

# Use Case of Block Chain in Automotive Industry

The impact of Block chain on Automotive industry can be understood in the light of the disrupting effect of Internet of Things, Artificial Intelligence and Big Data. The bottom line of these technological innovations underlying the digital transformation is that huge amount of data will be generated and shared between multiple parties and the insights from these datasets will be employed to generate new products and services. The question is where this data will be stored most efficiently and can the data transfer and access happen without a centralized authority in place as we cannot afford to increase our data cost because of the technological disruption.

The answer probably lies in deployment of blockchain technologies across the automotive value chain.

**Blockchain is a distributed ledger technology for securely transmitting any type of information without the control of any central authority**

Let us now look at the areas where the potential of disruption in automobile sector is maximum

1. Supply Chain transparency and automation
2. Spare parts provenance
3. Dealership Financing and Contract Management
4. Leasing and other digital services
5. Vehicle History, Insurance and Reselling

## **Supply Chain transparency and automation**

A car isn't simply a car, it can be looked upon as more than thirty thousand components assembled together to form a single unit. These components can be sourced from thousands of different suppliers located in different geographies and controlled by hundreds of different contracts and agreements. The key business challenge here is effective coordination between the suppliers, 3<sup>rd</sup> party logistics service providers and transportation companies to achieve just in time or near just in time availability of components in the production line. A blockchain based system builds trust and ensures greater transparency in the flow of goods, services and information between different parties and improve the key performance indicators in Logistics flow.

Together with IoT and AI a blockchain platform can ensure that permissioned nodes have the information they need to track parts and collaborate with suppliers to build transparency and visibility across the network. This in turn leads to a more predictable supply chain, increases planning efficiencies, optimises the cost and reduces risks due to supply and demand fluctuations in the value chain.

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## **Spare parts provenance**

A growing concern with car manufacturers is the availability of counterfeit spares in the market. A Blockchain based system can enable the service centres, manufacturers and the customers to trace the provenance of the spares through every step in the supply chain. Information on warranties and insurance can also be linked to avoid future disputes.

## **Dealership Financing and Contract Management**

A manufacturer has a long wait period for receiving payments for shipment of a vehicle from importers, distributors and dealers. The issue of letter of credit by the purchaser's bank or a submission of Bill of Lading by the manufacturer delays the entire process due to the heavy flow of paperwork. A Blockchain based system can enable faster processing of Export, Import and Banking documentations and reduce the settlement time. By enabling a sole source of truth between Dealers, Financers and OEMs Blockchain can enhance line of credit management, near real time reconciliation and transparency.

Another potential area of Blockchain is Contract Management. Since a manufacturer maintains hundreds of contracts for thousands of components, managing them requires lot of investment in IT systems. Blockchain provides an efficient, cost effective and accountable system where the contract management process is digitized and automated avoiding the need for different ledgers to be maintained by different parties.

## **Leasing and other digital services**

Blockchain technology has the potential to disrupt the process of car lease and any other car related services like rental, ride sharing and maintenance checks.

The expanding dynamics of the car related services is changing drastically in the digital age. While Uber, Ola expands themselves into the ride sharing business car rental companies like Hertz are finding it a challenge to build a partnership model with these companies in which they can securely transfer or retain its fleet or driver and settle the costs in real time.

Such industry challenges ask for a blockchain based platform where all the parties can share the information in a trusted way and benefit from the evolving model of business by allowing automated yet always recorded and verifiable transactions.

Car Insurance process is becoming more and more on-demand and dynamic. Instead of choosing one policy at the beginning and only switching it once a year, modern insurance policies will be based on real time vehicle data coming from various sources like inbuilt IoT sensors. Any transactions related to vehicle can be stored in the blockchain and therefore accessible whenever required.

Modern diagnostic systems inbuilt in the car will be capable to automatically indicate certain conditions in which some maintenance events need to be triggered.

The future scenario of car maintenance can be depicted as follows:

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*“The smart contract will create a service request on the OEM’s operated service portal where certified car maintenance shops can start reverse bidding on the requested service. Based on a predefined logic by the car owner, the vehicle then initiates the selection of the best fit vendor by considering factors such as availability, distance and price within its decision-making algorithm. The car can align with the shop’s schedule and book a date and time for the service. Then the Smart Contract finalizes the service check by initiating a payment process as well as documenting the service within the blockchain, making it a tamper-proof transaction. Choosing this form of documentation gives government authorities an easy, transparent and validated access to important car information.”*

## **Vehicle History, Insurance and Reselling**

A manufacturer can assign a unique identification for a vehicle on production which can be logged to a vehicle ledger powered by Blockchain technology. When it is shipped to resellers, or distributors or sold to an owner, the change of ownership can be logged in the non-mutable ledger such that the information can be recalled during later events like scheduled servicing, repairs, accidents and insurance renewal. During resell the entire timeline of events can be accessed by the customer or the financier to determine the usage and sell value of the vehicle.

## **Conclusion**

The Blockchain technology has the potential to completely change the Business model of Automobile industry. In the short term we expect to see more and more big players utilizing Blockchain for operational improvements in the supply chain. In the mid to long term we are likely to see new business models emerging from the confluence of IoT, AI and Blockchain and companies who are embracing Blockchain today will be at a competitive edge. We expect to see a major change in the car leasing business model which can easily be extended to trucks, buses, payloaders, carrier vehicles and agricultural equipment leasing as well.