

USING BLOCKCHAIN TECHNOLOGY TO ENSURE SECURITY AND TRANSPARENCY OF FINANCIAL TRANSACTIONS

Ensuring the security of online transactions is a critical challenge in today's digital world as financial operations increasingly move online. The rise of Internet banking, cryptocurrency transfers, and e-commerce has raised the risks of cybercrime, including fraud and system breaches. Traditional security systems, which rely on centralized servers and third-party entities, have several vulnerabilities: they are frequent targets for hackers, vulnerable to data breaches, and exposed to fraud by external parties. Frequent breaches at major financial institutions weaken user trust in traditional systems, highlighting the urgent need for innovative solutions to secure and make financial transactions more transparent. In this context, blockchain, a decentralized technology, provides a solution by reducing fraud risks, ensuring user anonymity, and enabling the independent verification of transactions [1].

Blockchain allows for establishing a decentralized structure where all transactions are contained in a transparent public record that cannot be altered without the requirement of trusted parties. The blockchain's basic principle is the sharing of encrypted information and key pairs between users, which ensures a great degree of protection and discourages transaction fraud. Any of the participants in the network do not need to worry about operations being manipulated by a third party, which makes this valuable technology for the financial industry [2].

The relative autonomy of blockchain technology also addresses the issue of accountability by increasing operational efficiency since each system participant has access to all transactions and thus does not need any additional contact with regulators. This supervision is essential in the context of the world economy, in which the volume of bilateral transfers is increasing, and it provides all stakeholders with equal access to view the information at any given point in time. [3].

Today, blockchain technology is mainly known for its use in Bitcoin trades. However, this is just the tip of the iceberg. Almost all financial operations can benefit from this technology, which makes the financial industry safer and more transparent. For instance, its use is extended to supply chain finance, smart contracts, and p2p payment systems, making it even more versatile. Such types of agreements, known as smart contracts, make it possible to execute and enforce contracts without the intervention of a third party. This cuts out the need for intermediaries and guarantees adherence to various prescribed conditions, thereby minimizing conflict and time wastage [4].

Regions with underdeveloped banking infrastructure are among the areas where the prospects of blockchain technology are most promising. In these areas, people can use different blockchain-based platforms to open savings accounts or take out microloans without the need to go to a bank. This democratization of finance enhances the scope of financial inclusion and helps reduce inequality globally.

However, the technology also has limitations that should be resolved in order for it to be adapted to the core. Currently, scalability is one of the critical issues, as blockchain technologies such as Bitcoin and Ethereum struggle when the number of transactions increases. Another problem is the high energy consumption, especially for PoW systems, which poses environmental threats.

Another obstacle is between the technology of blockchain and other financial systems. Often, blockchain cannot be integrated into legacy systems supported by banks or other institutions, which would require much money to overhaul the existing systems. Also, the need to enhance user experience will bring broader exposure to blockchain applications that have yet to grasp the attention of average users.

In conclusion, blockchain holds great potential as an innovative approach to managing financial transactions safely and transparently. Considering these benefits, its further implementation can improve efficiency, decrease costs, and mitigate risks (e.g., fraud), which is crucial in today's digital global economy. However, blockchain will not reach its full potential unless the matters of scalability, energy consumption, and regulations are sorted. Blockchain, with the help of evolution and unity of the sector and governments, will transform the industry forever and build trust within it in a world where everything is digital.

References

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