The Complete Beginner's Guide to Decentralized Finance (DeFi)

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What is Decentralized Finance (DeFi)?

Decentralized Finance (or simply DeFi) refers to an ecosystem of financial applications that are built on top of blockchain networks.

More specifically, the term Decentralized Finance may refer to a movement that aims to create an open-source, permissionless, and transparent financial service ecosystem that is available to everyone and operates without any central authority. The users would maintain full control over their assets and interact with this ecosystem through peer-to-peer (P2P), decentralized applications (dapps).

The core benefit of DeFi is easy access to financial services, especially for those who are isolated from the current financial system. Another potential advantage of DeFi is the modular framework it is built upon - interoperable DeFi applications on public blockchains will potentially create entirely new financial markets, products, and services.

This article will provide an introductory dive into DeFi, its potential applications, promises, limitations, and more.

What are the main advantages of DeFi?

Traditional finance relies on institutions such as banks to act as intermediaries, and courts to provide arbitration.

DeFi applications do not need any intermediaries or arbitrators. The code specifies the resolution of every possible dispute, and the users maintain control over their funds at all

times. This reduces the costs associated with providing and using these products and allows for a more frictionless financial system.

As these new financial services are deployed on top of blockchains, single points of failure are eliminated. The data is recorded on the blockchain and spread across thousands of nodes, making censorship or the potential shutdown of a service a complicated undertaking.

Since the frameworks for DeFi applications can be built in advance, deploying one becomes much less complicated and much more secure.

Another significant advantage of such an open ecosystem is the ease of access for individuals who otherwise wouldn't have access to any financial services. Since the traditional financial system relies on the intermediaries making a profit, their services are typically absent from locations with low-income communities. However, with DeFi, the costs are significantly reduced, and low-income individuals can also benefit from a broader range of financial services.

What are the potential use cases for DeFi?

Borrowing & Lending

Open lending protocols are one of the most popular types of applications that are part of the DeFi ecosystem. Open, decentralized borrowing and lending have many advantages over the traditional credit system. These include instant transaction settlement, the ability to collateralize digital assets, no credit checks, and potential standardization in the future.

Since these lending services are built on public blockchains, they minimize the amount of trust required and have the assurance of cryptographic verification methods. Lending marketplaces on the blockchain reduce counterparty risk, make borrowing and lending cheaper, faster, and available to more people.

Monetary banking services

As DeFi applications are, by definition, financial applications, monetary banking services are an obvious use case for them. These can include the issuance of stablecoins, mortgages, and insurance.

As the blockchain industry is maturing, there is an increased focus on the creation of stablecoins. They are a type of cryptoasset that is usually pegged to a real-world asset but can be transferred digitally with relative ease. As cryptocurrency prices can fluctuate rapidly at times, decentralized stablecoins could be adopted for everyday use as digital cash that is not issued and monitored by a central authority.

Largely because of the number of intermediaries needing to be involved, the process of getting a mortgage is expensive and time-consuming. With the use of smart contracts, underwriting and legal fees may be reduced significantly.

Insurance on the blockchain could eliminate the need for intermediaries and allow the distribution of risk between many participants. This could result in lower premiums with the same quality of service.

If you'd like to read more on the subject of blockchain and banking, we recommend reading our article How Blockchain Technology Will Impact the Banking Industry.

Decentralized Marketplaces

This category of applications can be challenging to assess, as it is the segment of DeFi that gives the most room for financial innovation.

Arguably, some of the most crucial DeFi applications are decentralized exchanges (DEXes). These platforms allow users to trade digital assets without the need for a trusted intermediary (the exchange) to hold their funds. The trades are made directly between user wallets with the help of smart contracts.

Since they require much less maintenance work, decentralized exchanges typically have lower trading fees than centralized exchanges.

Blockchain technology may also be used to issue and allow ownership of a wide range of conventional financial instruments. These applications would work in a decentralized way that cuts out custodians and eliminates single points of failure.

Security token issuance platforms, for example, may provide the tools and resources for issuers to launch tokenized securities on the blockchain with customizable parameters.

Other projects may allow the creation of derivatives, synthetic assets, decentralized prediction markets, and many more.

What role do smart contracts have in DeFi?

Most of the existing and potential applications of Decentralized Finance involve the creation and execution of smart contracts. While a usual contract uses legal terminology to specify the terms of the relationship between the entities entering the contract, a smart contract uses computer code.

Since their terms are written in computer code, smart contracts have the unique ability also to enforce those terms through computer code. This enables the reliable execution and automation of a large number of business processes that currently require manual supervision.

Using smart contracts is faster, easier, and reduces risk for both parties. On the other hand, smart contracts also introduce new types of risks. As computer code is prone to have bugs and vulnerabilities, the value and confidential information locked in smart contracts are at risk.

What challenges does DeFi face?

- **Poor performance:** Blockchains are inherently slower than their centralized counterparts, and this translates to the applications built on top of them. The

developers of DeFi applications need to take these limitations into account and optimize their products accordingly.

- **High risk of user error:** DeFi applications transfer the responsibility from the intermediaries to the user. This can be a negative aspect for many. Designing products that minimize the risk of user error is a particularly difficult challenge when the products are deployed on top of immutable blockchains.
- **Bad user experience:** Currently, using DeFi applications requires extra effort on the user's part. For DeFi applications to be a core element of the global financial system, they must provide a tangible benefit that incentivizes users to switch over from the traditional system.
- **Cluttered ecosystem:** It can be a daunting task to find the application that is the most suitable for a specific use case, and users must have the ability to find the best choices. The challenge is not only building the applications but also thinking about how they fit into the broader DeFi ecosystem.

What is the difference between DeFi and open banking?

Open banking refers to a banking system where third-party financial service providers are given secure access to financial data through APIs. This enables the networking of accounts and data between banks and non-bank financial institutions. Essentially, it allows new types of products and services within the traditional financial system.

DeFi, however, proposes an entirely new financial system that is independent of the current infrastructure. DeFi is sometimes also referred to as open finance.

For example, open banking could allow the management of all traditional financial instruments in one application by drawing data from several banks and institutions securely.

Decentralized Finance, on the other hand, could allow the management of entirely new financial instruments and new ways of interacting with them.