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Blockchain – Where We Have Been & Where We Are Going

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The Rise of Blockchain

2016 was the year that saw the rise of blockchain. Increased interest from the mass media, corporate titans across America, and the US government all led innovative approaches to using the technology. And one thing is certain – 2017 heralds much of the same trend. By the end of 2017, early-adopter financial institutions will have blockchain firmly ensconced in their business models, according to experts.

The Technology behind Blockchain

For those who are not familiar, Blockchain is a distributed or decentralized digital network that enables the exchange of value or the ability to confidently share data – including financial assets and contracts – in a secure environment. The core design of blockchain builds trust into every transaction and shared data source by creating a sort of open ledger that can be used to track assets. This enables greater security, cost efficiency, and optimized reconciliation processes.

At its core, blockchain is about going from a scenario where companies manage their own copies of a set of data to a world where all parties have access to a shared immutable set of data. Opening up data beyond a single organization requires using cryptographic techniques that utilizes public and private “keys” to ensure confidentiality and privacy. Blockchain is simply a way to verify and order transactions in a distributed ledger that represents a record of consensus. Records in that ledger can be added but not deleted, and all transactions have an auditable trail and a traceable digital fingerprint. The data in the ledger is encrypted by individual transactions, which means that while hackers could break in to a single transaction and alter it, they could not change any other entries in the ledger.

Perhaps the simplest analogy for blockchain is a Google drive spreadsheet with individually protected rows of data that records all transactions and associated information going forward on a real time basis. If that concept seems simple in theory, it is important to remember that it is much more difficult to implement in practice.

Blockchain Applications

Thus far, blockchain has gained the most traction in the financial services industry. In fact according to a report published by Santander InnoVentures in 2016, the technology could cut bank infrastructure costs for cross-border payments, securities trading and regulatory compliance \$15 billion to \$20 billion a year by 2022.¹

More importantly, blockchain also has the potential to become a general-purpose technology – perhaps similar to double entry bookkeeping or GAAP accounting, which changes how society

and the economy work. Indeed, the World Economic Forum has predicted that by 2027, 10 percent of global GDP is likely to be stored on blockchain platforms.²

Blockchain Potential and Opportunities

Skeptics abound when dealing with any new technology, but the potential with blockchain is real. In particular, blockchain has the potential to:

1. Enable new business models using public “contracts”
2. Streamline backend operations
3. Reset the use of intermediaries in asset transfers

Perhaps the most interesting of these opportunities is the creation of potential new business models. Consulting firm Accenture offers this example: “Blockchain can make commercial contracts programmatic, triggered by predefined events and conditions. One result? Machines that buy and sell like people. Imagine the following scenario: Currently, smart meters are used to record and report energy consumption. In the future, a blockchain-enabled utility market could allow customers to authorize those meters to buy electricity—even automatically switch providers—on predefined terms. For their part, utility companies could then sell electricity to the highest bidders, whether machine or person. A number of promising experiments are moving toward making this hypothetical situation a reality.”

Blockchain also can aid firms with streamlining of operations. All companies have to coordinate resources in order to sell products and services, and that typically involves processes such as accounting, data management, and workflow approvals. Blockchain can streamline that process such that it reduces the need for reconciliation and verification. For example, a blockchain-based invoicing network could create a permanent and unchangeable invoice record for a business relationship that allows real time invoicing and settlement. Think of it as a sort of shared real-time point of sale (POS) system between two parties.

Caveats to Bear in Mind

There are caveats that business people need to remember about blockchain though.

First, the technology and its standards are still evolving. Blockchain is still an emerging concept and changes on the security and even the design side could occur in the future.

Second, some of the best applications for blockchain may be in-house at firms. While sharing data between external parties presents unique challenges, many organizations have recognized the value of being able to confidently share data and benefit from immutable data lineage and powerful security. An example of this is the internal processes around client onboarding efforts.

Third, many types of blockchain models rely on network externalities, because the more participants there are in a blockchain, the greater the value of the network. As a business deal grows to include more and more participants, verification and consolidation of transactions across participants gets exponentially more difficult and time consuming. Blockchain reduces this

complexity by putting all transactions in one place. Getting everyone to agree to that requires that stakeholders can cooperate on standards and governance challenges.

Finally, the economic model for blockchain is still evolving. The current market is split now between solutions aimed at making existing business processes more efficient, and the development of new products and services. Where the industry will go from here is an open question though.

References

¹ <https://www.finextra.com/finextra-downloads/newsdocs/the%20fintech%202%200%20paper.pdf>

² http://www3.weforum.org/docs/WEF_GAC15_Technological_Tipping_Points_report_2015.pdf

About the Author

Michael has served as a business consultant for various companies, providing training and content authoring services as a subject matter expert in finance and economics for firms like IBM and Stanley Black & Decker. Previously Michael worked as a data scientist for a tech start-up in the financial industry, as a municipal bond trader for Wachovia Securities holding a Series 7 and Series 63 license, and for a large hedge fund in doing data mining and analysis. Currently, Michael is Assistant Professor of Finance at Fairfield University in Connecticut. He also gives lectures on a variety of corporate finance and investment topics from mergers and acquisitions to corporate governance.



Michael has developed and delivered courses in a variety of business areas and for a variety of participants ranging from undergraduate students to career professionals. He has developed a variety of numerous courses including topics such as microeconomics, macroeconomics, business simulation, financial economics, introductory corporate finance, advanced corporate finance, investments, derivatives, and case studies in finance and economics.

Michael has worked on projects ranging from research projects to professional consulting assignments. For example, Michael has consulted for a mid-sized asset management fund and worked on projects related to portfolio management and asset allocation. His work in analyzing investment analysis and corporate finance has appeared in several professional journals, and has been presented at major professional meetings like the Financial Management Association Annual Meeting, the American Finance Association Annual Meeting, and the Eastern Finance Association Annual Meeting. His work has also been written up by the Wall Street Journal and CFA Institute.

Michael holds a Ph.D. in Business Administration with a Concentration in Finance from the University of Tennessee. He also holds a Master of Arts in Economics and a Bachelor of Science in Industrial Engineering, both from Clemson University.



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