

Understanding the Benefits and Risks of Blockchain

by Robert M. Horkovich and Stephen Palley

Businesses are increasingly coming into contact with a new form of data storage and transmission known as blockchain. Best known as the architecture underpinning digital currencies such as bitcoin, blockchain also soon may impact businesses' use and distribution of a host of different forms of record-keeping and datasets. It is time to take stock of the potential benefits and risks.

WHAT IS BLOCKCHAIN?

Conventional databases use a "hub and spoke" structure in which a central computer, or server, provides access to individual users. By contrast, blockchain is a distributed database without a centralized server. New data ("blocks") are added to a shared electronic ledger by members of a "peer-to-peer" network. Data can include such things as the record of an event, a document or executable code (sometimes referred to as a "smart contract"). As a practical matter, blockchain records are difficult (if not impossible) to change without detection.

Bitcoin is the best known blockchain technology. It conventionally is thought of as a kind of digital cash that does not rely on a governmental authority for issuance and has a current market capitalization of over \$16 billion. Ethereum is the next largest blockchain network.

From a risk management perspective, blockchain presents some clear opportunities, especially for insurance, but as with any new technology, it is not without its risks.

POTENTIAL BLOCKCHAIN BENEFITS

Because data recorded on the blockchain is difficult to alter and not under the control of a single party, use of the blockchain can aid in the preservation of records, evidence and institutional memory. For example, one can imagine a future in which lost

policy disputes are unheard of. Once an insurance policy is sold and is written to the blockchain, coverage could be verified in the future without relying on an insurance company to check its records. Insurance certificates also could become a thing of the past, along with litigation that arises out of the certificate issuance process.

Or imagine adding executable code to a blockchain-stored insurance policy that provides for automatic payment of claims when certain events take place. Some attempts have been made to show how this might work in practice. For example, one Ethereum based proof-of-concept attempted to automate insurance for flight delays. Payment speed is another potential benefit: payments made using a blockchain-based crypto-currency are an order of magnitude faster than bank payments, whether by ACH or wire. For example, bitcoin transactions take roughly 10 minutes to clear, regardless of where the parties are located.

Large insurance companies currently are evaluating the technology. For example, Aegon, Allianz, Munich Re, Swiss Re and Zurich recently announced a blockchain consortium, in a press release stating that, "Blockchain has the potential to provide a consistent, automatic contract execution environment where transactions and contracts are stored on a shared ledger, thus reducing the administrative workload of multiple stakeholders to ensure contract consistency and execution."

BLOCKCHAIN RISKS

In addition to the promise that blockchain technology may offer, sound risk management requires an understanding of attendant risks. At present, most of the obvious risks may involve blockchain-based crypto-currencies, but that may change as new applications come online.

For example, legacy insurance policies may not provide neces-

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sary protection for a business that keeps or maintains bitcoin or other blockchain assets. Some policies may include explicit bitcoin exclusions. Others may include electronic data or new digital currency exclusions that insurance companies may attempt to apply to such assets. And like any valuable asset, bitcoin and blockchain assets can be damaged, destroyed or stolen.

New or atypical risks also may need to be considered. For example, how will value be determined given the fact that bitcoin's value in fiat currency fluctuates? How about coverage for seemingly esoteric risks like damage from sunspot activity or electromagnetic pulse? Where are digital assets actually located? Will coverage be available for losses that have an international nexus or exist in multiple places at the same time?

In addition to insurance, regulatory risk management must be considered. This is a complicated realm where new regulations are being written but old ones remain in force (and where not all countries share the same rules). Know your customer (KYC), anti-money laundering (AML) and tax and accounting obligations are some areas of focus for legitimate businesses that want to benefit from the technology while remaining above

board. A recent IRS subpoena to crypto-currency exchange Coinbase is one example of many showing how regulators continue to apply existing law to new technology.

Privacy is also a concern. Not all data belongs on a public ledger, available for the world to see. While technical solutions (and private blockchain) may resolve this issue for some, one question for any business considering blockchain technology is who will have access to the data.

Blockchain may offer many benefits and it seems likely to be a technology that is here to stay. As it moves into the mainstream, it will be important to actively manage the risks that arise from its use. ■

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