Blockchain has the power to resolve the paradox of infrastructural innovation

Financial markets infrastructures (FMIs) are not designed to be innovative. The expansion of their role since the financial crisis has also created regulatory pressure to enhance safety, pre-empting resources and decreasing the scope for experimentation. Yet there are ample opportunities to innovate with emerging market infrastructures leading the way, and pressures to innovate to survive, especially in Europe. But the biggest driver of innovation in FMIs, says Virginie O'Shea, senior analyst at Aite Group, might well be blockchain.

Innovation by financial market infrastructures (FMIs) sounds incongruous. After all, FMIs are meant to be the secure, resilient, permanent and stable components of the financial services industry. They are not start-ups ambitious to disrupt the status quo. In fact, a disruptive FMI is a phenomenon no one in the market wants to see. Nevertheless, the innovative use of technology is scarcely alien to the development of FMIs in recent years, and they ignore it at their peril in the future too.

Innovation can help FMIs alleviate pressure on operational and financial resources, which they have felt as acutely as their users since the financial crisis of 2007-08. They too face an increasingly onerous burden of compliance with regulatory obligations. The introduction of the concept of systemically important financial market utilities (SIFMUs) has arguably put FMIs under even greater pressure than banks to enhance their resilience and risk management procedures.

Since the Principles for Financial Market Infrastructures were published by the Committee on Payment and Settlement Systems (CPSS) and the International Organization of Securities Commissions (CPSS-IOSCO) in April 2012, the CPSS has re-emphasized its mandate to promote the safety of FMIs by changing its name to the Committee on Payments and Market Infrastructures (CPMI). Over the last three years, national regulators have also turned the principles into concrete rules FMIs are expected to follow.

Innovation competes for resources with compliance

The rules insist FMIs take legal, credit, liquidity and operational risks into account; formulate detailed recovery and resolution plans; and meet enhanced disclosure requirements. Naturally, meeting these obligations forces FMIs to take a measured and cautious approach to technological innovation. Coupled with the rising profile of cyber-security, it is not surprising that most FMI managers tend to treat newer technologies as an unwelcome distraction.

FMIs also face competing demands for resources. Central securities depositories (CSDs) and international CSDs (ICSDs) in Europe, for example, are investing to adapt to their platforms to TARGET2-Securities (T2S) and the

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accompanying regulation on settlement and Central Securities Depositories (CSDR). Though these measures are far from fast-paced - T2S dates back nearly a decade, and CSDR has missed its 2015 implementation deadline - they are having a major impact on European FMIs.

CSDs are being forced to cede their core settlement function to a centralized, pan-euro - and, eventually, pan-European - infrastructure operated by the European Central Bank (ECB). Simultaneously, restrictions are being imposed on how a CSD in Europe should operate. In tandem, these measures can scarcely be described as an environment conducive to innovation. Yet they also mean European FMIs have little choice but to change, if they are to survive. The question is where to focus their attention.

Emerging markets show FMIs how to innovate

Their counterparts in emerging markets offer some inspiration. The Korean Securities Depository (KSD), for example, has built a platform to automate all corporate pension processes. Called Pension Clear, the new service – scheduled to start in October 2015 – will underpin government pension reforms by becoming an information hub for its 348 participants. While PensionClear represents a bold step beyond the traditional realm of the CSD, it nevertheless builds on the existing FundNet system for mutual funds.

Pension Clear was itself inspired by the SuperStream project in Australia, which seeks to automate the payment of pension contributions in Australia. The KSD believes the new service will create savings for corporate pension plan sponsors of around US$67 million a year. Once Pension Clear is established, the depository plans to extend the concept to the wealth management, individual pension scheme, insurance, and savings account markets.

The National Securities Depository Limited (NSDL) in India is another emerging market CSD to invest in an imaginative extension of its remit. It now enables 13.7 million investors to hold all of their financial assets in paperless form in a single segregated account, and compute the value of their portfolios in real-time. NSDL says 85 percent of communications with account-holders are now purely electronic, including electronic trade confirmations to institutional investors, and text-based notifications to owners of mobile telephones.

Of course, CSDs and ICSDs in developed markets are focusing on fostering innovative services too. The Depository Trust and Clearing Corporation (DTCC) has taken full ownership of the Omgeo electronic trade confirmation service, and established a solutions business to deliver new information-based services to its users, including the management of client on-boarding and legal entity identifier (LEI) checks. In conjunction with Euroclear, DTCC is also developing a transatlantic collateral management service.

Blockchain is rich in revolutionary potential for FMIs

And FMIs everywhere are considering the potential impact on their current business of blockchain technology. The distributed ledger system, which underlies digital currencies such as Bitcoin, operates in a different manner to the methods currently used in the

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securities industry. It is public and distributed, instead of private and centralized. Anyone can download a copy of the transactions it facilitates, but end-user identities are protected by encryption.

This means blockchain technologies are fully transparent about where assets (such as Bitcoins) are held, and about who has owned them since the first transaction was initiated. Units of value are transferred from one party to another as part of a new "block" of transactions added to the existing chain. In the case of Bitcoin, the technology scales through distributed co-operation, whereby data centre operators (dubbed "miners") are granted bitcoins in exchange for their computing resources.

Multiple applications of blockchain are now being discussed, including the securities clearing and settlement functions currently performed by FMIs and custodian banks. But the technology is not yet ready to displace incumbents. In its present form, for example, it can process just seven transactions a second. There are also multiple legal, operational, and regulatory concerns, especially around how Know Your Customer (KYC), Anti-Money Laundering (AML) and sanctions screening obligations can be met.

However, the potential benefits of blockchain are acknowledged by FMIs, and some are actively investigating the technology. Responses to the April 2015 invitation from the European Securities and Markets Authority (ESMA) for evidence on how blockchain could be used in the securities industry were of mixed quality, but there was consensus that distributed ledger technology poses opportunities as well as threats, including to FMIs.

In principle, blockchain technologies could lead to significant reductions in the costs and risks of securities settlement and asset-servicing processes, such as corporate actions. They could also diminish systemic risk, because the distributed nature of blockchain eliminates single points of failure, with obvious implications for SIFMUs subject to the CPMI-IOSCO Principles. Implemented effectively – and that is a big 'if' at the moment – blockchain could open FMIs up to much greater competition by disrupting long-established vertical silos. Perhaps FMIs and innovation are not incongruent after all.

Want to find out more?

Securities MI innovation: the next frontier

Tuesday 13 October 2015

10.15-11.15 a.m.
Conference room 1

Moderator:

Virginie O'Shea
Senior analyst, Aite Group

Panelists:

Michael Bodson
President and CEO, DTCC

Tom Casteleyn
Executive committee member, BNY Mellon

Tim Howell
CEO, Euroclear

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CEO, NSDL

Jaehoon Yoo
Chairman and CEO, KSD

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