

Blockchain Technology: Not a Game, But a Game-Changer

Blythe Masters

CEO
Digital Asset Holdings



Blockchain technology has the potential to address pressing commercial realities. Rather than being a technology looking for a problem, it is one that can solve real problems.

Since 2015 blockchain technology has evolved from a novel backwater to mainstream finance. First seen as a disruptive force for traditional financial institutions, its commercial implementation this year has proved that it is actually a great enabler.

Blythe Masters, a FinTech expert and pioneer on the frontlines of this groundbreaking technology, shares her perspectives on its capabilities to change our future.

Q So, what exactly is blockchain technology?

Once you strip away the hype and the high-profile crimes and accidents

associated with crypto-currencies, distributed ledgers are nothing more than a clever new form of database technology. They are born of advances in the Internet, open-source protocols, computing power and the science of cryptography. They are shared, replicated, decentralized, transactional databases.

A transaction committed to the database is added to all those that came before it, and it persists for life as part of the immutable ledger. No one has the unilateral power to edit or revise the ledger's history, and no single entity acts as the administrator. These ledgers are continuously replicated and synchronized. Resilience is enhanced by elimination of central points of failure: If one location

suffers an attack or breakdown, others are able to maintain the integrity of the ledger. Security and privacy are achieved by sophisticated credential-checking techniques, and data are protected through encryption.



Traditionally, legacy financial infrastructure is based on centralized, unencrypted, hub-and-spoke database architecture. It is expensive, inefficient and vulnerable to both operational failure and cyberattack. Differences within and across separate databases create inconsistent transaction data that require costly reconciliation. So financial institutions spend a lot of their operational outlays on the generation, communication and reconciliation of vast quantities of data. All this creates opacity and delay, and makes it harder for regulators to keep abreast of what's going on.

However, the simple reality of distributed ledger technology is that it creates the opportunity for independent entities to rely on the same shared, secure source of information. Entities with a need to know about a financial transaction include not just the buyer and seller and their brokers, but custodians, registrars, settlement and clearing agencies, central depositories and, importantly, regulators. Costs are cut dramatically because instead of every interested party keeping a separate record, one prime record can do the job. This reduces duplicative

record-keeping, eliminates the need for reconciliation, minimizes error rates and facilitates faster settlement. In turn, faster settlement means less risk in the financial system and lower capital requirements.

As a result of compressed revenues and high — and rising — costs and capital requirements, banks' rates of return are unsustainably near or below their costs of capital. This means that it has become imperative for banks to find ways to restructure their cost bases, radically, and to reduce their need for capital, while simultaneously responding to the new regulatory requirements. Autonomous Research estimates that blockchain technology could generate \$16 billion of cost savings for investment banks in settlement and clearing alone by 2021, and free up an additional \$6 billion of capital. This is why distributed-ledger technology is attracting so much attention.



The technology is evolving fast. The original Bitcoin blockchain, designed to permit irreversible payments between parties unknown to each other in a public network, has certain features that are problematic for regulated financial institutions. Amid furious debate about whether this obviates the original purpose and genius of the design, alternatives — known as private or permissioned blockchains — have been developed. These improve upon privacy, transparency and throughput capacity (important features in regulated capital markets) by limiting participation to known

and approved parties. Numerous trials are ongoing among market participants, and the foundational work that needs to be done for this technology to be standardized is gaining momentum in the open source community, thanks to the Linux Foundation's Hyperledger Project. We anticipate that you will see the first commercial deployment of distributed ledger technology later this year, but it will take five to 10 years for the technology to become mainstream.



It is a technology that has the potential to address pressing commercial realities. Rather than being a technology looking for a problem, it is one that can solve real problems. Although still nascent and in a developmental stage, distributed ledger technology has the potential to transform back-office processing, in addition to digitizing the current physical transfer of assets. It has the opportunity to increase transparency in the payments space, reduce the risk of fraud and bring digital identity to the unbanked.

Distributed ledger technology addresses a multitude of challenges that banks and other institutions face. It can revolutionize the way in which firms conduct business for the better and improve efficiency, security and compliance while reducing risk and cost. I think 2015 was the year that financial services woke up to the potential of blockchain, and 2016 is going to be the year we start to see real-life implementations.