BLOCKCHAIN

Impact on Finance Industry

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Where did my Mangoes come from?

In Dec 2016, Frank Viannas, vice president of food safety at Walmart, picked up a package of sliced mangoes on his way to company headquarters at Fayetteville, Arkansas. He placed the packed mango container on the conference table and gave his team the mission of tracing the origin of mangoes while setting the timer. It took his team six days, 18 hours, and 26 minutes to get the answer[1]. A week to figure out the food source in the event of a foodborne illness outbreak in which a suspected pathogen is tied to mangoes somewhere wouldn't be desirable for Walmart, and everyone, including farmers, distributors, and Walmart would take a hit.

Walmart then tested a technology solution for food traceability in partnership with IBM. The result – in a few months as soon as Frank entered the lot number on a web portal, it took him 2 seconds to get mango's weight, harvest date, origin, hot-water treatment, shipment, US entry, and slicing details. And what made that possible was Blockchain[2].

Blockchain is a kind of ledger that businesses use to track credits and debits, and it concatenates (or "chains") cryptographically verified transactions into the sequence of lists (or "blocks"). Blockchain is a platform technology enabling an improved ability to verify and record the exchange of value among an interconnected set of users[3]. Blockchain technology enables any network of users to track and trade virtually anything of value. Blockchain is a secure and transparent way to do transactions that involve multiple stakeholders. Blockchain assures data

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[1] Hackett, Robert. "Why Big Business Is Racing to Build Blockchains." Fortune, Fortune, 26 Sept. 2017, fortune.com/2017/08/22/bitcoin-ethereum-blockchain-cryptocurrency/.

[2] Hackett, Robert. "Why Big Business Is Racing to Build Blockchains." Fortune, Fortune, 26 Sept. 2017, fortune.com/2017/08/22/bitcoin-ethereum-blockchain-cryptocurrency/.

[3] An Introduction to Blockchain by Richard A. Mayo Center for Asset Management

integrity, maintains auditable records, and renders financial contracts into programmable software. It's a ledger but an edgy one.

There are two types of blockchains: the public also called permissionless, blockchain, and private or permissioned blockchain. The public blockchain network is open to anyone, and everyone uses their native currencies such as bitcoin, which can be used to either compensate miners or to claim underlying assets from its issuer. A private blockchain, on the other hand, provides permissioned access to its network.

Blockchain technology becomes more valuable as more people use it to do different things. While currently, there are disagreements about Blockchain usage, it surely has a network effect as it will become more valuable to the users as more users use it. Potential uses of blockchain applications lie in various industries such as asset management, CPG, government, inventory, and supply chain management.

Blockchain usage in various industries-

As per CBinsights, banking is just the starting for blockchain as it can potentially disrupt up to 58 industries such as supply chain, retail, voting, internet identity, cloud computing, and so on[4].

In the supply chain industry, Maersk, the largest container ship and supply vessel operator in the world, recently partnered with IBM for the Global Trade Digitalization venture that leverages Blockchain to address the long-existing problems of supply chain management and the container shipping industry. Maersk's business model involves multiple stakeholders, for e.g., flowers to be transported from the Netherlands to the rest of Europe move from the shipper in the Netherlands

[4] https://www.cbinsights.com/research/industries-disrupted-blockchain/

to a trucking company, to the freight forwarder to the terminal operator, to shipping lines to customs to trucking at the destination before finally making it to the distribution centers for deliveries in the retail stores. The shipping industry's business model has its challenges with transparency, inefficiency, and overall administration. Like the rest of the industry, Maersk also had to deal with inefficient and error-prone manual processes that relied heavily on people, caused copious documentation, and contributed to significant delays in deliveries. The inconsistent information across organizational boundaries and 'blind spots' throughout the supply chain hindered the efficient flow of goods. The involvement of multiple companies and the lack of transparency made Blockchain a suitable solution to Maersk's problems as Blockchain enables any network of users to track and trade virtually, securely, and transparently.

Another good use case of blockchain is government election, as it requires voter authentication, secure record-keeping, and trusted allies. By leveraging blockchain, the government could maintain an audit trail and ensure that votes aren't changed, removed, or illegitimately added. Blockchain could provide these services for casting, tracking, and counting votes and could eliminate voter fraud, foul play, and the need for recounts. Follow My Vote is a blockchain voting startup that recently released an alpha version of its end to end blockchain voting solution[5]

Similarly, blockchain, with its strength in security, can help with infrastructure security, which has been easy to hack, especially with growing IoT devices. Xage, a startup, is leveraging blockchain's tamper-proof ledger to share data across industrial device networks.

[5] https://www.cbinsights.com/research/industries-disrupted-blockchain/

Even academic institutions are leveraging blockchain to move away from the extensively manual process of verifying, securing, and sharing academic credentials of students. Sony Global Education has developed an educational platform with IBM that provides the service[6].

Impact of Blockchain in Finance sector

Blockchain, currently majorly used in the financial sector, is expected to have a significant impact on lowering costs, making execution of transactions faster, and improving transparency. As per Wharton, just as disruptors like Amazon, Google, Facebook, and Uber built software platforms and thriving businesses thanks to the connectivity provided by internet standards, next-generation startups will develop new services and businesses with blockchains[7]. Cryptocurrencies are an early example, but many others will follow. An essential feature of Blockchain is its ability to eliminate intermediaries and thereby lower transaction costs. Most Blockchain and cryptocurrency's value is tied to speculative buying today rather than actual use cases. But in countries such as Venezuela, with currently troubled central banks, people with savings in crypto had greater protection against rapid currency devaluations[8].

Currently, in finance, the major blockchain products and services are leveraged in three broad areas: 1) the clearing, payments, and settlement functions in financial services companies (e.g., banks, asset managers), (2) creation and use of a digital identity within an enterprise, and (3) smart contracts that self execute when requirements are met[9].

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[6] https://www.cbinsights.com/research/industries-disrupted-blockchain/
[7] https://knowledge.wharton.upenn.edu/article/blockchain-will-impact-financial-sector/
[8] https://knowledge.wharton.upenn.edu/article/blockchain-will-impact-financial-sector/
[9] An Introduction to Blockchain by Richard A. Mayo Center for Asset Management

Blockchain could bring enhanced security, transparency, and information sharing in the financial ecosystem. UBS and Barclays are both testing Blockchain as a solution to expedite back-office functions and settlements, which, as per banking experts, could cut $20B in intermediary costs[10]. With the potential to enhance transparency and reduce intermediaries, Blockchain is considered to be a potential solution to reducing the cost of cross border transactions, which accounted for 27% of global transaction revenue in 2017[11]. JP Morgan is also vested in Blockchain with its Quorum platform and the JPM Coin, which it intends to use to facilitate transactions between institutional accounts[12].

Blockchain currently provides plenty of benefits such as reduced costs, faster transactions, improved security, and improved data quality to financial institutions.

However, blockchain isn't a new software that organizations could just install and start using. Although there is a lot of excitement about the technology, its success depends on all relevant members joining the initiative. The network-based technology requires a vast ecosystem to engage and participate and getting everybody in the chain on board with the idea will be a significant challenge. The involvement of all stakeholders will require collaboration within and across organizations, and doing so requires organizational change, which is challenging.

To increase ROI with blockchain, organizations not only need to digitalize their operations fully but also change people's mindset to change their way of work.

[10] https://www.cbinsights.com/research/industries-disrupted-blockchain/
[11] https://www.cbinsights.com/research/industries-disrupted-blockchain/
[12] https://www.businessinsider.com/jpmorgan-launching-jpm-coin-cryptocurrency-2019-2

Appendix

https://knowledge.wharton.upenn.edu/article/blockchain-will-impact-financial-sector/
https://www.asiablockchainreview.com/the-impact-of-blockchain-on-banks-financial-institution/
https://www.cbinsights.com/research/industries-disrupted-blockchain/
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