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IMPLEMENTATION OF CLEARING OPERATIONS ON BLOCKCHAIN /
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**IMPLEMENTATION OF CLEARING OPERATIONS ON
BLOCKCHAIN**

Problem statement. Securities settlement can involve many intermediaries,
making securities settlement comparatively slow, operational risks and costs high.

The purpose of this study is introduction of Blockchain's technology in clearing
operations. Blockchain technology has the potential to reduce dramatically the cost of
clearing and settling transactions. Securities can be issued on to a blockchain by
issuers, allowing investors to purchase them directly without the intermediation of fund
managers, let alone global or local brokers, custodians, CCPs or CSDs. The multiple
post-trade procedures of today - the capture, matching, confirmation and affirmation
of transactions - are collapsed into a single, seamless process. Instead of comparing
and reconciling separate records of the same transaction, all parties to it share a single
set of data, creating massive operational savings. The more asset classes on a
blockchain, the greater the savings.

Substantiation of the results. The direct clearing, settlement and custody of
securities in dozens of markets around the world currently relies on an extended chain
of intermediaries. They include global and local brokers, global and sub-custodians,

cash correspondents, central securities depositories (CSDs), and central counterparty clearing houses (CCPs).

All of these intermediaries have to compare the data they hold on the same transactions and assets in custody, and rectify any discrepancies they find. This process of “reconciliation” is the main source of inefficiency in direct clearing and custody. The promise of blockchain - an innovative technology which offers instead a single distributed ledger - is the elimination of that inefficiency. The price of blockchain, however, is the elimination or reduction of the service providers that make up the existing chain of intermediaries. For the custodian banks, that means blockchain is both an opportunity to cut costs and a threat to existing revenues. In a forthcoming analysis, based on the revenues and expenses of a group of major custodian banks, McLagan Investment Services assesses the value that is at stake.

According to the research, we can see a trend that, on average, blockchain has the potential to eliminate 39 percent of the costs of clearing and settlement, sub-custody and cash management and foreign exchange, but a much higher proportion (50 percent) of the revenues. In the most extreme but still plausible scenario, sub-custody revenues disappear altogether [1, p.100].

The potential savings from blockchain are attractive. But the costs of clearing and settling transactions are also the revenues of the sub-custodians. In fact, on a fully functioning blockchain encompassing multiple asset classes, the clearing and settlement revenues of the sub-custodian banks are at risk of disappearing altogether.

If transactions can be cleared, settled and recorded on a common but distributed ledger as part of a single process, the role of the sub-custodian in reconciling records of transactions with brokers, CSDs and global custodians becomes unnecessary. Only transactions in a handful of off-blockchain asset classes would continue to require custodial intervention [2, p.96].

Most of all the asset-servicing revenues are at risk too. As well as issuing securities into the accounts of investors, issuers can distribute entitlements to investors - dividends, interest payments, rights, and notifications of corporate actions - directly. In the same way, investors can use the blockchain to instruct issuers directly, on whether they prefer stock to cash, and how they wish to vote at the AGM.

Since securities are always delivered against payment on a blockchain, there is no need for counterparties to borrow cash or securities from custodians anymore either. This will reduce the revenues sub-custodians currently enjoy from advancing credit, intermediating the borrowing and lending of securities and the sourcing of collateral, and spreads on cash management and foreign exchange.

Blockchain networks in the securities industry must also be closed and not open, to protect private information about assets and transactions, leading to the emergence of multiple proprietary networks. Multiple proprietary networks reduce “network effects,” slowing down the adoption of the technology and reducing cost savings, unless standards can be agreed that allow them to inter-operate [4].

While regulators have encouraged the development of blockchain, to lower costs to investors and increase competition, they are not prepared to put the stability of the existing clearing and settlement infrastructure at risk. Securities markets also necessitate moving cash and assets internationally, and it will require the consent of multiple domestic regulators to operate a blockchain across borders.

Conclusions. The costs savings are compelling enough to transform the economics of the industry, enabling banks to widen their margins by reducing costs and developing new businesses, if they embrace blockchain technology. But if they fail to use it to generate new revenue streams, their continued existence is at risk. A dramatic fall in the costs and revenues of clearing, settlement and custody depends on widespread adoption of blockchain. There are many reasons why this might not happen - at least not quickly. One is that a sudden and wholesale switch to blockchain is impossible. Legacy and blockchain systems will have to run in parallel for an extended period, leading to a lengthy transition.

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