FSG Workshop: Distributed Ledger Technology

28 April 2017

R3

R3 is an innovation firm focused on building and empowering the next generation of global financial services technology. R3 runs a consortium of over 80 of the world's largest financial institutions, from over 20 countries. Consortium members have access to insights from projects, research, regulatory outreach, and professional services. R3 has created Corda, a distributed ledget for finance. Partners and an active developer ecosystem build applications on Corda that take advantage of the benefits of distributed ledgers.

Cryptocurrencies and blockchains

The purpose of Bitcoin, the canonical cryptocurrency, is:

> "*A purely peer-to-peer version of electronic cash* [which] *would allow online payments to be sent directly from one party to another without going through a financial institution.*"

We created a bitcoin address and made a payment of Bitcoin to it, tracing it on the blockchain in real time using the www.tradeblock.com website. We showed that there were about 8,000 Bitcoin nodes live, and demonstrated that there was no KYC process to opening an account, and that all transactions were visible to anyone in the world, and it were not encrypted.

Distributed ledgers

Bitcoin uses a blockchain for its accounting system, and blockchains have some properties that are useful for regulated financial institutions. However their design is not appropriate for industry. R3 collaborated with our Architecture Working Group participants (42 banks at the time) to gather requirements and understand constraints of the financial services industry. The result was Corda, a distributed ledger built from scratch to meet the needs of the regulated financial services industry.

Distributed Ledgers allow the the shared control of data and give participants confidence that what they see in their own databases matches what their counterparts see in their databases. Facts are reconciled before, instead of after, being recorded, and calculations and amendments are made bilaterally according to pre-agreed rules, rather than unilaterally then verified.

Corda is a distributed ledger without a blockchain: Unlike a blockchain, Corda doesn't indiscriminately broadcast all transaction data to all participants on the network. Corda is a distributed ledger platform designed and built from the ground up to record, manage and synchronise agreements (legal contracts), designed for use by regulated financial institutions.

Illustrative Financial Service Use Cases

Finally, we described the situations in which companies might want to consider distributed ledger technology over traditional technology setups. We discussed that distributed ledgers can be useful when there are specific considerations around control, risk, complexity, data visibility, cost, standardisation, and legal certainty.

We ended by demonstrating R3 projects in identity (Know Your Customer processes) and collateral registries. These are two elements that, if improved, could impact financial inclusion, especially for small businesses who have difficulty accessing loans and financing.