Review on Internet of things and blockchain fusion technology

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Abstract: With the development of The Times and the progress of science and technology, people have stepped into the information age, the development of electricity industry is becoming more and more rapidly, both logistics systems and the Internet of things will soon get the popularization. In addition, the researches on block chain technology tide also continue to surge up, a lot of people have been trying to integrate IoT and block chain, maximize advantage, and build a cross-industry IoT system. This paper mainly studies and explores the integration of Internet of things and blockchain.

1. Current situation of integration of Internet of Things and blockchain

1.1 Background introduction to the Internet of things

The Internet of things is a technology that has emerged only in recent years. However, it is actually a trace of the Internet of things in People's Daily life. For example, when we place an order online and receive a package, the process of package management is applied to the Internet of things technology. In recent years, the Internet of things technology has been gradually development belt in the car on the Internet, and even clothing, the furniture, the increased activity of the Internet of things, let the development of the Internet of things become more quickly, and in the process of the development of the Internet of things, the value of the Internet of things begin to appear to other people eyes, also has a lot of researchers have joined in the research on the Internet of things. But the Internet of things and the Internet have some similarities between, but the difference is very obvious, such as the Internet data relies on that input, and the Internet of things mainly through sensors to obtain data, and logistics network data is very accurate and extensive, so the data protection of Internet of things for people pay more and more attention to.

1.2 Background introduction of blockchain

Japan was the first to propose blockchain technology, which is a core technology including intelligent contract and consensus mechanism. Blockchain technology is a promising technology, and its current development is very exciting, and its biggest advantage is the ability to decentralize. Authorities have also invested a lot of manpower in the research of blockchain technology in recent years, and the number of blockchain enterprises in China is also soaring, all because people see the value that blockchain technology may provide. However, in the current development of blockchain, blockchain companies have a wide range of business, which is significantly different from other technologies. That is, the development of blockchain technology actually needs to avoid a lot of risks, which are difficult to reduce and different from the business risks of enterprises.

1.3 Research progress on the integration of Internet of Things and blockchain

In recent years, the fusion research of Internet of things technology and blockchain technology has gained a very strong momentum, and its development standards and application scope of the industry have been divided. Many researchers who study the fusion of Internet of things and blockchain have conducted in-depth research on the fusion mode between the two. In the integration process of blockchain technology and Internet of things, many frameworks and technologies need to be applied, which are all difficult to some extent, so the research progress in this aspect is still difficult. Standardization of the Internet of things and blocks the development of standardization of chain is not the same, but although is not the same, has the research value of are

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difficult to measure, and if the Internet of things technology and chain block can really successful fusion, plays to the maximum, and the two advantages for social development driving force is very big.

2. Innovation and challenge of integrating Internet of Things and blockchain

2.1 Innovation

(1) For blockchain technology, the Internet of things can provide more application scenarios for blockchain technology and support the scientific application of blockchain technology. The integration of Internet of things technology and blockchain technology can effectively solve some practical problems. In the Internet of things technology, it is the people and things, and the connection, these connections are real, and no matter what industry information can be get through the Internet of things terminal equipment, and on the Internet of things terminal access to the data is very accurate penguin, the accurate data has brought new impetus to the development of chain blocks, speeds up the block chain technology in the application of the physical world.

(2) The risk of Internet of things lies in the information security problem, while the existence of block chain can very well to protect privacy information of Internet of things, because the Internet of things technology, although can get more accurate data information, but the information easy to loss, and block the chain of the fusion of technology and the Internet of things can solve this problem, and the Internet of things and chain blocks are complementary, Internet of things and chain blocks fusion can maximize the advantages of the two on the biggest. In the network information age, the existence of data is very important, data can promote the development of the information age, so it is indispensable. Therefore, if there is chaos in the data world, social development will be greatly affected. The advantages of blockchain technology can successfully solve this problem, protect data privacy and accelerate the popularization of the Internet of things.

(3) In the integration and development of the Internet of things and the block chain, the consensus incentive mechanism of the Internet of things and the block chain technology can be effectively combined. In other words, the effective use of these two mechanisms can help the Internet of things technology achieve greater economic value in the business model, and this is an unprecedented innovation. However, in the integration and development of the Internet of things and blockchain, the Internet of things technology is not mature because of the lack of business model and technology is not mature enough. The way to solve this problem is to integrate these two mechanisms in blockchain technology, so as to promote the popularization of Internet of things technology, enable more subjects to participate in the application of Internet of things technology, and combine capital flow, physical flow and information flow into one to some extent.

2.2 Challenges

(1) Technical challenges

Iot technology in developing very rapidly in recent years, many techniques have been reaching maturity, and domestic and abroad began to establish a iot technology standard, this means that the Internet of things technology has sTable down slowly, but block chain technology because more late than the Internet of things technology, so the related research is still in its infancy, the development is not mature enough, in the practical application of the block chain often appear problem, block chain technology development in these years are the form of currency, a lot of researchers and entrepreneurs are very bullish on block the development of the chain, but for now, The integration of Internet of things technology and blockchain technology is not mature enough, and many problems need to be further studied.

(2) Business model challenges

The integration of Internet of things technology and blockchain technology is mainly aimed at applying its advantages and functions to business and generating greater economic value. In addition, in the current development of the Internet of things, although the business model of the Internet of things is not mature, there are also some achievements. Both at home and abroad, a

number of enterprises began to emerge in the layout of the Internet of things technology marketization. But now it faces a new problem, that is, how to strengthen the information protection in the process of commercializing the Internet of things technology. , for example, in recent years, put forward a new concept - intelligent, smart supermarket also said there is no supermarket, in the process of building intelligent supermarkets have applied to is the Internet of things technology, the intelligent supermarket faces the risk is too big, if just rely on the Internet of things technology, it's easy to have a difficult problem to deal with, and block chain technology is in reasonable avoid the risk, solve the problem of information security of intelligent supermarket, which is block chain technology in the role of business model. As for how to establish a safe and harmonious business environment on the basis of cross-industry, it is necessary for government departments and industrial chain enterprises to strengthen the research on the integration of the Internet of things and blockchain.

3. Conclusion

The fusion research of Internet of things technology and blockchain technology is of very high research value. Therefore, both at home and abroad, a boom of fusion research of Internet of things and blockchain has been set off. However, there are still many deficiencies in the current research progress, so it is necessary to strengthen the integration research of the Internet of things and blockchain, and accelerate the integration development of the Internet of things and blockchain technology.

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