

Blockchain Enabled Supply Chain Digitalization Improves Inbound Parts Shipments Cycle Time by 40%



Overview

The global automotive company faced challenges in procurement, order, shipment, and account payables with their complex processes. Lack of traceability led to high buffer inventory stock, and an unreliable turnaround. We implemented a distributed ledger-based solution for an auto OEM that reduces substantial costs in operations and administrative activities. The solution deployed real time tracking that eliminates 100% duplication in invoices and improves operational efficiency by 30%.

Client Background and Challenge

The client is a multinational automobile manufacturer. Their existing inbound supply chain for procurement of production parts operates among multiple stakeholders from different regions. Huge volume of physical invoices and documents, manual payments and approvals, traditional process of printing and submissions, led to lack of traceability. The lack of visibility lead to high inventory holds, payment delays, and invoice mismatches. This also increased invoice turnaround times and reduced the efficiency of the entire process. Hence the client wanted an end-to-end supply chain network to ensure a secured digital ecosystem improving both process efficiency and supplier relations.

Our Approach and Solution

Initiation:

TechM conducted a study to identify the challenges in key business impact areas such as value streams of supply chain including shipments tracking, parts procurement, and accounts payable. We recommend a distributed system or architecture for auto OEMs as it fits best to the industry requirements. Through the extensive design thinking workshops, we helped establish a private permissioned blockchain network for asset tracking among OEMs ecosystems. We connected various virtual machines and nodes sitting in the Azure cloud, AWS Cloud and on-premises servers of the various stakeholders for network setup. Data security and privacy was pivotal here and we ensured no data leakage was happening across stakeholders by bringing in role-based access backed by blockchain.

Building the solution:

The distributed ledger automates the existing business process workflow, connected core systems of OEM, supplier, 3PL, customs handling agencies, banks, and other interested parties which enabled real time tracking of key data sets such as ASNs, bill of landings bill of entry, goods receipts, and invoices. All the required shipping documents were digitized, and workflow was automated with reduction in time and cost. We empowered the business stakeholders with accurate shipment visibility with the ETA details coming from another blockchain network in the ecosystem - TradeLens. We then create a payments network targeting pain points in accounts receivables and payables by creating smart contract-based automation to reconcile supplier and logistics providers invoices with minimal to no manual intervention from the business users. All the transactions and audit trails were made available to all the participants.

For the MVP run we conducted along with the large OEM, we onboarded 5 global suppliers, 1 logistics provider, 1 customs clearance authority and a trading company responsible for consolidating orders and sending the shipment to the manufacturing plants in South Africa.

We had templated the onboarding process to enable batch of external stakeholders to be onboarded onto the network quickly and effectively and built a business case to take to the extended ecosystem.

Business and Community Impact



Real-time resolution of supplier invoices, customer invoices, and freight invoices disputes eliminate 100% duplication



Faster turnaround time reduces overall cycle time by 40%



Real-time tracking improves operational efficiency by 30% and reduces invoice/PO price mismatch by 40%



33-days early visibility into invoices



Less than 24 hours to correct supplier invoice price mismatches

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