Chapter 6
Revolutionizing Finance With Decentralized Finance (DeFi)

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ABSTRACT

Decentralized finance is an innovative use of blockchain technology in financial services. Because of its transparency and lack of intermediaries, it brings several advantages to the traditional finance ecosystem. Features like tokenization, total value locked (TVL), oracles, and data aggregation help in building a variety of DeFi products and services. Decentralized apps (dApps) run autonomously atop distributed ledger networks. Decentralized stablecoins, decentralized exchanges (DEX), decentralized credit and lending, derivates, and even decentralized insurance are offered on DeFi platforms. The chapter takes through three forms of decentralized insurance models. Case studies and examples for successful and unsuccessful claims are explored. However, the implementation of DeFi comes with its challenges and regulatory hurdles. Similarly, governance and security aspects are of increased importance.

INTRODUCTION

The concept of finance evolved over centuries, with rapid progress happening in the last two decades in the form of Financial Technologies (FinTech). The traditional financial system is often run by exchanges and intermediaries, such as banks, stockbrokers, stock exchanges, and insurance companies. Apart from charging a fee, these intermediaries often set the rules for how the financial services are offered. This method of providing financial services is called Centralized Finance (CenFi).

CenFi has been famous for centuries, but it comes with severe disadvantages. The intermediaries have central control over the transaction, charge high transaction fees, and often have a say on the exchange rates at which the transaction happens. A 2021 McKinsey report estimated that the global financial services sector earns around 2-3% of global GDP in revenues. The list included all types of financial services, such as banking, lending, investment, and insurance. Financial transactions are prone to data breaches, security issues and vulnerabilities, and potential forgery of transactions. Research shows that the traditional system delays international transactions and leads to global inequality (Kaur et al., 2023b).

A growing number of disruption technologies such as Blockchain and Distributed Ledger Technologies (DLT), Artificial Intelligence, Big Data, and Cloud computing are emerging and attempting to re-vitalize finance by bringing in features that shift power and authority from central intermediaries to the customers, thereby disrupting the business of the intermediaries.

Decentralized Finance (DeFi) is an emerging ecosystem comprising a wide range of complex financial applications built using Blockchain and associated technology so that financial services are offered by using existing and new financial instruments in an open, decentralized manner on a trustworthy network without using any central financial intermediary (Gramlich et al., 2023). This means the traditional supply and demand matching functions currently handled by banks, lenders, payment service providers, or investment companies will be done by decentralized protocols and smart contracts in an open, interoperable, transparent, and automated manner (Zetzsche et al., 2020). DeFi is considered a financial revolution, a financial inclusion movement to build an open, democratic, permission-free, and censorship-free blockchain-based economic infrastructure rather than relying on centralized intermediaries and institutions. DeFi is found to open doors for new entrepreneurial opportunities.

The inspiration for building the decentralized financial infrastructure could have come from how the electronic mail (email) system works. When it is possible to send an email to anyone in the world, why not be able to send money to anyone in the world in the same way?

Like a typical financial service provider, DeFi offers financial services such as loans, payments, decentralized markets, and derivatives. Removing intermediaries and retaining trust gives customers control over their finances. The DeFi applications offer services such as lending, borrowing, exchange, monetary banking (such as the issuance of stablecoins), tokenization, or other financial instruments such as insurance, derivatives, and prediction markets. DeFi enjoys the blessings of Blockchain and benefits from the transparent and trust less network features. DeFi is not a specific project, but a collection of ideas and projects built on blockchain technology.

The name Decentralized Finance or DeFi was coined in a Telegram group comprising software engineers and entrepreneurs struggling to propose a name for a service that offers blockchain-based financial services without the need for traditional intermediary financial institutions. A transition from a conventional financial system to a DeFi requires many infrastructure changes to be done apart from getting approval from various stakeholders. Though the financial intermediaries are left out of the DeFi

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