

Bird & Bird & Blockchain Use Case

Introduction

A common issue we encounter with blockchain technology is the difficulty in bridging the gap between the technology itself and its real world, practical applications. Blockchain is very much in its infancy in terms of real-world deployment and enterprises have been trialling a number of interesting and exciting use cases.

In this briefing note we will explore a use case from the retail and consumer sector where enterprises deploy private blockchains to track and trace goods.

For more in-depth content on a variety of blockchain topics, please visit our [Blockchain in Focus webpage](#).

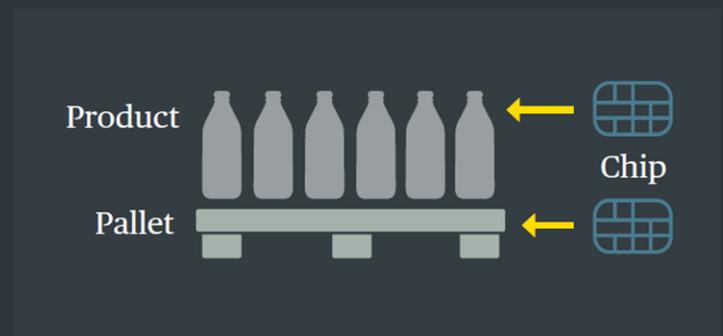
Use case

In this example, a retailer acting as a trusted intermediary sets up a private blockchain ("**Trusted Intermediary**"). There are many ways in which the private blockchain can be set up. For this example, the Trusted Intermediary is running the nodes comprising the private blockchain either itself or through "trusted nodes" operated by subcontractors. Sometimes these subcontractor operated nodes are referred to as "signatory nodes" or "validator nodes". For more information please see our Private Blockchain Briefing Note found on our [Blockchain in Focus webpage](#). The Trusted Intermediary has also created a software application ("**app**") that is used by participants to interact with the private blockchain.

Farmers and distributors are invited to join the private blockchain as participants. Farmers

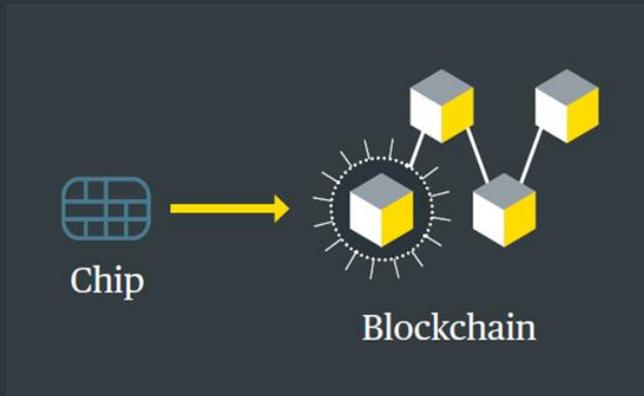
are asked to join as they will be prompted to record data relating to their goods on the blockchain. Distributors will be asked to join as they will be prompted to record data relating to the pick-up/delivery of goods on the blockchain. Prior to joining, these participants sign a contract with the Trusted Intermediary that governs (amongst other things) access to the private blockchain via the app.

The farmers prepare a pallet of goods (e.g. milk bottles); each pallet has a RFID chip / QR code (an "**identifier**") and each bottle in the pallet has an identifier. Each farmer's identifiers are linked so it is easy to track and trace all their goods. When the identifier is scanned it shows data relevant to the pallet: e.g. farm name, location, certificate of authenticity of the goods ("**Farmer's Data**"). The Farmer's Data is verified by a human before the data is linked to the identifier.



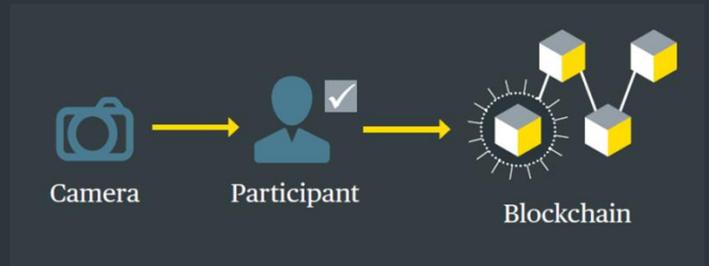
When the goods are ready for delivery to the supermarket, the farmer accesses the app and sends the Farmer's Data/identifiers for recording on the blockchain.

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At this point the distributor participant will receive a prompt to collect the goods from the relevant farm. The distributor will pick up the goods and then deliver them to the supermarket. The act of picking up the goods and delivering them to the supermarket can be sent as data entries to be recorded on the blockchain.

Internet of Things devices can be connected to the blockchain and send data to it. For example, cameras installed at the farmer's warehouse and the supermarket's warehouse can automatically send camera images when the distributor logs into the app and records data to the blockchain confirming pick-up and delivery, respectively.



The Farmer's Data/identifiers are sent by the farmer to the blockchain and automatically recorded once the goods are ready for delivery. The distributor's entries to the blockchain (pick-up and delivery) will be sent to the blockchain and so will camera images from the Internet of Things devices. This bundle of data is verified by a third party auditor and once confirmed (e.g. the camera image supports the distributor's entry confirming pick-up/delivery) it is recorded on the blockchain.

If there is a problem with the goods, then the relevant stakeholders can consult the blockchain to find out where the goods are: are they at the farmer's warehouse ready to be delivered, are they at the supermarket's warehouse or are they in transit. Since each pallet from a farm is linked it is easier to quickly locate their whereabouts and safely and efficiently recall them in the event of a problem.

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Chambers FinTech UK, 2020

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