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# Automotive Blockchain Solutions

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# Blockchain solutions for Supply Chain Transparency

## Track & Trace

Track and Trace solutions ensure seamless traceability of auto components at the click of a button. The authorized participants can look upon the blockchain ledger and query a product's status or location in real-time. The blockchain-based application eliminates parts counterfeiting, compliance violations and brings transparency along the supply chain.

## Ethical Sourcing

As the market moves towards mass electrification, demand for minerals such as cobalt, nickel, lithium, copper, and nickel continues to be on the rise. The automakers must ensure the sourcing of mineral supplies from certified mines. The ethical sourcing solution helps certify the provenance of a raw material tracking its movement from mines to market.

## Bill of lading

A typical blockchain network would include a transferor, transferee, carrier, and port operator. The objective is to reduce the time to clear the cargo through trustless transactions. The blockchain-based solution provides a single source of shared truth, reduces operational costs, and ensures accelerated cargo pickups.

## Targeted Recalls

Targeted recalls entailing a user interface through which manufacturers can mark the defective part both upstream – to the individual vehicle and downstream – to the supplier who supplied the part. If the manufacturer claims to have defective parts, the supplier can be immediately notified through the shared blockchain ledger.



# Blockchain solutions for Supply Chain Transparency

## Supplier Onboarding

A supplier onboarding solution includes a digital identity for the enrolled suppliers – enables them to own their identities and update their information replacing manual onboarding processes performed by the manufacturers. These updates can be broadcasted to the network in real-time. The solution can drastically bring down costs associated with data duplication and redundancy.

## Battery Identity

A blockchain-based battery identity solution helps maximize the lifecycle value and usage of batteries. The battery information resides on the blockchain ledger that helps track the origin and movement of the battery (and its component minerals) and accordingly reuse or repurpose based on their health condition.



# Blockchain Solutions for Customer Experience

## Car Passport

Car Passport identifies the vehicle and acts as proof of vehicle ownership. The blockchain ledger records car data (mileage, fuel consumption, driving patterns, maintenance history) in a real-time and fool-proof fashion. Only the car owners can access the passport (via mobile app) and with their consent, third parties such as insurers can access the data. The blockchain solution enables accurate resale values and combats fraud in the secondhand car market.

## Encrypted Vehicle Access

Secure communication happens between smartphones and sensors in cars, which enables authorized locking/ unlocking of the car. The solution allows owners to grant temporary authorizations to others. The owner can digitally track these authorizations and revoke access at any time. The solution promises unhackable safety and is 6x faster than existing solutions.

## Usage-based Insurance

Personalizing insurance rates based on mileage and driving behavior. Customers now challenge the concept of flat rates and expect insurers to charge based on their driving patterns. Driving parameters include speed, acceleration, hard braking, hard cornering, miles-driven, time of day, phones while driving, etc. The immutable shared ledger ensures data authenticity and hence genuine claims. In the case of an accident, smart contracts on top of blockchain can trigger and automate claims processing.



# Blockchain Solutions for Customer Experience

## Predictive Maintenance

The blockchain solution analyzes vehicle fault codes and provides insight into vehicle performance. The information can help alert fleet owners to replace failing parts before they result in vehicle downtime.

## Auto leasing

Tracking a car right from the manufacturing, history of ownership, maintenance records, mileage data over a distributed ledger helps leasing companies accurately determine the residual value at the end of the lease. Accurate quantification of the end-of-lease costs based on predefined smart contracts eliminates end-of-lease disputes between the parties concerned.



# Blockchain Solutions as Value-added Offerings

## Geofencing

Blockchain-based geofencing can secure green credentials for vehicle manufacturers. Geofencing (through GPS) enables the hybrid electric vehicles to automatically switch to electric mode when the hybrid cars happen to enter an emission-free zone. The green miles are subsequently documented in a tamper-proof blockchain ledger and then securely shared with the concerned city and regulatory authorities.

## Earn as you drive

Car manufacturers can reward their customers in return for good driving behavior or useful road-condition data. With the users' consent – the driving patterns and the on-road data get collected in the car ledger and instantly converted into rewards which can then be redeemed by the car owners. These rewards can be in the form of crypto coins or other points that can buy coffee, pay for electric charging, parking fees, etc.

## NFTs

Car manufacturers can drop time-to-time perks in the form of digital collectibles to boost customer loyalty and engagement. These crypto assets are in the form of digital car-inspired artifacts or as simple as static images. Each token is unique and hence the NFTs carry a certificate of authenticity that cannot be forged. The NFTs can be traded by the customers in a secondary marketplace.



# Blockchain solutions enabling Mobility as a Service

## Electric Charging

Electric charging infrastructure is crucial to accelerate global electric mobility. Blockchain can establish an electric charging and payment infrastructure that supports bi-directional charging between Vehicles to Grid (V2G), enabling electric vehicles to participate in the energy markets.

## Shared mobility

A blockchain-based mobility solution that requires the collaboration of multiple stakeholders - Vehicle manufacturers, transport companies, cities, and infrastructure providers. The shared mobility solution will help a rider move from A to B using multiple modes of transport via a single app. The vehicle and trips are digitally logged. Immutable transactions happen instantaneously without an intermediary. The entire process of booking for the trip, choosing the vehicle, automated payment upon completion of the trip works on smart contracts.







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Do you want to be positioned to capture the benefits of the new, potentially transformative technology that is blockchain? **Let's Talk.**



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