The Great Custodian Bank Shake-up Part 1: Blockchain to Rewire Custodial Operations

Abstract

Custodian banks are facing a slew of challenges such as cost pressures, operational inefficiencies, and aging legacy applications. Disruptive digital technologies such as blockchain and distributed ledger technologies (DLT), robotic process automation (RPA), and intelligent automation systems such as cognitive computing tools and decision support systems using machine learning (ML) algorithms can help custodian banks address these challenges. This paper, the first of a two-part series, examines how blockchain or DLT can be applied to specific service areas to help custodian banks transform their operations.

Technology Driving Change

Custodian banks are under pressure to offer competitive and cost effective services to their alongside tackling multiple challenges including a stringent regulatory regime, legacy systems, rising costs, and inefficient processes. Enhancing operational efficiencies, minimizing run-the-bank (RTB) costs, and improving customer experience are therefore top priorities for these banks, which is where disruptive technologies come in. Custodian banks are looking at leveraging DLT, RPA, and intelligent automation systems such as cognitive computing and decision support systems using machine learning to reengineer business processes and simplify and modernize their application architecture.

DLT in Action

Several service areas within custodian banks can benefit from the application of DLT or blockchain (see Table 1) to realize cost and operational efficiency gains, and improve customer experience.

Functional area	Process or sub functional area	Priority	Adoption possibility
Reference Data Setup	Customer reference data management	Medium term	Medium
	Client standing instructions	Medium term	Medium
Trades and Settlement	Settlement instructions processing	Long term	Medium
Asset Servicing	Announcements capture	Medium term	Medium
	Proxy voting and elections management	Medium term	High
	Reconciliation of proceeds	Medium term	High
	Market claims handling	Medium term	Medium
Reconciliation	Position reconciliation	Medium term	High
	Cash reconciliation	Medium term	High

Table 1: Areas Suitable for Blockchain Adoption

Complex hierarchical transaction processing between market participants can be eliminated by leveraging blockchain or DLT to enable more comprehensive, peer-to-peer, disintermediated interactions resulting in faster and cheaper transaction processing. Financial institutions must consider private blockchain platforms with permissioned ledgers such as IBM Hyperledger, R3 Corda, or private version of Ethereum (Quorum™) to enable faster adoption of this technology. The key advantages of using these products are features like

disintermediation and immutability or data integrity, as well as their inbuilt smart contract capability that enables further automation. Let's examine the key areas where blockchain can deliver maximum advantage.

Reference data management

Market data providers supply reference data to custodian organizations. Each individual firm obtains and manages its reference data and enhances it with additional data inferred based on financial data received from other sources such as issuers and stock exchanges. This results in inconsistencies in the reference data used by different market entities, which in turn causes transaction breaks that require significant reconciliation effort at a later date.

Blockchain solutions have the capability to enable the sharing of uniform reference data across all market entities in near real-time. Market participants can come together to form a common platform underpinned by blockchain technologies, wherein issuers publish the securities reference data for the use of all the members. Subsequent changes or enhancement to reference data by individual custodians can be approved by the issuers. This will help create a single, golden source of reference data across multiple market participants.

Collateral management

Custodians offer triparty collateral management services to their customers. Based on the service agreements submitted by the two counterparties, service providers create a master contract in their repositories, which is considered as the golden copy by all concerned parties. Amendments to this master contract and associated sub contracts, if any, are also processed by the triparty service provider. The entire process involves substantial manual intervention, which in turn causes significant operational risks.

Moving to a blockchain platform can help address these challenges. The triparty collateral manager can provide a blockchain solution for counterparties to create the master agreements and associated sub-contracts, which can then be validated by the service provider. The immutability feature of blockchain technology ensures data integrity of the master agreement. Amendments to the master agreement requested by either of the counterparties will be verified, reviewed, and approved by the other counterparty as well as the service provider. A new version of the master agreement will then be created in the blockchain ledger. A key benefit of using

blockchain for creating triparty collateral agreements is that it incorporates all the non-repudiated amendments besides enabling a single, consistent view of the agreements for all concerned parties.

Cross-border collateral movement between counterparties may involve the exchange of collateralized assets between parties' custodian accounts resulting in expensive settlement processes. Blockchain technologies can be used to address this wherein a custodian in a participant's home market will accept the collateral and issue equivalent virtualized tokens to the participant on the blockchain platform. The number of positions in each security for each participant will be recorded in the form of virtualized tokens in the blockchain ledger. Consequently, participants' collateral across different locations and central securities depositories (CSD) will reflect as tokenized balances in a virtual collateral pool. The parties that need to provide collateral to their counterparties can initiate a collateral movement request in the blockchain ledger, which results in the settlement of virtual tokens, while the underlying collateral assets can be locked by a trusted entity. The return of collateral can also be initiated in the same way, with the trusted entity unlocking the collateral securities. Such a blockchain based solution has the potential to greatly reduce the movement of physical securities across accounts and borders.

Asset servicing

Custodians receive corporate action (CA) announcements from different sources. After announcement scrubbing, the custodian creates a golden copy of the announcement. Also, custodians typically enrich the announcement with additional data points based on market data, inferences from historical data, and so on, which translates into a huge and expensive cumulative effort. Since the entire process is manual, it is error-prone, which means that inaccuracies in the information fed in by custodians can have huge implications for the execution of the CA resulting in significant financial risk.

Proxy voting and voluntary actions are processed hierarchically by issuers, CSDs, custodians, brokers, and investors. Consolidating these responses manually at each stage is time consuming and error-prone. Blockchain solutions can be used to make the voting process fast and efficient. The issuer can create the voting event on a blockchain platform and assign the eligible quantity to the custodians. Custodians in turn can assign the eligible quantity to the participants. The sum of the

quantities assigned to participants would equal the cumulative eligible quantity. Participants can further be enabled to vote on the blockchain platform which means that all the stakeholders can view the voting progress and the statistics on the blockchain platform in real time. Processing voluntary actions and proxy voting on a blockchain platform can deliver multiple benefits - complete elimination of error-prone, manual consolidation efforts at multiple stages, reduced costs, and significant time saves.

Reconciliation

Reconciling positions between custodians, depositories, and other foreign sub-custodians entails huge manual effort, which can be eliminated by sharing position updates between custodians and depositories through a blockchain ledger sponsored by the depository. The depository would update the position balances in the blockchain ledger and require custodians to review and acknowledge the updates. Such a solution will provide a real-time view of the position balances to custodians and depositories, while eliminating the need for time-consuming and expensive manual reconciliation processes.

Looking Ahead

Custodian banks must leverage the wider ecosystem consisting of sell-side and buy-side firms, market infrastructure firms, as well as competitors, and tap into their capabilities and resources to build advanced blockchain platforms. By creating a common platform that all the players can access, the total cost of ownership (TCO) will reduce drastically as individual firms will be saved the expense of managing standalone applications independently. This will help unlock exponential value for custodian banks as well as other ecosystem players. However, care should be taken to choose only those use cases for blockchain adoption that have true transformation potential and the ability to deliver noteworthy productivity gains and returns on investment. Several leading blockchain players are preparing to launch enterprise-grade blockchain platforms and custodian banks would do well to capitalize on the opportunity and adopt this disruptive technology to reimagine custodial operations.

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