

# *Blockchain*

## *Discussion*

CCAB |

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# What is Blockchain?

**Across all of FinTech, Blockchain technology is attracting the most attention from our Clients and the wider market**

*Blockchain is distinct from Bitcoin, which is one application of the technology.*

## Blockchain's key features:



**Distributed ledger** creating a single shared view of transactions - every participant in the network has simultaneous access to a shared view of information



**Peer-to-Peer Network** with no centralised authority. Technology replaces the need for a third party to authorise transactions and manage updates



**Trusted** by use of consensus, verification is achieved by network participants confirming changes with one another in real-time



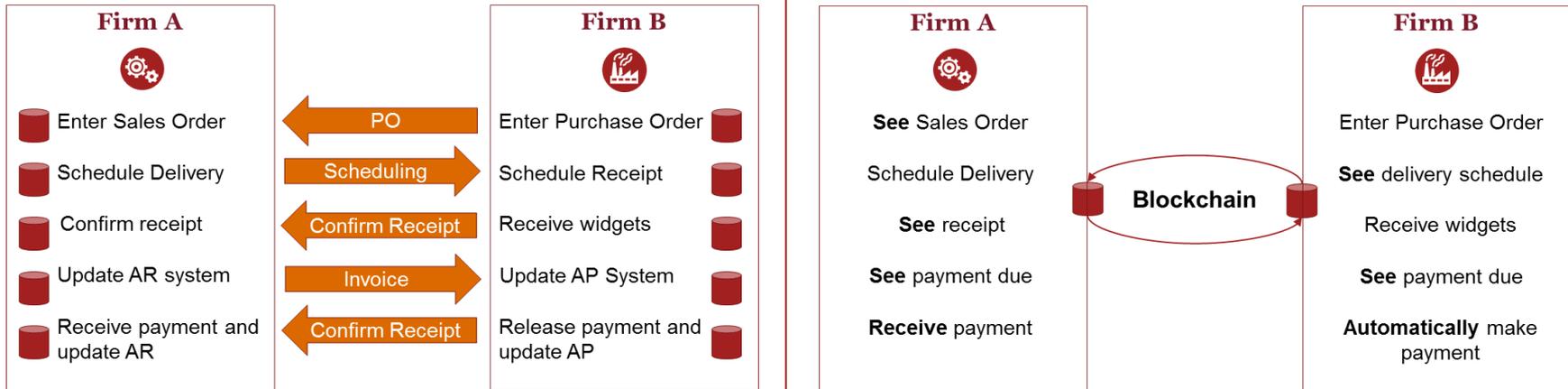
**Smart contracts** - the ability to run business logic means that shared agreement on the expected behaviour of a transaction can be embedded in the blockchain

*“.....blockchain technology has the potential to reduce the cost of operations and compliance across capital markets by \$20bn p.a.” (Santander Fintech 2.0)*

## Example use case

The ability for parties to simplify information flow within transactions will reduce duplication, reconciliation and error

Firm A sells Firm B £5m of widgets



- Multiple duplicated data updates
- Data entry errors and reconciliation issues (e.g. PO number, price, quantity)
- Manual steps to move through process
- Additional complexity where third parties interact (e.g. delivery firm, bank)

- Shared view of data – no reconciliation errors
- Updated by party that takes action (e.g. orders goods, dispatches goods)
- Data is trusted and accurate Steps can be automated into the transaction (e.g. payment made according to terms)

*“...potential to bring substantial efficiency and productivity gains to global supply chains, while decreasing fraud and increasing security,” (Ibrahim Gokcen, CDO Maersk)*

# *What business advantages does Blockchain offer?*

**The technology offers the opportunity to drive dramatic changes in business models – it is not the right answer to every possible problem**

If the following conditions apply, then blockchain has strong potential to provide a solution:

- 1. Multiple Parties Share Data** - multiple participants need views of common information
- 2. Multiple Parties Update Data** – multiple participants take actions that need to be recorded and change the data
- 3. Requirement for Verification** – participants need to trust that the actions that are recorded are valid
- 4. Intermediaries add cost and complexity** – removal of “central authority” record keeper intermediaries has the potential to reduce cost (e.g. fees) and complexity (e.g. multiple reconciliations)
- 5. Interactions are time sensitive** – reducing delay has business benefit (e.g. reduced settlement risk, enhanced liquidity) or timing of the transaction is crucial
- 6. Transaction Interaction** – transactions created by different participants depend on each other

*If you can't tick 4 out of 6 ask “Why Blockchain ?”*

**Realising Business Benefit Will Usually Require Cooperation Between Multiple Participants**

# Selected examples to consider

Initiatives are evolving from PoC to Pilot		
	<p><b>Trade Finance</b></p> <ul style="list-style-type: none"> <li>Faster Execution</li> <li>Less manual effort and cost</li> <li>Reduced risk of fraud</li> </ul>	Barclays announced the first live application of a Trade Finance application utilising the Wave Blockchain technology to execute a LoC in 4 hours instead of 7 days
	<p><b>Food Provenance</b></p> <ul style="list-style-type: none"> <li>Reduced Waste</li> <li>Ability to assure provenance</li> <li>Reduced risk of contamination</li> </ul>	U.S. retail giant, Walmart, is testing blockchain for food supply chain management, tracking the supply journey of pork in China and produce in the U.S. — two high-volume product categories
	<p><b>Energy Management</b></p> <ul style="list-style-type: none"> <li>Optimise use/production of renewable energy through smart contracts</li> </ul>	Brooklyn Microgrid will use the Ethereum platform to manage energy production and to incentivise and optimise production and use of clean energy using smart contracts
	<p><b>Fine Wine Registration</b></p> <ul style="list-style-type: none"> <li>Reduced Fraud/Counterfeiting</li> <li>Reduced risk of theft</li> <li>Proof of origin</li> </ul>	Everledger, the blockchain technology company, announced in December 2017 that it is using blockchain to secure the provenance of a bottle of wine. Bottles are identified through multiple data points and tracked through their life
  	<p><b>Payments</b></p> <ul style="list-style-type: none"> <li>Alternative to credit cards for online payments</li> <li>Reduced cross border FX costs</li> <li>Opportunity to address unbanked</li> <li>More secure than cash</li> </ul>	Bitcoin is popular in Argentina (and Latin America). Credit cards are less widely used and there are more unbanked than in more mature economies. Merchants however are often reluctant to accept bitcoin. Alternative models have emerged e.g. BitPagos use blockchain to create a payment system that enables users to buy goods online without bitcoin being directly used by either merchant or buyer

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