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SURVEY ON BLOCK-CHAIN BASED SOCIAL MEDIA

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ABSTRACT

This research paper contains information on Blockchain technology based social media. Blockchain is revolutionizing the way social media platforms operate, offering new opportunities for user empowerment data privacy, and content ownership. Block chain-based social media platforms leverage distributed ledger technology to enhance security, transparency, and decentralization. User gain greater control over their personal data and content, reducing the influence of centralized entities.

Keywords: Blockchain, Distributed Ledger Technology (DLT), Decentralization, Security, Transparency, Nodes, Cryptography.

I. INTRODUCTION

The emergence of blockchain technology has heralded a new era of innovation across various industries, and one sector where its transformative potential is becoming increasingly evident is in social media. Traditional social media platforms have long dominated the digital landscape, but they often grapple with issues related to data privacy, content ownership, and centralized control. Blockchain-based social media platforms are poised to address these challenges, offering a promising alternative that combines the strengths of blockchain with the dynamics of social networking. Blockchain is a decentralized technology that allows for secure, transparent and tamper-resistant record keeping and sharing. The concept of blockchain was first introduced in the early 1990s by Stuart Haber and W. Scott Stornetta, who proposed a system for time stamping digital documents in order to prevent their alteration. However, it was not until 2009 when an anonymous person or group of individuals going by the name of Satoshi Nakamoto, created the first blockchain-based cryptocurrency, Bitcoin. The Bitcoin blockchain is a public ledger that records all Bitcoin transactions that have ever taken place. The use of a decentralized ledger means that transactions can be verified and processed without the need for a central authority, such as a bank, government or credit card company.

Blockchain technology is a revolutionary concept that has gained immense popularity in recent years. It refers to a decentralized digital ledger that records transactions across multiple computers. Unlike traditional systems where data stored and controlled by a central authority, blockchain operates on a distributed network where every participant has access to the entire transaction history.

At its core, blockchain relies on a combination of cryptography and consensus algorithms to ensure the security and integrity of data. Each transaction is grouped into a block and added to a chain of previous blocks, hence the name "blockchain." Once a block is added, it becomes virtually impossible to alter or tamper with the information contained within it due to the cryptographic hashing process.

One of the most notable applications of blockchain technology is cryptocurrency, with Bitcoin being the first and most well-known example. Bitcoin introduced the concept of using blockchain for peer-to-peer transactions without the need for intermediaries like banks. This decentralized system enables users to send and receive funds securely, anonymously, and with minimal fees.

II. BLOCK-CHAIN TECHNOLOGY BASICS

A. Explanation of block-chain fundamentals(e.g., Decentralized, Distributed ledger.

Each block contains multiple transactions, a unique code called a "hash," and the hash of the previous block. This creates a chain of blocks (block-chain), which can't be altered after being added to the chain. Decentralized ledger means that the block-chain network doesn't depend on a central authority to validate, authorize, or record transactions, instead, the network participants reach consensus through a series of cryptographic protocols.

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In simple words, block-chain is a transparent and secure way to record transactions. It's decentralized, meaning that no single authority controls it; instead, everyone in the network has equal rights to contribute to the validation and recording of transactions. This makes block-chain a tamper-proof and reliable system.

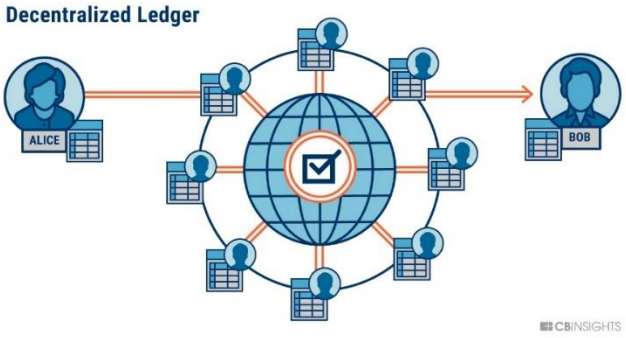

Figure 1: Decentralized Ledger

B. Key components: blocks, hashes, consensus mechanisms.

Hashes are unique codes created by complex mathematical calculations for each block and transaction to ensure data integrity and facilitate secure data transfer between blocks. Consensus mechanisms are the set of rules defining how network participants reach an agreement on the accuracy of data in a block-chain network to guarantee all network participants achieve the same understanding of recorded transactions while adhering to the network rules. Common mechanisms include proof of work (PoW), proof of stake (PoS), and delegated proof of stake (DPoS).

C. Smart contracts and their role in blockchain based social media.

- Transparency: Smart contracts on blockchain-based social media provide transparency as the code ensures that the terms of the agreement are visible to all parties.
- Security: Smart contracts are tamper-proof, meaning that once they are deployed on the blockchain, they can't be altered or interfered with, enhancing the security of blockchain-based social media platforms.
- Automation: Smart contracts can automate the execution of complex contracts, including financial and legal agreements, while enforcing terms and conditions agreed upon.
- Decentralization: Smart contracts can be deployed on a blockchain network, making them decentralized and eliminating the need for intermediaries, thereby eliminating central authorities.
- Tokenization: Smart contracts allow for the creation of tokens, which can be used to incentivize users to participate in the network and reward them for their contributions.
- Facilitating automatic execution of the rules and regulations governing the social media platform, which minimizes the need for human intervention, reducing transaction costs, and improving the efficiency of the network.

III. SECURITY AND ENCRYPTION IN BLOCKCHAIN BASED SOCIAL MEDIA

Furthermore, blockchain technology itself provides additional layers of security to blockchain-based social media platforms. The immutable and decentralized nature of the blockchain means that data entered into the network cannot be altered or deleted, preventing data tampering, and promoting transparency. Additionally, blockchain networks rely on consensus algorithms, which ensure that all nodes on the network confirm the legitimacy of transactions before adding them to the ledger. By combining encryption and blockchain technology, blockchain-based social media platforms can provide users with a high level of security, privacy, and control over their data. This makes them an ideal alternative to traditional social media platforms, which often face issues with data privacy and security breaches.

A. Cryptography:

Public-Private key encryption: users have unique public and private keys. Public keys are used to generate addresses and verify digital signatures, while private keys are used to sign transactions and access funds.

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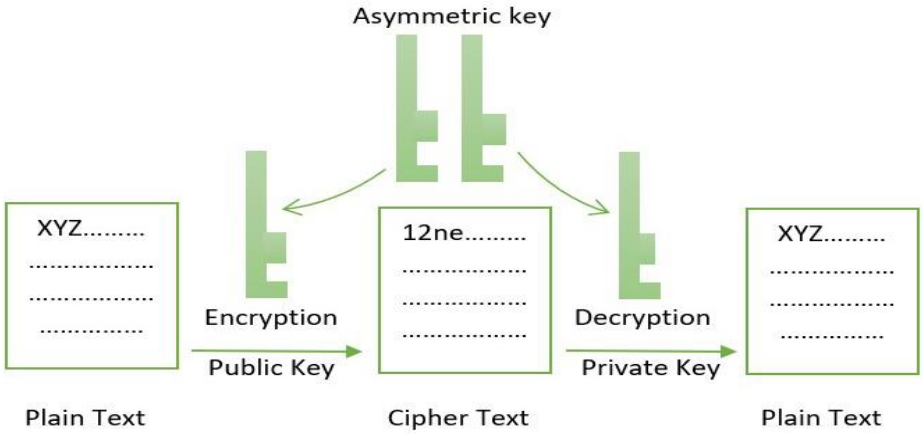

Figure 2: Cryptography in blockchain

B. Data Encryption:

End-to-End Encryption: Messages and content shared between users can be encrypted using end-to-end encryption protocols. This ensures that only the sender and the intended recipient can read the messages, preventing unauthorized access, even by the platform operators.

IPFS and Decentralized storage: Platforms can use IPFS or similar technologies for decentralized, encrypted storage of media files. Content is broken into smaller chunks, encrypted, and distributed across the network, ensuring data integrity and privacy.

C. Community Governance:

On-Chain Governance: Blockchain-based social media platforms often implement on-chain governance systems. Token holders can vote on proposals and protocol changes, ensuring a decentralized decision -making process.

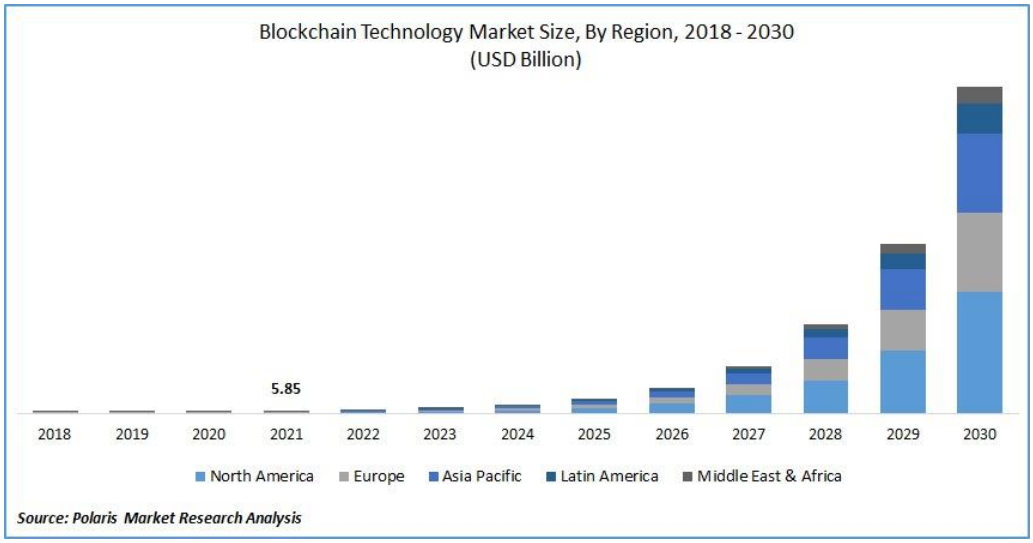

Figure 3: Market of blockchain technology

IV. THE ROLE OF USER- GENERATED CONTENT IN BLOCKCHAIN BASED DECENTRALIZED FINANCE

Moving on to the role of user-generated content in blockchain-based decentralized finance (DeFi), it is essential to recognize the potential of user-generated content as a key driver of value within the ecosystem. In a decentralized finance system built upon the blockchain, individuals can contribute content and receive compensation in the form of cryptocurrency tokens.

With user-generated content, we refer to any content created by users on the blockchain network, including blog posts, articles, music, videos, or any other kind of digital content. User-generated content can be valuable for DeFi platforms in the following ways:

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A. Content creation drives user engagement:

By encouraging users to create content, blockchain-based DeFi platforms can foster an engaged community, which can help attract new users to the network.

	Number		Market Capitalization (USD)	
Platform	**Absolute**	**Relative**	**Absolute**	**Relative**
Ethereum	1,793	86.74%	55,071,650,000	85.55%
TRON	26	1.26%	4,639,184,120	7.21%
Binance Chain	83	4.02%	2,297,032,000	3.57%
Omni	3	0.15%	1,407,629,950	2.19%
Neo	25	1.21%	160,789,200	0.25%
XRP	1	0.05%	156,223,800	0.24%
Stellar	21	1.02%	155,640,200	0.24%
EOS	31	1.50%	117,560,200	0.18%
Qtum	8	0.39%	71,898,580	0.11%
RSK Smart Bitcoin	1	0.05%	70,715,650	0.11%
Others	75	3.63%	227,652,769	0.35%

ımarketcap.com and tether.to per September 3rd, 2020. Data preparation in the style of I

Figure 4: Decentralized finance

B. User-generated content increases platform value:

High-quality user-generated content can increase the overall value of a DeFi platform by providing valuable information and insights related to the platform's operations..

V. CONCLUSION

In conclusion, blockchain-based social media platforms represent a significant paradigm shift in the way we interact online. By leveraging blockchain technology, these platforms offer enhanced security, privacy, and user control, addressing some of the major challenges faced by traditional social media networks.

The use of cryptography ensures secure transactions, data integrity, and user authentication, fostering trust among users. Decentralized storage solutions and end-to-end encryption protocols safeguard user data and communications, providing a higher level of privacy, Moreover, the implementation of smart contracts and consensus algorithm ensures transparency, immutability, and fair governance within these platforms.

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