



Derivatives Innovation Focuses on Blockchain Technologies

by
Allan D. Grody
December 18, 2017

Three major organizations, the International Swaps and Derivatives Association (ISDA), the Commodity Futures Trading Commission (CFTC) and the Depository Trust & Clearing Corp. (DTCC) are moving the derivatives agenda forward in an apparent like-minded strategy on future technology infrastructure. That future is to be built on a pillar of data standards, automated trade lifecycle processes, and the technology that underpins the Blockchain - Distributed Ledger Technology (DLT) and Smart Contracts.

In a nod to innovative technology [ISDA issued a Request for Quotations for development of their Digital Common Domain Model](#). This follows the lead of the CFTC who has encouraged the use of DLT and Smart Contracts for their own data processing and data storage needs - see [Remarks of Chairman J. Christopher Giancarlo at the Singapore FinTech Festival](#). Both organizations believe the new technologies of Distributed Ledgers and Smart Contracts can revolutionize the oversight of the derivative's industry and dramatically reduce costs of industry infrastructure and individual firm's costs by automating manually intensive processes. As a practicable example and nod to this new technology [DTCC is planning to launch a Blockchain Credit Default Swaps reporting platform in early 2018](#).

Also, the Global Legal Entity Identifier Foundation (GLEIF), which oversees the issuance of the Legal Entity Identifier (LEI) for counterparty identification, has suggested DLT be used for organizing, distributing and governing the Unique Product Identifier (UPI). Both the LEI and the UPI have been created by a global industry/regulator partnership for uniquely identifying derivatives transactions to be reported to trade repositories. Trade repositories themselves are a response to regulators' need to organize financial transactions for exercising their oversight responsibilities of the derivatives industry. Industry members have participated in this effort in adherence to regulators' oversight interests while anticipating their own cost and risk management benefits.

While it has been recognized that the benefit of DLT is maximized by the use of Smart Contracts it is less understood that the same data and process standards needs to be referenced in Smart Contract logic. The GLEIF, in their response to the Financial Stability Board's (FSB's) Consultation on the UPI, recognized this need by not only promoting DLT, but also asking to be the governance body for the UPI. Many of the [Public Responses to the consultation on proposed governance arrangements for the Unique Product Identifier \(UPI\)](#), including those from the GLEIF, ISDA and DTCC agreed that the LEI governance model of an industry/government partnership was an appropriate model for the UPI.

Currently all regulators and trade repositories maintain their own data copies of identifiers and associated reference data for products and counterparties, and for trades. ISDA members, likewise, maintain their own data copies of identifiers for products, counterparties and trades. Clearing houses do the same. All attempt to reconcile the various copies of what is intended to be identical data sets. It should, therefore, not be difficult to see how a single database updated in real-time, securely maintained through encryption technology, distributed and shared by all of the supply chain participants involved in the life cycle of a derivatives trade could benefit. That is exactly what DLT promises and what ISDA's Common Domain Model envisions.

Smart Contracts (encapsulated coded applications operating on standardized data representing the life-cycle processes of a trade), is another new technology. It is stored and activated across a networked database - the Distributed Ledger which itself is networked across the Internet. A Smart Contract is self-actuating, based on standardized contract terms and standard data that is translated into standard trade life-cycle processes imbedded in coded applications.

A Smart Contract acts on standard data sets identifying ownership of an asset and setting its outputs in conformity to each supply chain participant's processing requirements. A Smart Contract requires data standards to be globally accepted - the UPI and its reference data for the asset; the LEI and its reference data for each owner and participant in the supply chain; and the UTI (Unique Transaction Identifier, itself composed of a LEI prefix). It also requires process standards for each event in the life-cycle of a trade.

Distributed Ledgers and Smart Contracts can revolutionize the oversight of the derivatives industry and dramatically reduce industry infrastructure and individual firm's costs. McKinsey, the global consultancy estimates that the largest financial institutions alone can each save \$1 billion in costs through a simplified portfolio of data repositories. ISDA members, many are the largest, globally active financial institutions, are envisioned as direct beneficiaries of such savings. These savings, and other benefits, are now more obtainable than ever before as regulatory consultations on standards for derivatives transaction identification data has concluded (the LEI, UPI and UTI) and, most recently, the last set of harmonized derivatives transaction data elements have been finalized.

GLEIF has also recognized that the 'organizationally' federated operating model used for the LEI can be upgraded to a 'technically' federated operating model (the distributed ledger model). This can potentially provide the same DLT platform for both the LEI and the UPI. This distributed design was always a goal for the global LEI system (GLEIS).

The report of the implementation of the LEI to the FSB in 2012 stated that the design of the GLEIS would be premised on a 'logically' centralized (read as not physically centralized) database that will appear to users to be from a single seamless system. It also premised the design of the network that would join these distributed databases on a 'plug-in' architecture using a 'network card' to connect to the global LEI system. From the report "*...as with the Internet, the database will appear to users to be from a single seamless system, but again as with the Internet, the data will be physically stored on different systems across the globe. Technology will deliver the logical centralisation.*" These attributes are attributes of a distributed network and exactly what defines a DLT networked database.

Even though a distributed architecture was common place in developing financial systems in 2012 and the Blockchain was being used in a growing number of proofs of concepts in finance, regulators opted to fall back on an earlier, safer ‘best practices’ approach for both trade repositories and the LEI. Today data is collected in multiple country or regionally located operating units. Each has their own databases. These are operated by 30 local operating units (LOUs) in the current LEI system and by 25 separate ones, one each for each trade repository. Each send their data daily in batch overnight processes. LEI data is sent to one physical database at the GLEIF. Trade repositories send their data to multiple regulators and to central collection facilities depending on the jurisdiction.

Unfortunately this ‘best practice’ approach has failed to provide the needed aggregation capabilities for both trade repositories and the LEI system. Billions of swaps transactions have been sent to the various trade repositories with neither an ability to access them nor to aggregate them. Nearly a million financial market participant identities have been recorded in various LOU databases with the GLEIF merely ‘concatenating’ (joining) them into a single centralized file. There is no ability or attempt by the GLEIF to either validate or reconcile the content. There is the added problem of having created a centralized physical database as a single point of failure.

The attributes and promise of DLT would seem well suited to solve the problems of validation, aggregation, reconciliation and eliminating the centralized database as single points of failure for both trade repositories and the LEI system. It also holds the promise of the derivatives industry becoming the first truly straight-through-processing financial ecosystem. With transaction data standards now complete, derivatives industry regulators and participants should be encouraged to work in a formal industry/government project to implement common protocol and data standards for Distributed Ledger Technology and Smart Contracts in seeking to completely automate the life cycle of derivatives trades.

For further Information Contact

Allan D. Grody, President
Financial InterGroup - USA
169 East 69th Street - 18th floor
New York, New York 10021 USA
Mobile +1 917 414 3608
Email agrody@financialintergroup.com



www.financialintergroup.com