Streamlining Cross Border Payment Processing with Blockchain

Abstract

Blockchain is a friction-less technology that is currently gaining traction in various industries including banking, financial services and insurance (BFSI), retail, healthcare, manufacturing, and government sectors among others. Market leaders across domains are continually on the lookout for new technology solutions to stay ahead of the competition in the race to meet the ever-growing customer needs and the payments industry is no exception. Lately, the payments industry has been witnessing an increasing number of advocates championing the adoption of blockchain due to its potential to reduce the role of intermediaries and enable faster processing of cross border payments. However, the big question that remains unanswered is - how can banks seamlessly adopt blockchain in payments to reap long-term benefits. This whitepaper discusses key standards that banks must follow for adopting blockchain for a faster, cheaper, secure and digitized way of processing cross border payments.

Evolution of the Payments Industry

The payments industry has rapidly embraced new technologies to evolve at an accelerated pace. Over the past four decades payments landscape has changed dramatically resulting in a more mature, stable, real-time and any-to-any payment ecosystem – clear evidence of how consumers' exposure to new technologies and social media is driving the evolution of ubiquitous anytime, anywhere payment capabilities. Banks have responded to this trend by investing time and money in exploring new technologies such as digital and mobile applications in an attempt to transform payments.

Going a step forward on the technology path, the banks are now considering adopting blockchain for speedy payment processing. Some banks have even conducted proofs of concept (PoC) to assess the maturity of the technology and determine its ability to meet both functional and non-functional requirements in payments.

Compared with domestic payments, cross border payment processing is quite complex. For example, if company A in the US has to send a dollar payment to company B in Japan, in the existing scenario, it would depend heavily on correspondent banks in respective geographies resulting in processing delays, increased transaction costs and poor customer experience (see Figure 1).

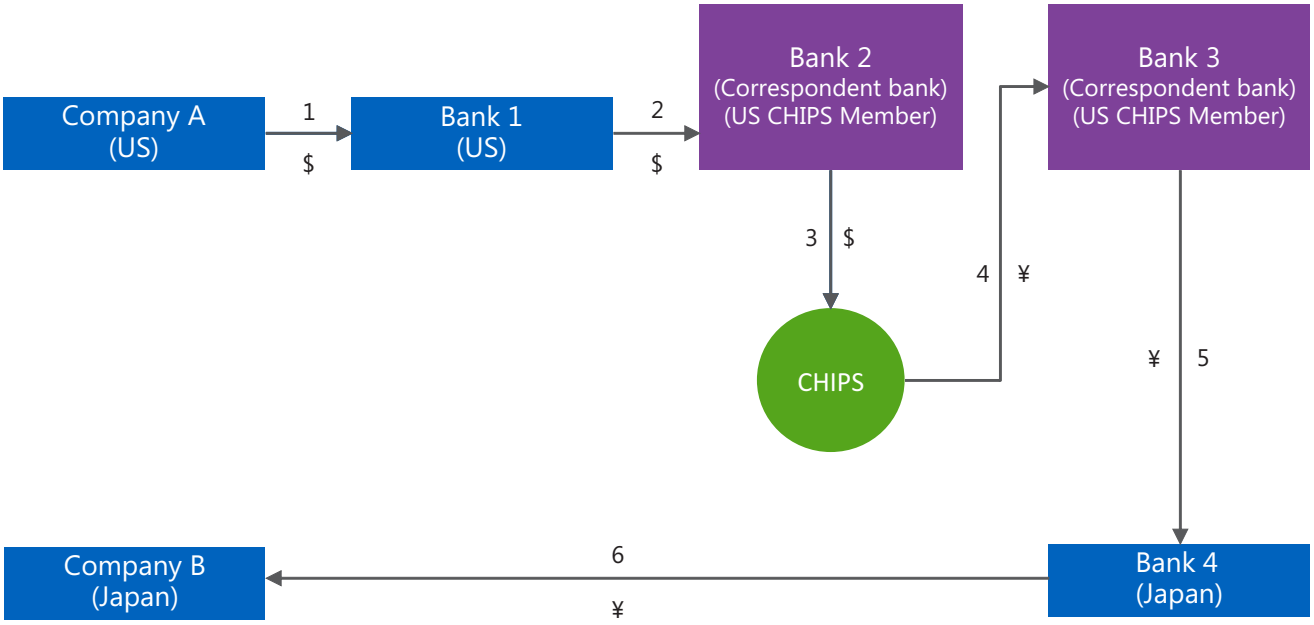

Figure 1: Current State of Cross Border Payment Processing

Going forward, cross border payments are set to grow both in terms of volume and value, which underscores the need for a fast, efficient, cost-effective, and secure processing platform. Moreover, other factors such as growing customer demand for

superior payment experience coupled with the regulatory push for instant payments is also driving the need to revamp the payment infrastructure in banks. Technology that can speed up cross-border payment processing, improve customer experience, reduce transaction costs and enable efficient and secure payment systems, is the need of the hour.

In our view, distributed ledger technologies or blockchain can be the answer to all the woes that the payment industry is currently grappling with and financial institutions would do well to seriously consider adoption given the potential benefits. Going back to our example, using blockchain can help the banks to enable faster processing of the dollar payment. As soon as the payment is initiated, a block will be created that will be is broadcasted to all the parties within the network. Authenticated users with the network will need to review and approve the payment and the payment (block) is then added to the chain. Each step of the process will be visible to all parties within the network thus allowing a high degree of transparency and trust. Authenticated users can then review and approve the transaction enabling the company B in Japan to receive the payment from company A in the US.

Blockchain Adoption in the Payments Industry

While we observe that many banks have started experimenting with blockchain technologies for cross-border payment processing by running PoCs, a widespread adoption is yet to gain traction. This is because, in our experience from engagements with global clients, PoCs are largely piecemeal as individual banks operate with independent payment systems along with proprietary communication and security standards. Hence, the lack of standardization in technology, security, and governance poses huge challenges for big-bang implementation of blockchain for processing cross-border payments. For banks to reap long-term benefits of a blockchain-based payment platform, several key standards will need to be adopted. Other hurdles to implementation revolve around meeting geography-specific regulatory and jurisdictional mandates, especially in reporting.

Blockchain adoption for cross-border payment processing will also necessitate banks to shift to a new business model, which comes with an element of risk. However, in our view, a shift from existing minimum risk payment strategies to embracing the risks associated with new models is crucial to driving innovation, achieving scale to process growing transaction volumes, and delivering superior customer experience.

Technical standards

Fragmented and isolated adoption of blockchain not only results in lack of standardization across software technology used but also increased costs. Additionally, interoperability is key to ensuring the integration of existing systems and processes into the blockchain framework. To address this, the banks will need to focus on developing common technical standards to enable interoperability and accelerate broader adoption of blockchain, improve network scale efficiencies, and adopt a standardized mode of communication (like SWIFT messages) as part of their overall strategy. Banks must run pilots for cross-jurisdictional use cases to gauge the processing time, scalability, and compatibility with geographic requirements to facilitate a wider adoption of blockchain and improve network scale efficiencies.

Regulatory and compliance standards

In order to enable greater transparency and ensure fewer risks for customers, regulatory agencies have mandated numerous new regulations (such as MiFID II) on top of the existing established frameworks like the Dodd-Frank Wall Street Reform and Consumer Protection Act, the General Data Protection Regulation (GDPR) and so on. Hence, banks must evaluate if implementing a blockchain-based platform over their existing technology infrastructure will ensure compliance with existing and upcoming regulations. Given that the price of regulatory violation is steep, banks would do well to carefully consider all the regulatory implications of blockchain adoption before embarking on implementation.

Governance standards

Banks are currently facing issues around the accountability and ownership of the distributed ledger that stores the transactions. Another issue that needs to be resolved is the facility to reverse transactions; since transactions processed using the distributed ledger are immutable and cannot be modified or cancelled, banks will need to lay down governance standards to address this and facilitate amendments, aggregation, reversal and cancellation, all of which is available in the existing system.

Security standards

While it is indisputable that blockchain technology is beneficial in terms of processing time and transparency, the transaction information is visible to all the participants within the network. This can have adverse privacy and confidentiality implications concerning personal customer data. The banks must lay down stringent security standards and educate users about maintaining robust user credentials, installing anti-virus software, and ensuring periodic scan of computers and mobile

devices. In addition, stringent testing of solutions supplied by third-party vendors must be undertaken before any integration into payment systems. Adopting the appropriate technical, regulatory compliance and governance standards will also play an important role in mitigating security risks.

What Banks Must Do

Given that blockchain adoption is still at a nascent stage in the industry, implementation at an enterprise level will come with its own challenges. Hence, it is absolutely essential for the banks to initiate certain preliminary steps in order to aid a smooth and hassle-free transition to a blockchain-powered payments platform. These would include:

- Identifying suitable Fintech partnerships and defining a strategic blockchain framework for processing cross border payments
- Leveraging cryptographic networks to ensure data security and establishing appropriate levels of access to protect the network
- Ensuring the blockchain framework has the capability to handle growing traffic; banks can consider storing a subset of the transaction data on-chain and sensitive information off-chain to ensure data privacy

While several factors will need to be evaluated based on the existing technology landscape of the banks, implementation decisions will hinge on the willingness and capability to invest in blockchain programs that may necessitate expensive and time-consuming changes to the existing processes. Individual banks will need to weigh organization-specific requirements and the potential benefits against the cost, time, and effort involved in implementing a blockchain-powered payment platform.

In a Nutshell

In our view, blockchain technology is a new disruptive paradigm with the potential to transform the payments industry. However, the banks will need to focus on some key elements before embarking on implementation. The road to adoption and implementation of blockchain while simultaneously ensuring adherence to the prevailing industry standards and regulations is fraught with myriad risks and challenges. To enable a hassle-free implementation, banks must consider working with technology service providers for strategic and structural support required to smoothly navigate the adoption journey.

About The Author

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Ponmeena Shankar Kannan Kanagaraj is an Engagement Manager for TCS' leading banking and financial services client in Europe. He has around 13 years of IT experience with special focus on the quality engineering. Ponmeena Shankar has a rich and varied experience in providing quality-engineering consultation for various large-scale transformation programs to leading global financial institutions. In addition, he also helps TCS' BFSI customers in their digital transformation journey. Ponmeena Shankar holds a bachelor's degree in Production Engineering from PSG College of Technology, Coimbatore, India.

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