

Electric Vehicle Manufacturing

Tech Stack | [Lifting Conversion Rates](#)



AI Accelerators Boost Customer Experience in Electric Vehicles

PROBLEM STATEMENT

The ultimate innovation in electric vehicles is extending battery life without sacrificing the driving experience. In a highly competitive market, now more than ever, conversion from petrol to electric cars boils down to better customer experience behind the wheel. While speed, horsepower, reliability, and aesthetics are top-of-mind for consumers, energy conservation and proximity to charging stations are usually not the selling point. Ultimately, the science of optimizing battery life across different driving styles and conditions is left to the car manufacturer. In this case study, Mastech InfoTrellis helps an electric car company design an intuitive dashboard with predictive maintenance capabilities. This provides electric vehicle drivers the right information to help the electric vehicle manufacturer extend the battery life.

THE SOLUTION

With a wide range of Ontology cards available for the client's benefit, Mastech InfoTrellis was able to configure a customized dashboard that described various driving styles and scenarios. This helped the electric vehicle manufacturers better understand the behavior of the drivers and the vehicles in different weather conditions and traffic conditions on the road. These cards were installed in the Customer Experience Knowledge Graph to seed our simulations of how drivers may respond to warnings on the dashboard.

Smart Ingestion Engine was then set-up to transform Imagery data, which was collected from the cars' cameras and GPS. The Smart Ingestion Engine fed off live data from the cars to extract potential signals that were important to the safety of the driver and the car.

Quality Assurance was required for this ingested data, for which the Data Quality AI Accelerator was put to work. While setting up a data pipeline for quality checks, the first signs of trouble were found, along with possibilities for parts failure. The Data Quality AI Accelerator played a significant role in improving Customer Experience to inform the electric vehicle manufacturers about any trouble ahead before the drivers themselves. Thus, the electric vehicle manufacturers were in a better position to improve the customer experience significantly.

Feature miners were used to look for signals of car malfunction or battery running out of power, based on what the driver is doing, how soon the car will break down or run out of power could be gauged by mapping driver behavior. With data science behind the scenes, important signals of dysfunction were rarely missed, and the electric vehicle was immediately driven to repair or charged at the designated stations.

A Smart Storyteller is usually in the form of an automated continuous learning document. However, in this case, Smart Storyteller AI Accelerator was employed to inform the dashboard, completely factoring in human factors, to alert the driver to pay attention. The Smart Storyteller consistently thwarted any untoward incidents by showing alerts to the driver without it being too distracting.

THE OUTCOME

This case study on electric vehicle manufacturing succinctly illustrates the power of AI Accelerators at work. When installed in automobile dashboards that are relied upon by millions of drivers every day as they commute to work or travel long distances, customer experience improves vastly to deliver the best automobile technology on-road and at critical moments of failure. As for the conversion rate, the AI accelerators are fundamental in extracting signals from the car and driver. With the help of data science, Mastech InfoTrellis is equipped to turn the collected data into life-saving insights to alert the driver in a manner that does not detract from their driving experience.

To conclude, Mastech InfoTrellis helped the electric vehicle manufacturer meet their business objectives as this project was able to yield a 37% lift in conversion rates, translating into \$200M+ in net profit, a year after implementation.