Title: Blockchain's Promise
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Date: December 1, 2017

The Lane Report

The Internet of information is evolving into an Internet of value. While the Internet, as we've known it, was the product of computing and communications technologies, its new iteration is powered by cryptography, mathematics, software engineering and behavioral economics.

Blockchain's technology combines the transparency of the Internet with the safety of cryptography to provide a quicker, more secure way to verify information and, ultimately, to establish and build trust when information, money or assets move. Blockchain will change the way we buy and sell goods and services; the way we interact with government; and the way we confirm the accuracy, reliability and authenticity of the transactions we pursue.

The blockchain revolution is already starting to upend business models and disrupt industries. The financial, economic and societal implications will be enormous.

Whereas traditional transactions are accomplished through an intermediary or central authority such as a bank or a government, blockchain transactions are verified by the consensus of potentially large numbers of users.

A transaction is recorded and shared with all the computers in a blockchain network. It's then combined with other transactions into a block, similar to a computer database. Every transaction is time-stamped, as is the block itself once it's completed. Since all transactions are logged sequentially, duplicate transactions are avoided. And unlike conventional ledgers, the information blockchains store can't be changed or deleted without other users knowing about it.

Blockchains do two things. They compile and organize data into blocks. And they link those blocks together using cryptography.

A completed block is distributed across a network where it's added to a chain. At the same time, other people across the network may be sending out their own blocks. But since data is added in the right order and time-stamped, everybody always has the latest version.

The blockchain's security, and thus its trustworthiness, is assured by a bit of cryptographic math called a "hash." The hash makes the links between blocks virtually unbreakable.

The hash from each block is added to the next. And thus the chain is locked down. Since everybody has a copy of the whole blockchain, everyone knows to trust it only if all the blocks across the chain match up.

Blockchain is in its infancy and, as with any disruptive innovation, it must overcome obstacles:

- The legal and regulatory environment in which it will grow is just taking shape.
- Today's blockchains aren't able to store enough information to optimize their potential.
- Those blockchains which are accessible by anyone raise privacy concerns.
- Current blockchain technologies allow only a discreet number of transactions per second, limiting their scalability.
- And with no standardized means of implementation, embracing blockchain is a radical decision for businesses.

Still, the prospect of a secure network where any transaction can be independently confirmed as unique and valid without an intermediary is extraordinarily appealing. Imagine the impact of trusted, paperless transactions between total strangers - - transactions authenticated by mass collaboration and driven by collective self-interests, rather than businesses motivated by profit or governments motivated by power.

Let's encourage policymakers and regulators to promote the unfettered flow of information and direct interaction between contracting parties while protecting and advancing all of our personal interests.

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