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Research Article

Evolution of Finance with Metaverse and Web3

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ABSTRACT

Two of the most exciting advancements concerning the internet could be web3 and the metaverse. In addition to affecting how we interact with each other and with institutions over the internet, this advancement could also have an impact on how assets are traded, how we invest, and how we borrow. Some key components of web3 are already making some waves, some big and some peculiar, in finance. These components include decentralized autonomous organizations (DAOs) and decentralized finance.

Keywords: Metaverse, web3, Decentralization of finance

1. Introduction

The history of finance is a history of centralization of the power to make economic decisions like where to invest and whom to lend to. In response to the Great Recession when trust in banking systems was depleted, people came up with cryptocurrencies built on blockchains to form the foundation of a financial sector without the major players of traditional finance. While the goals and ethics surrounding cryptocurrencies can be up for debate, we must note that decentralized finance has caught on in recent years, having reached a market size of $13.61 billion in 2022[1].

Various components of decentralized finance such as decentralized autonomous organizations (DAOs), and asset tokenization hold the potential to unlock new efficiencies in financial markets. Metaverse, another exciting advancement, promises cost benefits and improvements in customer experience by changing how financial services are delivered. In this paper, we explore the trends in decentralization and how they are impacting finance and the impact of metaverse on how banking and other financial services are delivered to users.

2. What is Web3?

To understand what Web3 represents, we must first look at Web1 and Web2. Web1 was prominent in the 1990s. It can be referred to as the first incarnation of the internet and consisted of read-only web pages. The internet was mainly used for visiting static read-only web pages and sometimes exchanging messages with acquaintances and strangers.

Web2 emerged with websites such as Twitter (now X), Facebook, and YouTube enabling users to create and share content for free. Interactive web pages overtook static web pages. While these companies enabled users to create content, they had turned their users, or rather the interests and habits of the users into a product.

The user behavior and interest data collected were used to provide targeted advertising services. In this business model, network benefits were important as the value of social media platforms to a user depended on how many other users they could potentially connect to.

As a result, in this current period, we see centralization of the power to govern and shape the Internet.

Web3, the next evolution of the web, is a proposed decentralization. Instead of a few corporations owning and appropriating benefits, users will **read, write**, and **own** the web. Some important proposed features are:

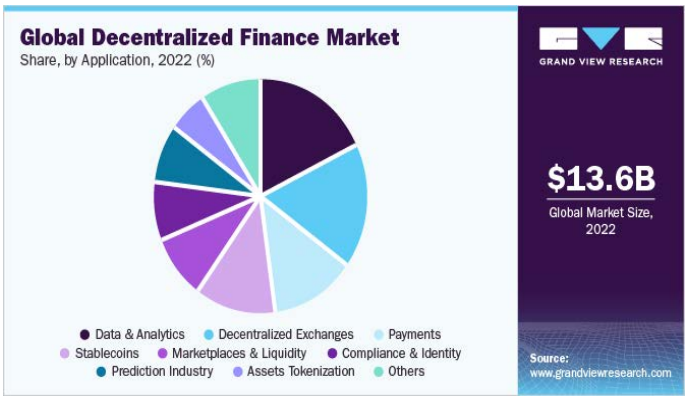
1. The utilization of blockchain technology to create a decentralized database difficult for moderators to censor
2. Creation of centralized identities for each user in place of separate log-ins for every website
3. Automatically executing contracts established in blockchain that cannot be altered
4. The tokenization of real-world assets and products

3. Decentralized Finance

Today's financial institutions like banks, brokerages, and non-banking financial companies (NBFCs) are defined as centralized institutions, in the context of this paper, due to the centralization of power. For instance, banks accept deposits from the public and hold power over how these deposits are utilized for lending.

Decentralized finance attempts to do away with institutions as middlemen and enable peer-to-peer transactions. If decentralized finance is achieved, it could improve the level of competition in lending as well as investing.

According to Grand View Research, in 2022, the market size of decentralized finance was $13.61 billion. From 2023 to 2030, the decentralized finance market is expected to grow at a compounded annual growth rate (CAGR) of 46% to $231.19 billion. In their report, Grand View Research notes that the factors driving the growth of the decentralized finance market are the increasing adoption of blockchain technology and the increasing adoption of digitized financial services[1].



Source: Grand View Research.

However, decentralized finance has its share of challenges. According to a report by the Bank of International Settlements, decentralized finance could amplify the vulnerabilities present in traditional finance such as operational fragilities, liquidity and maturity mismatches, leverage, and interconnectedness[2].

Following are some key challenges faced by decentralized finance:

1. Regulatory challenges

An advantage of centralized finance is that a large volume of lending and investing happens via large institutions. As a result, regulatory bodies like central banks can effectively cut down on financial fraud. This forms a key reason for trust in financial institutions.

However, in comparison, regulating individual lenders, investors and borrowers interacting globally is exponentially difficult. Additionally, regulations differ across countries. The regulatory bodies are about as many as the number of countries. As a result, coordination can be incredibly difficult and important for regulators in a decentralized finance ecosystem.

Difficulties in regulation and remedying fraud might limit the number of users of decentralized finance and its potential to connect users globally.

2. The tendency of financial markets to centralize

The core principle of decentralized finance is to distribute the power to dictate key terms and policies. However, financial markets tend to centralize. Hence, it is unrealistic for a fully decentralized finance ecosystem to continue existing.

As individuals or institutions amass wealth, their ability to dictate terms will naturally increase. If existing financial institutions were green-flagged by regulators to enter the decentralized finance ecosystem, they could tilt the power balance in their favor in the long term.

It could be speculated that borrowing costs would drop due to high competition but, due to the amount of wealth they have already amassed, banks and financial institutions would retain a chunk of their power.

3. Anti-social elements

Decentralized finance could potentially connect users from all over the world. Due to difficulties in regulation, anti-social elements might infiltrate the decentralized finance ecosystem. In a report by the Congressional Research Service, it was noted that Hamas, a terrorist organization, received approximately $41 million through cryptocurrencies between 2020 and 2023. Although decentralized finance does not provide full anonymity, it would create additional pressure on regulators to continuously identify crypto wallets and centralized identities of anti-social elements[3].

4. Decentralised Autonomous Organisations

Decentralized autonomous organizations (DAOs) are entities with no central governing body such as a board of directors. Instead, managerial responsibilities and decision-making powers are distributed among members. The voting powers of each member are decided based on how many tokens they hold.

For instance, if a member has two tokens then they will have twice the voting power of a member with only one token. Tokens are issued through the DAO's treasury in exchange for fiat currencies.

According to a Vice report, in July 2021, CityDAO bought 40 acres of land in Wyoming. CityDAO aims to build a city on the Ethereum blockchain. To become a citizen of this city, one needs to purchase one of the 10,000 non-fungible tokens (NFTs)[4].

The goals of DAOs can be varied. American CryptoFED DAO made headlines after becoming the first DAO to be recognized as a legal entity. BitDAO is an investment fund that allows members to buy stakes in Web3 and decentralized finance start-ups. ConstitutionDAO is known for failing to win a rare edition of the US Constitution put up for auction despite raising

$40 million[5].

5. Financial Markets and Tokenization of Assets

Tokenization involves assigning unique symbols called tokens to sensitive information. Asset tokenization refers to assigning digital tokens to physical assets. By assigning tokens to assets their ownership can be traded on blockchains without intermediaries like brokers, dealers, and exchanges. Asset tokenization can be seen as the next step in the evolution of fractional ownership of assets.

Since tokenized assets can be traded over blockchains, the liquidity of the underlying asset rises. When a single asset is assigned multiple tokens, the minimum capital requirement falls considerably. A real-life analogy of this would be stocks and exchange-traded funds (ETFs).

Another benefit of asset tokenization is the cost savings. New fund offers (NFOs) and initial public offerings (IPOs) involve considerable costs.

Some assets that could be tokenized include private equity, art, metals, commodities, intellectual property, and real estate.

6. Banking and financial services via Metaverse

Metaverse, too, is touted as the next incarnation of the internet. In contrast to Web3, the metaverse is not a roots-deep update of the internet. Mark Zuckerberg, the founder of Facebook, has described the metaverse as "an embodied internet that you are inside of." The metaverse utilizes technologies like virtual reality, augmented reality, and various other advanced technologies to create a 3D virtual world[6].

So metaverse's impact would be on how users interact online with banks and other financial institutions rather than impacting the services provided.

A benefit of Metaverse could be servicing customers in remote locations without the need for opening new branches.

The Union Bank of India came out with Uni-verse where "customers can pick avatars to enter the lounge and interactively browse the bank's various products and services." Uni-verse can be accessed through PCs and laptops and can be utilized to get services like balance inquiry, nomination updating, and personalized debit card application.

As more banks take to the metaverse, they may see significant cost savings and improvements in customer experience. The metaverse can also be a boon for online banks that do not have physical branches in the first place.

7. Conclusion

As we head towards a future of the internet defined by decentralization and mixed and virtual reality, we took a look at some of the key developments that could affect the way we invest, and borrow. As Web3 takes its roots, decentralized finance, tokenized assets, and decentralized autonomous organizations (DAOs) become more prominent and are speculated by some to take power away from traditional financial institutions.

We looked at some limitations of this wave of decentralization headlined by challenges in regulation, the innate tendency of financial markets to centralize, and the scope of anti-social elements infiltrating decentralized finance.

We also discussed how the tokenization of assets could improve the liquidity of various assets and open various asset classes for retail investors.

Finally, we discussed the potential of metaverse to bring cost benefits and improvements in customer satisfaction for banks and other financial institutions.

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