Blockchain for the Internet of Things

By: www.ProfitableInvestingTips.com

Two new aspects of the internet, the internet of things and the blockchain working together provide more than double the value of either one alone. The internet of things is a system of computer devices that are interconnected and interrelated allowing data transfer without the need for human interaction. The blockchain is a distributed ledger which assures that digital records are transparent and unalterable via its cryptographic hashing on a decentralized network. What specifically is the use of blockchain for the internet of things?

Glitches in the Internet of Things

In 2013 retailing giant Target was hit by a massive **security breach** in which more than 40 million proprietary debt and credit cards with their related information were compromised. The hackers first hacked an HVAC company that handled heating and air conditioning for Target's stores remotely. They entered Target via the internet of things, the smart software installed in HVAC systems to allow remote management. Target data was then accessed once the hackers were in Target's system. The loss of trust for Target was huge among their customer base.

Blockchain and Trust in Data Management

IBM writes about how the **blockchain adds trust** to AI and IoT (internet of things). They make the point that as the internet of things expands it gains the capacity to not just collect and transfer data but to gain insights and make decisions. The issue that arises is how to trust the data that comes out of an unsupervised system of internet connections to things from automobiles to toasters. How can someone make reliable decisions based on data that they cannot validate?

Blockchain Brings Trust to Data Captured in the Internet of Things

Using the blockchain as a repository, internet of things devices are given an identity which can be verified and validated throughout their life cycle. Because devices are constantly sending encrypted challenges and responses to other devices in their own network this approach works well for reputation and identity systems. With this approach smart systems similar to smart contracts in decentralized finance can operate independently but still have their date be trusted over time. The point is to avoid having someone like the Target hackers sneak into an HVAC system, shipping containers crossing the pacific, or a toaster in the boardroom of a Fortune 500 company and progress from there to stealing every bit of data in sight.

Controlling the Actions of the Internet of Things

Smart homes and businesses are becoming increasingly common. Devices are interconnected and capable of recognizing problems and even ordering new parts when something is amiss. Smart contracts can be used to oversee these actions and the blockchain is ideal for tracking such actions and verifying that they make sense

and are, in fact, originating in the appropriate internet of things and not anywhere else or being carried out by anyone else. Because data within the blockchain is verified and secure, it is always possible to back check device actions and decisions

When we wrote to **beware of AI hype in the crypto world**, we were concerned about companies using the term AI but not really having any functioning artificial intelligence. In the case of the internet of things our concern is that AI apps can act more than a little crazy at times such as when ChatGPT suggested to a *New York Times* reporter that he leave his wife and "live with the AI app." By anchoring AI in the internet of things to the blockchain with its capacity to verify data and keep it secure, we would expect to rein in any IoT AI excesses before they become troublesome.

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