AI SOLUTION

• Overall Objective: Reduce unplanned vehicle downtime by a quarter in the first year of implementation. This is done by predicting impending component failure before it happens.

• Objectives:

• Maximize Fleet Operating Efficiency and Vehicle Life Cycle: With future failure predicted earlier, the solution makes sure that the vehicle remains on the road longer, maximizing their life cycle and minimizing operations.

• Cost Savings: Maintain only if the parts need it and not on a fixed, typically wasteful timeline. Money that would otherwise be wasted in the surprise break-downs and reactive repairs is conserved.

• Safety Improved: By scheduling failure of such important components as brakes or motors, accidents are avoided and the whole place becomes safer.

• Higher Utilization of Resources: With predictive maintenance scheduling, businesses also stock parts and labor, maximizing efficiency.

BUSINESS OBJECTIVES

1. Production and Manufacturing

AI manufacturing products are designed to bring in efficiency, reduce cost, and increase product quality.

• Generative Design: AI develops and runs many car parts and different design repeatedly in a seconds to engineering tolerances, minizing the time frame from months to minutes.

• Quality Control: AI-powered computer vision can visually analyse in real-time on the factory floor for problems, which detects micro-defects that are not visible to the human eye. That means improved product quality and reduced warranty claims and recalls.

• Smart Robotics: AI-powered modular robots enable assembly, with additional precision and productivity, and mass customization.

• Supply Chain Optimization: Machine learning algorithms get data to forecast demand, manage inventory, and calculate best routes. This improves just-in-time manufacturing, reduces shortage or overage, and reduces logistics cost.

2. Vehicle Design and Development

Artificial intelligence is revolutionizing the design process to make safer, more efficient, and more innovative vehicles.

• Simulation and Optimization: AI offers computer simulations of vehicle performance, such as crashworthiness, and battery management.

• Battery Management: AI technology for electric vehicles can improve battery life and performance by tracking voltage and temperature in real-time and recharging load.

• Vehicle Safety: AI powers next-generation driver assistance features such as automatic emergency braking and adaptive cruise control. They are detecting obstacles using sensors and preventing accidents, and they are improving safety and reducing accidents due to human errors a great deal.

3. Car Experience and Customer Service

AI technology in the car and as customer-facing staff is improving user experience and individualizing the driving experience.

• Personalization: AI has the ability to learn an individual's driving habits to automatically set things like climate, seating, and music playlists.

• Driver Monitoring: AI systems are capable of observing driving habits for the purpose of keeping drivers alert and focused on the road, and providing feedback to eliminate risky driving habits.

• Car Assistants: Voice assistants using AI allow drivers to manage vehicle functionality, driving directions, and entertainment through natural voice, reducing driver distraction.