easyfi



Universal layer-2 lending Protocol for DeFi

CRYP2NOVA

Version 1.0

July 2020

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Abstract

The current state of the cryptocurrency market comprises numerous participants viz. Investors, traders, lenders, borrowers, and arbitrageurs among others. They exchange hands to the tune of billion dollars worth of digital assets in custodial & non-custodial markets.

Niche markets like decentralized finance, popularly known as DeFi, have presented users with limitless opportunities and a plethora of choices. The advent of open finance enabled by millions of lines of code has the potential to self regulate, design new regulation, build community governed regulatory approaches across the otherwise most centrally regulated industry in the modern world. It has the potential to empower a billion lives with better access to financial products of choice.

DeFi protocols & products have evolved over the incumbent ethereum blockchain and are ready for expansion. While the inherent problems of the ethereum network are a great barrier to adoption & scalability, there's a dire need to instill sophistication in the existing digital assets markets to elevate it to a level at par with traditional markets. Market participants lack imagination when it comes to trading the time value of assets. Incentives in the form of interest rates derive motivation for the deployment of unutilized assets. The efficient utilization of time value of assets leads to wealth creation in markets whilst value transfer between participants who seek (borrower) and who gives (lender).

Presently, most digital assets are mispriced and carry high volatility over a longer time frame. Hence, holding digital assets with depleting principal value is demotivating. Therefore, users seek new incentives & frameworks to offset the losses and cope up with higher transaction costs and complexity.

In this paper, we introduce a decentralized system for the frictionless borrowing of digital assets on layer 2 networks to tackle the shortcomings of existing systems, making money markets efficient, and creating higher-yield bearing opportunities.

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Introduction

EasyFi is a universal layer 2 lending protocol built for DeFi focused on scalability, composability, and adoption. It has been designed as an open network infrastructure to run on public networks to facilitate an end to end lending & borrowing of digital assets and related financial products.

Freedom to create new financial products and customize existing ones paves the way for permissionless innovation. 'Proof of Reputation' contracts establish creditworthiness and promote greater efficiency and transparency for better lending & borrowing opportunities. Non-custodial contracts allow seamless on-chain & off-chain transactions of digital assets across markets and participants while retaining custody with the original owner.

The network design is ethereum compatible and blockchain agnostic allowing instant settlement of assets over different blockchain networks while retaining custody with the asset owner's network. The cross-chain framework allows lending & borrowing across a spectrum of global markets including private platforms and permissionless public networks. The network is secured by proof of stake mechanism, governed through participating voters to achieve consensus among network participants.

We believe this technology can be transformational for the lending ecosystem while retaining higher efficiency, lower transaction costs, lower dependency & greater transparency.

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Problems & Motivation

01. High cost & slow speed of transactions

The incumbent ethereum network is a vast ecosystem that offers great resources and eases to build. But it comes at a cost which is increasing by the day. High gas fees or transaction costs are a huge barrier to mass adoption and scalability. Latency, low throughput, higher block completion time makes network accessibility difficult. Provided the magnanimous challenge ethereum faces, currently, it is therefore important to build alternatives and curtail dependency.

02. High collateralization ratio

Currently, most DeFi users need to lock 150-200% of assets to avail loans which are predominantly used for trading and accessing leverage across different protocols. While it adds to the cost of a loan, it also presents a great barrier to market expansion. Lately, new mechanisms like credit delegation, flash loans have tried to solve the problem but they are still evolving. We believed under collateralized and uncollateralized lending is critical for mass adoption.

03. Lack of Smart financial products

Traditional financial markets offer many choices and a wide range of products to choose from. Although, these are more easily accessible by institutions than retail users. So users have to subscribe and use what is being offered by institutions. Mutual funds, Fixed deposits, term deposits, insurance, bonds, securities are pushed to market while DeFi has turned the tables. DeFi has not only empowered developers to create and sell such financial products, it has given a voice to users to demand products of their own choice and suitability. But currently, we understand that there's a dearth of smart and sophisticated financial products in the decentralized finance market. Therefore, we believe, new financial products with more real-life use cases need to be created and made more accessible through decentralized finance.

Also, it is inevitable to ignore the pace at which the size of the decentralized market is expanding. The primary reason for the same is the influx of institutional and HNI's/UHNI's capital to markets. Important to ask if we have offerings and products to suit the needs of these institutions? We believe DeFi lacks the same and therefore, needs more sophisticated financial products so as to sustain such market size.

04. Absence of credibility benchmarks

Identity mapping to the borrowers and their track record is still disconnected from borrowing transactions, collateral-free or low collateralized loans are a distant dream. A higher collateralization ratio is also linked to a lack of trust in a multi-party agreement. DeFi lacks such a mechanism so as to measure and benchmark the creditworthiness of a user in a scientific way. Higher collateral is a cushion to volatility and mitigates the risk of liquidation events too. But this brings inefficiency and lack of transparency in the market. The absence of credibility benchmarks is a great hindrance to the development of newer financial products and the ability of institutions to lend in a more decentralized way. Interest efficiencies and higher costs of operations only add to the list of problems.

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Proposed solution

01. Porting necessary infrastructure to Layer 2 Blockchain networks

Layer 2 scaling techniques move transactions off-chains and bundle them into proofs that are submitted back to the main chain. Layer 2 solutions provide better speed and low cost of transactions. These optimized networks are ethereum compatible and are customizable to a great extent. Therefore, offering the necessary flexibility to operate in a niche while constantly being connected to the main ethereum network too.

There are numerous layer 2 solutions that solve the problem of scalability and high transaction cost but needs refinement and deployment. EasyFi Network protocol is designed as a layer-2 agnostic solution to provide an agile exchange of assets across numerous layer 2 networks in a plug & play mode and switching in between on-chain off-chain storage as and when necessary.

02. Existing Layer 2 solutions

L2 scaling solutions are categorized into

A. State channels
B. Sidechains

It is assumed that every network participant on a state channel acts as a validator which is a fixed set while anyone can use the network on a side chain and has a very separate validator set.

Sidechains are further classified into custodial and non-custodial sidechains. On a custodial sidechain, assets are moved to a parallel chain with their own consensus mechanism and security whereas non-custodial sidechain assets are secured on the main chain through smart contracts.

One of the frameworks to build non-custodial side chains is called Plasma. The major advantage with plasma is that it allows the derivation of security through mainchain (Ethereum) which is not the case with all non-custodial sidechains. Plasma allows enforcement of block headers onto the main chain which is basically snapshots of balances at a certain point of time, bundled as a single transaction. These transactions are bundled into a Merkle tree and root hash is generated while submission on the main chain.

On a plasma chain, validators stake for the right to validate plasma blocks. Only chosen or designated validators can validate, making it primarily a proof of stake chain. Plasma, therefore, allows off-chain transactions at a much higher and cheaper rate. The single operator model can be used in Plasma with a requisite fraud-proof mechanism which enables the optimistic execution of transactions on the sidechain.

Optimistic Rollups are also non-custodial side chains that include enough data in blocks for everyone to reconstruct and challenge their state thereby solving the data availability problem of Plasma but are prone to the scalability problem of the mainchain (ethereum) itself. ZK-Rollups have architecture very similar to ORs, but fraud proofs are replaced by validity proofs. These validity proofs are expensive to compute therefore costs higher fees.

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To understand the comparison and deep dive technically into L2 s, please refer to the following table:

	STATE CHANNELS	SIDECHAINS	PLASMA	OPTIMISTIC ROLLUP	VALIDIUM	ZKROLLUP
Security						
Liveness assumption (e.g. watch-towers)	YES	BONDED	YES	BONDED	NO	NO
The mass exit assumption	NO	NO	YES	NO	NO	NO
A quorum of validators can freeze funds	NO	YES	NO	NO	YES	NO
A quorum of validators can confiscate funds	NO	YES	NO	NO		
Vulnerability to hot-wallet key exploits	HIGH	HIGH	MODERATE	MODERATE	HIGH	IMMUNE
Vulnerability to crypto-economic attacks	MODERATE	HIGH	MODERATE	MODERATE	MODERATE	IMMUNE
Cryptographic primitives	STANDARD	STANDARD	STANDARD	STANDARD	NEW	NEW
Performance / economics						
Max throughput on ETH 1.0	1..∞ TPS[2]	10K+ TPS	1K..9K TPS[2]	2K TPS[3]	20K+ TPS	2K TPS
Max throughput on ETH 2.0	1..∞ TPS[2]	10K+ TPS	1K..9K TPS[2]	20K+ TPS	20K+ TPS	20K+ TPS
Capital-efficient	NO	YES	YES	YES	YES	YES
Separate on-chain tx to open a new account	YES	NO	NO	NO	NO	NO
Cost of tx	VERY LOW	LOW	VERY LOW	LOW	LOW	LOW
Usability						
Withdrawal time	1 CONFIRM	1 CONFIRM	1 WEEK [4] ([7])	1 WEEK [4] ([7])	1..10 MIN [7]	1..10 MIN [7]
Time to subjective finality	INSTANT	N/A TRUSTED	1 CONFIRM	1 CONFIRM	1..10 MIN	1..10 MIN
Client-side verification of subjective finality	YES	N/A TRUSTED	NO	NO	YES	YES
Instant tx confirmations	FULL	BONDED	BONDED	BONDED	BONDED	BONDED
Other aspects						
Smart contracts	LIMITED	FLEXIBLE	LIMITED	FLEXIBLE	FLEXIBLE	FLEXIBLE
EVM-bytecode portable	NO	YES	NO	YES	NO	NO
Native privacy options	LIMITED	NO	NO	NO	FULL	FULL

Source: Matter Labs

In conclusion, Plasma, we believe, is the best available L2 solution because of inherent properties as discussed, while ORs & Zk-Rollups are a great improvement in the direction and we are open to keep exploring the same until we can see a real-world production-grade implementation.

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03. Undercolletralization & Borrower's evaluation

Enforcing something financially which isn't financially backed is a great challenge. To mitigate the risks involved one of the approaches could be to shift the burden to a better-suited entity. A third party that can't guarantee repayment in case of default. It can be termed as a process of social fund recovery where the borrower's guarantee is taken by a certain individual who is ready to back the event. Since anonymity and privacy have been core or decentralized finance it would be counterproductive and tough to find such backing. Therefore, the guarantor approach won't be best suited.

Another approach that can be taken from traditional financial markets is replicating credit score mechanisms. Legacy finance has been utilizing credit evaluation techniques through consortiums which created and maintains a centralized database for assessing borrower's credibility. Historical data of users is collected, collated, stored, and analyzed on the basis of preset parameters to suit the satisfaction of lending entities. These lending entities feed tons of data to the centralized engine which, over time, becomes invaluable for credit risk management. Of course, there are shortfalls to this approach as we have witnessed leakages, misuse, and exploitation of user's data by key centralized institutions and sovereign entities. But using the right mechanisms, since we enjoy the liberty of distributed databases and peer to peer interaction in a decentralized world, we believe, we can create such a system so as to assess borrower's creditworthiness while addressing the shortcomings.

Therefore, we wanted to use a system that doesn't allow for censorship beyond lending and where users are in complete choice and full control of their data while preserving the privacy & degree of anonymity too. Tough task! Huh. we explored much but got to understand that the identity layer problem is not easier to solve. Finally, we ended up creating our own identity layer protocol called TrustScore that helps solve the dilemma. Using TrustScore users can whitelist an ERC20 address and Trustscore's proprietary algorithms create metrics that help establish borrowers (read user's) creditworthiness over a period of time. Trustscore scans user's activity on various lending platforms and protocols to assess credit behavior only through that whitelisted ERC20 address. Users have a choice to add as many whitelisted addresses as they want. The algorithm intends to gather only related financial information of users required to establish a certain behavior and non-financial reputation would be uncensorable even in case the user is at default.

Using the system, as explained above, Easyfi intends to solve the problem of over-collateralization and identity layer (up to some extent) in the decentralized finance ecosystem. A separate paper detailing the mechanism shall be released in the near future too.

04. Smart Products

As mentioned above, for retail users, lending markets need to offer products that can be utilized beyond trading. Therefore, we intend to offer such financial products that have a direct impact on the user's real life. As our first offering, we planned to launch products under the microlending category. Microlending allows borrowers access to time-bound loans of small values at much lesser interest rates than traditional banking & lending markets. These loans would be able to be drawn directly to their wallets and can be used for various purposes. Microlending products have a huge use case for small businessmen too for meeting their day to day working capital requirements.

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Lending markets, predominantly, in decentralized finance have been catering to borrower's requirement of funds for trading purposes. Recently, we have witnessed, a huge influx of institutional capital into various protocols and platforms. We believe institutions have finally retained confidence in the code and are deploying their ideal funds in lieu of better interest earnings. This calls for institutional-grade products and offerings required to meet the dynamics of smart capital. Easyfi has plans to introduce insurance in DeFi through credit default swaps as the first in a series of financial derivative instruments. More detailed information pertaining to design, architecture, deployment, etc. shall be made public through subsequent papers.

Needless to mention the role of undercolletralization, credit delegation like mechanisms in designing such financial products is of great importance. We'll release detailed information on different products and related concepts in subsequent papers.

Unique Selling Proposition

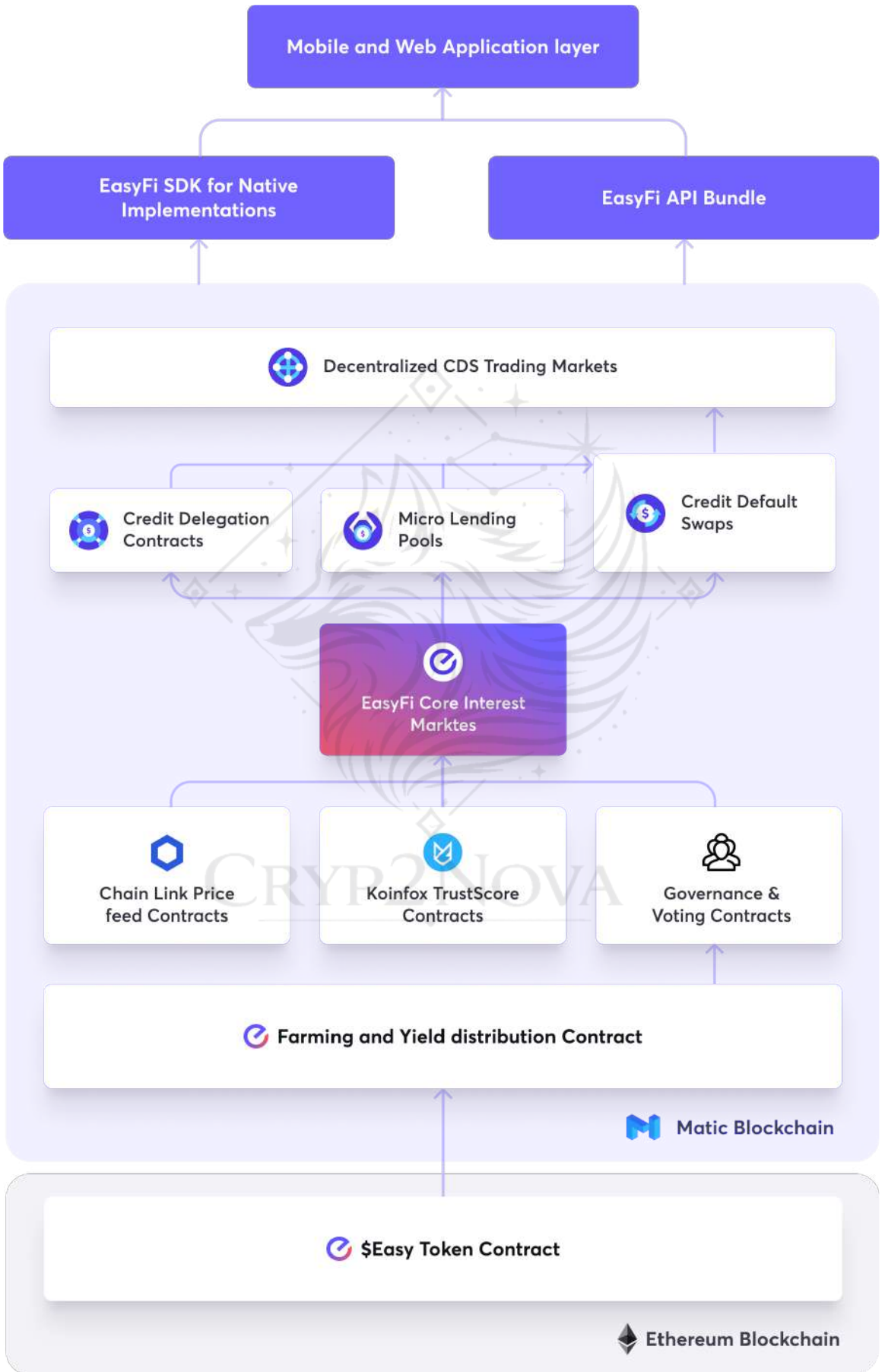
Existing money market protocols have been successful in creating & aggregating much-needed liquidity to the existing market. The supply side is overwhelmed with excessive capital which remains unutilized due to the weaker borrowing side. This demand gap has lead to a tipping point where it is now necessary to focus on demand generation by offering more appealing financial products in insurance, microlending among others to borrowers.

Therefore, EasyFi aims at bridging the gap among borrowers and sellers while addressing the technological limitations of the existing network.

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Network Architecture & Implementation



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Core concepts

01. Supplying Assets

Users supply an asset to their respective liquidity pool where aggregated liquidity is matched to the borrower's demand thereby creating fungibility of the resource pool. Utilization Ratio U describes the ratio of total assets borrowed from respective liquidity pools against assets supplied. Unless otherwise utilized to full capacity, users can withdraw their assets at any time. Assets in respective pools are represented by ERC-20 Token **'eToken'**. Asset suppliers hold eTokens of a proportionate amount which represents the user's proportionate contribution in the pool and entitled for interest earned from the money market over a period of time. The accumulated eTokens are convertible to underlying assets thereby accruing interest, as a function of borrowing demand, by simply holding 'eToken'.

Utilization ratio **U**, for each market **a** unifies supply and demand as:

$$Uc=Borrows_a/(Cash_a+Borrows_a)$$

02. Borrowing Assets

'eToken' holders by using the same as collateral can borrow from EasyFi money market protocol and other integrated protocols in the ecosystem, seamlessly. Users can specify the asset to be borrowed without getting into the hassle of negotiating terms and conditions but with desired parameters, so set by market forces. Transparency and uniformity make the money market unique in its approach for all network participants.

03. Collateral Value

Each market has a collateral factor 0 to 1, representing a portion of the underlying asset that can be borrowed. Lower collateral factors interpret illiquid market and higher collateral factors represent high liquidity in the respective market.

The user's borrowing capacity is calculated by multiplying collateral factors by the sum value of accounts with underlying assets.

For example, the **Borrowing capacity** (for the corresponding market) B_c of user account **A** with **x** amount of USDT, collateral factor 0.67 of the market **a** is calculated as follows:

$$B_c^{(A)} = {}_X\text{USDT} * (0.67)_a$$

In simple terms, as

Borrowing capacity = (Value of token balance) * (Collateral Factor)

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04. Interest Rate Model

Governance can decide the interest rate model and is codified through a demand curve which is expressed as a function of utilization ratio, as calculated above, base interest rate, and reserve ratio. Therefore, the Borrowing Interest rate of the market **a** can be calculated as follows:

$$\text{Borrowing Interest rate}_a = \text{Base rate} + U_a * \text{Reserve rate}_a$$

The supply interest rate for the market **a** is derived through borrowing interest rate, reserve factor, and the total amount of borrowers or total spread **S** in the respective market as followed:

$$\text{Supply Interest rate}_a = \text{Borrowing Interest rate}_a * U_a * (1-S)_a$$

05. Exchange Rate

User's balances are expressed in proportion or amount of eToken balances for each activity conducted in the protocol. Users can redeem, mint, borrow, repay limited to their balance of eTokens with accrued principal and interest which can be exchanged with underlying market assets using exchange rate (Price of eToken for the underlying asset). It is calculated as follows:

$$\text{Exchange rate (r)} = \frac{\text{underlying balance} + \text{total borrow balance}_a - \text{reserves}_a}{\text{eTokenSupply}_a}$$

06. Interest Rate Index

As the market forces namely demand and supply changes in a market, the interest rate is calculated and applied to all borrowers uniformly which adjusts over time. This change is regularly captured and represented as an Interest Rate Index for each time the transaction is done in the protocol. It is calculated per block interest rate, denominated by **r * t** as follows:

$$\text{Index}_{a,n} = \text{Index}_{a,(n-1)} * (1 + r*t)$$

07. Liquidity pools

Under existing standard mechanisms borrowers are matched with lenders. These borrowers pay an interest fee for seeking assets and lenders are rewarded for providing liquidity to the market. The cost incurred to borrowers is incentivized to lenders therefore acting as economic incentives to maintain liquidity in the market. Therefore, they act as operators of the money market which provides sufficient depth to the liquidity pools.

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08. Undercollateralized Lending

Optimum collateral requirements are important to motivate borrowers to enter the market. Over collateralization is a barrier to entry albeit it's important to mitigate market risks that arise from volatility and subsequent liquidation. Traditional financial markets have appropriate credibility assessment measures and corresponding facilitating institutions in place to establish the creditworthiness of a user. Consequently, they instill sufficient trust in the system to facilitate lending & borrowing by mitigating intrinsic risks of default or non-payment.

Defi lacks such standard benchmarking mechanisms due to a lack of access to data pertaining to users. This calls for maintaining user data over a period of time to build creditworthiness and record any defaults or non-payment by the borrower. But there's another pressing concern of privacy and data security of users. Therefore, it is pertinent to follow a novel and balanced approach so as to establish creditworthiness, data verification, and maintain appropriate privacy at the same time.

09. Micro Lending

Peer to peer financing has witnessed huge growth in digital assets markets and we have seen impressive advancements in the sector leveraging p2p applications. One of the major use cases of peer to peer financing is microlending. But Defi has still to offer microlending as a service to its users. Microlending enables the deployment of funds to real-world use cases and derives better value economies. Creditworthiness helps establish trust in multi-party agreements and allows uncollateralized lending through a shared pool and credit delegation to a seeker of choice.

EasyFi intends to facilitate lenders offering undercollateralized loans of smaller value to borrowers. Inherent risks of credit default and non-payment are shared by existing lenders in a proportionate manner. Lenders here provide liquidity to pools meant for portfolios of many dozens of microloans. By spreading the risk across a large number of lenders it is ensured that the whole portfolio is not wiped out and loss is shared. This facilitates the expansion of lending markets to new dimensions that DeFi has yet to witness.

10. Credit Delegation

Alternative methods like peer to peer financing enable users to obtain loans from other users directly, cutting through the middleman. The most important factor that defines a relationship is "Know your borrower" which means the lender knows to whom he is lending. Thereby taking the burden of risk that may arise in the event of default. But in decentralized finance, as discussed above under the heading 'borrowers evaluation', in absence of an identity layer the only resort left to lenders is to mitigate the primary risk of default through some mechanism. Here, the Credit delegation plays a vital role which is a programmed or coded version of bi party agreement between lender and seeker. Both parties can enter into a trusted agreement in which the lender's capital can be borrowed by the seeker. All important clauses and conditions perse Interest rates, loan terms, and other covenants are set into an Open Law agreement and stored, providing an immutable point of reference. While credit delegation offers a degree of under collateralization, combined with creditworthiness (TrustScore) can be translated to uncollateralized lending in the future.

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11. Smart financial products

Smart contracts have the capability to create, design, and offer a wide range of custom financial products using different protocols or platforms. These smart contracts are written at a higher level of thoughtfulness for better testing, analytical capabilities. They can further be integrated to create more innovative and high yield-bearing products like credit swaps, default swaps, and more.

12. Proof of reputation contracts

A series of interconnected Smart Contracts, enabling **Trustscore** being computed and stored on Blockchain to avoid any biases or fraudulent activity around the calculation of user's performance for the specific set of transactions. These smart contracts aim at recording, analyzing, and benchmarking historic records of users in accordance with set parameters and conditions. These are highly customizable smart contracts offering a wide range of use cases like performance measuring, credit rating, user identification to name a few.

13. Cross chain bridge contracts

As the name suggests this unique set of smart contracts enables cross-chain transactions for real-time lending, borrowing, and management of digital assets in a non-custodial manner. This means users can lend assets without moving tokens over the blockchain networks. Non-custodial collateral contacts create a synthetic supply of digital assets, thereby locking original tokens or assets in itself and enabling transactions over various networks. The collateral derives the value from market oracles and reconciles with corresponding assets during the transaction cycle through network nodes.

Atomic cross-chain swaps enable exchanging one token for another on different blockchain networks while cross-chain bridges act as an immediate fix to enable interaction between different blockchain networks. The protocol aims at using these cross-chain bridges to enable cross-chain atomic swaps of the token in real-time for lending & borrowing of digital assets. This means asset suppliers (lenders) & seekers (borrowers) can access different markets, financial products across different blockchain networks simultaneously.

14. Risk management

Risk is inherent to lending and needs to be managed in accordance to different market requirements. For instance, risks inherent to microlending or undercollateralized lending seek unique risk parameters to ensure the management of defaults or non-payments. Different financial products have a different set of standards, parameters, risk models, and mechanisms. The protocol offers a complete agile environment to adhere to, test, and deploy respective risk modeling strategies and parameters.

The protocol is designed to create risk management parameters which deem essential while interacting with more decentralized protocols, DAOs, and platforms. Users can propose, set, and approve such parameters and design mechanisms for robust governance and the addition of new risk management capabilities to the protocol.

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15. Governance

The protocol's on-chain governance model allows for reaching consensus among different network participants through a direct voting mechanism. The chain governance mechanism influences participants' behavior on the network with the purpose of weeding out bad actors and incentivizing good actors so that the network runs completely unencumbered. The stake weighted mechanism offers stakeholders holding higher stakes with greater voting rights to set various parameters, propose and define new rules, markets, collateral limits, etc. The protocol also defines the scope of off-chain governance which will be detailed over time to time with users.

16. Dual Yield Farming

Governance delegation combined with novel incentivization structure has enabled a great deal of decentralization. The network effect with vested interest helps create large value networks. Yield farming makes a network robust and unleashes great economic innovation. Yield farming includes a digital asset holder putting his digital assets to work by investing it in the network itself. In return, they are paid a fixed or variable interest on their invested crypto assets.

For accelerating the adoption of this newly launched lending protocol and attracting new liquidity onto a layer two blockchain network, we would like to introduce a new variant of yield farming or liquidity mining called "Dual Yield Farming" whereby EasyFi along with different partner projects, will allocate a portion of EASYFI tokens (EASY) and partner project's native token (say XYZ) towards incentivizing liquidity providers and yield farmers. This in turn, we believe, will bring in community interest and supply to the protocol hence enabling desired liquidity as well as engagement.

Under dual yield farming, a higher APY (Annual percentage yield) can be achieved in a sustainable manner. Since the inflation of native token is controlled and is complemented through corresponding emission of incentives of another partner token, users tend to earn more, in a sustainable way, over the period of time. By innovating yield farming structure and combining forces with other quality projects, easyfi has adopted an open-minded approach for a more collaborative & engaged community with an end goal of incentivizing users for the long term and earning their loyalty. More details on dual farming and subsequent collaborations shall be made public from time to time.

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Design ethos

01. Blockchain agnostic

We believe niche ecosystems like DeFi are just the start to an era where many such ecosystems shall be replicated over numerous blockchain networks and L2 networks. Likewise, we may witness mushrooming of more financial and non-financial niche ecosystems for retail and enterprise users. Therefore, it is needed to adopt a flexible approach and create a system that enables interaction & exchange of digital assets between such networks easier.

EasyFi universal layer 2 protocol is designed as blockchain agnostic and L2 agnostic that can interact between various networks using appropriate mechanisms.

02. Ethereum compatibility

Ethereum's network through smart contracts capability has facilitated thousands of businesses and enabled millions of users to interact and exchange. The strength of the network lies in the ecosystem it has created over a period of time. There are thousands of developers who are working tirelessly to create amazing products. It is, therefore, not possible to create anything in silos.

EasyFi network protocol is designed to be ethereum compatible, blockchain agnostic, a multi-network universal protocol to enable exchange and interaction of digital assets.

03. Interoperability

Projects like Polkadot, fusion, cosmos specialized in interoperability and link siloed blockchains. These projects enable the transfer of value and data over numerous networks. Interoperability is pertinent to scale markets and bring more users. Different blockchain networks cannot operate in silos and need to interact with each other.

EasyFi is designed in a way to interact with other protocols which enables interoperability.

04. Staking involved consensus & governance

Governance delegation mechanisms empower network users and participants with more engagement and value derivation. The protocol is designed to enable staking at multiple levels and facilitate governance through moderated voting mechanisms. We intend to design to keep protocol interactive, participative, and one that offers convenience to developers & end-users.

05. Network security

The set of rules and configurations designed to protect the integrity, confidentiality & accessibility of the network covers a multitude of technologies, devices, and processes. It is pertinent to adopt the best possible measures to keep security utmost. Therefore, the protocol is designed as per the highest standards and thus offers a desired amount of security to enable secure transfer of value and data over numerous networks.

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Governance

01. Stake weighted voting

The primary governance mechanism in EasyFi universal protocol is through on-chain voting by the participants keeping in account the weightage attached to their stake within the scope of exercise. Each participant enjoys governing rights, in proportion to the number of tokens staked on the network. Users need to perform various activities on the network to become eligible for staking rewards.

Stakeholders can float a proposal to the governing community and seek participation from community members. To avoid flooding of proposals or proposal spam, proposal creators need to ensure a minimum level of participation or otherwise, a portion of their stake is forfeited as a penalty. This ensures a clean and more participative governance delegation across the community.

02. Event determination

For specific events like interest rate determination, collateral requirement, weighted stake decisions, the addition of trading markets, defining trading parameters, etc. that requires additional thoughtfulness a special proposal be created, and community participation is sought. In addition to stakeholder's weighted stake average, the user's activity & network participation be taken into account as an eligibility to participate in voting.

This comprehensive approach helps in the determination of events of special importance and ensures holistic participation from members of the governing community. All proposals and events shall be listed in the main forum from time to time and moderated on basis of stake & participative voting, therefore.

eToken contracts

All the interactions between money markets and users are facilitated through eTokens; users can mint, redeem, borrow, repay borrow, liquidate eTokens from, and for underlying assets in respective money markets. Smart contracts have implemented ERC20 token specification for each money market. Exchange rate (**r**) defines the settlement of eTokens & underlying assets, which increases in proportion to interest accrued over time and has a direct relation to the market (**a**) total borrowing balance.

$$\text{Exchange rate (r)} = \frac{\text{underlying balance}_a + \text{total borrow balance}_a - \text{reserves}_a}{\text{eTokenSupply}_a}$$

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EASY

Token Utility

EasyFi native token 'EASY' will be used for the following key functions:

Governance: $EASY token will enable users to be able to play part in the protocol's governance as EasyFi is going to become a DAO and enable the community to control various governance decisions w.r.t. Running the protocol.

Protocol Incentivization: will enable users to earn rewards from time to time and provide them with voting rights in the upkeep of the protocol and continuous development.

Staking rewards: $EASY token will enable various projects to launch their lending and borrowing markets on the EasyFi network hence will enable them to reward the users to stake $EASY tokens for earning rewards in form of tokens of the respective markets and interact with corresponding markets on the protocol.

Cross market interaction: EasyFi is the first protocol in the DeFi space to enable dual token farming, hence enabling various markets being launched on EASYFI to be able to incentivize EASYFi users to interact with those respective markets.

Cross Chain Settlement: $EASY tokens will be used as a cross-chain settlement instrument in the various bridges created to communicate and share the liquidity with various other sidechain and main chains being built over a period of time like Binance Smart Chain, Polkadot, etc.

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