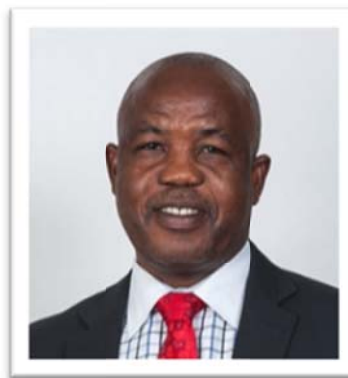


Blockchain Technology implications for the Future of Financial Services

By

Emmanuel Musa Samdi

Head Africa, VP at IMCI Group International Ltd.



This emerging technology (blockchain also called the distributed ledger technology DTL) is already having some impacts on the ways financial services are delivered. This impact is expected to continue as the application of the technology matures. However, this time the impact is not only in its efficiency and effectiveness but also on building a stronger bond and dependency between the technology and its users. This bond is based on the fact that the users of this technology are learning to trust the technology for its reliability, security, accountability and the execution of agreed and signed contracts without third-party playing an intermediary role. One of the most significant challenges to financial transactions today is the high level of financial crimes by scammers, money launderers, outright fraud through collaboration and forceful extortions. At the current level of development the technology can be used for the wrong purposes, but as its regulatory process develops, this would be of minimal concern. Where financial transactions are clean the main challenges of the existing system (soon to be referred to as traditional systems) revolve around speed, length of processes involved, hacking risk in the processes and costly errors.

According to Deloitte, (2016) the implications of this technology to financial services are significant. Transactions become faster and cheaper, and information silos disappear. Risk decline as credit history and asset provance become an immutable part of the record. It is also easier to verify compliance of a trading partner to the agreed contract. Dispute process becomes simpler and the audit process more reliable. Lenders get higher visibility on assets pledged by borrowers. The absence of intermediaries implies that financial institutions can

easily reconcile records and resolve disputes among them. This technology can be used as a public or private network. As rightly observed the financial services are already changing and this change is attributed to technological innovations which suggest that the already existing technologies such as biometrics, robotics, machine learning, cloud, cognitive and quantum computing, provide an excellent platform for blockchain technology to maximise its potentials regarding applications. Therefore the blockchain technology is expected to have a significant positive impact on financial services:

- Global Payment System
- Commercial Property and causality (P&C) Insurance claims
- Syndicated Loans
- **Trade Finance**
- Contingent Convertible bonds (CoCo Bonds)
- Automated Compliance
- Proxy Voting
- Assets rehypothecation
- Equity Post Trade
- Others

At this point, it is necessary to give a brief explanation of how this technology (Blockchain) also referred to as a distributed ledger technology (DTL) works, after which our focus would be on one particular financial service, the TRADE FINANCE.

How the Blockchain Technology (DTL) work?

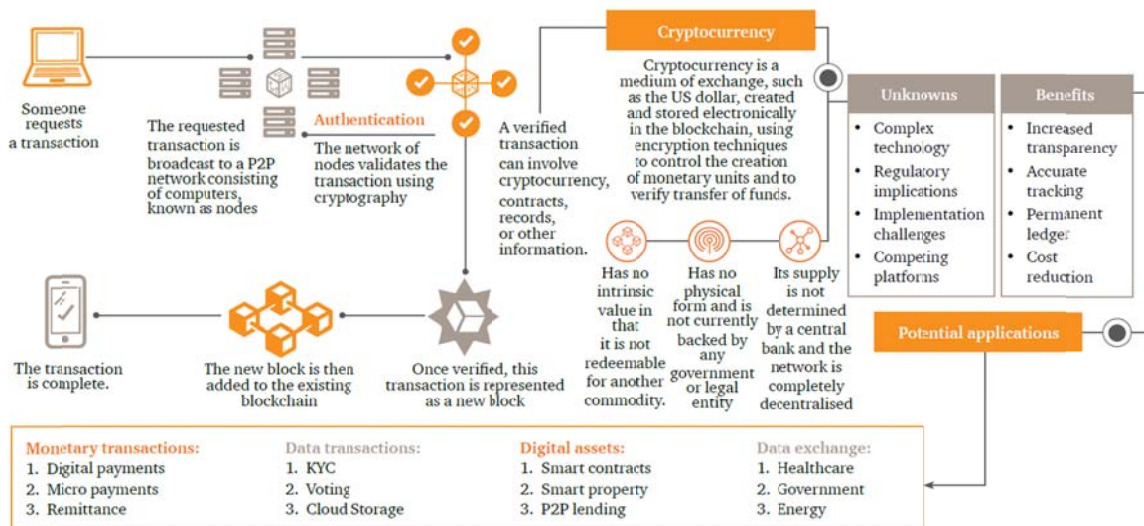
The blockchain technology powered the development of Bitcoin in 2008/2009. The pseudonymous developer (Satoshi Nakamoto) was the first person to solve the “double-spend problem” (i.e. the problem that simple digital files representing monetary units can be copied and spent twice). In traditional digital payment systems, the central actors like the banking institutions ensure that monetary units can only be spent once. By inventing a blockchain powered solution to the double-spend problem, Bitcoin was able to create the first international payments network that does not need a central party like the Central Bank. The cryptocurrency operates on a peer-to-peer basis (Ohnesorge, 2018).

This powering blockchain technology has been defined severally by authors. The PWC (Price water house Coopers Private Limited, (2018) defined blockchain from the perspective of digital Transformation as a decentralised ledger of all transactions in a network aimed to increase security, reduce cost, decrease transaction time, and increase transparency, while eliminating the need for a trusted third party. They believe that backed by other technologies such as artificial intelligence, internet of things, robotics, cloud computing and other technologies like data COEs, EPM platforms and data lakes, ‘Perform’ for SSCs, global

business services and integrated business planning resulting to a digital transformation with significant implications for business.

Another definition by Gupta, (2017) observed that *Blockchain* owes its name to the way it stores transaction data in *blocks* that are linked together to form a *chain*. As the number of transactions grows, so does the blockchain. Blocks record and confirm the time and sequence of transactions, which are logged into the blockchain, within a discrete network governed by rules agreed on by the network participants. However, a self-explaining chart of how blockchain works is provided by Price water house Coopers Private Limited, (2018) as below:

Blockchain: how it works



the application of the technology for **Trade finance**.

CASE STUDY

Trade Finance

HSBC adopts blockchain technology

According to HSBC GROUP (2018), it has just completed the first live end-to-end trade finance transaction on a scalable application for the issuance of a fully digitised letter of credit, using Distributed Ledger Technology, more commonly known as blockchain. The application was built using R3’s Corda blockchain. While maintaining the existing letter of credit process, a single blockchain network was used for all participants, instead of relying on multiple systems. This is in collaboration with R3, a consortium of over 100 financial

institutions. Twelve banks were directly involved in supporting this letter of credit application, which HSBC developed further to enable live transactions.

HSBC observed that this new technology holds the promise of improved speed and processes and eliminating paper. However, realising these advantages requires a decentralised network, mirroring the decentralised nature of global trade. This is where blockchain comes in. The developed R3's Corda uses blockchain to track and trace information as it moves between parties. The Corda technology keeps all players in sync, reducing the need for reconciliation and speeding up transactions while providing end-to-end visibility. In the trade finance transaction, this technology helped reduce the time taken for exchanging and checking documents, from the typical 5-10 days to less than 24 hours (HSBC GROUP, 2018).

What is Corda?

Corda is a built-for-purpose blockchain platform created by R3 (consortium) for their members. The core design principles are to build something that will integrate with bank systems, and that ensures speed, scalability and privacy. Essentially Corda is designed to enable secure global communications and exchange of digital assets across a globally shared ledger for banks and their customers. This transaction built on Corda v3.1, and released in April 2018 (HSBC GROUP, 2018).

Conclusion

According to HSBC developing a network to support the deployment of blockchain-based applications will be one of the critical next steps. They will continue to work with R3 to expand the number of partner financial institutions and increase adoption by others in the trading ecosystem.

Recommendation

The recommendation here is that companies and financial/investment institutions should start to look closely into the possible disruption of their business models and to figure out how best to be part of the emerging process before competition makes it very expensive or use the late adoption as a strategy to dominate their markets. This is not a technology to avoid because the technology will not avoid any organisation eventually. It may be cheaper and more strategic to grow with technology as a business organisation. The adoption of the technology by the public sector would create a serious challenge for the private sector late starters.

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