



CALL FOR PROPOSALS

The Impact and Potential of Blockchain on the Securities Transaction Lifecycle

The SWIFT Institute invites proposals for research on the potential development of blockchain technology for use in the securities markets and the disruptive impact of such a technology on the existing securities transaction ecosystem.

The distributed ledger is not a new concept in the financial world, however, its appeal has risen in the wake of increasing popularity and interest in crypto-currencies and the blockchain. The blockchain is basically a giant ledger most popularly used to keep track of who owns bitcoins. In contrast to a bank's ledger (being private and centralised), the blockchain is distributed widely and is public. The question now is how can blockchain be used beyond currency, say, for securities transactions?

In recent months various institutions have announced plans to explore or use (in limited scope) blockchain in the securities markets. UBS Bank have been working on smart-bonds on the blockchain, in the theory that it could allow for instantaneous settlement rather than the days it takes at present, thereby lowering both costs and operational risk. The Nasdaq OMX Group has been experimenting with blockchain as a record-keeping ledger for the Nasdaq Private Market. The New York Stock has purchased a stake in a Bitcoin wallet firm in readiness if stock exchanges move to a distributed model.

Proponents of blockchain say that distributed ledger transactions can be irrevocable, with clearing and settlement nearly instantaneous. Accuracy of transaction data is increased, whilst cost and settlement risk are reduced. A publicly available record of all holdings and transactions are created, which allows for ease of monitoring by regulators (and eliminates the need for regulatory reporting).

Critics argue that speed and capacity of transactions over blockchain is insufficient for the securities industry. As it currently stands Bitcoin can process seven transactions per second; or approximately 600,000 per day. This is about the same daily transaction volume seen on the London Stock Exchange. Bitcoin today runs primarily on desktop computers. Presumably to cater for the daily volume of securities transactions globally, high-end servers (super computers) would need to be in place. Would this effectively centralise the distributed ledger? What type of infrastructure would be required to run all or a subset of securities transactions on Blockchain?

In the securities transaction lifecycle, post-trade clearing and settlement is slow and expensive, involving many actors including global and local / sub custodians, central counterparties (CCPs) and central securities depositories (CSDs). Settlement of a securities transaction typically takes two days, often longer, to complete. Blockchain and the distributed ledger have the ability to securely and transparently move securities in seconds or minutes, with automatic clearing and settlement upon trade execution.

The theory sounds impressive and desirable. But it is practical? What would the securities transaction lifecycle look like on the blockchain compared to today? Would it replicate the settlement instruction lifecycle from say investment manager through to CSD, or would it eliminate some of the steps, and intermediaries, along the way? What are the implications of having one part of the lifecycle on blockchain (say, clearing and settlement), whilst others may not be on blockchain (say, issuance and / or trade execution)? What is the impact on incumbents in the transaction lifecycle (e.g. custodians, CSDs, etc.)?

From a technology perspective are existing blockchain implementations robust enough or will they need to be re-engineered to cater for global securities transaction processing? Today's blockchain uses a significant amount of computing power to maintain the Bitcoin ledger, albeit in a distributed environment. What technology requirements would need to be in place to accommodate securities transaction processing? How would this impact the potential cost savings of moving to a distributed ledger?



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Research proposals can be theoretical or empirical. The research should focus on distributed ledger and blockchain technology for use in the securities transaction lifecycle. Research should aim to answer the following questions (other suggestions are welcome):

1. What would the securities transaction lifecycle look like on the blockchain compared to today? What is the optimal design of a system based on distributed ledger and blockchain to cover securities lifecycle processing? Would it replicate the settlement instruction lifecycle, or eliminate some of the steps along the way? Would real-time delivery versus payment be achieved?
2. What would be the impact on the current range of intermediaries in the securities transaction lifecycle (e.g. custodian banks, CSDs, etc.)?
3. Where are the opportunities for other kinds of participants to become part of the securities transactions lifecycle if using Blockchain?
4. What are the implications of having one part of the transaction lifecycle on blockchain (e.g. settlement), whilst others may not be on blockchain (e.g. trade execution)?
5. What are the cost and risk implications of securities transactions on blockchain? Does risk (settlement, operational, etc.) increase or decrease? How are costs impacted? Who will bear the cost of establishing a global blockchain environment for the securities industry, and who will benefit from any resulting cost savings?
6. What technology requirements need to be in place for global securities transaction processing using blockchain? How does this compare to what exists today?

Grant & Working Paper

A grant of EUR 15,000 will be awarded to the author of the selected proposal. 50% will be paid immediately; the remaining 50% will be paid on acceptance of a working paper.

The SWIFT Institute will publish the working paper to the global financial industry whilst the author is free to submit the paper for publication in academic journals and other publication outlets of their choice.

Proposal Submission

Please submit your research proposal as follows:

1. CV / bio including education, work history, research experience, publications, etc.
2. Description of your research project (2,500 words maximum) to include the following:
 - Objective of your research
 - Methods by which you intend to undertake your research
 - Timeframe by which you intend to complete your research
3. By email in MS Word / Excel / PowerPoint format and / or pdf.

Deadline: Proposals must be submitted no later than 07 August 2015

Email: Send submissions to: nancy.murphy@swift.com