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Blockchain: Standards Wanted

Long reliant on collaborative standard-setting, the financial industry looks for more of the same to realize the operational and risk-mitigation potential of blockchain

By Katherine Heires April 8, 2016

As blockchain technology gains a following in the financial industry, there is a growing consensus that standardization will be essential to achieving anticipated efficiencies in banking and capital market operations.

That was a common theme — and was reflected in the title — of an April 4 conference at Baruch College's Zicklin School of Business in New York: "Smart Contracts, Blockchain and Data Standards." The meeting was sponsored by XBRL US, a not-for-profit consortium that supports the XBRL financial reporting standards, along with the CFA Institute and Baruch's Robert Zicklin Center for Corporate Integrity.

Firms will ultimately need access to standardized data and platforms to realize the full benefits of automation, John Turner, CEO of XBRL International, said in opening the conference. "Creating agreed-upon semantics is an essential part of this brave new world," he asserted. "Standards need to be in place to build a collaborative environment."

The week before, Depository Trust & Clearing Corp. attracted nearly 500 people to a Grand Hyatt Hotel ballroom in Manhattan for the first of what president and CEO Michael Bodson said will likely be an annual Blockchain Symposium. Bodson stressed the need for collaboration and advocated standardization — historically crucial aspects of the DTCC infrastructures — in his prepared remarks.

Bodson called it ironic that blockchain, a "consensus technology," has spawned a proliferation of "labs, sandboxes and funding experiments across multiple asset classes" — a "seemingly chaotic whirlwind of multiple and competing bets."

He added: "There are a wide range of issues that the industry needs to come together to answer to put shape to the future-state vision, such as establishing the foundational building

blocks, developing the governance and standards and identifying which areas of the post-trade process would benefit most from implementing the technology."

'Sooner Than Later'

Approximately 100 people were in attendance at the Zicklin half-day event, which covered "smart contracts" and other applications of the cryptographically secure digital ledger system.

"Let's not make the same mistakes made in the payment systems in this new [blockchain] field," XBRL International's Turner urged. "Let's agree on standards sooner than later."

Blockchain, which originated as the underlying ledger for Bitcoin, has been gaining momentum as a focus for research and development in the financial services industry. Use cases and proofs of concept are being explored by the likes of Digital Asset Holdings and the 40-plus member R3 CEV consortium. And there has been a coalescence around Linux-like open standards principles in the Hyperledger Foundation.

Turner noted that data in XBRL, the eXtensible Business Reporting Language that has gained wide acceptance in financial statement reporting, is machine readable, can be utilized in some blockchain transactions, and the standard could be a factor in the development of smart contracts.

Early Implementations

Coinciding with its symposium, DTCC announced a joint effort with Digital Asset Holdings "to develop and test a distributed ledger based solution to manage the clearing and settlement of U.S. Treasury, Agency, and Agency Mortgage-Backed repurchase agreement (repo) transactions."

DTCC, along with four major banks, London-based information services company Markit and distributed ledger developer Axoni announced April 6 "the successful test of blockchain technology and smart contracts to manage post-trade lifecycle events for standard North American single name credit default swaps (CDS). The first of its kind initiative demonstrated that the complex events inherent to CDS, including payments, amendments, novations and

compressions, can be efficiently managed on a blockchain in a permissioned, distributed, peer-to-peer network."

Comparing blockchain to the early Internet, Philip Moyer of Safeguard Scientifics said, "We are at the same moment when email standards were starting to be developed."

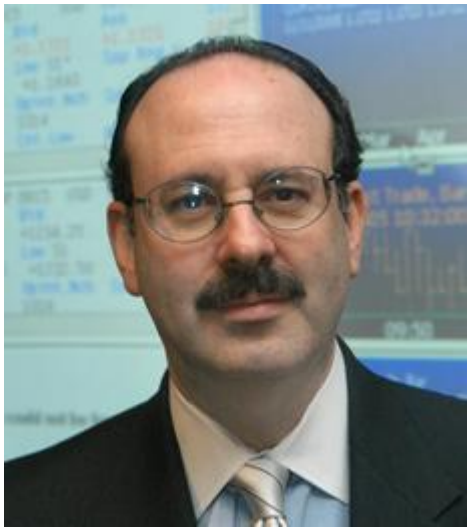
R3 unveiled on April 5 – through a blog post reported by Coindesk – Corda, a new distributed ledger technology that is differentiated from the permission-less Bitcoin-blockchain model and tailored for the financial industry, including "observer nodes" for regulatory monitoring.

"We are not building a blockchain," said R3 chief technology officer Richard Gendal Brown. "Unlike other designs in this space, our starting point is individual agreements between firms... We reject the notion that all data should be copied to all participants, even if it is encrypted."

Tokyo-based Nomura Research Institute, which in October 2015 announced a feasibility study with Nomura Securities, said April 7 that a second phase of its securities-markets proof of concept would run through June. "Along with JPX [Japan Exchange Group], the PoC will be supported by Nomura Securities, SBI Securities, Mitsubishi UFJ Financial Group and others to ensure the study is explored from various perspectives," NRI said. "The PoC will mainly examine business scenarios and validation items, and prepare prototype systems based on those scenarios. Currency Port Limited will also join the PoC to contribute its blockchain technology."

Governance Implications

The challenge that lies ahead was made clear by Philip Moyer, senior vice president and managing director of Safeguard Scientifics, where he oversees all financial technology investments. Moyer, who is XBRL US vice chairman and former CEO of EDGAR Online, told the Zicklin School conference that as of year-end 2015, $1 billion had been invested by approximately 144 venture funds and firms in an ever-growing list of blockchain-oriented infrastructure, tools and applications.



"We still have a long way to go from proof of concept to something that could be adopted industry-wide," said Baruch College lecturer Bernard Donefer.

"If you compare blockchain development with that of the Internet, we are at the same moment when email standards were starting to be developed," Moyer said.

Bodson of DTCC suggested "three keys to long-term success": "a collaborative re-architecture of core practices and processes to ensure standardization"; reliance on "existing, regulated and trusted central authorities" for standards, governance and technology to support distributed ledger Implementations; and an industry consensus on "whether implementing distributed ledgers is more cost-effective than improving existing technology" and can overcome scale and performance challenges.

Mike Goldin, a software developer at Consensys, a production studio and consulting firm that advocates and supports the Ethereum blockchain platform, talked about why regulators should be interested in these discussions.

"With blockchain technology, you can more easily enforce penalties for bad compliance by creating a chain of accountability with cryptographic accuracy," he explained. The Securities and Exchange Commission or another entity could launch a blockchain-powered trading market, allowing people to bet on what companies will or won't be compliant.

Security at the Edges

Christian Lundkvist, a cryptofinanical engineer with Consensys, pointed out that from a financial risk perspective, blockchain technology flips security infrastructure on its head.

“On a blockchain, instead of a firewall protecting the financial institution and customer data, security moves to the edges of the platform,” he said. “Customers need to protect their private identification keys — not the institution -- and this is a very big challenge we are working on.”

The Zicklin event included discussions and demonstrations of several current blockchain projects: Nasdaq Linq for trading private company shares; a project for the spot gold market in the U.S. and U.K., powered by itBit’s Bankchain technology; and a proof of concept for swaps trading, built by Consensys on the Ethereum platform.

One attendee who asked not to be identified was unimpressed: “All these vendors — they make it sound like blockchain technology is the answer to all your problems: Do you have arthritis? Try blockchain!”

This observer said that according to conversations with Nasdaq, “they haven’t really solved the problem of how the money moves, but because it’s such a small trading market with such small transactions, they can get it to work.”

Getting Up to Speed

An often-mentioned criticism is that blockchain in its current state is not suited for high-speed and high-volume markets. Referring to recent reports of slowdowns in Bitcoin processing, Bodson said, “At one point several weeks ago, 40,000 Bitcoin transactions were waiting to be cleared, and the average time to verify a transaction was up around 43 minutes.”

Mary Ann Callahan, a former DTCC executive who is an infrastructure adviser with itBit, which has a New York State trust company charter and a post-trade focus with Bankchain, said at the Zicklin event, “We know that $1.4 billion is spent on reconciliation efforts every

year. Ultimately, we believe settlement efforts — utilizing blockchain technology — can take on some of the high speeds we've seen in the trading area, allow regulators to have a more complete view of markets and see risks building up. It's going to be a fresh way to monitor and look at markets."

Bernard Donefer, a distinguished lecturer at Baruch College and instructor in risk management systems, said after observing the swaps-trading demo, "Using blockchain technology to keep track of the legs of a derivatives transaction might be a risk mitigation tool at some point in the future, but we still have a long way to go from proof of concept to something that could be adopted industry-wide."

"With blockchain," Donefer added, "there's a lot more that has to be worked out. Aside from standards, you have legal and regulatory issues. It's not just about the technology, and so all of this may take a long time."

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