitors. Buyers can make a bid for the NFT if you wish to buy, and you can also cancel your bid if desired. Buyers can make a bid any time, but they must have the purchasing assets for bidding in advance. Bidding tokens will be locked while the bid is alive.
Instead of getting prices in a price feed, auction pre-bid prices, bid prices, and cancellations of those bids becomes price change information.

Bidding tokens will be locked while the bidding is alive, but bidders can stake the locked tokens and receive extension fees from the seller (exhibitor). This means that crypto assets will be locked for bidding, but the result is that there is no reduction in capital efficiency.

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 ith highest bid price is

$$\begin{cases} \max\{d_i - (q - b), 0\} & if\ i \leq n \\ 0 & if\ i > n \end{cases}$$

Therefore, if the bidder is in bidders of top n highest bid price, their deposit may be forfeited.

3.3. Settlement with Exhibitor's Decision.
The highest bidder can buy the NFT if the seller want to sell. The 1st highest bidder must 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
When the exhibitor can't pay the fees to postpone the end of NFT exhibition, the exhibited collateralized NFT will be liquidated.
※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 price.
If $d_1 \geq q$, then the deposit amount of the bidder of the 1st highest bid price is greater than or equal to q, therefore the 1st highest bidder will receive the NFT and the charge $d_1 - q$.
In other cases, the procedure below will be iterated for n times. In the ith iteration, the ith 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. If he doesn't do so, his deposit d_i will be forfeited and the iteration continues to the next i.

4. Use Case

NFT owners who do not want to sell their NFTs but are looking to unlock liquidity in their asset can borrow these crypto assets. If you choose to borrow a stablecoin such as a JPU or USU, you can let UnUniFi operate it and earn rewards automatically.

5. How to Stabilize JPU, EUU, USU

※The following is an only description of JPU, but EUU and USU are also issued on the same protocol, so their mechanism is same.

There is nothing in the JPU digital asset design that in and of itself guarantees trading in a market around 1 JPY, or in a stable range. The price and volatility of a market is a function of the ratio of supply and demand for an asset in that market; the JPU asset design can influence the price in the market by adjusting the ratio of supply and demand for that asset, but only indirectly.

JPU stability in markets is not a strictly necessary condition for a moderate level of success in terms of market engagement. Indeed, there are assets on the market today with supposed stability mechanisms whose price action is anything but stable, yet still drive high levels of engagement. Endeavoring for a specific JPU price and volatility level is not a goal, it is a means. Using the OKR framework for project goal setting, an objective of the JPU asset may come to be the most used "stable asset" in the crypto industry. To achieve that level of usage and growth, minimizing JPU price volatility and deviation from ¥1 are arguably the most important key results to measure. It's a subtle but useful point, that while JPU stability around ¥1 is likely an important part of its success, it is not strictly necessary. The price and stability of JPU or EUU does not affect your ability to repay the principal borrowed on the UnUniFi Protocol. This is due to the fact that your principal is denominated solely in JPU and not in any other asset. For example, if you borrow ¥100 from the supplied BTC and no borrowing APY is set, you will be able to repay ¥100 and have full access to the supplied BTC, even if JPU is trading at ¥0.50 or ¥1.50. The price of JPU will be affected if there is a surplus of JPU to be raised from the valued borrowed APY, if you sell the borrowed JPU (effectively shorting it), or if you buy JPU with other assets (and are now effectively long the asset). Usage makes JPU price stability an important key result for JPU growth. Users who borrowed JPU will be more likely to sell it for what they need, with less risk, for a longer period of time if they are confident that when they buy it back to repay it, the unit price will be about the same as when they sold it. Additionally, they will be more likely to sell JPU for a longer period of time. Similarly, sourcing JPU as inventory for various profit-generating strategies (purchasing liquidate assets at auction, DeFi yield staking, etc.) becomes more appealing as the user's belief in the long-term stability of JPU price increases.

JPU Lending Auction Arbitrage:

The JPU lending system assumes JPU is worth ¥1.00 insofar as its ability to purchase liquidated assets at auction at a rate where 1 JPU equals ¥1.00 of liquidated assets. For example, if ¥100.00 of BTC is up for auction, then you can purchase the entire ¥100.00 BTC lot for 100 JPU, whether you purchased that JPU at market for ¥0.50 or ¥1.50.

This feature presents a price arbitrage opportunity for any JPU valued at less than ¥1.00.

There are a number of factors which contribute to asset flows in a market. For the JPU digital asset here are a few categories:

Endogenous Variables:

Borrow APY: Borrow APY is the annualized rate at which a user must pay on their borrowed JPU and can be adjusted per asset. We might expect that as Borrow APY for a given asset increases, all else being equal, marginal propensity to borrow JPU from that asset will decrease, thereby increasing demand to source JPU.

JPU Savings Rate: JPU savings rate is the annualized rate at which JPU holders are compensated for sourcing and holding JPU. We might expect that as JPU Savings Rate increases, all else being equal, marginal propensity to source JPU should increase.

Exogenous Variables:

JPU Downstream Demand: JPU downstream demand is any demand source which compensates JPU holders for taking a specific action. We might expect that as JPU downstream demand increases, all else being equal, the marginal propensity to source JPU should increase.

JPU Speculative Demand: JPU speculative demand is the set of decisions made by JPU market participants to potentially place bets on specific JPU prices, at specific times. For a given JPU price and time, we might expect that as JPU speculative demand increases, all else being equal, the volatility for that price decreases.

6. What is Cosmos Network?
Cosmos is a network of independent parallel blockchains that are each powered by classical BFT consensus algorithms like Tendermint 1.
The first blockchain in this network will be the Cosmos Hub. The Cosmos Hub connects to many other blockchains (or zones) via a novel inter-blockchain communication protocol. The Cosmos Hub tracks numerous token types and keeps record of the total number of tokens in each connected zone. Tokens can be transferred from one zone to another securely and quickly without the need for a liquid exchange between zones, because all inter-zone coin transfers go through the Cosmos Hub. This architecture solves many problems that the blockchain space faces today, such as application interoperability, scalability, and seamless upgradability. For example, zones derived from Bitcoind, Go-Ethereum, CryptoNote, ZCash, or any blockchain system can be plugged into the Cosmos Hub. These zones allow Cosmos to scale infinitely to meet global transaction demand. Zones are also a great fit for a distributed exchange, which will be supported as well.
Cosmos is not just a single distributed ledger, and the Cosmos Hub isn't a walled garden nor the center of its universe. Cosmos Communities are designing a protocol for an open network of distributed ledgers that can serve as a new foundation for future financial systems, based on principles of cryptography, sound economics, consensus theory, transparency, and accountability.

7. GUU Token Distribution

We absolutely do not do initial coin offerings or token sales. Every token will be distributed in return for your actions, like 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%	VCs for 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

8. Tokens Specifications

Name	Symbol	Denom in blockchain
GUU	GUU	uguu
JPU	JPU	ujpu
EUU	EUU	ueuu
USU	USU	uusu

9. GUU Specifications

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

10. Governance Specifications

Minimum deposit for voting	1,000,000uguu =1GUU

11. Staking Specifications

Max validators	100
Bonding denom	uguu

12. About Us

The UnUniFi Protocol is owned by Botany LLP (Yu Kimura, Takeru Shimojima, Kenji Yanagisawa). The developer team of the UnUniFi Protocol is CauchyE, Inc. which is a leading technologist company of Cosmos blockchain technologies in Japan.

13. Legal Disclaimer

Please be aware of and accept the following risks before using JPU, EUU, or USU. 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.

13.1 Risk of Losing JPU or EUU 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 JPU, EUU, or USU, 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 JPU is stored is the same as the loss of the JPU, EUU, or USU itself. Phishing attacks against you or the JPU, EUU, or USU on your device may result in loss of JPU, EUU, or USU. This includes loss due to malware attacks, DoS attacks, consensus-based attacks, or any other form of attack.

13.2 Risks Related to the UnUniFi Protocol

Since JPU, EUU, or USU are based on the UnUniFi Protocol any malfunction, failure, or failure of the UnUniFi Protocol, may have a material adverse effect on JPU, EUU, or USU and may render JPU, EUU, or USU temporarily unusable.

13.3 Risk of mining attacks

JPU, EUU, or USU, 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 JPU, EUU, or USU.

13.4 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 JPU, EUU, or USU. You are responsible for making your own decisions regarding the taxation of the JPU, EUU, or USU.

13.5 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, including failure, malfunction, or operational status of the User's or a third party's communication or system equipment, and failure due to natural disasters, cyber-attacks, or any other causes.

13.6 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.

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

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