

DeFi: The Future of Finance

The idea of Decentralized Finance (DeFi) was conceived around 2017, a few years after the launch of the Ethereum Blockchain. It has since emerged as a groundbreaking trend in the world of finance, harnessing the power of blockchain technology to enable open, permissionless, and transparent financial services.

What is DeFi?

Decentralized finance (DeFi) is a financial system that is built on blockchain technology. It is designed to provide financial services without the need for central intermediaries, such as banks and financial institutions. DeFi applications are powered by smart contracts, which are self-executing programs that can be used to automate financial transactions.

DeFi vs. Traditional Finance: A New Paradigm

DeFi, or decentralized finance, is a new financial paradigm that challenges the traditional system in several keyways:

- **Centralization vs. Decentralization**

Traditional finance is centralized and is controlled by a few institutions that set the rules and terms and can deny access to services.

DeFi, on the other hand, is decentralized. This means that it is not controlled by any single entity. Instead, it is powered by a network of computers and participants. This decentralization makes DeFi more inclusive and accessible, as anyone with an internet connection can participate.

- **Permissioned vs. Permissionless**

Traditional finance is permissioned, meaning users must go through identity verification and approval processes before accessing financial services. This can be a barrier to entry for many people.

DeFi is permissionless, meaning that anyone can participate without the need for permission from a central authority. This makes DeFi more open and accessible to everyone.

- **Trust in Institutions vs. Trust in Code**

Traditional finance relies on trust in financial institutions, which act as intermediaries and custodians of assets,

ensuring the security and integrity of financial transactions.

DeFi, on the other hand, relies on trust in code. Smart contracts are used to automate and execute financial transactions. These contracts are stored on a blockchain, which is a tamper-proof ledger of all transactions. This makes DeFi more secure and transparent than traditional finance.

DeFi Infrastructure

- **Blockchain**

The key to all DeFi is the decentralizing backbone- a blockchain. Blockchains are decentralized, tamper-proof ledgers that allow multiple parties to share data and assumptions without trusting each other. Secured by consensus protocols, blockchains determine which blocks become part of the chain and thus the "truth." Proof of work (PoW) is the most popular consensus protocol, but proof of stake (PoS) is a more energy-efficient alternative.

- **Cryptocurrency**

The most popular application of blockchain technology is cryptocurrency, a token (usually scarce) that is cryptographically secured and transferred. Scarcity is what assures the possibility of value and is itself an innovation of blockchain.

Cryptocurrencies can be used for payments and can be transferred to and from exchanges. The initial cryptocurrency model is Bitcoin, which is mainly used for payments. Other cryptocurrencies, such as Ethereum, offer more features, such as the ability to run smart contracts.

- **The Smart Contract Platform**

A crucial ingredient of DeFi is a smart contract platform, which goes beyond a simple payments network such as Bitcoin and enhances the chain's capabilities.



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Smart contract platforms are blockchains that enable self-executing contracts, called smart contracts. Smart contracts automate a wide variety of transactions, such as lending, borrowing, and trading. Ethereum is the most popular smart contract platform.

• Stablecoins

Stablecoins are cryptocurrencies that are designed to maintain a stable price relative to a target asset, such as the US dollar. They are essential for DeFi because they allow users to participate in DeFi applications without having to worry about the volatility of their assets.

There are three main types of stablecoins:

- **Fiat-collateralized stablecoins:** These are backed by a reserve of fiat currency, such as the US dollar.
- **Crypto-collateralized stablecoins:** These are backed by a reserve of another cryptocurrency, such as Ethereum.
- **Non-collateralized stablecoins:** These are not backed by any underlying asset and rely on algorithmic mechanisms to maintain their peg.

Some popular stablecoins: Tether (USDT), USD Coin (USDC), Dai (DAI), Synthetix (SNX), Ampleforth (AMPL), Empty Set Dollar (ESD)

• Decentralized Applications (dApps)

dApps are a critical DeFi ingredient. dApps are like traditional software applications except they live on a decentralized smart contract platform. The primary benefit of these applications is their permissionlessness and censorship resistance. Anyone can use them, and no single body controls them.

Decentralized Finance (DeFi) Use Cases

• Decentralized Lending and Borrowing Platforms:

Decentralized lending and borrowing platforms allow users to lend and borrow digital assets directly from each other using smart contracts without the need for a middleman. Decentralized lending platforms offer a number of advantages over traditional lending systems. For example, they can provide users with access to loans without the need for a credit check or collateral. Additionally, the use of smart contracts ensures that loan agreements are executed transparently and efficiently.

• Decentralized Exchanges (DEXs) and Automated Market Makers (AMMs):

Decentralized exchanges (DEXs) allow users to trade digital assets directly with each other, without the need for a centralized intermediary. Automated Market Makers (AMMs) are a type of DEX that uses smart contracts to create liquidity pools that traders can buy and sell assets from. DEXs offer a number of advantages over centralized exchanges. For example, they give users more control over

their funds and allow them to trade assets that may not be listed on centralized exchanges. Additionally, AMMs provide a way for traders to buy and sell assets without having to wait for a match on an order book.

• Stablecoins and their Role in DeFi:

Stablecoins are digital assets pegged to a fiat currency, such as the US Dollar, and provide users with a stable medium of exchange and bridge between DeFi and traditional finance. Stablecoins are used in a variety of ways within the DeFi ecosystem. For example, they are used to lend, borrow, and trade assets. Additionally, stablecoins can be used to hedge against the volatility of cryptocurrencies.

• Insurance and Prediction Markets in DeFi:

Insurance and prediction markets are emerging components of DeFi that offer users risk mitigation and speculative opportunities.

Insurance protocols in DeFi aim to protect users from smart contract vulnerabilities, hacks, or other risks associated with the decentralized ecosystem. Users can purchase insurance coverage by paying premiums in cryptocurrencies.

Prediction markets allow users to speculate on the outcome of various events, such as election results, sports events, or the price of cryptocurrencies. These markets leverage the wisdom of the crowd to generate insights and forecasts.

Challenges and Risks

- **Complexity:** It can be complex and difficult to use, especially for beginners.
- **Volatility:** The DeFi market is highly volatile, meaning that the prices of assets can fluctuate wildly.
- **Security risks:** DeFi protocols are vulnerable to hacks and exploits.
- **Lack of regulation:** DeFi is currently unregulated, which means that there is no one to protect investors if something goes wrong.

Conclusion

DeFi disrupts traditional finance by offering financial services without intermediaries. It offers innovation but also unique challenges. Understanding DeFi basics, benefits, and risks is essential before engaging with it. DeFi has the potential to revolutionize finance and empower people globally.

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