Terra Protocol: Building the Future of DeFi with Algorithmic Stablecoins

Terra

Exnetwork Capital

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Decentralized Finance (DeFi) is one of the largest and popular applications of blockchain technology. The rapid growth of the DeFi industry is fueled by numerous projects building a variety of financial solutions on different blockchain protocols. These solutions are either aimed at offering an alternative to traditional financial solutions or designed to augment the existing financial infrastructure to increase efficiency, reduce costs and bring more transparency to the system.

By design, the use of blockchain technology implies that value exchange on these networks happens through cryptocurrency transactions. However, conventional 14 cryptocurrencies like Bitcoin, Ethereum, etc., aren't ideal for such transactions due to their highly volatile nature, which has led to the use of stablecoins. Unlike other cryptocurrencies, these stablecoins have their value pegged to relatively stable assets like fiat currencies. Ideally, each stablecoin will be backed by an equivalent value of assets in reserve.

In recent times, the crypto industry has witnessed an influx of stablecoins as demand for low-volatility assets is on the rise. This is due to increasing usage of DeFi applications and cryptocurrencies as mode of value exchange. Some of the popular stablecoins include USDT, USDC, DAI, BUSD and more. However, there exists an imbalance as a majority of these stablecoins are pegged against the US dollar. In several cases and depending on their underlying protocol, the transaction fees remain high. Furthermore, most of the stablecoins currently available in the market are backed by heavily centralized custody services. This is quite the opposite of the philosophy of decentralized economy on which the entire crypto industry is based.

Introducing Terra Protocol

Terra Protocol is the largest open-source, decentralized public blockchain protocol that is working on solutions to help DeFi projects overcome these existing deficiencies. Developed by Do Kwon and Daniel Shin from Terraform Labs, the Terra Protocol enables the creation of algorithmic stablecoins. Built using Tendermint-Cosmos SDK, known as the “internet of blockchains,” Terra Protocol is an independent Proof-of-Stake (PoS) blockchain whose functions are governed by its native LUNA staking token which is also responsible for ensuring the price stability of all stablecoins generated as part of the Terra ecosystem.

The stablecoins on Terra Protocol, some of which includes the popular UST , KRT, MNT, CNT, SDT, pegged against US dollar, Korean won, Mongolian tugrik, Chinese yuan, IMF’s Special Drawing Rights and more, track the price of their underlying asset with the help of algorithmic monetary policies. These policies, combined with LUNA’s role in ensuring price stability, governance and stakeholder engagement make Terra Protocol an ideal option for creating highly efficient, decentralized global payment systems for fast and inexpensive transactions.

UST: The US-Dollar Pegged Stablecoin

TerraUSD, popularly known as UST is one of the many stablecoins in the Terra Ecosystem whose value is pegged against that of the US dollar. While UST is a relatively new stablecoin, it has already emerged as the fifth largest stablecoin in the crypto market. Unlike other stablecoins, UST doesn’t fall under the class of custodial and non-custodial stablecoins like USDC and DAI respectively. In fact, it belongs to a whole new class of stablecoins, dubbed algorithmic stablecoins whose value is governed by the market dynamics of demand and supply.

True Decentralization

Algorithmic stablecoins are truly decentralized and more streamlined compared to the other types. In the case of custodial stablecoins, the value of each token is backed by an equivalent in traditional assets which is managed by the issuer, this in turn leads to increased centralization and risk of regulatory overreach. Meanwhile, most of the non-custodial stablecoins use other volatile decentralized assets as collateral, forcing them to over-collateralize so that they can overcome any drastic change in the collateral's value.

As an algorithmic stablecoin, the value of UST is governed by a combination of corruption-resistant, decentralized oracle systems and open market arbitrage incentives. This mechanism brings in on-chain seigniorage and contraction features which are responsible for maintaining adequate supply of UST in a way that the digital asset's value remains at par with the US dollar value.

Whenever the demand for UST increases, the protocol allows the community to generate UST by burning its equivalent value in LUNA. The UST generated can be traded in the open market at a premium as the pent-up demand would have driven the token's price up by a considerable percentage to generate profits. This, in turn, will restore the supply and help UST reclaim parity with the USD value. Similarly, in the event of excess supply, the UST value will start exhibiting a decline which will enable the community members to buy it from the market at a slightly lower price and convert it to LUNA. During these conversions, known as seigniorage, the contraction of the value of each UST is always considered to be $1. It means that when a person burns $1 worth of LUNA, they will receive 1 UST even if the asset is trading at $1.05 in the off-chain market. Similarly, those converting 1 UST to LUNA at the time UST is valued under a dollar on the off-chain market will still receive $1 worth of LUNA.

The fixed conversion/swap rules governed by smart contracts greatly encourage community participation by extending a profit-making opportunity. This system eliminates third-party intervention in price stability to maintain complete decentralization.

The UST Advantage

The design of token emission and price stability mechanism makes UST a highly scalable stablecoin. In addition, Terra Protocol's use of Tendermint-Cosmos blockchain technology imparts UST with interchain compatibility (Cosmos' Inter-Blockchain-Communication or IBC), which makes it easier for the crypto industry to adopt on any blockchain. At present, UST is technically compatible with Ethereum and Solana blockchains apart from its native Terra Protocol. The interconnectivity is supported by a bridge protocol called “Wormhole”, and soon UST could become potentially available on many other blockchains too.

The real-world use cases for UST extends beyond that of its counterparts as Terra Protocol’s support for smart contracts that can run on multiple chains enables the creation of a vibrant ecosystem. Meanwhile, the support from Terra Alliance – a global ecommerce consortium backing the adoption of stablecoin payments as an alternative to traditional online payment methods to avoid exorbitant transaction costs - definitely works in UST’s favor.

The Terra stablecoins are also yield-bearing tokens. Users can manage their holdings using Anchor Protocol – a savings protocol on Terra blockchain to earn interest. Meanwhile, the Mirror Protocol on Terra Ecosystem for creating synthetic assets, opens up a whole new avenue for the utilization of UST. These synthetic assets will drive a whole new decentralized trading revolution where UST will play the role of a perfect hedging tool.

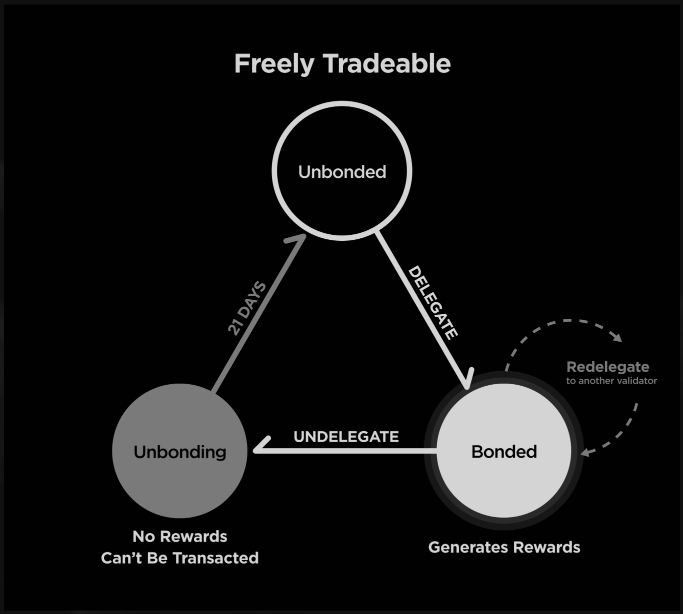
The Role of LUNA

An important part of the Terra Ecosystem, LUNA is the native staking token that incentivizes network participants like validators, delegators and stakers while collateralizing the price-stability mechanisms that govern the value of Terra stablecoins. LUNA also plays a role in the governance process as only those in possession of LUNA can submit proposals, vote on them and work in consensus to shape the path of future development of the Terra Ecosystem.

Watch this video to know how LUNA affects UST price on Terra Blockchain

https://www.youtube.com/watch?v=KqpGMoYZMhY

By staking LUNA, token holders will become eligible to receive staking rewards, which are generated from transaction fees on the network and the stability fees collected as taxes. The staked LUNA is considered as bonded and can’t be exchanged or traded until it is unbonded. During the entire staking period, the locked LUNA will generate rewards for delegators and validators on the network. While staking LUNA may be a quick and easy process, the unbounding process takes 21 days to complete. During this period users can neither trade these tokens nor earn rewards from those tokens *[liquid staking will soon be available via Stader Labs]*.



Meanwhile, those possessing unbounded LUNA can convert it to UST at any time or trade it against other cryptocurrencies in the open market to leverage on profit making opportunities. The maximum supply of LUNA is capped at 1 billion and the ecosystem continues to burn LUNA as and when new stablecoins are created, resulting in gradual increase in the value of LUNA which will benefit the token holders and ensures sustained release of UST and other stablecoins.

The Drivers of Terra Ecosystem

The Terra Ecosystem, particularly its stablecoins have already gained a lot of adoption, thanks to the dApps responsible for incentivizing the stakeholders.

Anchor Protocol ('Stripe' for Savings)

Anchor, the savings protocol on the Terra ecosystem enables users to store their TerraUSD (UST) to earn interest on it. The protocol serves as a decentralized bank account for those who would prefer stablecoins instead of fiat as the currency of choice.

Furthermore, Anchor can be considered a decentralized money market that provides a stable 19-20% APY to depositors on the demand side and a supply-side (e.g., borrowers) that only accepts liquid staking derivatives from major proof-of-stake (PoS) chains (bLuna, bEth, others in the future). The option to pick stablecoins over fiat is made easier by the presence of payment applications like CHAI and MemePay, which are supported by many ecommerce players in South Korea and Mongolia respectively. Furthermore, Terra's infrastructure includes crypto payment gateway solutions that developers and merchants can readily integrate for easy acceptance of any Terra-based stablecoin as payment.

Mirror Protocol

Mirror Protocol is another decentralized application that has piqued the interest of the community. The ability to create synthetic digital assets, known as mAssets that track the value of any real-world asset offered by Mirror Protocol, has attracted developers as well as the global trading community. As people rush to trade synthetic stocks, the demand for UST has increased ten-fold. Traders see it as the best collateral to create mAssets and act as a hedging tool. This demand has reflected in the rising market capitalization of UST and driving the value of LUNA upwards.

A Bright Future Ahead

Terra Protocol is on the verge of bridging the gap between traditional and decentralized finance spaces. While the blockchain agnostic nature imparted by IBC makes Terra assets universal across the crypto ecosystem, it also enables the replication of various features that were once the exclusive domain of the traditional financial ecosystem. The scalability, flexibility and true decentralization Terra brings to the world through its algorithmic stablecoins and the native LUNA staking token are expected to fuel widespread adoption of digital assets.

The Stars of Terra Ecosystem

The Terra Ecosystem is ready to take on other well-established protocols as more projects choose to use it over other available alternatives. By the end of this year, the community can look forward to the addition of multiple popular projects to the ecosystem, potentially driving the value of LUNA and the standing of Terra Protocol as the future of DeFi. Some of the upcoming projects as well as those that have already made Terra their home include:

- ### Loop Finance

Loop Finance is one of the first movers on Terra Protocol, offering a range of DeFi products and services including the ecosystem's first AMM Community DEX platform. In addition to the exchange services, Loop Finance will also offer a NFT Minting and a Marketplace solution, Mobile wallet and Chrome wallet extensions to meet the diverse needs of the community.

The Loop Community DEX offers attractive passive income opportunities to the participants in its staking and liquidity pools by offering 75% of the collected transaction fees to liquidity providers and the remaining 25% to staking participants.

Loop Finance is also committed to giving back to the Terra Ecosystem through the specially set-up Loop Positive Feedback Fund. The fund, managed by Angel Protocol receives 10% of the $LOOP tokens and is used to support promising projects voted on by the community.

- ### Nexus Protocol

Another first of its kind offering in the Terra ecosystem, Nexus Protocol is a yield optimization project that eliminates the complexities involved in yield farming by implementing one-click risk minimized vaults for Anchor Borrow – a lending protocol on Terra Ecosystem.

The vaults offered by Nexus Protocol includes the bLuna/bETH vault where users can deposit the two crypto tokens to create a sustainable high LTV ratio on Anchor borrow and earn optimized rewards in return. The smart contracts and the oracle network ensure efficient LTV management while borrowing.

The UST Mirror Vault is a delta neutral strategy vault designed to optimize yields for users by hedging mAsset-UST LP staking with aUST-minted mAssets from Anchor Protocol. The vault constantly monitors the Mirror Borrow LTV ratios and repositions the funds as required to generate yields higher than what's offered by Anchor Protocol.

- ### Star Terra

A place where Fantasy meets DeFi, StarTerra is the first of its kind, unique gamified IDO platform on the Terra Protocol. The launchpad platform implements a play2earn model along with NFT integration. While projects launching on the StarTerra universe enjoy professional services offered by the platform's in-house experts to help them with tokenomics, marketing, audits etc., the community of engaged gamers cum crypto enthusiasts support these projects by participating in the IDOs while having fun in the process.

The StarTerra ecosystem comes complete with investor pools, staking and farming features, along with rewards in the form of NFTs and UST for participation. With the gamified approach, the StarTerra IDO launchpad introduces competition among investors in the guise of players to enable successful fundraising while ensuring a rewarding experience to the community.

- ### Orion Money

Orion Money is a cross chain stablecoin bank that bridges different blockchains to offer reliable cross chain savings, payment and yield generation opportunities to the crypto community. The Orion Money ecosystem is comprised of three distinct products: Orion Saver – the cross chain savings dApp; Orion Yield and Insurance – insured high yield staking product for Orion stakers; and Orion Pay – a cross chain payment solution complete with fiat on-off ramp solutions for users to spend their stablecoins.

Orion Money provides the broader crypto community access to attractive and stable deposit yields offered by Anchor Protocol across multiple blockchains. Users can deposit any leading stablecoin on Orion Money and earn interest.

According to the platform, users can enjoy APRs of up to 20 percent on Orion Money. Orion Money deposits the users' holdings on Anchor by facilitating their conversion into UST through EthAnchor. The returns generated by Orion Money on deposits depends on the asset type. The platform also plans to issue loans in the near future.

- ### Astroport

Astroport is the next generation AMM on Terra protocol that brings various assets from within and beyond the Terra ecosystem together to create one universal liquidity hub. Capable of supporting assets from the Terra, Solana, Cosmos, Ethereum and other ecosystems, Astroport has developed multiple pool types using different algorithms within a single AMM system.

The Astroport decentralized exchange on Terra blockchain offers three different pool types viz., Constant Product Pools, Stableswap Invariant Pools and Liquidity Bootstrapping pools to support a variety of token markets. Among these three, the Liquidity Bootstrapping Pools takes a special place in Terra and other upcoming blockchain ecosystems as they witness adoption by a lot of new projects. The Liquidity Bootstrapping Pools enable new tokens to create a market by algorithmically adjusting the price based on the weight of the token pairs. It helps in extending the price discovery process while lowering the initial liquidity requirements, thus keeping price volatility or sudden price movements in check. Astroport also offers a flexible architecture where users can create new pool types to meet their needs.

- ### Mars Protocol

Mars Protocol is another pioneer in the Terra Ecosystem. It is a package of various financial products that will be backed by the platform's flagship money maker protocol. On Mars, users will be able to deposit, lend and borrow any digital or synthetic asset. Calling itself the bank of the future, it is a fully automated, noncustodial, open source onchain credit facility with a dynamic interest rate model which finds its roots in control theory.

Mars will be offering both collateralized and uncollateralized borrowing facilities on the Terra Network. Initially supporting assets like UST, ANC, MIR and LUNA, the platform intends to extend its offering in the near future by utilizing IBC, Wormhole and other cross chain communication protocols. By catering to a much larger borrower pool through the combination of collateralized and uncollateralized lending, the platform generates high borrower demand for increased utilization and higher yields.

Mars Protocol addresses the interest rate problem plaguing the DeFi industry by implementing dynamic real time interest correction algorithms that are reactive to market conditions. It enables efficient utilization of the money market pools throughout, rather than using a traditional model that relies heavily on a governance model that allows modification of interest rates by going through a time-consuming voting process.

The Mars Protocol comes complete with staking and farming features, along with an insurance fund that protects participants from the protocol risk and shortfall events. It also implements sound liquidation processes to ensure that the LTV ratio on all the pools remains healthy at all times.

- **Prism Finance**

Prism Finance expands the DeFi applications of Terra Ecosystem by introducing a derivatives protocol. The protocol enables users to extract the maximum value out of their digital assets by refracting them into two components – the yield component and principal component. Users can deposit the supported assets on Prism Protocol to receive perpetual yield and principal tokens which can be put to use as one desires.

On Prism, users can raise liquidity by pledging the future yields of their assets instead of the assets themselves as collateral. By doing so, Prism reduces the prevalence of mass liquidation events that are common today, owing to the volatile nature of digital assets. Here, users will continue to be in control of their principal assets and yet access liquidity without the risk of losing the entire collateral due to an unforeseen liquidation event. Over the entire duration, the yield tokens will continue to generate returns while principal tokens can be traded or exchanged, just like one would do with any digital asset.

Further, it also enables participants in yield farming and liquidity pools to generate guaranteed yields over a predetermined period irrespective of the price movement in the open market. The Prism ecosystem also offers attractive incentives to liquidity providers, enabling them to earn returns in the form of a share in AMM transaction fees, $PRISM liquidity incentives, staking rewards and airdrops.

With Prism, users can not only leverage the yield and principal tokens for loans, but they can also indulge in market neutral relative value trading between assets and yields. The project imparts few prominent features like invoice factoring and currency forwards found in traditional finance to the DeFi space. In the near future, it is quite possible that Prism's refracting mechanism will find use in traditional financial assets like real estate, commodities, precious metals and other instruments as and when they move on chain.

- **Levana Protocol**

Levana, short for Leverage Any Asset, is a hub that enables anyone to create leveraged products on the Terra Ecosystem. Working in conjunction with the Mars Protocol and Astroport, the project offers a wide variety of leveraged assets to the market. The first of many products is the Levana Leverage Index Token which enables users to secure a leverage position on any of the assets supported by the protocol.

In the Levana ecosystem, users can create asset pools with intended leverage and generate LLI tokens representing the ownership of assets in that pool. These assets can then be traded by implementing desired leveraged trading strategies to capitalize on market movements and potentially amplifying the returns.

Starting with leveraged LUNA, Levana is in the process of expanding its offerings of leveraged tokens. In the near future, the project is looking to introduce leveraged index tokens, perpetual swaps , tokenized swaps, cross chain perpetuals, options and more to the Terra ecosystem.

Levana also provides yield farming opportunities to the Terra community where users can deposit LUNA and other tokens to earn Levana's native LVN token rewards and mint desired leveraged tokens.

Levana takes the Terra ecosystem one step closer to creating completely decentralized new age trading products that were once considered to be the exclusive domain of traditional finance.

Nebula Protocol

Nebula Protocol is a powerful project that further expands the boundaries of DeFi by providing dynamic ETF capabilities to the Terra Ecosystem. The Nebula Protocol enables users to create their own asset indices, referred to as clusters. These clusters will be managed by specialized algorithms to ensure that the community remains the driving force.

The Nebula Protocol redefines passive investment exposure through community governed protocols where users can define triggers for the automated algorithms to enable dynamic rebalancing for everybody's benefit. The supported asset classes on Nebula includes leading cryptocurrencies, mAssets, derivatives, bridged cryptocurrencies, Mirror protocol-based stocks and commodities, Anchor yield products, forex and derivatives.

Still in its initial stage, Nebula Protocol is expected to offer a community-driven passive investment opportunity for the crypto community with centralized controls.

White Whale

White Whale is an arbitrage platform on the Terra Ecosystem that allows the community to leverage arbitrage opportunities in the crypto markets to maintain the peg of the ecosystem's stablecoins. The decentralized product ranks high on simplicity, while distributing the privilege of arbitrage that only crypto whales and institutions possessed until now.

On White Whale, anyone can deposit their crypto into the UST arbitrage Vaults and leave the rest to automated bots. These bots detect arbitrage opportunities and deploy the funds resting in the value to leverage them. The arbitrage parameters are defined and adjusted through community governance.

During the remaining time, in the absence of significant arbitrage opportunities, the funds in the vault remain parked on Anchor to continue earning yields for the participants. In addition to the current UST arbitrage feature, White Whale also extends the capabilities to the entire Terra ecosystem with multi-arbitrage functionality. In addition to profits from arbitrage, users on White Whale can also earn rewards by staking the project's native WHALE tokens in the WarChest.

The arbitrage functionalities extend beyond UST, LUNA/bLUNA and soon it will support other stablecoins, mAssets and derivatives.

- **Kujira Protocol**

Kujira Protocol, previously known as Harpoon Protocol, has not only had a name change but also a better platform experience update to make it easier to use. Kujira is committed to levelling the playing field in decentralized finance by building dApps for regular crypto users. Kujira has launched its first dApp, ORCA. ORCA is an economical, easy to use platform to bid on discounted, at-risk collateral on Terra with the click of a button. No bots, no code, no complications. These liquidation contracts were previously reserved only for the tech savvy whale, but with Kujira, anyone can bid on, and benefit from, liquidating collateral assets.

Users no longer need large amounts of liquidity or smart contract coding knowledge to participate in liquidations. And most importantly, no longer need to fight a losing battle against bots.

- **Lunaverse**

Lunaverse is a virtual world built on the Terra blockchain, it is a combination of realistic 3D real city models and NFT properties linked to yield bearing deposits on DeFi protocols. Lunaverse is an exact replica of the existing world, with 3D city models integrated in Lunaverse 2.1 spatially accurate to within 5cm.