Views about Blockchain

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Abstract

From the popular topic of Bitcoin in previous years to the recent popular topics of Web-3.0, NFT, and cryptocurrency, all of these are inextricably linked to the blockchain. So in this report, I will discuss my views about blockchain, including three parts: what is blockchain, the advantages of blockchain, and the potential applications of blockchain.

1 What is blockchain?

Blockchain is a decentralized ledger, a technical solution to collectively maintain a reliable database in a decentralized and trustless manner. It offers a way for untrusted parties to reach a consensus on a common digital history so that participants can confirm transactions without a need for a central clearing authority.

The key feature or aim of blockchain is decentralization. Until now, we live in a centralized world. Alipay, as we all know, it's a typical third-party central institution. Let's take a simple example: Alice and Bob don't know each other, and Alice wants to spend 100 RMB to buy the goods that Bob sells online. The process seems to look like this:

Alice $\xrightarrow{100RMB}$ Bob

Alice's account: -100 RMB; Bob's account: +100 RMB

But actually, the process is like this:

Alice $\xrightarrow{100RMB}$ Alipay(third-party central institution) $\xrightarrow{100RMB}$Bob

Alice's account: -100 RMB;

Alipay receives 100 RMB from Alice; Alipay pays 100 RMB to Bob;

Bob's account: +100 RMB

Third-party central institutions like Alipay make two people who are thousands of miles apart trust each other. They are of course very important because their presence can make people less troubled by trust problems. However, in order to make all users' transactions are recorded and the accounts are correct, Alipay will make great efforts, they need to pay corresponding manpower and material resources to maintain this very complex income and expenditure settlement system. Therefore, they will charge merchants some corresponding fees, like what Taobao does, and also bank charges for international transfers.

With blockchain, people can solve credit problems in a decentralized form, which is more efficient, equal, and economical.

2 The advantages of blockchain

We can think of a blockchain as a database that stores information in the form of blocks. These blocks can be replicated on a personal computer. The blocks on all computers are the same and kept in sync with each other, and each computer can be considered a node in the blockchain. When someone wants to add or delete data, the operation must be approved by more than half of the nodes, so the security of the stored data and the transparency of the operation can be guaranteed.

Therefore, summarize the advantages of blockchain as the following eight aspects:

1. Transparency

All participants can view the information in the blockchain, but cannot modify the information. This helps reduce risk and fraud while building trust.

2. Security

Thanks to its distributed and encrypted nature, blockchain is hard to be attacked illegally. As a result, this technology enables business and IoT security.

3. Elimination of middlemen

Blockchain is a P2P network that will reduce businesses' reliance on certain third-party middlemen. This helps improve process efficiency, reducing the chance of data entry errors and transaction fees.

4. Traceability

Because blockchain data cannot be tampered with, it is ideal for tracking and tracing or tracing items in complex supply chains.

5. Increased Efficiency and ROI

Distributed ledgers will help businesses create leaner, more efficient, and more profitable processes, allowing them to achieve a quick return on investment.

6. Speed up the process

Blockchain can speed up process execution in multi-party transaction scenarios, without the constraints of office hours, speeding up transaction processing.

7. Automation

Blockchain is programmable. Through programming, blockchain technology can automatically trigger actions, events and payments when conditions are met.

8. Data Privacy

While information needs to be verified through a consensus process before being added to the blockchain, the data itself is converted into a series of letters and numbers via a hash code. Participants in the network cannot decipher this information without the key. So it can greatly protect users' privacy security.

3 The potential applications of blockchain

Finally, list some areas where blockchain technology can be applied.

1. In the public utility industry

The utility industry is well suited to adopting blockchain technology because of the many laws and regulations that need to be reviewed and verified, and blockchain can make these processes completely "trustless". For example, blockchain technology can be used to officially register the assets owned by the public.

2. In the field of human resources

During the company's recruitment process, reviewing a candidate's qualifications and work experience is a time-consuming process, especially now that candidates can work for multiple employers at the same time and change jobs frequently. With a unified blockchain to record candidates' education levels, qualifications, work experience and other credentials, HR specialists can more efficiently review candidates' qualifications. This will significantly increase the efficiency of recruitment.

3. In the financial field

Blockchain technology can be used to simplify accounting processes and banking services. For example, the Accounts Payable department can pay trading partners directly. They can enter the identity of the payer into the blockchain, which is then encrypted with a private key before other computers in the blockchain network can verify this information. The Accounts Payable department will no longer need to update the payment arrival time record as the blockchain will be updated by the recipient. This will increase the speed of the payment process.

4 Summary

In my personal opinion, I think blockchain is a wonderful technology that can benefit the whole world and it is the future. I really like the idea of decentralization, which means more equal power.

But for now, maybe it's hard to achieve complete decentralization. Because human and technology development has not yet reached a level where complete decentralization can be achieved in my view, so maybe decentralization and centralization work together like two legs is a good way.