Vehicle Lifecycle Demo

Dan: Hello, my name is Dan Selman and I am the Chief Architect for the Hyperledger Composer team, based here in Hursley. Composer is middleware to define, integrate and execute blockchain solutions.

Anthony: Hello, my name is Anthony O'Dowd [title/role]. Today we are going to show you a demo that digitises the lifecycle of a vehicle; from manufacturing, to purchase, to scrap using the Hyperledger Fabric blockchain. We are going to focus on three main participants in the business network:

- Paul who wants to purchase a vehicle
- Mike who works for Arium the vehicle manufacturer, and
- Debbie who works for the Vehicle and Drivers Agency, the government regulator for vehicles.

The 3 participants share information across the business network using the Hyperledger Fabric distributed ledger.

Dan: Our story starts with Paul, who would like to purchase a new vehicle. He is going to use Arium's new iOS application to order and customise his new vehicle.

Arium has a "mobile first" strategy and has deployed an iOS application that drives their lean "just-in-time" manufacturing process.

> Hand iPhone to customer. Walk the customer through selecting a vehicle, choosing paint, options and trim. If not use the iPhone or iPad open this URL.

Anthony: As soon as the order is submitted Mike has complete visibility into the order; it is being tracked on the blockchain. We are going to simulate the progress of the order through the factory. As each stage in the manufacturing process the the blockchain is updated and you can see the iOS application is also updated in real-time.

> Press the Start Manufacture button on the Arium dashboard

- First the chassis is manufactured
- Then a Vehicle Identification Number is assigned
- Then the owner is assigned to the vehicle and the vehicle is registered with the regulator
- Finally options are applied and the vehicle is shipped for delivery

Arium's systems of record are based on SAP. They use IBM Integration Bus with Composer's Loopback connector to drive transactions from SAP into the blockchain.

Dan: Let's now take a look at Debbie regulatory view of what just happened. As soon as a VIN was assigned to the vehicle Debbie can start to track its history.

> Show the V&DA dashboard

In this simplified demo Debbie can even see the status of the order on the blockchain. In the real-world we would expect to see a notification from the Arium blockchain being sent to the VDA blockchain when a vehicle rolled off the production line.

The regulator is also very interested in the compliance status of all the vehicles on the road. They use batch and streaming analytics on the blockchain data to identity vehicles that are out of compliance.

Debbie clicks on the suspicious vehicles report to see the details of vehicles that are out of compliance.

> Show suspicious vehicles

Here is one whose mileage is going backwards!

Here is another vehicle that was written off for insurance purposes, but has not been scrapped.

Anthony: A key value of blockchain is that this business network can be easily expanded to involve new participants.

Here we've shown bringing in the Vehicle Standard agency (who test the road worthiness of vehicles), the police and insurers into the business network. The police use IBM i2 to detect vehicles used by crime syndicates. The insurer uses SPSS, BPM and ODM for their underwriting processes, while the Vehicle Standards agency uses CICS and MQ running on Z.

Dan: Composer makes it easy for developers to quickly build powerful blockchain solutions, and we are very fortunate to have the Composer team co-located in Hursley with so much great technology from IBM's core franchises. We are actively working with those teams to make it easy to get data and on to and off the blockchain and to ensure that integration is easy.

Both: Thank you! Have a great day.