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CFTC Leads on Blockchain Innovation

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19 March 2018

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The CFTC, guided by its innovative and visionary chairman, Christopher Giancarlo, has expressed its intention to apply new technologies to further its reporting and regulatory mandates. The CFTC set the stage for studying technological game-changing Blockchain technology by first setting up its LabTech initiative and then conducting 150 interviews in preparation for the meeting of its Technology Advisory Committee (TAC), held last month (Feb. 14).

[Related: "CFTC Technology Committee Explores 5 Key Issues"]

How the CFTC will maneuver its way to achieve its regulatory goals will be quite challenging. Navigating the decades-old tensions between industry members and their regulators will prove the deciding factor, not the technology itself.

The CFTC and all other sovereign derivatives regulators, operating in a global derivatives industry, are dependent on industry members to implement a set of data standards and then a set of common Blockchain protocols to underpin this compelling yet nascent technology. The CFTC, as all regulators do, has its hands tied in getting its industry members to adopt game-changing technology. It must rely on industry members individually to cost-justify such technology. Unfortunately, most use a return on investment analysis that spans too short a time frame to project any meaningful benefits – even though the benefits to the CFTC in its responsibility to oversee the industry would be game-changing and the benefits of risk reduction and cost savings over time to the industry and individual members would be quite significant.

At the TAC meeting the prerequisites of data standards and Blockchain protocol standards were emphasized by many TAC members. This practical prerequisite has been a recurring theme throughout the dialogue on the use of Blockchain technology in financial services. Without such standards the CFTC and other regulators, and industry members alike, would be faced with the prospect of multiple reporting formats and multiple Blockchain implementations. This would be a continuation of the same unintegrated reporting regimes of the industry's legacy past, not the forward view of its future as the CFTC envisions – a globally digitized, straight-through-processing (STP) derivatives business supporting standardized regulatory reporting.

Blockchains operate across a distributed database that records every transaction and distributes this information across computer nodes connected to the Internet. It is a single, immutable ledger shared by all. It has tremendous promise to remove many of the thousands of databases that financial intermediaries and Financial Market Utilities (FMUs) use to store their own versions of what is supposed to be the same data while using a variety of non-standard asset, contract and counterparty identifiers; and non-standard transaction data and reference data elements. These identifiers and transaction and reference data elements are separately validated, aggregated and kept by each financial institution and FMU across the global financial supply chain. This data also has to be mapped together to connect between systems. Where they differ, they must be reconciled through human intervention.

Because of its incremental design over many technology generations, the high-value transaction-based financial systems that perform order, trade, payment, clearing, settlement, collateralization and custodial functions comprise collectively the most expensive and vulnerable ecosystem in the world. While this ecosystem is nearly completely digitized, suggesting its potential for straight-through-processing, STP has never been fulfilled, due in part to delays caused by the reconciliation process. These delays are built in to the myriad interconnected networks that make up the global financial industry's technology and communications ecosystem. Here, too, it is necessary to reconcile a financial market participant's identity and the transactions' data elements at each intermediate data handoff point operated by FMUs and through vulnerable legacy systems at its end receiving points. In contrast, the vision for Blockchain is a single ledger used by all in the financial supply chain; the use of cryptography for common identity management; and mathematical computations for both anonymizing and confirming the validity of a transaction.

An allied Blockchain concept, smart contracts — the automation of a financial transactions' data into its real-world financial impacts like payment, collateralization, or movement of custodial assets — cannot work efficiently if the transaction being transmitted in digital form through the Blockchain is not the same asset/contract nor counterparty expected by the receiver. A suggestion in the TAC meeting to solve this problem is to offer an "off chain" solution (meaning to represent already validated data as an addressable node on the Blockchain). This, however, is a stopgap solution. It is a way of perpetuating existing infrastructure that supports the cumbersome process of validating non-standard data through multiple mappings across multiple siloed business structures. Better to solve this problem by storing and updating a single secure copy of standard metadata and contract and identity codes addressable on nodes on a Blockchain for all to use in creating financial transactions.

TAC members voiced other issues that could potentially impede Blockchain use. One was that Blockchain technologies are not yet mature enough, needing more transaction processing speed before it could tackle infrastructure rebuilds at scale. However, the objective for increased speed – for example, reducing settlement times from days to minutes – is already a proven capability of Blockchain. Another issue brought up by TAC members was that the global derivatives industry needs a global regulatory solution with a global set of data identification standards and harmonized data components for standardized regulatory reporting, an effort not mentioned as underway already.

If left to their own devices sovereign regulators will define their own approaches, and individual industry members will coalesce around hardened positions taken up by their trade associations. Both will adapt narrowly defined point solutions suited to their self-interest rather than tackle the potential to radically change derivatives infrastructure and eliminate costly supply chain intermediaries, the promise of this technology. One TAC member made a plea to the CFTC to join with other derivatives regulators to develop a common transaction reporting format.

[Related: "Chairman Giancarlo Outlines the CFTC's Agenda, Home and Abroad"]

Complicating the debate is the presence on the TAC of those who have the most to lose, those financial infrastructure intermediaries that could find their business models and themselves redundant in the new digital age envisioned for Blockchain infrastructure technology.

Financial institutions themselves must give up the centralized technology themes of a long-ago era that served its purpose well, but at considerable expense, operational risk and now cybersecurity vulnerabilities. Whatever techniques prevail in the future, effective supervision of an industry will still require a close, ongoing examination of the industry's most basic financial plumbing: how a transaction is assembled by humans interacting with software that fetches appropriate data components and performs calculations on those components; how these transactions are matched and stored both within and among financial institutions; how the validated transactions are transmitted to regulators; and, most important, how validation is to be affected.

In the Blockchain context the financial plumbing is in need of further definition. How to validate and operate smart contracts and whether they are on or off chain. Which Blockchain validation or consensus protocol to adapt – permissioned (private or federated) or permissionless, requiring different degrees of trust in the validator; proof-of-work or proof-of-stake requiring computationally more vs. less rigor to validate transactions; and, finally, combinations of each category.

Aligning the interests of industry members with the Blockchain ethos of global standards, cryptographic authentication, validating transactions without a trusted centrist and elimination of reconciliation by centrally organized infrastructure entities is the task before the CFTC. What makes this doable is that the derivatives industry is already well on its way to finalizing a standard global set of metadata and defining its data identity standards and harmonizing its transaction and reference data elements.

These data standards initiatives are now incorporated into one of the industry trade association's (ISDA's) efforts. ISDA has commissioned the regulatory technology company REGnosys to develop a digital model of its conceptual Common Domain Model (CDM). CDM aims to capture all post-execution trade lifecycle events in a digital representation of work flow and data standards to enable Blockchain's game-changing potential.

A good next step for the CFTC is to lead other derivatives regulators to embrace the global standards-setters already operating in this space – the FSB, IOSCO/CPMI and the LEI ROC – to develop a business case for the industry. It should be a combined government/industry effort to adapt this game-changing technology to improve regulatory oversight while eliminating risks and costs.

Starting out on a technology journey is never easy. However, history has taught us that by starting the journey, the path will become clearer and solutions will follow. The CFTC and ISDA have already started us on this journey.