DeFi Adoption 2020:

A Definitive Guide to Entering the Industry

AAVE
Chainlink
Compound
Curve
MAKER
Nexus Mutual
SYNTHETIX
UMA
UNISWAP
ENJIN
Equilibrium
ForTube
THORCHAIN
YOUHODLER
Wing

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Part 1.1

What is Decentralized Finance (DeFi)?

Decentralized Finance ("DeFi"), is the idea that traditional financial service offerings such as banks, markets, and other investment services can be recreated or improved upon using applications created on the blockchain.

DeFi is an ecosystem of blockchain-based financial instruments designed in the decentralized way:

- outside of companies' and governments' regulation
- running on smart contracts

There is no reliance on centralized authorities and stakeholders come together to build a permissionless ecosystem. The idea driving the majority of the industry players is to open financial services to everyone by building a permissionless ecosystem.

DeFi recreates traditional financial services — i.e. lending & borrowing, trading, and even insurance — tailored for storing, earning, or transferring digital assets. Decentralized applications (dApps) can come in varying degrees of decentralization, simplicity, and security, providing users with flexible options.

DeFi has some unique traits making it a phenomenon in finance. Many platforms have some or all of these characteristics:

No third parties. DApps rely on smart contracts instead of the humans responsible for operations. DeFi products need no intermediaries to process transactions. No middleman has control over or access to your assets as the majority of DeFi platforms are non-custodial.

Learn DeFi: Smart Contracts:
A smart contract is a self-executing programmable contract between users and platforms that allows users to trade, invest, and send tokens without any third-party involved.

Learn DeFi: Non-custodial
"Non-custodial" in DeFi means a platform that does not store the private keys for users' funds. Keys are managed by the user, giving more security.

Read more on CT: Crypto Custody, Explained

Governed by users. When it comes to governance, DeFi is also special since it moves towards decentralization and should eventually be based on the wisdom of the crowd. By holding the governance tokens users can take part in voting on platform governance decisions.

Easy to enter. Thanks to the permissionless nature of DeFi, anyone can start using the platforms without the need to disclose personal information and applications for access. All you need is to connect the wallet to the platform and start lending, borrowing or trading. Your account is not tied directly to your real-life identity as the platform and other users only know your wallet number (no name / age / country mentioned). However some wallets does have KYC/ AML requirement and therefore DeFi does not guarantee anonymity if these wallets were used.

Community driven. In the DeFi space, communities are one of the crucial aspects of each project as they help create value through usage and organic marketing. With many DeFi applications and protocols being open source, community developers can add features and build new apps. Projects can be "forked" to launch tweaked versions of the original product.

Truly Global. The products are not customized for specific countries and are developed in a way that a person from Europe and a person from Asia will have the very same experience and access to features.

DeFi structure

The DeFi industry is often classified into different layers, starting with the base layers (infrastructure and blockchain protocols), the assets themselves and other frameworks, before reaching the consumer layer on top, which most users interact with. Whereas the ICO trend of 2017 seemed more about competing base-layer blockchain protocols vying to be the next-Ethereum killer, the 2020 DeFi trend seems more about connecting as many existing protocols and assets as possible with a focus on collaboration and cross-chain applications. **This offers the advantage of specialization, as certain projects are able to focus on niche use cases, technologies, or markets, after which they can be integrated into multiple platforms for more rapid growth.**

Learn DeFi: Governance tokens
Governance tokens are designed as a tool for holders of the token to vote for the risk management and business logic of the system[3]. The more tokens you hold, the more power you have in terms of decision-making.

Learn DeFi: Forks
Fork is a term for creating a new variation of an existing platform by replicating and modifying the code. The goal of forks usually is to add new functionality to the platform or to fix security issues. Outside the DeFi space a well-known example of a hard fork was the appearance of Bitcoin Cash as an alternative to Bitcoin with improved transaction speed and smaller fees. In the DeFi industry, forks of the popular DeFi protocols have started popping up with Sushi Swap forked from decentralized exchange Uniswap and Swerve being the fork of stablecoin swap protocol Curve Finance.

Risks and security

DeFi is rapidly developing, but not all of the projects entering the space have passed through comprehensive security audits and formal verification. Therefore, it is imperative that all users understand the risks involved with DeFi as bugs, exploits, thefts, and loss of funds through user error are not uncommon in this space.

Always exercise best practices with wallet and private key management while being sure to invest responsibly to avoid severe losses. Furthermore, many analysts regard some of the protocols and investment practices to be entering an investment 'bubble' where tokens could quickly devalue in a changing market environment. **The purpose of this guide is to encourage responsible use of DeFi platforms, rather than mere speculation on future token value.**

Part 1.2

CeFi vs DeFi — Mapping the Difference

DeFi is not the only alternative to traditional finance: CeFi, or Centralized Finance, is another branch of blockchain-based finance disrupting the banking industry. Before diving deeper into the DeFi space, it is necessary to distinguish DeFi from CeFi. Both DeFi and CeFi are related to digital asset management, represent the movement for better financial inclusivity and offer high potential yields.

	Centralized Finance	Decentralized Finance
Underlying technology	**Blockchain-based**	
Attitude towards digital assets	**Focused on digital assets (including cryptocurrencies)**	
Private keys possession	**Custodial**	**Non-custodial**
Governance execution	**By platform management decision**	**By community voting**
Interest rate determination	**Discretionary rate**	**Market rate**
Price oracle type	**Relies on a sole provider of information**	**Queries multiple oracle sources**
Main type of risk exposure	**Risks associated with centralized custody**	**Risks associated with flaws in code**
Platform examples	**YouHolder, Nexo, Cred, Binance**	**MakerDAO, Compound, Aave**

Exhibit / CeFi vs DeFi

Private key management. From this point, CeFi bears a striking resemblance to traditional finance as centralized corporations bear custody, and, consequently, the risks for safekeeping their users' funds and information. On the other hand, DeFi sticks to a non-custodial approach.

Governance. In the CeFi, corporate management is responsible for decision-making in terms of both current and future state of their companies. Many centralized exchanges such as Binance, Huobi, and OKex are getting involved by rewarding users for storing assets in interest-yielding savings accounts. In the case of DeFi, the communities — consisting of platform governance token holders — are responsible for managing platforms.

Interest rates. CeFi and DeFi are also different in terms of the interest determination. As the result of the CeFi governance architecture these platforms solely hold the power to define the interest rate. DeFi platforms rely on market data and proprietary data provided by market participants, and then let governance token holders vote on whether an adjustment of the interest rate is necessary or not.

Oracles. Centralized oracles function as a single entity providing data from an external source to a smart contract operating with a set of security features. On the other hand, decentralized oracles rely on multiple external sources to increase the credibility of the data provided to the smart contracts. Within the DeFi ecosystem, decentralized oracles are primarily used, as using centralized oracles goes against the ethos of DeFi products / applications.

Risks. For CeFi the most considerable potential risk is getting hacked, the situation that could compromise any centralized system. If someone penetrates the custodian's wallets, users' funds would not be secured anymore and they would need to rely on the platform to compensate them. In the DeFi space, there is a much greater risk variation: users have to worry about core development team integrity, security of the code and even correct operation to avoid losing their funds due to a misclick.

Despite both sides having different benefits and tradeoffs, DeFi and CeFi are representing a brand new paradigm in finance and spurring innovation in the sector. Whether DeFi and CeFi are a success and can overtake traditional finance is yet to be seen, the rapid development of alternative finance is a long-term trend.

Part 1.3

The Technology

1.3.1

The Blockchains

To date, the DeFi industry is dominated by projects on the Ethereum blockchain network, as they enjoy more compatibility with exchanges, wallets, stablecoins, and other tools.

As a first mover, Ethereum has built up a powerful advantage with it's thriving developer community. The reason for the Ethereum dominance in the DeFi market is its better composability standards compared to the other blockchains. Composability helps to create a network effect, a situation whereby a product or service gains additional value as the number of users increases.

Thanks to the network effect, the value of the new solutions built on top of the Ethereum blockchain grows, and the ecosystem attracts even more users and developers. This results in a more robust and ever-growing ecosystem. To date, there are more than 200 Ethereum dApps according to DeFi Prime data, but the real number tends to be even higher.

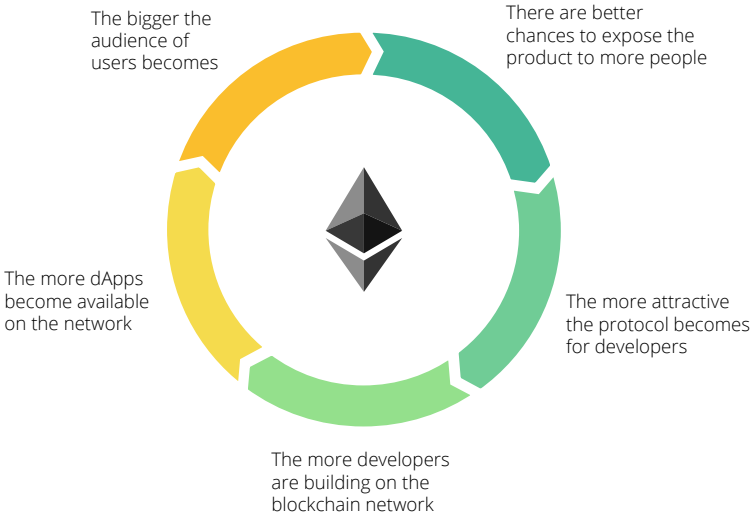

Exhibit / The network effect phenomenon in the DeFi industry

As a result of the network effect, we see Ethereum leading the market with more dApps and users. However, lack of scalability poses a serious problem to the Ethereum network. The number of active dApps on the network surges and so does the number of transactions performed by users. To explain the scalability problem, we take a quick look at the Ethereum fees structure.

In the whole Ethereum DeFi ecosystem users have to pay **gas fees** for each transaction, whether they are sending tokens or interacting with dApps. In this respect, gas fees are similar to bank commissions in traditional finance. Each transaction on the Ethereum network has to be validated by miners who are paid in gas in return for their services.

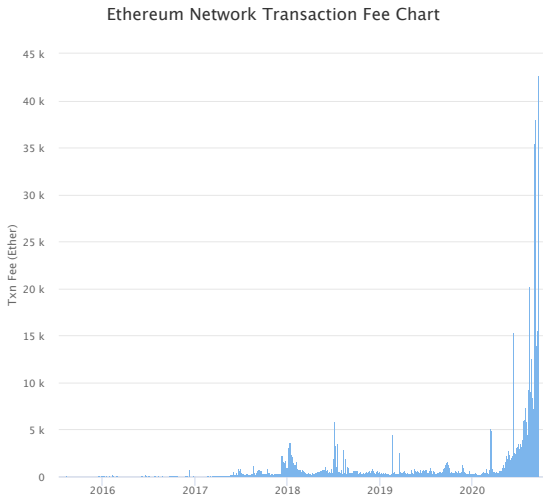

Exhibit / Ethereum network transaction fees *Source: Etherscan*

And here the Ethereum scalability problem comes to the stage. The growing number of users actively interacting with the dApps in the Ethereum ecosystem means a surge in demand and gas price for validation of transactions. The main upgrades that will make Ethereum more scalable are highly anticipated, but as of now remain in a testing phase.

As a short-term fix seems unlikely, this issue of congestion opens the door for other blockchains including NEO, Polkadot, Cosmos, EOS, Ontology, Tron and others to seize a part of the rising market share. Examples mentioned later in the report such as Wing and Equilibrium show how DeFi solutions can be built on other blockchains.

45% **of the platforms built on Ethereum name scalability and high gas costs among top-3 problems constraining mass DeFi adoption[1]**

Learn DeFi: Gas fees

Gas is the internal pricing on Ethereum blockchain required for processing transactions; the amount is determined by miners who validate the transactions and get paid for it. The Ethereum blockchain is notoriously over congested, meaning that fees on that blockchain are prone to extreme volatility. An optimistic viewpoint sees this as a temporary growing pain, while more negative users might see this as a reason to explore other blockchain platforms.

The current gas price, multiplied by the gas limit, will result in the gas fee, or the total amount of Ether to be paid.

Gas fee = gas limit × gas price

As for the gas limit, this refers to the maximum value that a user is willing to pay for the transaction or function. Despite users being able to set the amount of gas units that can be taken from them, gas limit is usually pre-determined by the complexity of a transaction.

Transaction complexity stands for the amount of computational power the transaction involves to go through successfully. **The more code that is executed on the blockchain, the more computational power is needed, the higher the gas limit should be** as miners need to compensate for the resources consumed. Different transactions will bring about different gas costs, but a regular Ether (ETH) transaction would take at least 21,000 gas units, whereas a more complex DeFi application might be 10 times as much.

[1] Cointelegraph Consulting conducted this survey between July 10 and August 25, 2020. The survey polled a sample of 26 senior executives of the platforms currently operating in the DeFi industry. Survey respondents represent 12 countries (Australia, China, Cyprus, Estonia, Kenya, New Zealand, Serbia, Singapore, Switzerland, South Korea, UK, USA) and a wide range of DeFi services, including but not limited to lending & borrowing, exchanges & liquidity, asset management.

Read more on CT: Ethereum Rivals Are Seizing the Moment

Scaling DeFi

There seem to be three possible consequences for users and developers if upcoming Ethereum upgrades don't solve the problem of over-congestion.

1. Diversify from Ethereum — Recreate the platforms on newer, more flexible platforms. Certainly there is no shortage of players in this space at the present, but would further complicate the DeFi landscape and become "less interoperable". In this scenario, CeFi and **cross-chain platforms** would thrive, as users opt for simplicity.

2. Build "Layer Two" solutions — these involve creating secondary chains or networks that can track multiple transactions before syncing with the main network. This is what most Bitcoin and Ethereum backers would prefer as it would keep the balance of power in their favor.

3. Remain stuck at this level — This would create a 'whale's only' ecosystem where increasing transaction fees would only be accepted by those making high-value transactions. This is the most unlikely, as it would imply that DeFi development and user growth stagnates.

Regardless of what happens in the future, at the moment, most of the projects built on Ethereum are making plans to switch to another blockchain even if there are difficulties with the upcoming Ethereum 2.0 release. As it stands, the development community is still showing some loyalty.

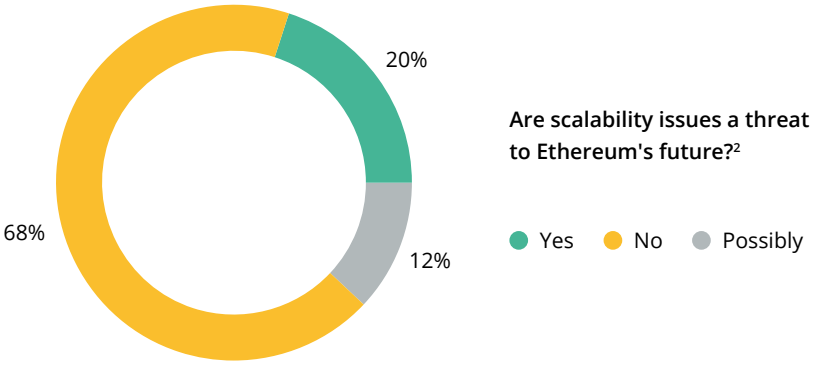

Exhibit / The DeFi platforms' attitude towards migrating from Ethereum blockchain network
Source: Cointelegraph Consulting DeFi Survey 2020

Learn DeFi: Cross-chain
Cross-chain is the process of using tokens, dApps, or smart contracts on more than one blockchain. Many believe this can solve the issues of scaling, as users would be able to trade assets with crowded native blockchains (such as Bitcoin and Ethereum) on secondary blockchains. The blockchain platforms that successfully solve this problem stand to gain a lot of overflow traffic, provided they can achieve this in a secure and efficient manner.

Know your platform: Binance Smart Chain
Another possible solution to the Ethereum scaling situation is Binance Smart Chain, an optimized Ethereum fork created by Binance. The benefit of maintaining nearly complete parity with Ethereum is that existing DeFi platforms can be easily ported, and that browser tools and wallets (such as MetaMask) will be highly compatible. Instead of consuming ETH as gas, it consumes BNB, and with faster block times and improved performance due to a Proof-of-Stake consensus. Having the leading exchange as an initiator is a major advantage, as certain existing ERC-20 tokens can be converted to the nearly identical BEP-20 (Binance Smart Chain's naming standard) simply by withdrawing them from Binance.

Know your platform: Enjin
Famous for its blockchain gaming solution, Enjin has developed a new layer-two scaling solution known as Efinity to allow dApp and game developers to rapidly complete token transfers. After completing gameplay or dApp usage, Efinity then closes the channel and settles the result on Ethereum's main network.

Read more on CT: Ethereum 2.0 Staking, Explained

[2] Cointelegraph Consulting DeFi Survey 2020

1.3.2

The tokens

One of the primary drivers in retail investment interest for 2020 was the growth of the DeFi token value. Many evoked memories of the 2017 ICO craze with early investors finding themselves with exponential gains on seemingly unknown platforms.

From a technology perspective

Native tokens

Ethereum	ETH
Bitcoin	BTC
Polkadot	DOT
Cosmos	ATOM

ERC-20 & Wrapped tokens

Chainlink	LINK
MakerDAO	MKR
Tether	USDT
Wrapped Bitcoin	WBTC

ERC-721 (NFT) tokens

CryptoKitties	
NBA Top Shot	
Decentraland	LAND

From a utility perspective

Governance tokens

Compound	COMP
Aave	LEND
Balancer	BAL

Stablecoins

MakerDAO	DAI
USD Coin	USDC
Equilibrium	EOSDT
TrueUSD	TUSD

Fee tokens

Synthetix	SNX
Kyber Network	KNC
Looping	LRC

Exhibit / DeFi tokens types and examples

Native tokens

Native tokens are the main tokens of public & permissionless blockchain networks like Bitcoin and Ethereum. Most of these saw steady growth from January to August of 2020 as DeFi burst on to the mainstage.

ERC-20 tokens

ERC-20s are a type of secondary tokens on the Ethereum blockchain that are designed to interact with smart contracts, making them ideal for DeFi use cases. The upside to having so many different tokens created with the same standard is that they are easy to add to exchanges, platforms, and wallets as they all align to the same standard. Tokens with similar features to ERC-20 exist on platforms other than Ethereum, but use a different name and standard. At the same time, there is a mechanism called **wrapped tokens** designed to represent the tokens of other blockchains on Ethereum.

ERC-20 tokens are fungible, which means each ERC-20 token has exactly the same value as the others. Like each $1 banknote has a value of $1, one LEND token is identical to all the others.

Learn DeFi: Wrapped tokens
Wrapped tokens are a specific subtype of the ERC-20 tokens. Token wrapping mechanisms are used for the tokens not compatible with the ERC- 20 standards, including but not limited to native tokens (ETH) or tokens from other blockchains, such as BTC. The goal of converting digital assets to wrapped tokens is to increase their functionality since most dApps are configured to handle ERC-20 standards.
A wrapped token represents an underlying asset 1:1 ratio and conforms to the ERC-20 standard. Wrapped Bitcoin (wBTC), for instance, is a token that is worth the same as one BTC at any given moment, only it's traded and stored on the Ethereum blockchain.

Read more on CT: ERC-20 Tokens, Explained
Read more on CT: Wrapped Crypto Tokens, Explained

ERC-721 tokens

ERC-721 tokens are different from ERC-20 tokens as they are non-fungible. Each ERC-721 token has different characteristics, each one is unique and individual, and this is why they have different values. In the DeFi space these non-fungible tokens (or NFTs) are mostly used for issuing collectibles and may also serve as investment vehicles.

Governance tokens

At the forefront of the DeFi craze were governance tokens which were created alongside DeFi platforms in an attempt to decentralize certain aspects of governance and encourage user participation (in some cases, as a method to raise funds, as well). Users holding tokens could stake them on voting platforms to decide key administrative rules such as new features and other policies.

Stablecoins

Stablecoins are digital assets designed to combat the volatility of cryptocurrency prices. They have their value pegged to another asset price such as US dollars, other cryptocurrencies, or precious metals. Stablecoins are a convenient medium of exchange and a means of risk hedging.

Fee tokens

Fee tokens stand for a specific type of digital assets deployed to allow for some additional functionality, serve as a collateral and a means of payment for the services on the platform. These tokens are different from governance since the first ones do not give any management rights to holders. Fee tokens are also different from stablecoins as there is no price stabilization mechanism behind the token — the price is set by the market.

Project Name	Project Type	Token Symbol	Token Icon	Governance/ Stablecoin/Fee
Chainlink	Oracles	LINK		Fee
Synthetix	Synthetic Assets & Derivatives	SNX	SYNTHETIX	Fee
Aave	Money Markets	LEND	AAVE	Governance
Maker	Lending	MKR		Governance
Compound	Lending	COMP		Governance
Dai	Stablecoins	DAI		Stablecoin
0x	Protocols and Frameworks	ZRX		Fee
UMA	Protocols and Frameworks	UMA	UMA	Fee
Ren	"Cross-chain Liquidity Providers"	REN		Fee
Kyber Network	DEX Tokens	KNC		Fee
Band Protocol	Oracles	BAND		Fee
Yearn Finance	Yield Farming	YFI		Fee
Equilibrium	Money Markets	EQ		Governance
Uniswap	DEX Tokens	UNI		Governance

Part 1.4

DeFi Key Metrics

Total Value Locked

The key metric for tracking the pace of DeFi development is Total Value Locked (TVL). TVL stands for the aggregated amount of money locked in the smart contracts of the DeFi platforms and is calculated by multiplying the total number of tokens held by a protocol by their value in USD.

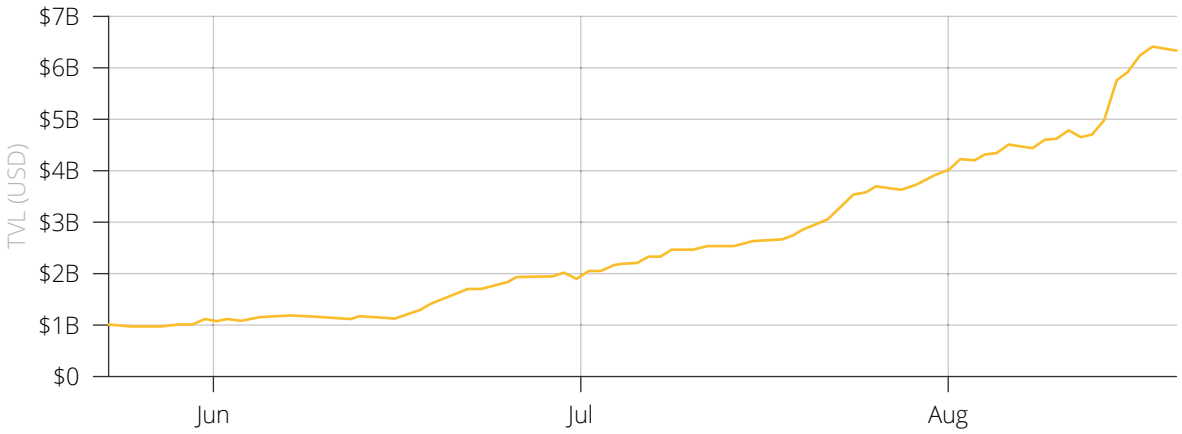

Exhibit / Total Value Locked (USD) in DeFi *Source: DeFi Pulse*

Still, TVL can be deceptive for two reasons: well-backed projects can park large quantities of digital assets into the platform, while not necessarily achieving much with the funds, in an attempt to look more credible or active. More worryingly, some platforms, particularly those that encourage a practice known as yield farming, can lend funds to users which can then be relocked in the same platform or other platforms in order to receive even more loans. This cyclical process inflates TVL, and casts doubt over the legitimacy of parts of the DeFi space.

Daily Active Users

Daily active users is the most unbiased metric for measuring DeFi usage and growth. This is calculated by the number of unique addresses interacting with each of the DeFi platforms. However, when totalling the users of the whole DeFi ecosystem, it is essential to take into account the double counting of users interacting with several platforms a day, which makes the DAU index biased.

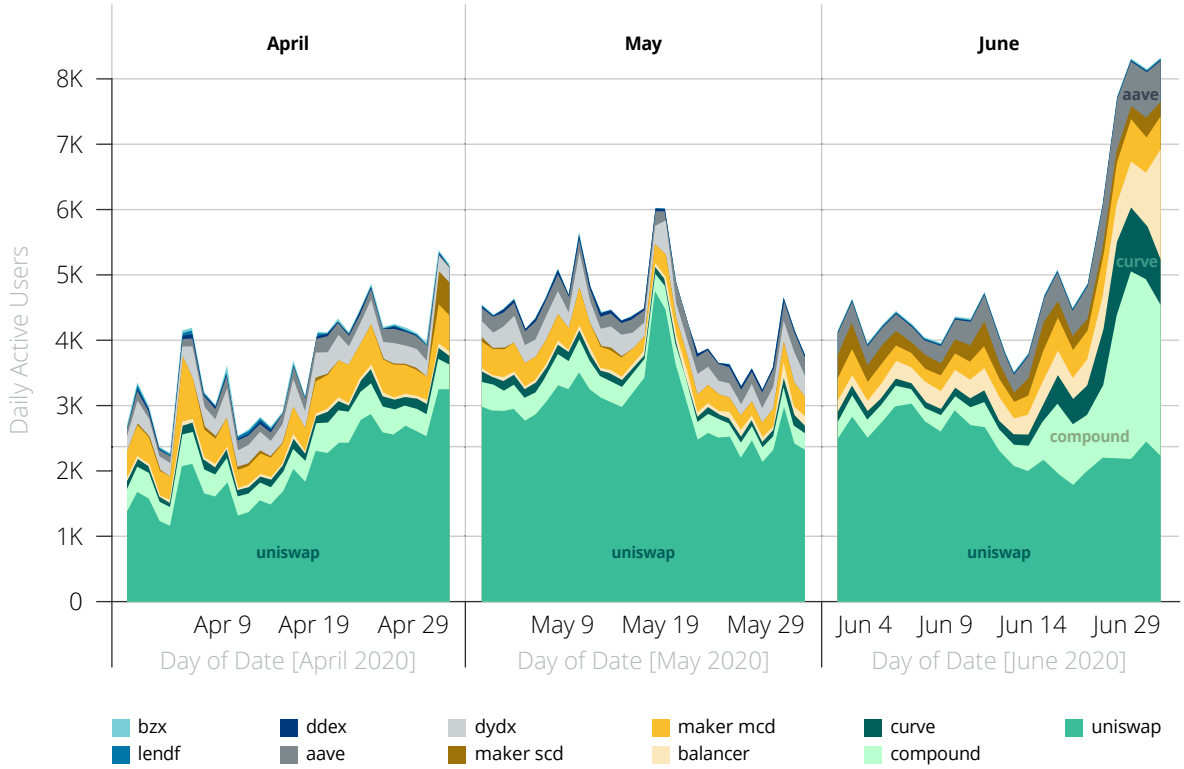

Exhibit / Daily Active Users — 2020 Q2

Source: Consensys Codefi DeFi Report Q2 2020

Market Cap

DeFi can be also measured through the lens of its market capitalization. The market cap of each DeFi platform is calculated as the total number of its tokens multiplied by the current market price of the token. CoinGecko and DeFi Market Cap both list the Top 100 DeFi coins. As for the DeFi market cap, it is the result of the top 100 platforms' market capitalization being summarized. The DeFi market cap continues to pass new milestones as it crossed the $14 billion mark as of September 2020.

Part 1.5

The Trends

1 Increasing complexity

Releases of newer versions of DeFi platforms are expected to grow in complexity. The core reason for this is that investors are looking for higher yields, and this sparks competition. The platforms have to become increasingly creative to design instruments that deliver growing returns.

Although the instruments are becoming more complex, the top 3 drivers of platform adoption according to the DeFi projects surveyed in this report are listed below. User experience, cost efficiency, and education are must haves for every platform aspiring to increase the number of users.

What will play a bigger role in leading to mainstream DeFi adoption?

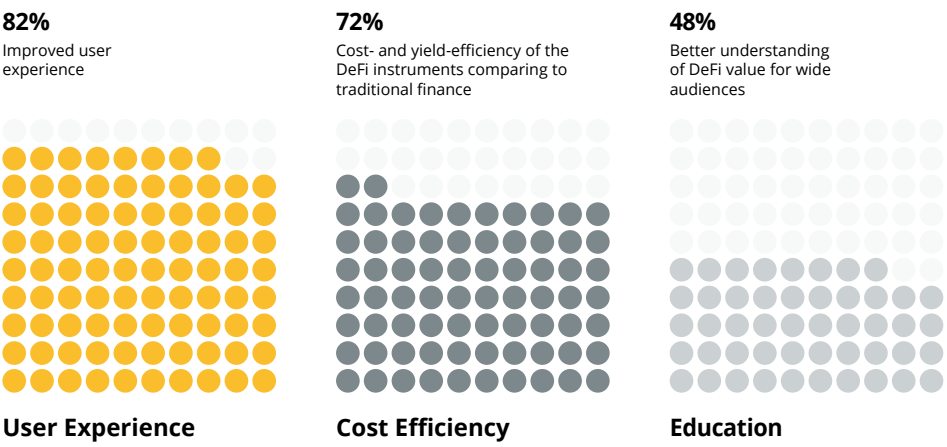

Exhibit / Top drivers for DeFi mass adoption *Source: Cointelegraph Consulting DeFi Survey 2020*

2 More "whale-centric" barrier to entry

As the gas fees are continuing to soar due to the growing load on the network, the platforms built on Ethereum are becoming more costly to use. Until Ethereum 2.0 is introduced (and this may take years), the fees will keep on rising. This could become a major roadblock for DeFi user growth since there are a limited number of people willing to pay high fees and all the transactions of a small amount (less than $40-50) struggle to maintain profitability.

3 Maturity far away

DeFi was a recent development, however, it has been rapidly developing through its short life. Nevertheless, it can be considered a mature technology only when it wins a reputable number of users and sustainable economic model. The majority of the platforms evaluate the time frame for reaching the maturity stage as 3-5 years, while 32% believe that it will take 6-10 years or more for the industry to ripen.

What is the time frame for the DeFi industry to reach the plateau of productivity?

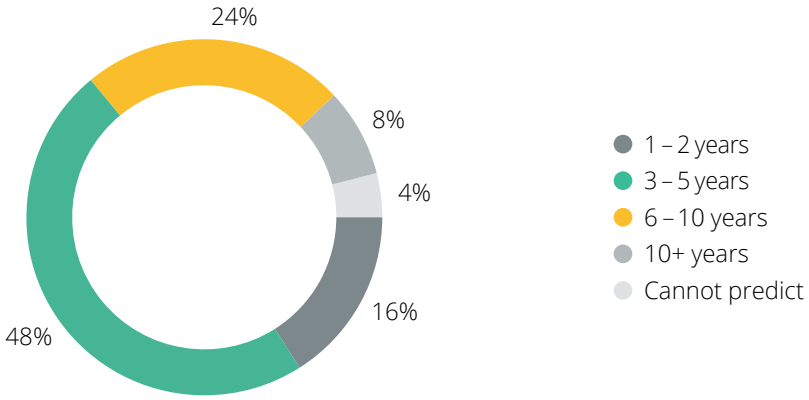

Exhibit / DeFi players' perception of the industry maturity horizon *Source: Cointelegraph Consulting DeFi Survey 2020*

4 Retail-focused DeFi

While the digital asset market is seeing a significant increase in inflows from institutional investors, DeFi is not arming for the big investors money race. Most of the DeFi platforms are planning to embrace the retail-focused strategy.

Which category of clients is your main product targeting?

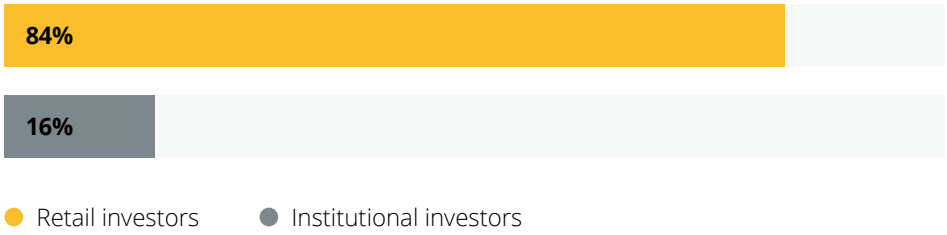

Exhibit / The current market focus of the DeFi industry players *Source: Cointelegraph Consulting DeFi Survey 2020*

Do you think institutional investors will be a critical market segment for you to target?

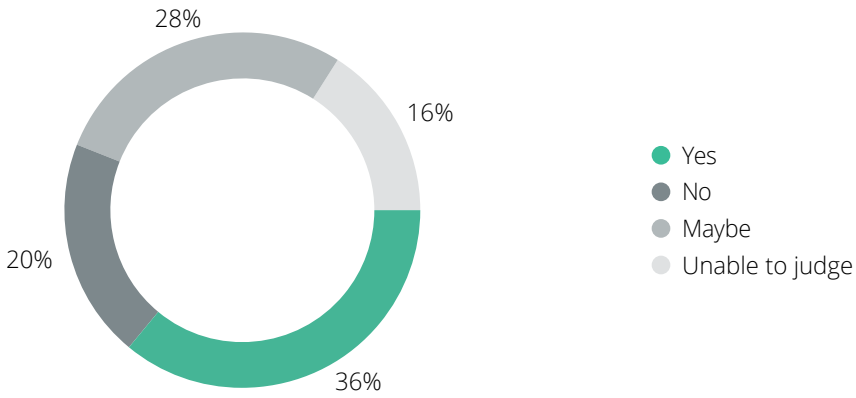

Exhibit / Institutional market potential for the DeFi players *Source: Cointelegraph Consulting DeFi Survey 2020*

Does your platform plan to offer DeFi services tailored for businesses?

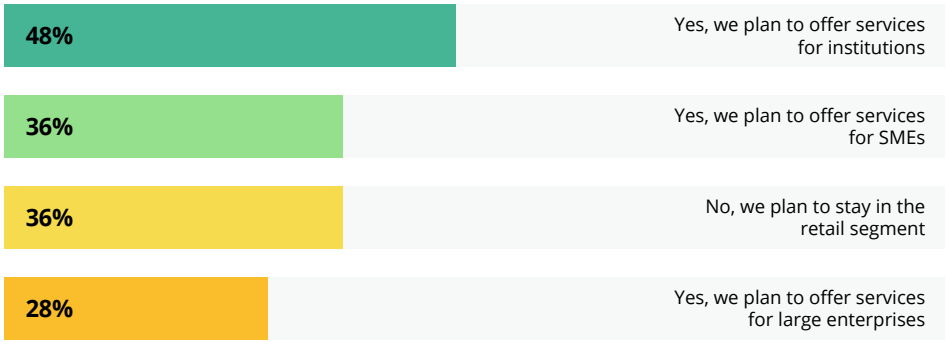

Exhibit / DeFi industry players possible market strategies *Source: Cointelegraph Consulting DeFi Survey 2020*

5 Agile development teams

DeFi companies are similar to usual venture-backed companies, with the note that the whole industry consists of such early-stage startups.

In this faster-moving industry, DeFi platforms need an iterative, agile approach to build disruptive products. Small teams help to keep up the momentum and make changes fast: both when it comes to business strategy or fixing the code.

56% **of the platforms have 10 to 30 employees and 40% have even smaller teams[3]**

[3] Cointelegraph Consulting DeFi Survey 2020

The second reason why keeping the DeFi teams small makes sense is that the majority of the platforms are bootstrapping and possibly have limited resources to expand the number of employees.

What was the revenue scale in 2019 for your company?

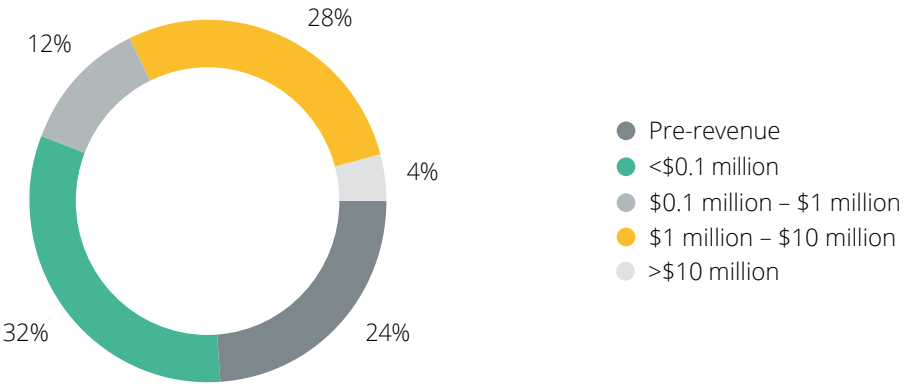

Exhibit / DeFi industry players revenue distribution *Source: Cointelegraph Consulting DeFi Survey 2020*

Thirdly, DeFi is an example of a decentralized industry where the teams had no problem working remotely from the very beginning. However, managing a small decentralized team is much easier, so while the platform is taking off, it is better to have more control of what is going on.

Part 2.1

The Use Cases

In terms of use cases, DeFi offers a robust ecosystem of instruments designed to earn money. While DeFi was and still is mostly used for speculating (with governance tokens being the prime example), there are some ways to capitalize on DeFi without any speculation. We will be covering the following DeFi use cases:

1. Stablecoins
2. Trading and Liquidity Providers
3. Lending and Borrowing
4. Asset Management, Staking, and Yield Farming
5. Derivatives and Synthetic Assets
6. Insurance
7. Oracles
8. Prediction Markets

Read more on CT: Stablecoins, Explained

1 Stablecoins

Stablecoins are digital assets that have a price pegged to a currency, basket of currencies, or other asset to reduce volatility and risk. The most common stablecoin is USDT, which is pegged to 1 US Dollar and is stored on nearly 1.4 million addresses with close to $7 billion in circulation, making it a top five cryptocurrency by market cap. Stablecoins have a clear and sustainable future as a method of payment, store of value, and tool for investing in other DeFi products.

Stablecoins can keep the price from fluctuating in a number of ways. The most common way is by backing the tokens with fiat, much like a national currency is backed by gold or other asset. These coins can be bought on exchanges, and the supply is regulated by a centralized authority. Stablecoins backed by cryptocurrency can be bought on exchanges or are minted by the users themselves. Locking an asset in a smart contract vault will allow them to mint or withdraw a stablecoin, much like a lending platform. Since these stablecoins can be used to unlock a certain amount of locked assets, they maintain their value. However, if the value of the locked asset suddenly plummets due to market volatility, the platform will potentially liquidate the locked assets in order to protect the value of the stablecoin.

	Decentralized stablecoins			Centralized stablecoins
Type:	Backed by fiat	Backed by cryptocurrency	Backed by algorithms	Central Bank Digital Currencies (CBDC)
Example:	USDT, USDC, PAX, BUSD	DAI, EOSDT	AMPL, NuBits	Sand Dollar (Bahamas)

Risks

Not all stablecoins are in fact completely stable. Fiat-backed stablecoins often lack transparency with their reserves, and the holders must place faith in the centralized authority in charge of issuing the coin to maintain the stability. Cryptocurrency and algorithm-backed stablecoins use smart contracts to regulate stability, which are vulnerable to exploits, bugs, and hacks.

Learn DeFi: Rebase
In statistics or finance, a rebase changes the base by modifying a calculation or parameter. For DeFi, several projects have experimented with this by creating an elastic (changing) token supply. They can then rebase the amount of tokens each person holds by adding or subtracting from the total supply on a regular basis.
As the price drops, holders are rebased with fewer tokens, creating scarcity leading to a higher price.
As the price increases, more tokens are rebased to holders, encouraging them to sell and drive the price back down towards the targeted "stable" price. This has the benefit of being truly decentralized, but also adds the risk that user behavior is irrational and wont respond predictably to user behavior. It also has been criticized for it's effectiveness, since it only serves to stabilize a user's total wealth, but not the value of the token itself.

Know your platform: Ampleforth (AMPL)
AMPL was intended to be a stablecoin using the rebasing technique mentioned above. With a price target of around $1 dollar, the community was shocked to find intense speculation drove the price to nearly $3 dollars in late July 2020 before subsequent volatility saw the price plummet to around $0.50 in early August before stabilizing. The daily rebases reduced some of the effects of this volatility, but proved that the rebase method wasn't completely reliable, especially during a market frenzy.

2 Trading and Liquidity Providers

Most DeFi trading happens on either a traditional exchange like Coinbase or Binance, or on a Decentralized exchange (DEX). The main difference is that with a DEX, users do not need to deposit or withdraw funds, they simply connect a third-party wallet to a website interface.

Get to know your DEX:

With a DEX, the wallet interacts with the webpage via smart contracts, hybrid order books, or **liquidity** pools. This has the added benefit of:

- No trusting a centralized exchange
- No lengthy deposit times
- No KYC verifications

On the other hand, this also means users have limited access to things that users take for granted on centralized exchanges such as:

- Customer support
- Diverse trading pairs
- Promotions, bonuses, and referral rewards

Here are some common DEX examples:

Hybrid order book: IDEX, Loopring	These exchanges mimic a centralized exchange by having an order book that users can browse and place orders in. The order book is powered by smart contracts, so users must connect a web or hardware wallet to trade. **Advantages:** Familiar to use, clear order book structure. **Disadvantages:** On-chain fees can be high, trade pairs and order book depth limited by users.
Liquidity Pools: Uniswap, THORChain, Bancor	These exchanges offer **staking** opportunities in addition to trading. Users can provide liquidity by depositing idle tokens into pools. When a user seeks to make a trade, they trade one type of token into the pool and another one comes out at the appropriate ratio. **Advantages:** Any token can be exchanged for anything, no need to wait for matching orders. **Disadvantages:** Prone to **slippage**, require liquidity depth, fee structure unclear.

Read more on CT: Crypto Exchange Liquidity, Explained
Uniswap and Automated Money Markets, Explained

Know your platform: Uniswap
Uniswap has become a household name in recent months due to the success of Ethereum-only DeFi tokens on the platform. There are now more than $250 million dollars worth of assets staked in their liquidity pools.

Learn DeFi: Liquidity
Liquidity Providers: The role of the liquidity provider (LP) is to share their supply of tokens so that an exchange or platform can offer them to users. With a DEX, rather than buying millions of dollars in tokens themselves, LPs supply funds into liquidity pools, which other users can then trade freely with. Most platforms add a small fee for each transaction, which is then split among LPs as a reward for the use of their tokens. This is a low to medium risk way for users to earn a passive income with their funds, particularly on high-volume platforms.

Learn DeFi: Staking
In the DeFi space staking is the process of placing tokens into a smart contract or platform to secure the network, provide liquidity for other purposes, or simply stabilize the token supply. With so many use cases needing instant and deep liquidity to be effective, nearly every platform offers staking benefits, both as a reward for participation as well as recognition of the risk of temporarily surrendering control of your funds.

Learn DeFi: Slippage
When available trade volume is low, a large order will execute at a higher price than the expected price, known as slippage. DEX users should be cautious with large orders. Any delays with executing the trade can cause slippage, as volatile prices might change quickly.

Liquidity Aggregators: Paraswap	Aggregators scan the prices on multiple exchanges to offer the best price on trades. **Advantages:** This saves users time and simplifies the DEX-trading experience. **Disadvantages:** Still limited by the liquidity depth of the platforms it aggregates from.
Stablecoin DEX: Curve	With stablecoins so vital to many DeFi platforms, it makes sense that they'd need their own DEX. The function is not just to allow free trading between stablecoins, but also to 'stabilize' their prices by creating large liquidity pools. Curve's larger pools have hundreds of millions of dollars worth of stablecoins staked inside. **Advantages:** LPs can earn trading fees on their stablecoins. **Disadvantages:** Limited to stablecoins, while also exposing the assets to hacks or exploits.
Leverage Trading: dYdX	With traditional **leverage trading**, users must open accounts with a broker and be subject to stringent KYC processes and regulations. Broker fees can be significant, making decentralized platforms an attractive proposition for serious traders. **Advantages:** Simplified onboarding experience with powerful trading tools. **Disadvantages:** High-risk trading platforms with slower trade execution than on a centralized platform.

Centralization debate:

Many believe that centralized exchanges are a vulnerability in the decentralized blockchain ecosystem. They are the targets of hacks, fraud, and manipulation. Many exchanges charge exorbitant listing fees for new projects, creating minor barriers to entry for small, legitimate projects while rewarding projects that raise higher amounts of capital.

With a DEX, any project can be listed for free, regardless of size, making them a haven for newer and more experimental projects. However, this same openness also makes a DEX the target for scams, hacks, and exploitation of their smart contracts and users. At the present, the industry is growing with a reliance on major exchanges who simplify the user experience, assist in exploring blockchain-friendly regulation, and global marketing for the digital assets listed within; in the future there must be a careful balance between centralized and decentralized exchanges.

Know your platform: Sushiswap
While Uniswap was created without a governance token, Sushiswap and its anonymous developers created the SUSHI token that users could earn by staking Uniswap liquidity provider tokens. This effectively was an attempt to cannibalize Uniswap by offering higher yields to liquidity providers. Not long after launch, the platform's founders allocation was transferred and sold and the main Twitter account announced they were handing the platform over to the founder of FTX (exchange) and Serum (blockchain). Many were upset and consider the actions of Sushiswap to be scam-like, while others praised the ingenuity of the decentralized community.
Note: On September 17th, Uniswap created the UNI token, which sent the Ethereum gas prices skyrocketing as LPs rushed to claim them. This was in response to other platforms incentivizing LPs to leave Uniswap with tokens of their own.

Learn DeFi: Leverage trading
With leverage trading, the platform effectively loans you assets to trade with, allowing users to rack up extreme gains or losses much faster than with just their balance. The risk is that once a user's total account balance is below what is needed to cover losses on a trade, they can be liquidated, losing all their funds.

Learn DeFi: Staking
In the DeFi space staking is the process of placing tokens into a smart contract or platform to secure the network, provide liquidity for other purposes, or simply stabilize the token supply. With so many use cases needing instant and deep liquidity to be effective, nearly every platform offers staking benefits, both as a reward for participation as well as recognition of the risk of temporarily surrendering control of your funds.

Read more on CT: DEX, Explained

3 Lending and Borrowing

DeFi enables users to lend and borrow directly, removing a banking intermediary from the entire process. Balance verifications are based on a blockchain, assets are transferred to a smart contract as **collateral**, and interest rates are deducted without human intervention once the conditions are set. ypically, these loans require a high **collateralization rate** to avoid **liquidation** when market prices fluctuate.

Money markets and lending platforms such as MakerDao and Compound headlined the early DeFi stage by being the two most dominant platforms. Soon they were joined by a number of platforms that tried to replicate their success by either adding more complex financial features or by simplifying the user experience. All are similar in that users can deposit tokens as collateral for a loan, or provide liquidity by depositing tokens and earning interest on them.

Real-life scenario

Payday loan: Suppose you needed a short-term payday loan, but didn't want to sell your cryptocurrency tokens for fear price volatility will push the price up before you can buy them back. You deposit them in a smart contract vault, receive a loan in a stablecoin such as DAI or USDC, which you could then sell for cash. At the end of the month, you could buy back the required amount of stablecoin and unlock your original assets.

Short-term trading: With all the government stimulus checks being written, you predict the price of cryptocurrencies will rise significantly. You lock your current assets in a smart contract vault, and use the loaned stablecoins to buy even more cryptocurrency. After the price increases, you sell only enough to repay your loans, unlocking your original assets and keeping the trading profits.

Learn DeFi: Collateralization
Collateral is a way for the lending platform to recoup their assets should the borrower be unable to repay their debt. In the traditional world, collateral often has a static price, such as a house or property. In the DeFi space, the value of the collateral (cryptocurrency tokens) can swing wildly in value, bringing on the risk of liquidation.

Learn DeFi: Collateralization rate
The required rate of collateral to borrowed assets. On MakerDao, the rate is 150% for most assets, meaning you can borrow up to 66% of the value of your collateral. Having a higher than required collateralization rate is a good practice to prevent liquidation.

Learn DeFi: Liquidation
When the value of the collateralized token drops below a certain threshold, it will be sold off in order to repay the borrower's debt. This is a risk of using volatile assets as collateral on decentralized platforms. On most platforms, users can always add collateral by depositing more tokens into the vault if they sense the price is falling too rapidly.

Learn DeFi: Money markets
Money markets are a major part of traditional financial markets that provide short term loans and liquidity for participants such as banks or other institutions. DeFi recreates these, with the added bonus of being instant, intermediary-free, and not requiring lengthy identification processes.

Read more on CT: Crypto Lending, Explained

Know your Platform: MakerDao and Compound

MakerDao and Compound were two of the earliest movers in the DeFi space. They both operate with the same concept: Simply deposit tokens to provide loans for others while earning interest, or borrow tokens while collateralizing another asset.

Platforms like Youhodler take a more centralized approach, by creating a custodial wallet for users. The centralization trade-off is rewarded by a simplified user experience that includes multiple savings and investment options.

Platform	MakerDao	Compound	Aave	dYdX
Accepted Collateral:	ETH, BAT, USDT, USDC, WBTC, KNC, ZRX, MANA	BAT, DAI, ETH, USDT, USDC, wBTC, 0x BAT, DAI, ETH, USDT, USDC, wBTC, 0x	DAI, TUSD, BUSD, BAT, ENJ, REN, LINK, MANA, REP ...and more	USDC, DAI, ETH
Additional features:	Basic trading	Money Markets	Flash Loans	Leveraged Trading

Learn DeFi: Arbitrage and Flash Loans

Arbitrage: The buying or selling of a token on multiple platforms to take advantage of different prices for the same asset. For example: Due to low liquidity, a token on Uniswap fell way below the price listed on a centralized exchange like Binance. Users could buy on Uniswap and sell at the higher price on Binance, instantly earning a return. With the combination of many exchanges and money markets coupled with inconsistent liquidity, the DeFi space offers a number of opportunities for arbitrage and trading.

Flash Loans: Flash loans are the idea that users can be loaned large sums of money without any collateral provided the user is able to pay the loan back within one transaction. For average users, this might seem like a difficult concept, but when using DeFi products, a token usually undergoes a series of swaps that could take advantage of different prices or promotions on different platforms. Taking the example of arbitrage, if a user notices a pricing inconsistency on multiple exchanges, it's possible to:

1. Borrow a large sum in stablecoins
2. Use it to buy a token from on DEX A
3. Sell it at a higher price on DEX B
4. Return the loaned sum to the flash loan platform
5. Keep the remaining profits

A second example could be regarding loaned tokens. Assuming platform B is offering a lower interest rate on loans than platform A, with the traditional method, a user would have to:

1. Pay off the loan and unlock the collateral
2. Send the collateral to platform B
3. Restake the collateral and receive new loan

With a flash loan, a user could skip step one, receive a second collateral-free loan to pay off the first loan, move the collateral to platform B, and use the loan from platform B to pay off the flash loan all within one transaction. While this might seem like a complicated process, much of it can be handled in the background, giving users additional liquidity to always take advantage of the best prices on the market.

4 Asset Management, Staking, and Yield Farming

With so many DeFi products springing onto the market, finding the right way to invest can be a major source of confusion. Many platforms in the previous sections offer rewards for staking, investing, or providing liquidity to the platform, often in the form of a traditional annualized percentage (APR), in governance tokens, or both.

Apps like InstaDApp, Zapper.fi, and Zerion try to simplify this process by offering a user dashboard where you can connect a wallet and then select which platform you wish to stake tokens on, including popular platforms like Compound (money markets), MakerDao (lending) and Curve (stablecoin liquidity pools). Uniting the different platforms under one dashboard certainly simplifies the user experience, while making it easier to manage and observe a variety of different investments.

Know your platform: Balancer
Balancer acts as both an exchange and an investment manager by setting up liquidity pools of paired assets. Much like a digital index fund, you could deposit funds to one of the pools (for example: the 60% MKR and 40% wETH is one of the more popular pools on the protocol). In order to maintain the balance between the pairs, traders can then access the pools (they can take advantage of arbitrage opportunities) with the trading fees going back into the liquidity pools. Liquidity providers are entitled to their percent of the pool, including trader fees.

Learn DeFi: Yield Farming

At the heart of the investment craze was yield farming, a new phenomenon that had users staking funds in platforms chasing high returns on DeFi platforms. Yield farming started when Compound rewarded users on the platform with their COMP governance token, which caused a massive increase in total value locked (TVL) on the platform.

Exaggerated yield farming soon came about as users began depositing tokens in Compound as collateral (earning even more tokens) to borrow more tokens, which they could reinvest (earning COMP again) in the same or other platforms, creating a repeating cycle of borrowing and lending. While the process sounds confusing, it follows the basic premise: One stablecoin locked could be used as collateral for a loaned stablecoin, which could then be locked into another protocol's pool, and as traders maintain the balance between pools as demand shifts, the trading fees serve as rewards for these yield farmers.

This shows how tokens are shifted around by yield farmers without any actual value being created. Unchecked, this kind of irresponsible lending behavior inflates platform metrics but lacks sustainability.

Risks and concerns:

Fund management and yield farming are certainly hot topics in the community and rightly so: most long-term blockchain enthusiasts have access to tokens sitting on exchanges and wallets and DeFi provides a unique way to earn interest and other returns on them. Yield farming and liquidity pool aggregators make it easy to identify high value opportunities, despite the questionable economics supporting some of these platforms. Many questions surround the sustainability of high-yield DeFi investments, particularly if the primary use case of the platform is just lending tokens to yield farmers hoping to reinvest them elsewhere. The challenge will be on DeFi's developers and ecosystem leaders to create products with real-world value, encouraging participation even after the frenzy around governance tokens fades.

Know your platform: Yearn Finance (YFI)
Yearn Finance founder Andre Cronje created a tool for yield farmers that automatically rebalanced the portfolio for maximum yields. This process also minted users with a special version of the DAI stablecoin (yDAI) that could then be deposited into Curve (The DEX for stablecoins) for even more earnings. The process was a major success, and even though Cronje admitted the governance token (YFI) that users also earn in exchange for staking had zero financial value. Retail investors thought otherwise, and bought the token up from $0 when it launched on July 17th to over $43,000 dollars a few months later in September.

Know your platform: Yearn Finance (YAM)
After the yield farming craze really took off, a team of developers took the farming nickname literally and created Yam Finance. The platform combined two trending buzzwords: rebase economics and yield farming. They were also upfront about the due diligence that had gone into development by announcing that no security audits had taken place and investors should participate at their own risk. Investors took the bait and locked more than $400m in the first 24 hours, making it the 7th largest Defi project according to total value locked (TVL) as of August 19th 2020. Not surprisingly, the next day the developers announced a critical bug in the rebase function, that crippled the platform and caused the once highly-coveted YAM tokens worthless. Now, the developers are hastily pushing out some updates to try and save the project. As of now, Yam serves as a warning for the dangers of using unaudited DeFi platforms.

5 Derivatives and Synthetic Assets

With derivatives and synthetic assets, DeFi has the potential to unlock the trillion dollar global financial markets, making them more accessible and efficient. This offers the DeFi industry a long-term path to true sustainability beyond just the cryptocurrency trading, lending, and staking space.

Know your platform: Synthetix

Synthetix is one of the largest and earliest DeFi platforms with over $800 million dollars locked in the platform. Some of the more popular assets on the platform include:

Type	Tokens	Explanation
Forex	sAUD, sUSD, SGBP, sCHF	Trade foreign currencies and hedge against volatile conditions.
Commodities	sXAU (Gold)	This asset is pegged to the price of an ounce of gold.
Indexes	sFTSE, sNIKKEI	These are pegged to the price of major stock indexes.
Cryptocurrencies	sBTC, sETH, sBNB	Trade major cryptocurrencies without worrying about network and wallet options.
Inverse Cryptocurrencies	iBTC, iETH, iBNB	The equivalent of shorting (without needing a Futures account), the value goes up as the price of the cryptocurrency goes down.

Learn DeFi: Derivatives
Derivatives are financial contracts that derive their value from the future price of an asset. Bitcoin futures are the most common example, which are often used as a hedge or speculative investment by traders.

Learn DeFi: Synthetic assets
Synthetic assets in DeFi are a token that can represent the value of any number of things, including gold, a barrel of oil, a currency, or traditional stocks.

6 Oracles

While most have faith in decentralized smart contracts, transparent source code, and verifiable on-chain data, how data gets to the blockchain is a major concern. That's why decentralized oracles are tools that are designed to report important data to smart contracts and DeFi protocols so that platforms can function accurately and fairly. Think of them as trusted data feeders which connect the real world with the blockchain. Many of these oracles are tasked with reporting regularly updated price feeds, so that exchanges and smart contracts can make automated decisions. For lending and leveraged trading platforms this is especially important as user funds could be liquidated if the price of an asset was to be reported inaccurately.

	Chainlink	Band Protocol	Dos Network
Supports:	Ethereum	Ethereum, Cosmos, Polkadot	Ethereum, EOS, Quarkchain, Tron, and more
Token:	LINK	BAND	DOS

Know your platform: Chainlink
Chainlink dominates the conversation when talking about oracles due to their explosive token value appreciation in 2019/2020. Their oracles are responsible for providing data to a number of leading DeFi products such as Synthetix, Aave, Bancor, Paraswap, and Swipe, who both use and sponsor these oracles on the network.

Read more on CT: Crypto Synthetic Assets, Explained | DeFi Oracles, Explained

Oracles exploded in popularity after the phenomenal price increase throughout 2020. They have the ability to be plugged in to any dApp or smart contract, making them a valuable and ubiquitous technology.

7 Prediction Markets

Decentralized prediction markets have the ability to disrupt the betting industry, as markets can be created on anything from sporting events to political elections. Augur, a leading platform in this space, allows users to stake tokens on the outcome of certain events. Currently, events that are open for betting regard a wide range of topics including sporting events, the 2020 US Election, the amount of COVID-19 cases.

8 Insurance

With billions of dollars locked in smart contracts, coupled with the risk of hackings, malfunctions, and exploits, the DeFi space sorely needs a fallback plan in case disaster strikes. Opyn and Nexus Mutual (NXM) are two platforms that allow users to buy insurance on their holdings or platforms. If tokens are lost due to accident or theft, the insurance will pay out to the user. Unlike traditional insurance policies, users can buy insurance on tokens they don't have. In a sense, it can be viewed more like a bet on the soundness of the platform. As long as users buy coverage, if the platform fails, they are entitled to returns.

$31,000

the amount paid out by Nexus Mutual in February after smart contract platform bZx suffered a bug exploit

Few have benefited more from the rush of money into the DeFi space than Nexus Mutual. The TVL on the platform exploded from averaging around $4 million earlier in the summer to around $75 million in mid-September.

Part 3

DeFi in Use

Cross-chain trading and liquidity Token: RUNE

https://thorchain.org/

Company overview

THORChain makes exchanges between tokens on different blockchains possible by connecting a decentralized network of liquidity pools. Unlike other cross-chain solutions that require complex wrapped or pegged tokens mechanisms, THORChain connects liquidity pools from different blockchains that are optimized to maximize incentives for liquidity providers such that a deeply-liquid trading environment can be facilitated.

Token overview

- Total supply: 500,000,000 RUNE
- Circulating supply: 158,432,088 RUNE
- Token type: BEP2 (Binance Chain)

Key features

The THORChain ecosystem has four main roles that work together to benefit the network. When landing on the main dashboard, users will have the option to take part in:

1. **Swapping** — Swappers who wish to exchange one token for another will pay small transaction fees while getting fast swaps with minimal slippage
2. **Trading** — After swappers exchange assets, prices may slip away from global averages. Profit-seeking traders will correct this by buying and selling on different exchanges, correcting any mispriced assets.
3. **Providing liquidity** — Liquidity providers supply their assets in the liquidity pools while collecting fees from swappers and traders.
4. **Node operation** — Anonymous node holders also collect fees from the system in exchange for using computing resources to secure the network.

Cross-chain method:

THORChain's goal is to be compatible with Ethereum, Bitcoin, Binance Chain, and Monero. It uses what's called a one-way state peg to manage the different blockchains. Essentially, vault addresses on each different blockchain are observed by a signer module made up of the nodes users can run (they named it Bifrost). The Bifrost then communicates all transaction-related data with the THORChain mainnet, where any staking or swapping logic is computed.

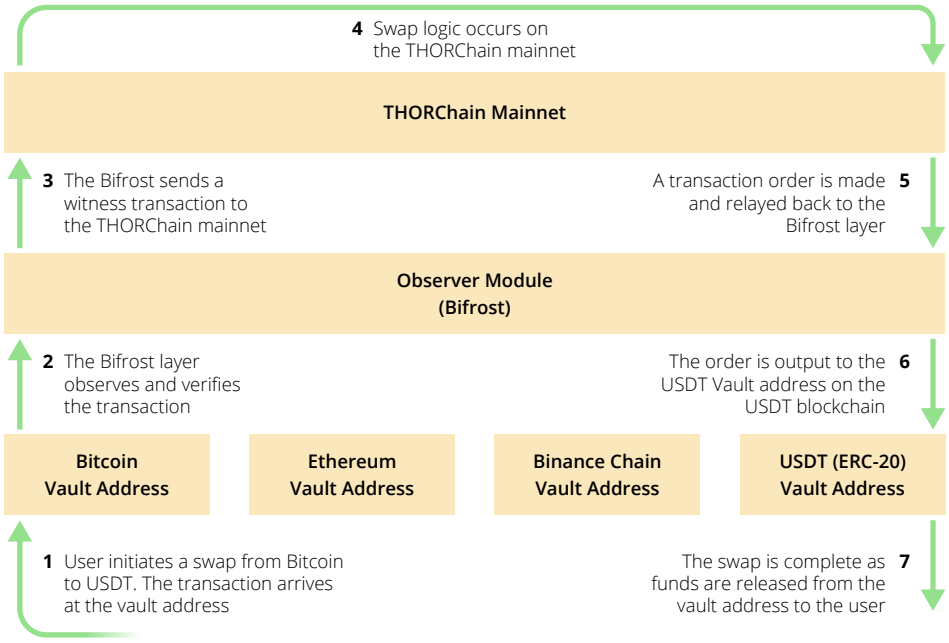

Exhibit / An example swap from BTC to USDT (ERC-20)

Platform differentiation:

Many other DEX platforms are limited to a single blockchain, making them ineffective for active traders with more diverse portfolios. THORChain also places a high priority on anonymity and decentralization, which gives more options to people hoping to avoid centralized platforms and transact on a neutral and decentralized platform.

Decentralization, nodes and bonds:

Decentralization and anonymity are key for the THORNodes, which are 99 independent nodes. This anonymity prevents collusion and protects the privacy of node operators. Node holders are incentivized by two factors:

Positive incentive:

- A portion of the fees on the platform are given to node holders in RUNE tokens

Potential risk:

- A bond (in RUNE tokens) is required to be bonded prior to being selected by the protocol. The bond can be deducted from if key network events are mishandled. In other words, node holders can lose money if they fail to sign a block or perform some other negligent or malicious activity. If a node attempts to steal assets, their bond will be deducted to 1.5x the amount they attempted to steal, making the liquidity pools complete again. This ensures that the anonymous individual behaviors are aligned with the best interests of the platform.

Emission schedule:

Just as Bitcoin offers block rewards to miners, THORChain has a similar plan that encourages early participation and system growth. Each block a portion of the reserve is emitted to stakers and node operators as a financial reward. The rewards should also encourage more token holders to stake RUNE either in the liquidity holders or as a bond for a node, reducing the supply on the secondhand markets.

The Incentive Pendulum:

For the platform to be both efficient and safe, there must be a proper ratio of node-holder bonds and liquidity pool assets (staked). For example, if there is a higher ratio of pooled-assets to bonds, bond holders could be tempted to steal assets and forego their bond. If there is a higher ratio of bonds to pooled assets, trading on the platform will be inefficient. To solve this, THORChain has an incentive pendulum that detects when the ratio is off, and adjusts reward distribution to encourage the system to balance. If not enough capital is bonded, more rewards will be given to node holders, which will drive up the amount of bonds on the platform as more people compete for the higher rewards.

Upcoming features

THORChain is still a relatively new project, but their first production blockchain has launched (nickname Chaosnet), which allows swapping and pooling of Binance Chain BEP2 tokens, and is undergoing public validation. Current numbers of around $10m in capital secured, with about $6m in volume over 3 weeks. Multi-chain mainnet that supports Bitcoin and Ethereum is expect after this phase.

Safety and security

While there are certain risks with nearly every platform in this industry, THORChain has conducted a number of independent audits to show their transparency. The THORChain Github lists a number of recent audits, including by well-known cybersecurity auditor CertiK, and GAUNTLET, who have conducted an analysis of the economic viability of THORChain's Incentive Pendulum.

THORChain governance attempts to be as minimal as possible and designed with the goal to eliminate the need for node holders to interact with each other, thus reducing the likelihood of collusion. There are only four instances where governance is needed from the users:

- Deciding on asset listing or delisting
- Deciding on blockchain listing or delisting
- Deciding on upgrades through a THORChain Improvement Proposal (TIP)

Remarkably, THORChain's founders believe in a pseudo-anonymous leadership role, meaning that the founders aren't listed on websites and in the whitepaper. The founders do take part in occasional interviews and their identity is known, but they don't wish to be a distraction to the decentralized nature of the protocol.

Blockchain ecosystem and
Ethereum scaling solution

https://enjin.io/

Company overview

Enjin offers an ecosystem of integrated products that make it easy for everyone to develop, trade, monetize, and market with blockchain. While they are better known for their usage in the blockchain gaming world, their Ethereum scaling solution and asset management solution is ideal for DeFi applications to put into use. their upcoming Ethereum scaling solution and asset management solution, known as Efinity, is ideal for Ethereum-based DeFi applications to put into use. It can be collateralized by token hodlers to earn passive income in the upcoming lending platform (Efinity).

Token overview

- Total supply: 1,000,000,000 ENJ
- Circulating supply: 821,201,679 ENJ
- Token Type: ERC-20
- Minting: Developers create assets that have instant liquidity due to their ENJ backing.
- Melting: Users can melt their assets to retrieve the ENJ backing from within.
- Diminishing supply: As the number of minted assets increase, the availability of ENJ on the market decreases.

Key features

1. **Asset backing** — Creating blockchain assets via the Enjin Platform requires a nominal amount of ENJ backing.
2. **Transaction fee** — Peer-to-peer transaction fees and Enjin Marketplace purchases are paid with Enjin Coin or ENJ-backed assets.
3. **Transaction prioritization** — Blockchain assets backed with more ENJ will have priority within Enjin's upcoming scaling solution, Efinity.
4. **Lending** — Efinity will feature a DeFi framework enabling users to earn, lend or borrow the ENJ token.

The Enjin ecosystem has a number of established products, including:

- **Platform**
  Blockchain asset creation, management, and integration platform that has been used to mint over 1 billion blockchain assets for more than 750 projects.
- **Wallet**
  Blockchain asset wallet that seamlessly links with games and apps. With over 1 million downloads, it's one of the most feature-packed digital wallets in the world.
- **Marketplace**
  Online marketplace where users can discover, buy, and sell rare and unique blockchain assets. It currently features over 10 million digital items.

- **Beam**
  A QR-based blockchain asset distribution system used by companies like Microsoft and Binance. So far, it has been used in more than 1,000 campaigns to deliver over 181,000 blockchain assets via QR codes to users across the globe once it is publicly launched, with the support of Efinity, anyone will be able to distribute blockchain assets via QR codes without paying transaction fees.

Upcoming features

Mint

Enjin is creating a new product that will enable easy, seamless creation of fungible and non-fungible tokens representing digital or real asset classes. Projects will be able to mint fungible and non-fungible tokens directly onto the Efinity network without needing to purchase ETH.

Efinity

Efinity is an upcoming Ethereum scaling solution that will enable fast, free transactions of both ERC-20 and ERC-1155 tokens, while providing passive income to Enjin Coin lenders. Besides alleviating existing network congestion issues, Efinity will enable everything from large-scale blockchain MMOs to new decentralized reward-based and equity crowdfunding models.

Key DeFi features of Efinity

- **Borrowing:** Developers will be able to borrow Enjin Coins to mint their assets, increase the value of their economy, and gain priority for their assets on Efinity.
- **Lending:** Users will gain passive income by lending Enjin Coin to developers of blockchain games and apps — simply by clicking a button inside the Enjin Wallet app.
- **Developer-friendly:** Game and dApp developers can open an Efinity hub, allowing users to make transactions and transfers within their application without cost. The ledger will be settled back on the Ethereum mainnet after the dApp usage is complete.
- **Scalability:** Efinity is horizontally scalable across an infinite number of Efinity Hubs, each Hub featuring a high TPS.
- **Gas-free transactions:** Users will be able to receive and send ERC-20 and ERC-1155 tokens in split seconds on Efinity without owning or spending any ETH, enabling developers to onboard users that have no prior experience with blockchain or cryptocurrency.
- **Wallet integration:** Users will be able to send and trade digital assets, including stablecoins like DAI, USDT, and USDC, through the Enjin Wallet and other partnered wallets. No work will be required by the developers of these ERC-20 and ERC-1155 assets to enable compatibility.
- **Dynamic speed of transactions:** A blockchain asset's ENJ backing will be in direct correlation with the speed of its transaction on Efinity; assets with more ENJ imbued in them will be sent faster.

Value to users

- **Early mover and market leader:** A Blockchain gaming market leader, perfectly poised to introduce DeFi to an industry in dire need of decentralized reward-based and equity crowdfunding.
- **Nearly infinite scalability:** Enjin has created Efinity for good reason, current infrastructure isn't fast enough. In order to scale properly, gaming and DeFi applications would both require extremely high throughputs. A single game with millions of active users would be impossible on Ethereum in its current state. Efinity is a solution that is ideal for any Ethereum dApp processing high-frequency token trades.
- **Mint-melt tokenomics:** Backing digital assets with Enjin Coin imbues them with real-world value. Assets can be melted back into ENJ at any time, which increases consumer trust.
- **Network effects:** Enjin's products have already created impressive results, despite being beholden to the cost of Ethereum transaction fees. To this date, over 1 billion ERC-1155 assets have been minted and distributed to hundreds of thousands of users using the Enjin Platform. These numbers are projected to increase parabolically with the launch of Efinity.
- **Product ecosystem:** A holistic ecosystem of integrated products that provide everything users need for creating, managing, trading, distributing, monetizing, and integrating blockchain assets.

Safety and security

The Enjin Wallet has been tested by information security team Oru and has a number of features that make storing assets safe. This includes dual-layer encryption and a custom keyboard that protects it from key loggers.

Successes to date

- As of July 2020, Enjin has onboarded over 30 developers as part of the official Enjin Adopter program, helping them build, fund, monetize, and market their blockchain games.
- Many of the assets created on Enjin have gained an intrinsic value of their own; for example, a rare Binance collectible token was sold for over 50,000 ENJ on the Enjin Marketplace.
- Microsoft is using the Enjin Platform for Azure Heroes, a blockchain-based rewards program that recognizes members of the Azure development community for inclusive behavior, meaningful contributions, and verifiable acts of impact. To date, over 32,000 Enjin-created badges have been distributed to Microsoft Azure developers.

ForTube

Lending platform and yield farming protocol
Launch year: 2018

https://for.tube/

FOR token overview
Supply: 1,000,000,000
Type: ERC-20, BEP-20

Company overview

ForTube is an open financial platform launched by the Force Protocol and one of the largest DeFi platforms initiated in China. It is one of the top global lending platforms by TVL, offering compatibility to a wide range of cryptocurrencies. With access to a wide range of global markets as well as users in China, ForTube has a high growth potential both in transactional volume and TVL.

Key features

1. **Bank** — ForTube's Bank allows users to deposit or borrow a number of stablecoins and cryptocurrencies. The FOR token is used to reward depositors, offering an improved yield. This is the core feature of ForTube, and users can earn instant yields by depositing tokens via MetaMask, ImToken, or a number of other supported wallets.
2. **Binance Smart Chain** — ForTube's platform is compatible with BSC, offering users greatly reduced gas fees and faster confirmations. Users can withdraw BEP-20 tokens from Binance to Metamask for depositing in ForTube.
3. **Bonds** — Users can issue bonds which other investors can choose to purchase, effectively lending them cryptocurrencies and stablecoins. This presents an interesting fundraising method for users of the platform.
4. **QIAN Stablecoin** — QIAN is an algorithmic stablecoin that can be minted or melted by depositing cryptocurrency into the platform. This is an area that ForTube could look to grow as they integrate their stablecoin into more products and exchanges.

Value to users

- In August of 2020, ForTube launched version 2.0 of their platform, which featured large yield farming incentive rewards. Version 2.0 of their platform supported a wide range of cryptocurrencies, including FOR, YFII, YFI, LINK, LRC, NEST, LEND, SNX, BNT, KNC, COMP, MKR, ENJ, MANA, and SAND. Version 2.0 included optimized smart contracts to lower gas fees and streamline the lending process.

Safety and security

Smart contracts were successfully audited by a number of security companies, including CertiK. CertiK and ForTube announced a collaboration to integrate Certik's Security Oracle which will provide real-time on-chain security scores for ForTube and their external smart contracts.

Wing

Lending platform
Launch year: 2020
https://wing.finance/

WING token overview
Supply: 10,000,000
Type: OEP-4 (Ontology)

Company overview

Wing is building a cross-chain lending platform that allows users to deposit and borrow assets. However, it comes with a unique twist: it's exploring the merging of on-chain and off-chain credit systems. It takes advantage of Ontology's decentralized identity framework (ONT ID) to create a secure and private credit score for users.

Key features

1. **Flash pool lending** — Users can either supply liquidity or borrow using their assets as collateral. Initially supported assets will include renBTC, ETH, ONT, DAI and USDT.
2. **Dynamic interest rate model** — Interest rates fluctuate with shifts in supply and demand, helping the platform remain at an optimal ratio of borrowing to deposits.
3. **Decentralized governance** — The WING token, which is released into the pools as rewards for users, can be used for voting on new product pools, rules, governance mechanisms, or community fund allocation.
4. **No token pre-allocation** — No team members, initiators, or investors will receive an allocation, leading to a fair governance structure.
5. **Cross-chain and multi-asset support** — Ontology's framework can support other blockchains, notably Ethereum and ERC-20 tokens. Wing intends to include support for these as well as other assets, such as NFTs.
6. **Scalable** — Ontology's framework can currently support over 3,000 TPS, allowing it to handle a much higher volume of users than current Ethereum-based platforms.

Value to users

OScore: Decentralized Credit Ratings	Why does DeFi need decentralized credit?
Wing and Ontology are working together on a framework called an OScore, an innovative credit evaluation system that can be used by dApps including Wing. The idea behind this is that user transaction history, on-chain asset balance, and other on-chain historical events can create a reputation system that rewards responsible dApp usage. Offline data like KYC verification can be used as a credential that identifies the user to the dApp, while the user maintains full control over the data. In the initial phase, the OScore will be used to give Wing users incentives such as token bonuses and lower collateralization requirements. As the system expands, Ontology will develop more application scenarios to make the Oscore rating system a complete representation of a user's financial profile.	• Collateralization-based lending requires excessive amounts of collateral to be stored — resulting in a non-optimal lending environment. Credit based lending can use resources more efficiently by reducing or eliminating the need for collateral. • Future regulatory requirements might offer additional challenges for lending without KYC, yet few users will feel comfortable uploading personal data to a dApp. OScore solves this by giving users full sovereignty over their data.

Safety and security

Wing's smart contracts are under audit by 3 main organizations to ensure the safety of the platform.

YOUHODLER

Lending and Investment Management
Launch year: 2018

https://www.youhodler.com/company

Company overview

YouHodler is a web and mobile app that acts as a custodial wallet and radically simplifies the DeFi process. They are a Europe-based company with offices in Switzerland and Cyprus. As an active member of the Blockchain Association of the Financial Commission and the Crypto Valley Association, customers are protected by the independent Financial Commission's dispute resolution process.

Key features

1. **Borrow** — Crypto-backed loans — Users can deposit major digital assets (the TOP 20 coins by market cap) as collateral for crypto loans with a high loan-to-value ratio (90%). The loans are available in EUR, USD, CHF, GBP, Bitcoin (BTC) and stablecoins. Users can withdraw instantly to a credit card or personal bank.
2. **Save and earn** — Savings accounts — Earn up to 12% on stablecoins, 8.2% on gold (via PAXG), 4.8% on Bitcoin (BTC), and many other cryptocurrencies. Weekly payouts are available.
3. **Multi HODL** — Multi HODL is a user-friendly way to access the risks and rewards of margined trading with profits as high as 290%. Users start by determining their risk level and the asset they wish to receive a loan in, then changes in volatility can multiply quickly.
4. **Exchange** — Using a third-party widget, users are able to buy cryptocurrencies directly with their bank card. In addition, users can swap between cryptocurrencies, fiat and stablecoin currencies.

Advanced financial products

Value to users

- **Easier user workflow:** Rather than having to use complex wallets, deal with private key management, and risk losing all their funds to a careless mistake, YouHodler takes care of all the details on the backend. This is an ideal solution for new Defi or blockchain users, as well as more advanced users seeking expedited solutions they can access from their mobile phones.
- **Customer Support:** Unlike more decentralized solutions, YouHodler can provide 24/7 customer support. Their experienced team understands user needs when dealing with financial products.

Safety and security

To protect user funds, YouHodler uses Ledger Vault's infrastructure to securely control its crypto assets with a multi-authorization self-custody management solution and $150 million pooled crime insurance. Users are required to submit KYC information to ensure the company meets the strict regulatory standards in Europe. YouHodler's fiat funds are stored in reputable banks in Europe and Switzerland, while partnering with trusted payment providers.

Equilibrium

Money markets and lending
Launch year: 2018

https://equilibrium.io/

Company overview

Equilibrium is a cross-chain money market built on Polkadot's Substrate framework. The project originated on EOS but expanded to Polkadot to take advantage of the increasingly popular DeFi ecosystem being built there. Users can stake assets and borrow EOSDT, a stablecoin pegged to the US dollar.

Key features

1. **Pooled-lending** — With Equilibrium, users can lend or borrow major digital assets like ETH, BTC, XTZ, TRX, synthetic assets, and other stablecoins.
2. **Collateral baskets** — When borrowing, Users can deposit multiple assets as collateral to reduce the risk of volatility leading to liquidation.
3. **Cross-chain** — Polkadot's bridges give trustless interoperability and allow users to access main DeFi use cases all in one interface
4. **DEX trading** — Using the lending pools, users can execute cross-chain trades and even add leverage trading
5. **Staking and liquidity farming** — Earn rewards on assets staked in liquidity pools and earn EQ governance tokens

Value to users

- Equilibrium is positioned in a crowded DeFi space but is banking on their multi-feature approach to attract users. As one of the earliest non-Ethereum DeFi players, their wide range of supported assets could entice token holders from other blockchain ecosystems to become active users.

Safety and security

Founder Alex Mehlikov is a well-known face in the DeFi community. He co-founded the exchange Changelly, which was an early alternative to traditional order book exchanges.

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