# THE DEAL DESK

GFMC Newsletter

DeFi and Smart Contracts

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Decentralized Finance

DeFi aims to eliminate the need for intermediaries in a financial transaction. This is done using blockchain technology to create a decentralized network of computers that can verify and execute financial transactions. Eliminating intermediaries in DeFi has several benefits, including eliminating fees paid to intermediaries and transaction transparency; these contracts can be executed quickly (instantaneously) and are efficient transactions. However, some risks are also associated, as they are stored on the blockchain, making them vulnerable to cyberattacks.
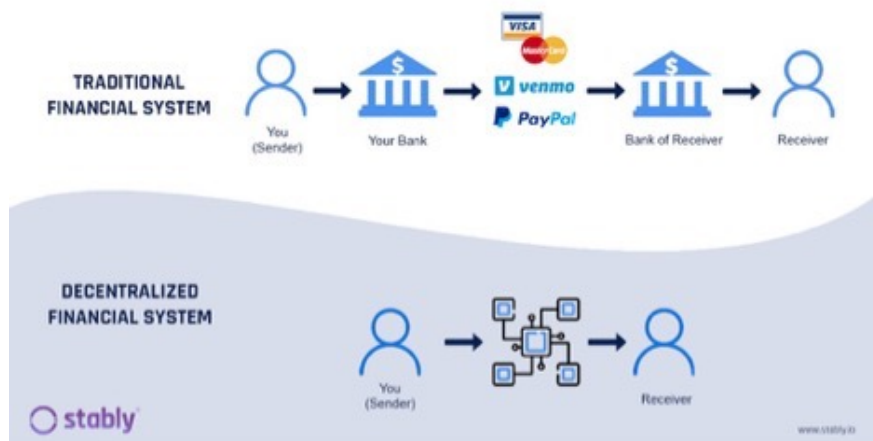
Source: www.stably.io

Decentralized Finance

Decentralized Finance (DeFi) is a terminology used in Blockchains and cryptocurrencies for financial services. DeFi is nothing but conducting financial services such as lending, borrowing, investment, or exchanging crypto assets without relying on a traditional centralized intermediary (for example, Banks or Stock Exchanges).

How is DeFi being used today?

- Financial Transactions – For payments, trading securities and insurance, lending and borrowing are already happening with DeFi.
- Decentralized Exchanges (DEX) - DEX facilitates peer to peer financial transactions and lets users retain control over their money. Most investors use centralized exchanges like Coinbase, Gemini etc.,
- Stable Coins – While cryptocurrencies are notoriously volatile, stable coins attempt to stabilize their values by tying them to non-cryptocurrencies, like the US Dollar
- Yield harvesting, Flash Loans, Non-Fungible Tokens etc.,

DeFi transactions are executed using an automated smart contract. Smart contracts are self-executing contracts stored in the blockchain and used to automate various financial transactions, such as lending, borrowing, and trading. Smart contracts work like traditional contracts while automatically enforcing the contract. They are programs that execute exactly as they are set up (coded, programmed) by their creators. While the traditional contract is enforceable by law, smart contracts are enforceable by code.

Smart contracts are executed based on simple logic, IF-THEN. For example – IF you send object X, THEN the amount in cryptocurrency will be transferred to you. IF I finish the work, THEN the digital assets mentioned in the contract will be transferred to me.

Decentralized marketplaces represent a core use case of blockchain technology. They put the "peer" in peer-to-peer networks i.e. they allow users to transact with one another in a trustless way without the need for an intermediary. For example, the smart contract platform Ethereum is the top facilitating decentralized marketplaces. Ethereum is the main layer-1 solution in decentralized finance, but rivals include DOT, XTZ, SOL, BNB, and ATOM.
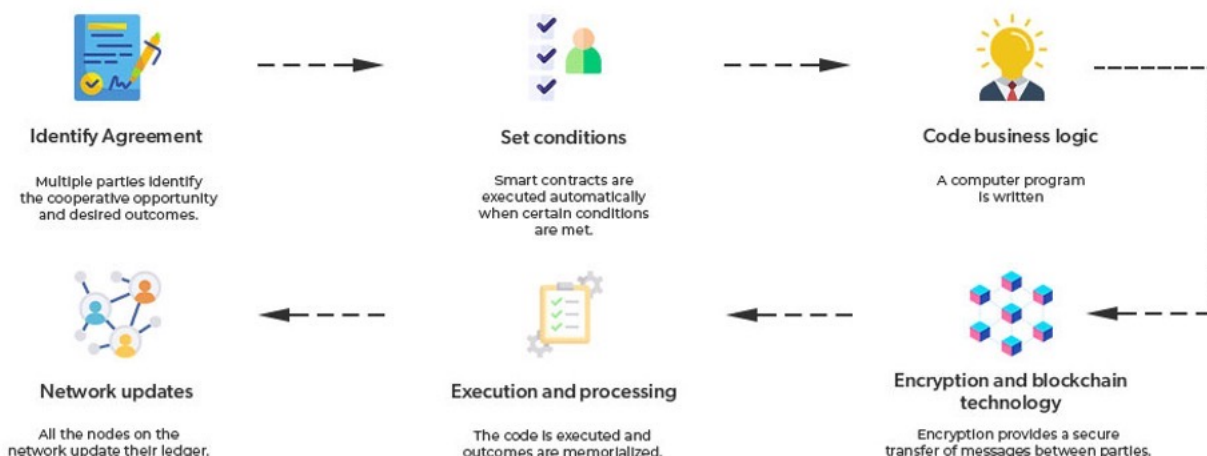
Exploring DeFi Platform

- Firstly, a crypto wallet compatible with DeFi applications must be created. The crypto wallet is gateway into the ecosystem of DeFi Apps (Dapps).

- Once the wallet is set up, cryptocurrency is added to it. If an account with any crypto exchange exists, it can be easily linked to the wallet. This enables easy in-app funding flows.
- Once the wallet is loaded with the cryptocurrencies of any choice, one can navigate to Dapps to make transactions. (Dapps are applications built on blockchains that support smart contracts, like Ethereum, Avalanche, Polygon, or the BNB Chain. Connecting the wallet to Dapps is how one can earn interest, take out a crypto loan, or secure insurance against a crypto investment)

How does lending and borrowing work on DeFi platforms?

When making use of Dapps, users looking to become "lenders" need to supply their cryptocurrency (via wallets) into what is referred to as "money markets." This is done so by an individual sending their assets to a smart contract, following which these coins become available to other users for borrowing. This is called P2P lending, which allows people to lend and borrow through smart contracts eliminating intermediaries such as banks. The above-mentioned smart contracts issue interest tokens that are doled out automatically to the lender and can be redeemed later.

Identify Agreement
Multiple parties identify the cooperative opportunity and desired outcomes.

Set conditions
Smart contracts are executed automatically when certain conditions are met.

Code business logic
A computer program is written

Network updates
All the nodes on the network update their ledger.

Execution and processing
The code is executed and outcomes are memorialized.

Encryption and blockchain technology
Encryption provides a secure transfer of messages between parties.

A user who wants to borrow funds from Dapps is required to provide a guarantee in the form of cryptocurrency, which is worth more than the actual loan itself. This may sound irrational because why would a person who already has cryptocurrency want to borrow from Dapp by collateralizing his existing cryptocurrency? There are many reasons why DeFi borrowing makes sense.

Firstly, users may need funds to cover any unforeseen expenses they may incur while not wanting to sell their cryto holdings, as the crypto assets may be primed to increase in value in the future.

Similarly, users can use funds borrowed via Dapps to increase their leverage on certain positions. How? Let us understand by example – A user who has 100$ worth of Ethereum, can collateralize the cryptocurrency Ethereum to borrow 80$ worth of Stable Coins (Stable coins are pegged to fiat currencies, their value does not fluctuate in the same way as other cryptocurrencies). The user can use the 80$ worth of stable coins and pay back the same amount to get back their Ethereum. By then if Ethereum doubled in price, the user will cash out 200$ worth of Ethereum. This is a double-edged sword though; Dapps have something called Loan to Value (LTV) which means if LTV is 80% you can borrow only 80$ if 100$ worth of cryptocurrency is being collateralized. If the value of Ethereum drops instead of increasing, when the value of Ethereum touches the LTV margin, your Dapp will take your Ethereum and sell it in the market. However, you get to keep the $ 80 worth of Coins you borrowed.

When do the borrower need to pay back the loan? Usually, there is no fixed period to pay back the loan. If the borrower's position is safe, they can borrow for an undefined period. However, as time passes, the accrued interest will grow, which might result in the liquidation of their assets.

The ratio of supplied and borrowed tokens in a particular Dapp determines the interest that lenders receive or the interest that the borrower pays. The interest paid by the borrower is the interest earned by the lenders. So, the borrowing APY (Annual Percentage Yield) is higher than the supply APY. The DeFi lending provides variable interest rates which can change dramatically depending on the tokens' lending and borrowing demand.

DeFi Risks? Is it safe to invest in DeFi?

DeFi presents exciting opportunities in the new age of finance; however, it is not without risks.

- DeFi platforms often rely on smart contracts to automate various processes. Bugs or vulnerabilities in smart contracts can lead to significant financial losses, as seen in past incidents where hackers exploited flaws in smart contracts.
- These are not immune to hacking attempts and security breaches. Hackers target vulnerable infrastructure, wallets, third-party services used by Dapps.
- Dapps are new, and regulatory frameworks are constantly evolving. Changes in regulations could impact the legality and operations of certain DeFi applications.
- A few DeFi projects may suffer from low liquidity, making it difficult for investors to buy or sell at fair prices.
- To mitigate risks, it is better to start investing in what the user can only afford to lose. Always carefully examine DeFi's community feedback and the overall reputation of the Dapp in the industry.

DeFi can replace traditional financial systems, but at what costs?

References

1. https://www.coinbase.com/learn/crypto-basics/what-is-defi
2. https://cointelegraph.com/learn/defi-a-comprehensive-guide-to-decentralized-finance

Trivia Quiz

1. Which type of written note you could make to someone you owe money to is a more formal way of saying "IOU?"

2. In finance, what term that contains a state of matter refers to the ease with which an asset can be converted to cash?

3. It is common practice in the finance and accounting industries to note which spreadsheet cells are "hard coded" by using what color font.

About the Author
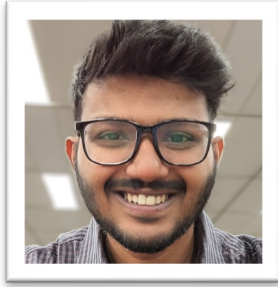
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Vamshi Krishna Biginepalli is a full-time MSF graduate student. He is a qualified Chartered Accountant in India with 3 years of professional experience in Audit, Taxation, and ERP Systems. He aspires to become a Financial Analyst. He is a travel enthusiast and likes photography.

Alumni Spotlight

Ruchi Agrawal
MBA and MS Finance 2022

Ruchi Agarwal currently serves as a Finance Manager (FLDP) at Amazon, earning a dual degree comprising an MBA and an MS in Finance from the University of Texas at Dallas. During her academic years, she showcased versatility by introducing the Deal Desk newsletter, mentorship programs, and finance alumni meet for GFMC. She was recognized as a JSOM Student of the Year finalist and JSOM Graduate Student Organization leader OWLIE awards. Additionally, Ruchi gained valuable experience at IDG as a Corporate financial reporting and technical accounting intern.

"The capacity to learn is a gift, the ability to learn is a skill, the willingness to learn is a choice" — Brian Herbert Ruchi believes that achieving success in life relies on three essential principles: effective time management, task prioritization, and ongoing learning. Her guidance for graduate students centers on cultivating a robust professional network and developing behavioral skills. She recommends participating in activities such as group projects, student organizations, mock interviews, and case study competitions as valuable methods to gain insights into one's strengths and weaknesses while actively working to enhance them.

The Deal Desk provides a platform to JSOM students to share their views on important events affecting the finance industry

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