Stepping into the next decade - Emerging areas in International Banking

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"In today's era of volatility, there is no other way but to re-invent. The only sustainable advantage you can have over others is agility, that's it. Because nothing else is sustainable, everything else you create, somebody else will replicate."– **Jeff Bezos, Founder, Amazon**

I. Introduction

As we move into the last two years of this decade, banking – globally –is at crossroads. While disruptors from Fintech Companies threaten to eat into traditional services of Banks like remittances, lending and savings, delays and high costs resulting from use of 'traditional' procedures and technology make banks look flat footed. At the same time, proliferation of frauds and banks being used a channel to funnel slush money, have exposed banks to risks as never before. Entry of banks into the next decade, therefore, appears to be an exercise accompanied by a surfeit of barbs.

It is keeping the above situation in mind that we will discuss the advantages that Blockchain Technology (BCT) promises to provide in resolving, at least some, of the problems banks may face in future.

To backtrack a little bit, BCT evolved during the days of the Global Financial Crisis, when it was felt that keeping money in banks, which were centralised in their record keeping and validation, was too risky and it would be better to do the same through a network of Distributed Ledgers, or Blockchains. The idea was first mooted by Satoshi Nakamoto in a White Paper published in 2009. Only, no one really knows whether a person by that name actually existed or whether it was a group of persons who assumed 'Nakamoto' as a pseudonym. The paper envisaged a system where a purely peer-to-peer version of electronic cash would allow online payments to be sent directly from one party to another, without going through any financial institution.

II. What is a Blockchain

Simply put, a Blockchain is a growing list of records, or blocks, that are connected cryptographically. Each block is connected by a cryptographic hash, time-stamp and transaction of the previous block. It is an open distributed ledger between two entities, managed by a peer-to-peer network following a protocol for validating the new blocks. Once validated, the blocks cannot be altered without alterations of previous blocks, which is practically impossible as it would require concurrence of other network participants. A Blockchain - to a transaction - is quite similar to what internet is to communication.

Transactions recorded on the blocks are, therefore, immutable and resistant to frauds.

The main advantages of BCT, in addition to immutability of records, are:

- Reduction of cost
- Increase of speed of transacting
- Increased transparency
- Reduction of operational and financial risks
- Amenability to being used for execution of 'Smart' contract 1

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Figure 1 given below compares the architecture of the Centralised Ledger (as is traditionally used) with that of the Distributed Ledger (as is used with Blockchain technology)

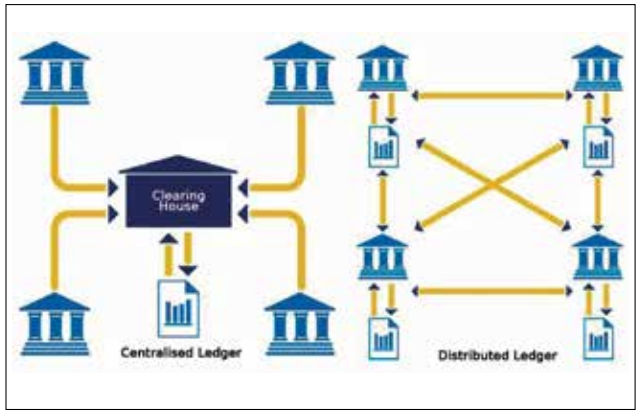


Figure – 1

We will examine the impact of using BCT on three major areas of international banking, viz., Trade Finance, Remittances and KYC-AML compliance and determine how the emerging technology can mitigate many of the challenges faced today in those spheres of Banking.

III. Trade Finance

With global trade nearing the figure of USD 20 trillion, Trade Finance is one of the focus areas for most International Banks. In Trade Finance, Letters of Credit are the workhorse and a large proportion of global trade is backed by LCs.

The main challenges faced in handling LC based business are:

- High cost of operations
- It is time consuming since physical movement of documents are involved
- Documents are fraud-prone
- Finance can be hampered due to discrepancies arising in the documents (rejections) and time being taken to resolve the discrepancies

A Trade Finance transaction handled using BCT can address all the above-mentioned deficiencies. LCs can be issued as Smart Contracts into the Blockchain network by the importer and, thereafter, validated by the importer's bank and exporter, in that sequence. The LC, once validated, can be seen by all connected entities. Shipping documents issued by the transporter and the exporter can also be directly introduced into the network and validated. Since, each document would require to sequentially validated in order to constitute a part of the transaction Blockchain, no alteration can take place without validation by the network. Hence, fraudulent presentations can be eliminated. The simultaneous access of all connected entities to the various documents speeds completion of the transaction and payment by the importer to the exporter. The fact that there is no movement of physical papers drastically reduces the transaction cost and transaction time.

Figure – 2 compares a conventional trade finance cycle with one which is driven using Blockchain.

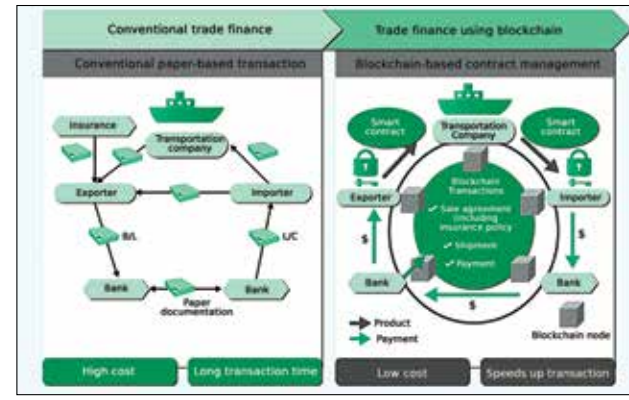


Figure – 2

To illustrate the benefits, in one of the first Blockchain driven trade finance transaction, an LC for USD 100,000- was opened by Barclays Bank, on account of ORNUA (formerly Irish Dairy Board) in favour of Seychelles Trading Company for export of cheese and butter and the entire transaction was completed in 4 hours, as against typically 7 to 10 days.

In the words of one of the senior officials connected with the transaction:

"I've been here for more than two decades and I never even dreamed of a solution where you can remove completely the documents from the circle and just get everything moving around the world on an electronic basis within minutes, rather than days of couriers and shipping and all that".

IV. Remittances

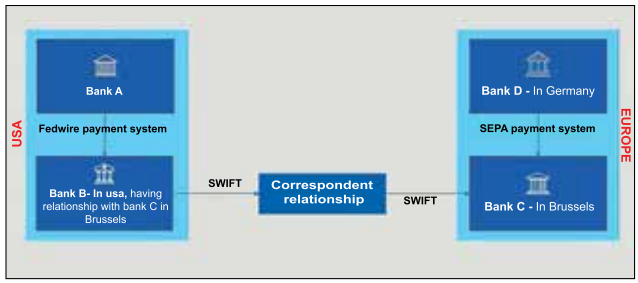
Remittances is another area of banking where, globally, tremendous opportunities of using Blockchain technology are emerging. A traditional SWIFT MT 103 remittance, today, involves a cluster of Banks which serially process the funds transfer before it reaches the beneficiary. More are the number of intermediaries in a transaction, greater is the impact on the following counts:

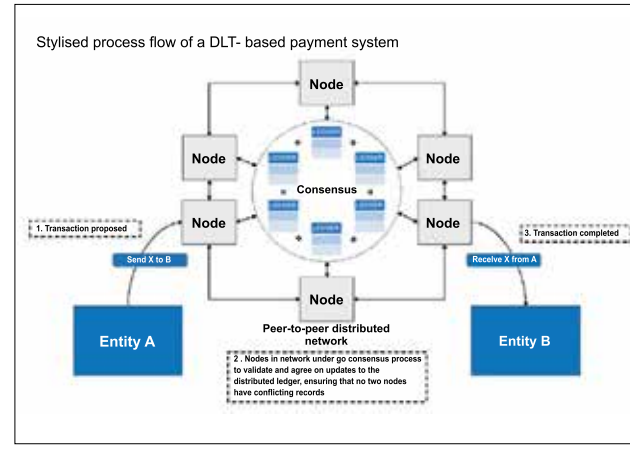
- Higher cost / charges
- Longer time to complete the transfer
- More the liquidity requirement
- Higher the possibility of frauds
- Lesser the transparency and ease of reconciliation

Remittances can be remodelled by routing them through Blockchain networks. The following figures depict a typical traditional remittance as against one using Blockchain.

A typical SWIFT remittance uses correspondent banks (B and C) to route a payment from Bank A to Bank D, as in Figure – 3 below. The drawbacks in such remittances have been listed earlier in this paper.

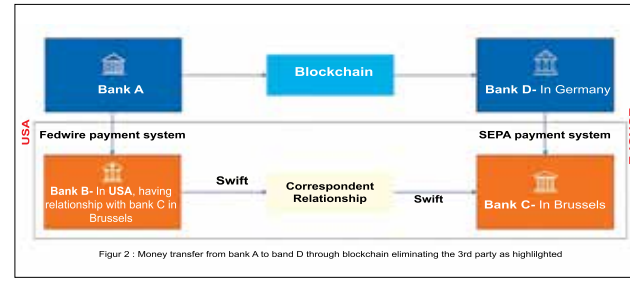
In a Blockchain powered remittance, the proposed transaction is introduced into the network and processed by multiple nodes, independently. Once all the nodes validate the transaction in a distributed (rather than centralised) manner, the transaction is completed by a debit to the remitting bank and a credit to the beneficiary bank. The nodes work in consensus in order to validate the entry in the distributed ledger. Since, the entries have been validated by the entire network, they become immutable. These are depicted in Figure – 4.





Source: BIS Report on distributed ledger technology in payment, clearing and settlement (Feb 2017)

The simplification that arises out of the Blockchain remittance is depicted in figure - 5, which is a modification of the earlier Figure - 3, and it depicts how Banks B and C are eliminated in the transaction flow and replaced by a Blockchain.



Figur 2 : Money transfer from bank A to band D through blockchain eliminating the 3rd party as highlighted

V. KYC-AML

Managing identities of customers can be nightmarish for banks. The process is duplicative, highly manual and does not lend itself to scalability. According to

a report published by a reputed consulting firm, banks spend over USD 25 billion in crime risk management and it is estimated that, while about 80% of the effort is spent in information gathering and processing, only 20% is spent in actually making a meaning of the information gathered. It is a complicated situation which is compounded by the fact that the systems of different banks do not "talk' to each other and this leads to poor customer experience, endless document gathering and lack of transparency of usage of customers' private data.

The potential of the Blockchain system in the KYC gathering and validation process can have numerous benefits. These include:

- Greater operational efficiency leading to reduction of time and energy required in the early stages of customer on-boarding
- Real-time updating of existing KYC data while maintaining full data security and customer privacy
- Transparency and immutability of data. No changes to the existing database would be permissible without the concurrent validation by all nodes in the Blockchain, thereby mitigating risks of frauds
- Addressing concerns of customers over issues of data privacy. Customers could be required to give their express consent, digitally, to specific agencies before the latter can have access to their personal data.

In fact, recently a Proof of Concept for using Blockchain technology for KYC AML function was performed using three large international banks and the utility's functionality, security and scalability were tested. Consequently, it was found that there could be cost saving to the extent of 25% to 50% as a consequence of avoiding duplication and providing a robust audit trail.

VI. Conclusion

While there are, certainly, a number of grey areas in the use and propagation of Blockchain technology in general and, its use in the banking landscape in particular – especially with regard to the aspects of regulations and security – it is also a fact that the technology has the potential of becoming a definite and disruptive game changer. Banks are intermediaries in financial transactions and any additional intermediary only escalates cost and delays completion of the processes. Consequently, technologies like Blockchain have to reckoned with very seriously by banks and ignoring them could well be to the peril of banking, as we know today.

References:

1. KPMG – Could Blockchain be the Foundation of a Viable KYC Utility
2. Blockchain for Trade Finance: Payment Method Automation – Cognizant (Oct 2017)
3. BIS Committee on Payments and Market Infrastructures – Report on distributed ledger technology in payment, clearing and settlement (Feb 2017)
4. White Paper on Blockchain Technology – Institute of Development and Research in Banking Technology, IDRBT (Jan 2017)