

DeFi Research 02

DeFi BUILDING BLOCKS

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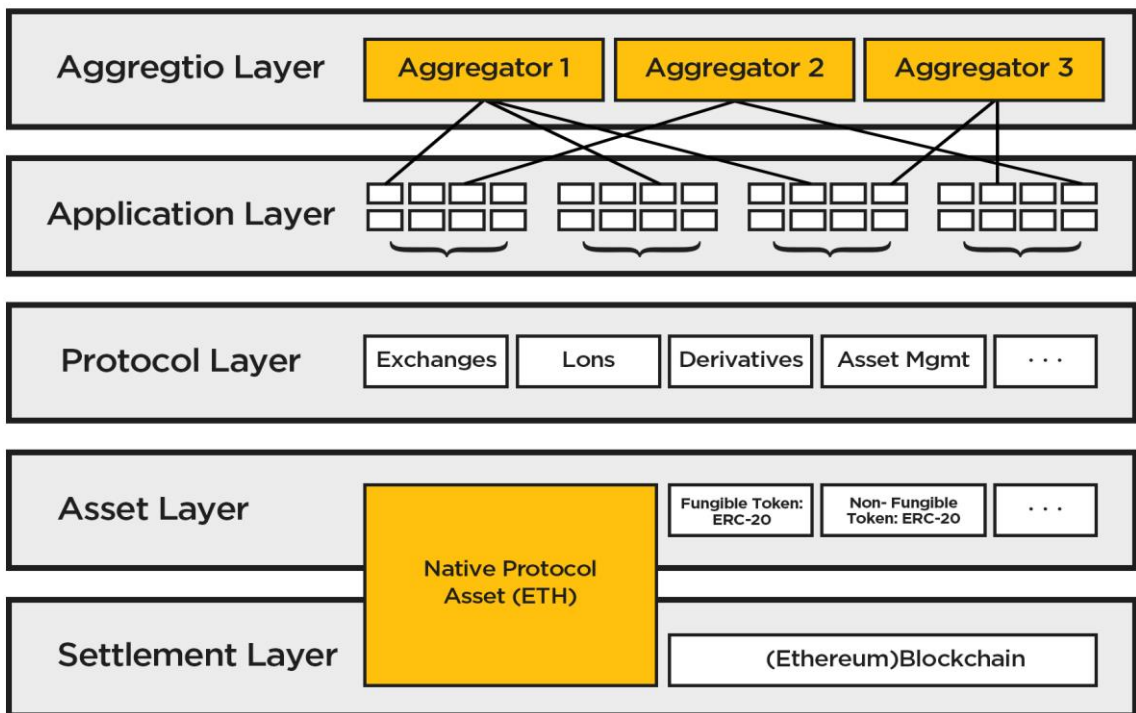
DeFi Building Block Introduction

DeFi uses a multi-layered architecture. Every layer has its own distinct purpose. Each layer provides the foundation and the stability for the layer on top of it to express itself effectively. In this section we propose a framework for the analysis of these layers, DeFi analysis continues with a short recap about DeFi Finance stack [\[↗\]chapter 1.](#) and This serves as the basis for [\[↗\]chapter 2,](#)which explains DeFi Applications .

DeFi Financial Stack

We differentiate DeFi Financial Stack in 5 layers: the settlement, asset, protocol, application and aggregation layers.

It is important to understand that these layers are hierarchical, in the sense that they are only as secure as the layers below. If, for example, the Blockchain in the settlement layer is compromised, all of the subsequent layers would be unsecure. Similarly, if we would use a permissioned ledger as the foundation, any decentralization efforts on subsequent layers would be ineffective.



The settlement layer

It consists of the Blockchain and its native protocol asset. It allows the network to securely store ownership information and ensures that any of the state changes adhere to the network's rule set. As such, the Blockchain can be seen as the foundation for trustless execution and serves as a settlement and dispute resolution layer

The asset layer

It consists of all tokens that are issued on top of the settlement layer. This includes the native protocol asset as well as any additional tokens that are based on token standards supported by the Blockchain.

The protocol layer

It provides standards for specific use-cases such as decentralized exchanges, debt markets, derivatives and on-chain asset management. These standards are usually implemented as a set of smart contracts and can be accessed by any user.

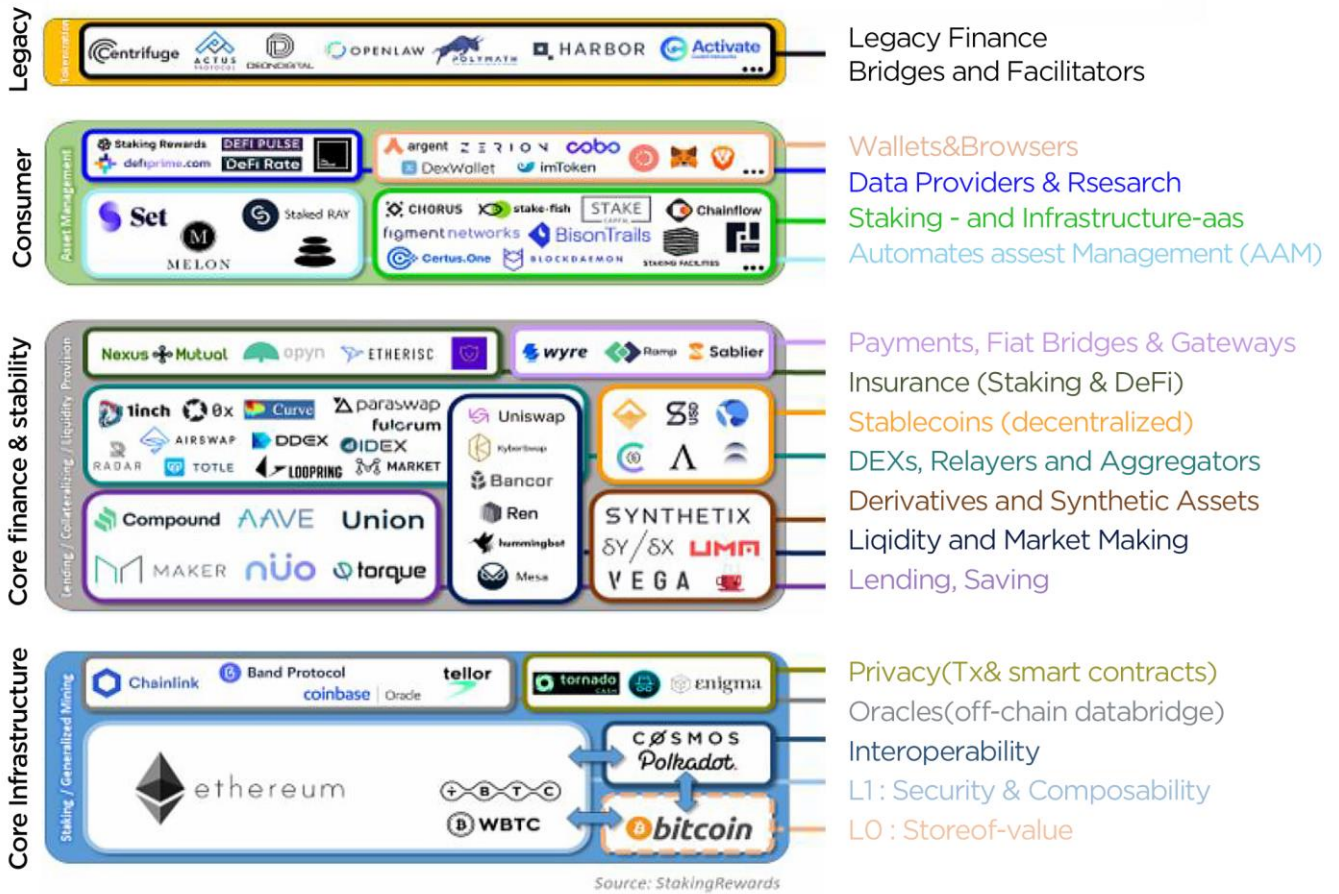
The application layer

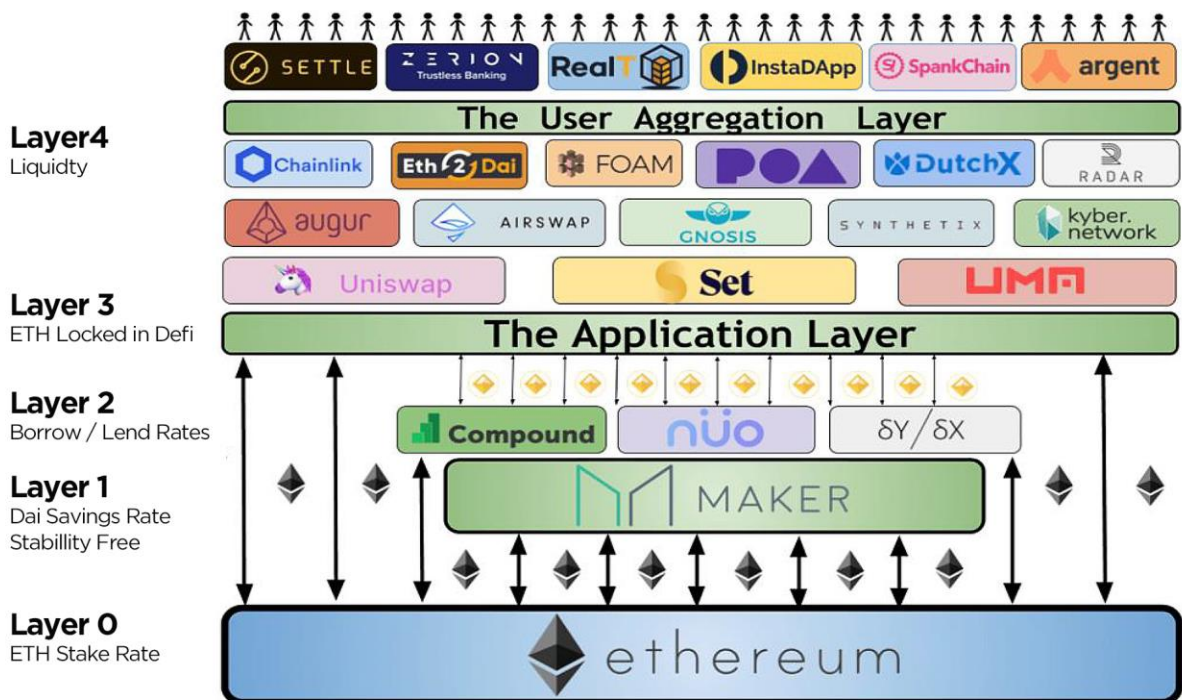
creates user-oriented applications that connect to individual protocols. The smart contract interaction is usually abstracted by a web browser-based front end, making the protocols easier to use

The aggregation layer

It is an extension of the application layer. Aggregators create user-centric platforms that connect to several applications and protocols. They usually provide tools to compare and rate and services, allow users to easily perform otherwise complex tasks by connecting to several protocols simultaneously, and finally combine relevant information in a clear and concise manner

DECENTRALIZED FINANCE (DEFI) STACK: PRODUCT & APPLICATION VIEW





Layer 0 – The ETH Stake Rate

Layer 0 is the layer that is responsible for the security of Ethereum blockchain. Layer 0 issues more Ether (per person) when security is low, but less Ether (per person) when security is high. This ensures that Ethereum is sufficiently secure, while enabling sufficient Ether to migrate to higher up the financial stack.

Holding a certain amount of Ether (ETH) to participate in the network and obtain a reward in return. The process of staking involves locking up an amount of a given cryptocurrency in a wallet to participate in the operation of a blockchain in return for rewards. Theoretically, anyone can participate in staking on any blockchain operating a proof-of-stake consensus. Proof-of-stake has several variations, which also allow people to participate in staking. Those with 32 ETH can validate network transactions on their computer and earn interest for doing so.

Layer 1 – Dai Savings Rate, The Stability Fee

Layer 1 is the stability layer. Layer 1 takes the Ether issued at Layer 0, and transforms it into its stable form, Dai. Layer 1 is also the capital generation layer

Layer 1 is where money can be minted directly by individuals, and added to the total pool of money in the macro-economy.

Maker DAO is the place where Dai is born. In order for Dai to be born, the generator of the DAI, the CDP Holder, commits to paying The Stability Fee. The Stability Fee is the interest rate on the loan, and is a tool that is used to manage the price of Dai on the secondary market.

It also determines the cost of capital. The Stability Fee is a measure of the estimated return that the CDP holder expects to receive in a given year, with the loan that they produce from their collateral assets

Layer 2 — Dai Weighted Average Borrow (WABR) & Supply Rates (WASR)

Layer 2 is the ‘availability of capital’ layer. Layer 2 determines the cost of borrowing, balanced by the interest paid to suppliers.

The Dai WABR and WASR takes the averaged rate that Dai is supplied to, or borrowed from all Dai lending/borrowing platforms. By weighting the average price, by the volume found at each market (Compound, DyDx, Ducato), the Borrow and Supply Rates gives a number that shows the rates for supplying Dai to, or borrowing Dai from, ‘the Market’. These two numbers will be a useful metric to track, as money managers look for data to support their decisions.

Secondary Lending Rates (Dai)



Layer 3 — ETH Locked in DeFi

Ethereum applications are basically computer software that programs how money, or other assets, operate. Internet runs on Data, where the Ethereum runs on Value.

ETH Locked in Defi

TVL (USD) | TVL (ETH) | [ETH](#) | BTC | DAI

[All](#) | 1 Year | 90 Day | 30 Day | 7 Day



Ether can exist in 1 of 3 places -

1. Staking

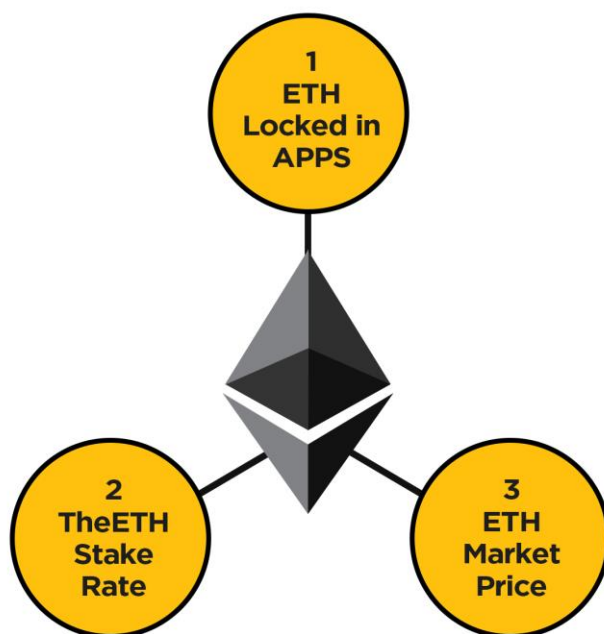
Ether, acting as a Capital Asset, that provides a regular dividend return.

2. ETH locked in Apps

Ether, acting as a Store of Value, acting as collateral for trustless/permissionless participation in global finance.

3. On the Secondary Market

The price that the secondary market must pay for access to the above two services.



The application layer (1-ETH Locked in Apps) reflects the market appetite for financing. Supplying to, or borrowing from, the market.

Layer 4: User Aggregation

Layer 4 is the last layer to emerge, as it is completely dependent on the applications below it for structure and purpose. The best example of a successful Layer 4 application has been InstaDapp's cross-protocol bridge.

InstaDapp built a service that transfers automatically transfers one's debt from MakerDAO to Compound / Ducato, from one borrowing platform to another, to access better rates.

THANK YOU



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