NETWORK SECURITY ISSUES IN BLOCKCHAIN

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Annotation: In this article, you have given your thoughts on the strengths and weaknesses of the blockchain and what needs to be done in the near future.

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Security measures have been introduced into the network in such a way that there is no common denial point, not only privacy, but also that no action is canceled and authentication is ensured. Anyone wishing to participate in the system must use encryption - this is not discussed and the consequences of unintentional actions are felt only by the person who performed them. Hacker attacks, personal data theft, fraud, cyberbullying, phishing, spam, malware, and virus fraudsters all pose a threat to human security. The early days of the Internet did not increase the security of individuals, institutions, and economic activity, instead of making many processes more transparent and making human rights violations more difficult. The average Internet user often hoped that emails and accounts would be protected by simple passwords, as providers or employers would not require more secure passwords. It should also be noted that digital currency is not stored in a normal file. It is displayed in transactions marked with a cryptographic hash. Users will have cryptocurrencies for their money and will be able to make transactions directly with each other.

Each of them is responsible for such security - the need to reliably protect private keys. Safety standards are important here. The Bitcoin blockchain operates on the popular and well-developed SHA-256 encryption standard, released by the U.S. National Institute of Standards and Technology and accepted as the federal standard for information processing. The complexity of repeating the multiple mathematical calculations required to find a block solution requires the computing device to expend a lot of electricity to solve the problem and generate new bitcoins. Some other algorithms use much less energy. In our opinion, any

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economy works best when it works for everyone. That means lowering barriers to participation. This means creating a platform for redistributed capitalism, not redistribution of capital. The early days of the Internet did wonders for many people. However, as noted above, a large part of the world's population remains without access to technology, the financial system, and economic opportunities, as before. Moreover, the hope that the new means of communication would bring prosperity to all was not justified. Yes, the Internet has enabled companies in developed countries, in emerging economies, to provide jobs to millions of people. It has reduced barriers to market entry for many entrepreneurs and provided new opportunities and access to basic information to the poor. We believe that blockchain technology is a technology that protects and empowers everyone's rights and humanity. The global financial services network is currently fraught with many challenges. It is obsolete because it is lagging behind the high-dynamic digital world and is therefore based on technologies left over from the last century that work slowly and reliably. It is a monopoly that prevents billions of people from accessing basic financial instruments.

It is centralized, so it is prone to information leaks and other attacks and denials. It is monopolized, so it seeks to maintain the status quo and hinder innovation. Blockchain allows innovators and entrepreneurs to solve these and many other problems by finding new ways to create value on this powerful platform. Global financial experts need to think carefully about the following ideas related to blockchain:

Certification. For the first time in history, different subjects can make a deal and run a business without knowing each other and without trusting each other. Confirmation and trust are no longer the prerogative or privilege of the financial intermediary. In addition, the declaration of trust will have a new meaning in terms of financial services. The blockchain can establish a trusting relationship when necessary, confirming the exact similarity and solvency of each party, based on the history of transactions (in the blockchain), reputation (based on aggregated views) and other general economic indicators.

Value. In blockchain, the network clears and regulates the value of the peer-to-peer P2P transmission, doing so on a regular basis, so its registry is always up to date. If banks had taken advantage of this opportunity without changing their business model, they would

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have saved about $ 20 billion a year in operating costs - a figure that belongs to the Spanish bank Santander, and the real numbers are much higher. As a result of the sharp devaluation, banks would be able to provide more access to financial services, markets, and capital to private and corporate clients in societies that are not adequately covered by banking services. This would be beneficial not only for market leaders, but also for start-up entrepreneurs around the world. Anyone can join global financial flows from anywhere, only with a smartphone and internet connection.

Speed. Currently, it takes seven days to regulate cash flow, two to three days to regulate exchange transactions, and 23 days to cash in on a bank loan. The SWIFT network makes fifteen million payments a day among tens of thousands of financial institutions around the world, but it takes several days to regulate and clear them. The same thing happens with the ACH (Automated Clearing House) system, which pays trillions of dollars a day in the United States. It takes an average of 10 minutes to process and clear all transactions made on the Bitcoin network during this time. Other blockchains are faster, and modern innovative solutions such as the Bitcoin Lightning Network seek to increase the size of the bitcoin blockchain by reducing regulation and clearing time to a fraction of a second. "In a banking system where the sender is in one network and the recipient is in another, the money can literally get lost on the way through a lot of registers, intermediaries, transit platforms. In fact, the transition to an instantaneous, non-cost type of value transfer frees up capital that stays in place for a long time. This, of course, does not please brokers who benefit from "on the go" money.

Risk management. Blockchain technology promises to eliminate several types of financial risk. First, the risk of settlement is the risk that the payment will not be made as a result of any error in the settlement process. Second, the risk of a counterparty is the risk that the other party will default until the transaction is settled. Finally, the most serious systemic risk is the sum of all the major counterparty risks in the system.

Value innovation. The Bitcoin blockchain was created to transfer bitcoins, not to work with other financial assets. But it's an open source, experimental technology. Some innovators are creating separate blockchains, or subcoins, that are not for bitcoin payments

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but for other purposes. Sidechains are blockchains that differ from bitcoin blockchains in their capabilities and functions, but use bitcoin computer infrastructure and advanced network without compromising its security. Sidechains communicate with the blockchain using a two-channel switch - a cryptographic tool that transfers assets to and from the blockchain without the involvement of a third party. There are also innovators who are trying to create trading platforms in private blockchains and exclude the use of bitcoin and other tokens in general. Financial institutions are using blockchain technology to record, exchange and sell assets and liabilities, and over time they can replace traditional exchanges and centralized markets with it, which can change our perceptions of value and the trading mechanisms with it. .

Open source code. The financial services network is a huge set of outdated systems that can collapse at any time. It's difficult to improve technologically, because every innovation requires resilience. Blockchain, being an open source system, is constantly evolving, evolving, and evolving through network compromise. These advantages - certification, much lower value, instantaneous speed, risk reduction, great innovation, flexibility - in the future not only payments, but also operations with securities, investment banking services, accounting and auditing, venture investments , insurance, business risk management, banking services to individuals and other fundamentals of the industry. People have to control their data. Everyone has the right to decide for themselves what, when, where and how much to tell about their identity. Respecting the right to privacy and protecting the security of personal information are not the same thing. We need both. Eliminating the need to trust each other, Satoshi Nakomoto thus interacts with him eliminates the need to know the other party better. The inviolability of private life is a fundamental human right and the foundation of a free society.

In the last twenty years since the advent of the Internet, data centers, both public and private, have collected a variety of classified information about individuals and organizations, including without informing them. People everywhere are afraid that corporations will create some kind of *cyberclone* while searching for information, sweeping the entire digital world. In a blockchain, participants can keep a certain amount of anonymity

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at will - they don't have to report any additional information or store that information in a central data set. The importance of this situation cannot be underestimated. Blockchain does not have a personal database. Blockchain protocols allow you to select the level of uncertainty required for a particular transaction or situation. That way, we can better manage our electronic copies and their interactions with the world.

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