One technology to bind them all?

Finbarr Bermingham says that the hype over blockchain in trade finance has reached fever pitch, but there are huge barriers for the technology to cross if it is to be widely used

Few banking practices are as archaic as trade finance. While traders on the New York Stock Exchange have turned to atomic clocks to time trades to the microsecond, it takes weeks to clear the paperwork to ship a cargo of oil between Indonesia and Singapore. It often takes even longer to get paid.

The paper-based world of trade finance is also vulnerable to fraud, as shown when a rogue trading company in Qingdao, China, duplicated warehouse receipts for metal in 2014, costing banks billions.

Enter blockchain: the technology that has whipped the trade finance industry into a frenzy. Blockchain is digital ledger software best known for its use in bitcoin and other cryptocurrencies. Many industries have hailed it, but in trade finance it is billed as the solution to many central issues, including latency, fraud, know-your-customer and cost.

What is blockchain?

Blockchain allows encrypted data to be shared across a distributed network, without the need for centralised authority and without the data ever being duplicated. This has led to it being billed as "a single instance of the truth". In a trade finance transaction, it would allow exporter, importer, shipper, bank and other involved parties to add information to a single digital document, which is immutable, instantly updated and viewable by all those permitted access. In the often murky and cumbersome world of trade finance, these improvements on speed, efficiency and transparency would be welcomed by many.

The amount of time and money being pumped into blockchain by trade banks and companies suggests that they are keen to improve the old way of working, and that they are confident that this is a good way to do it. Banks do not generally disclose their development costs, but we saw the investment appetite in a fundraising round in May this year.

R3 is the largest consortium of financial institutions collaborating to develop a platform and commercial applications for distributed ledger technology (DLT – another term for blockchain). Its solution, Corda, is one of the most anticipated developments on blockchain for trade. In May, 40 investors from 15 countries piled into a $107m investment round for R3, showing that banks are willing to put their money into this technology.

"Paper versions of LCs [letters of credit] can easily be duplicated, or get lost," says Michael Eidel, executive general manager, cash-flow and transaction services, at Commonwealth Bank of Australia (CBA). "Trade finance is labour intensive and cumbersome: there are many parties along the supply chain looking at paper and manually editing it. We believe that blockchain, as an underlying technology, can fundamentally solve these issues."

Last year, CBA and Wells Fargo conducted the first live trade transaction involving two independent banks on blockchain. A shipment of cotton was moved by Brighann Cotton from Texas to Qingdao. Internet of Things technology tracked the cargo, while the involved parties used Skuchain's Brackets blockchain ledger to host digital documents and smart contracts, reducing the processing time from days to minutes.

This is one of the few live trade transactions to be hosted on blockchain. Barclays and the Japanese bank Mizuho have done deals in Ireland and Japan, but these featured the same bank on both ends. To date, most of the work has been about exploring whether blockchain functions.

"This is something that works, as highlighted by the proof of concepts," says Aziz Parvez, head of Asia Pacific trade and supply chain product management at Bank of America Merrill Lynch. "But when it comes to commercialisation, it still has to go through a lot of hoops. Irrespective of the activity, be it LC-related or open account, you need a wider acceptability from various parties, including banks, corporates, and even the custom houses, for this to be really meaningful."

The general view is that, at a basic level, blockchain works in trade finance. It will prevent duplication of documents, will allow for more transparency and will reduce transaction time. We will see commercial use of the technology later this year and into 2018, with banks and companies developing stand-alone blockchain solutions, while industry-wide consortia such as R3's Corda and Hyperledger will also shortly enter the production phase. But even the most evangelical proponents will admit that many issues need to be resolved before blockchain is used with any scale.

Challenges of adoption

One of the pressing issues is compliance. By definition, trade finance is cross-border and involves parties in different jurisdictions. In each of these places, there may be different standards around invoicing, bills of lading and other areas of documentary trade. This lack of standardisation is one of the challenges to any digitisation, blockchain included. How would a blockchain solution meet regulatory standards from country to country, when physical documents are often examined individually?

Bolero provides digitisation services to the trade finance industry and its chief executive, Ian Kerr, understands the issues at play more than most. He says: "I think people have been getting carried away. The focus has been on the tech, not the business. People have been looking at digitisation for a long time. In banks, people are trying to tick the 'blockchain box' without thinking what it means. How will it work with their existing business and systems, and how will it sit alongside compliance responsibilities?"

These issues are on the agenda of trade bodies such as the International Chamber of Commerce (ICC) and the Bankers Association for Finance and Trade, which are looking to create standards for digitisation, as they have done for certain areas of documentary trade.

"The ICC has an industry working group on how to standardise digital trade," says Hari Janakiraman, head of trade and supply chain product at the Australian bank ANZ. "An example would be digitising an invoice: what does it mean? I've seen a couple of draft outputs and it's very positive."

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Another issue is corporate buy-in. Theoretically, companies need not make a large investment to use a bank's blockchain: they would download an app, without even knowing that it is blockchain-based, in the same way that you might not know which email client you are using.

This is not the first attempt to digitise trade finance, and one recent effort, the bank payment obligation, died a death after banks struggled to engage clients. It is an issue bankers are aware of, but that does not make it less challenging. Vivek Ramachandran, global head of growth and innovation at HSBC, says: "Simply focusing on the digitisation of trade

finance is a fairly futile exercise. You need to digitise trade, and the financing will follow on the back of that."

Some of blockchain's perceived strengths may also be deterrents to corporate clients. Chris Khan, the lead architect of R3, which recently built a prototype app to streamline LC processing, says blockchain will never eliminate trade finance transaction processing time because of compliance issues, but that R3 aims to reduce it to single-digit days. This will please bankers, as the cost of trade processing comes down, but perhaps not the buyer, who might see the billing cycle greatly reduced. How do you sell efficiency to a company that now has to pay for their goods weeks earlier?

> *"You have to be very careful with how you position and commission access to buying and selling data*

The transparency of blockchain may also not enthuse some trading houses. "There are certain organisations, pure traders, Bunge, Trafigura, people like that, who would say the last thing they want is total visibility of who they bought from and for what price, and who they're selling to and for what price," says Kerr. "Arbitrage, that buying and selling, is how they make their money. So you have to be very careful with how you position and commission access to the data."

The number of pilots suggests that the development costs have not been prohibitive. But these will rise in the production phase. Experienced engineering talent in such a nascent field is expensive, and bankers expect the integration of blockchain into banks' legacy systems to be costly. But if blockchain streamlines trade processes as expected, costs will come down and the benefits of automation will eventually be felt.

The future?

It seems certain that we will see commercial blockchain solutions for trade finance within months. Banks and industry players such as Maersk, the world's largest container shipping company, are developing stand-alone products, which would help digitise both underlying trade and the financing. But the disparate nature of trade means that, in the future, a single blockchain for global trade is far-fetched. More likely is a patchwork of different blockchain networks, which will need to be interoperable with each other and existing legacy systems.

It is also abundantly clear that blockchain is not a panacea. Fraud will still find a way. Furthermore, many regulatory issues faced by banks are a response to bad practice, not systems errors. Other technologies, such as artificial intelligence, will be crucial to eradicating those and blockchain will have to interoperate with other emerging technology in trade finance if it is to find large-scale adoption. ■

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