TECHNICAL DIFFICULTY

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OPINION

Blockchain: what is it good for, in real-world IT?

How will IT departments leverage blockchain technology to solve long standing IT challenges?

Big ideas are great. The technology world long ago accepted the idea of high risk/high reward moon shots. It is very easy to get swept up into how a technology can revolutionize the world. Blockchain has the potential for big things, from combating voter fraud to recreating the world's financial systems. The future is seemingly very bright for blockchain, . But what I don't hear people talking about are the more practical IT usages of blockchain. How can blockchain make IT departments more efficient and more secure?

The first step in talking about practical uses of blockchain is to first understand what exactly makes blockchain so revolutionary. The idea of distributed data is not new; we've had technologies like BitTorrent for years. Blockchain extends the idea of distributed data to include digital transactions and ledgers.

Historically, transactions were owned by a single source and only shared to trusted third parties. This is how traditional systems like banking worked. You have money in Bank A and use it to pay Company B. Bank A tells Company B that you have the funds to cover the bill and transfers the funds to Company B's bank.

Blockchain is different in that it distributes a record of transactions to internet-enabled devices running blockchain software. Trust is created by validating blocks of data as it relates to the previous block across multiple devices. If any previous block is changed and less than 51% of the chain verifies the change, it will not be verified. It is trust by committee using math and encryption keys to keep the data and process secured. Obviously, there are a lot of details that are being glossed over. If you really want an in depth explanation of blockchain go watch this YouTube video.

Now that we have a new way of verifying and tracking digital transactions how can we implement it to improve IT? A challenge that is a good candidate for leveraging blockchain needs to:

- Be related to managing something very dynamic;
- Have current solutions that are too fragmented and difficult to manage;
- Be highly susceptible to malicious activity.

There are many current IT challenges that have all of these components. Let's talk through three of them:

Device management

Currently, devices are managed through enterprise systems that verify ownership via a software system that sits over the Operating System (e.g. AirWatch) or through a hardware signature implanted on the firmware of the device during manufacturing (e.g. Apple's DEP). If the device is lost or stolen the bad guys only have to circumvent a single point of authentication to be able to take control of the device.

Blockchain technology can be used to authenticate a device to a specific person or business by using the power of the distributed network to verify ownership. If the device is stolen and an unauthorized party attempts to login, the distributed network will deny the login. The only way to use the device would be if 51% of the network authenticates the action.

The key to distributed device management is the connection to a specific online identity. You're no probably wondering how we verify digital identity? Glad you asked.

Identity management

In a similar way to device management, current identity management systems hold your information and credentials in a single place and share it with trusted third parties. I can use my Gmail account to log into multiple other systems that I allow, but all of my permissions are still stored on Google's servers.

We can leverage blockchain to store permissions across the distributed network and only allow third party systems access through use of block transactions. Imagine the scenario where I leave my job at Company X and start working for Company Y. In this situation I would tell the network to stop sharing my name, address, and SSN with Company X and start sharing it with Company Y. I could also not let Company Y see my medical history data. I have full control over all my security. The security does not live with one vendor and can not be given to anyone that I do not specifically allow.

We would essentially strip away the need for an IT department to manage their users credentials. The employees themselves would have full control over which specific systems have access to each piece of their personal data. The need for Active Directory, SSO, multi-factor authentication, and application-specific security are completely eliminated.

Licensing

One of the most cumbersome, lowest return challenges of IT is managing licenses. License keys are the current standard way to track purchases, but they are susceptible to being lost or stolen. If the "license" was simply a verification of access through the distributed

network there would be no need for an actual license key or file. The user either would or wouldn't have access to the software based on the vendor's blockchain.

Gone are the days of license audits, software assurance, and license fraud. If a person has verified access to the software via the blockchain, they can use the software. If that transaction has been completed and their access revoked, they lose access. It's simple.

A lot has to happen for these systems to be viable. The critical step will be having blockchain technology built directly into all operating systems. Assuming a two-year cycle for adoption, we could be 5-10 years away from having fully removed the need for IT to manage end users and devices. Sounds pretty disruptive, doesn't it? What do you think?

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