APPLYING BLOCKCHAIN TO PAYMENTS

I've blogged for over a week about blockchain based developments in Clearing & Settlement and Trade Finance, and will continue for another week talking about the developments in Payments and Digital

ntity. However, at this point, I should clarify that I use the term *blockchain* as an overall term to

scribe what is happening. I often get critiqued for this, quite rightly, as blockchain is just a part of

lding a distributed ledger and what I'm really talking about here is Distributed Ledger Technology (DLT).

y problem* is that most people find that terminology can also get confusing as we talk about permission

d permissionless ledgers, shared and federated ledgers, public and private ledgers and so no. So

ologies if using the broad brush term blockchain to refer to DLT, but I just find it easier.

e reason why I say I get critiqued for this, quite rightly, is that if I were talking about DLT, blockchain is

one of four key parts to a distributed ledger [2]:

Blockchain—a secure record of historical transactions, collected into blocks, chained in chronological order and distributed across a number of different servers to create reliable provenance

Digital signatures—unique digital keys used to authorize and check transactions and positively identify the initiator

A consensus mechanism—rules and techniques to ensure that participants recording and processing transactions agree on which transactions are valid

A digital currency—in some implementations, a cryptographic token that represents actual value. Bitcoins are one example, but ultimately central banks could create digital fiat currencies as well.

So I apologise to the pedants out there (Dave Birch) but hopefully that that helps to clarify what I mean when discussing blockchain in Clearing & Settlement, Trade Finance, Payments and Digital Identity, and overcomes some of that criticism.

Anyways, continuing the use case discussions of blockchain in banking and finance, I'll move onto the third major use case today, payments. Of course, payments is really the #1 use case for the blockchain, as this started with bitcoin as a currency. It's morphed from there into all sorts of other currencies: litecoins, Ripples, dogecoins and more.

Now I could write a lot more about that, but instead I'm going to defer this blog column to Credit Suisse as just two weeks ago, they produced a fantastic report about the implications of bitcoin and blockchain on the world's payments markets.

The conclusion is that Visa, MasterCard, WorldPay and others in the payments sector can relax: bitcoin will remain a niche player and blockchain technology poses little risk.

The report has been produced in response to questions from investors about blockchain and its potential to disintermediate the payments processors. The 135-page report draws an analysis on the impact the technology will have on 14 different companies in various sectors from payments to capital markets. The authors conclude that bitcoin faces an uphill struggle to become a major force, highlighting 13 barriers to mainstream adoption. In contrast, shared ledgers are seen as a more potent force with three key properties – disintermediation of trust, immutable record and smart contracts – endowing the technology with real advantages to legacy systems.

On payments, the report acknowledges that a permissioned public ledger could remove the need for a central clearing house in the form of Visa and MasterCard. However, the bank's analysts still see limited risk to these card schemes, arguing that the decision by the likes of Apple to tap into their rails, making the networks the guardians of the tokenization process, puts them in a strong position.

Concerns about firms such as WorldPay are misplaced, which rates the company's stock as 'outperform', while DH Corporation also scores 'outperform' in part because it is facing up to the blockchain threat and partnering with Ripple.

Fintech giant Fiserv faces a greater threat, rated 'neutral' because "we believe that as blockchain-based applications develop around core financial services, FISV could face competition in the bank technology space". Fiserv has, in fact, hedged against the threat, taking a stake in blockchain start-up Chain, alongside Nasdaq, Visa, Citi and Capital One.

Another payments player that could be in trouble is SWIFT, which is slow and costly and has systems that are decades old, have limited flexibility and face a growing security threat, as evidenced by the recent Bangladesh Bank attack.

Warns the report: "Enter blockchain – a low-cost, instant, virtually unhackable, fully automated, end-to-end transaction system built on a private permission-based network. Such a system would not only enable

banks to eliminate costly overheads, but would provide a lower-cost money transfer product attractive to large multi-national organizations with high frequent cross-border funding and trade finance demands."

A similar report was produced by Citibank in July with the same conclusions.

Given the disruptive impact the internet has had on other industries, one key concern for investors is whether Bitcoin could disrupt the status quo in payments. The Bitcoin Blockchain has a market cap of ~$10 billion, so the market is clearly ascribing value to this payment network. The key question we address is whether a decentralized payments system like Bitcoin overcomes security, throughput, and other potential hurdles and presents a meaningful challenge to the incumbents?

The key conclusion is that cryptocurrencies are not a disruptive threat to the banks or card networks (Visa/MasterCard), or the MTO model (e.g. Western Union) for cross border remittances, but that the impact will be more from its ability to open up new markets and reach new customers.

Another report from Bain & Company delves deeper into what is happening in payments:

Changes to the complex pipelines that make payments possible rarely occur, but when they do happen, the consequences can be profound. Distributed ledger technology, first showcased by the Bitcoin digital currency network, has the potential for such dramatic change—yet most banks have not adequately prepared for the ensuing battles to retain control of customers and of merchant payment interfaces.

By removing central intermediaries, simplifying connections between counterparties and recording data on a tamper-proof block chain, distributed ledger technology has the potential to improve the speed, transparency and efficiency with which payments are made. Bitcoin, for all its flaws, provides a compelling example of the possibilities, and has catalysed a surge of investment and innovation. Since 2012, roughly $1 billion in capital has poured into hundreds of distributed-ledger investments. Official recognition has followed: For example, Ripple Labs, a prominent distributed ledger start-up, has secured a seat on the Federal Reserve's Faster Payments Task Force, the US regulator's flagship payments modernization effort.

What are the implications for banks? To address that question, Bain & Company interviewed more than 50 senior bankers, venture capitalists, technologists, international payment association executives and start-up CEOs. What became clear from these conversations: While in theory banks are well positioned to confront the changes triggered by the rise of distributed ledgers, in practice the situation is more complicated. Regulatory and other hurdles may have forced most start-ups to partner with, rather than compete against,

incumbent banks, but distributed ledgers will create winners and losers within the banking industry.

It's interesting that they reference Ripple in that dialogue, along with Credit Suisse questioning SWIFT's future, as Ripple are really targeting the decimation of cost in the international payments arena incurred by counterparty structures like SWIFT. They recently announced, for example, that seven banks (Santander, CIBC, UniCredit, UBS, ReiseBank, National Bank of Abu Dhabi and ATB Financial of Edmonton) had made a breakthrough by being among the first financial institutions in the world to move real money across borders using blockchain-based technology. The banks announced they had taken part in projects to make international payments using digital assets on the platform of Ripple, who were also elected to the Federal Reserve's Faster Payments Task Force Steering Committee last year. Ripple are a key player in the payments space, and I'll come back to them tomorrow.

Other key recent announcements include Danish blockchain payment service provider Coinify raising $4 million in their Series A investment round from SEB Venture Capital, an entity within the SEB Group and SEED Capital Denmark. Coinify says it presently supports 15 blockchain currencies (including Bitcoin, Ether and Ripple).

Ether is the currency of Ethereum, and Ethereum are probably the other big contender for the payments crown alongside Ripple. I say that as, even with the DAO hack, Ethereum and their ability to transact programmed transactions, better known as smart contracts, are a key player in the internet of trust.

As you can see there is lots happening here, and payments is one of the key spaces to watch.

* my real problem is that DLT has always been Dave Lee Travis to me, and I don't really want to refer to this exciting technology as a besmirched DJ