

# IoT-led Paint Quality Optimization for a Heavy Commercial Truck Major

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CASE STUDY.

## OVERVIEW

A global manufacturer of commercial vehicles based in the USA faced challenges in terms of reducing paint defects per unit. They needed a cost-effective solution and decided to partner with Tech Mahindra. Through our domain and technical expertise, we offered an IoT-based platform to detect painting quality and build reports.

## CLIENT BACKGROUND

The customer is an American Fortune 500 company and one of the largest manufacturers of medium- and heavy-duty trucks in the world. The customer is engaged in the design, manufacture, and customer support for light, medium, and heavy-duty trucks

Our customer's key business objective for an anchor plant was to reduce paint defects per unit (DPUs). The vision is to establish a 'Paint Quality Control Tower' as a scalable and modular analytics platform by implementing predictive and prescriptive analytics capabilities

## BUSINESS CHALLENGES

- It is necessary to have a systematic and convincing business case and ROI model to secure executive sponsorship. Few proofs of concepts (POCs) developed did not scale up to become platforms
- Support in picking the most cost-effective, and interoperable IoT platform in their IT and OT landscape. Also, a partner to develop well-defined user stories and granular implementation plans defining various stakeholder responsibilities
- Need for an I4.0-compliant cloud architecture to replicate the implementation of this use case across multiple plants and scale up as operations

## OUR SOLUTION AND APPROACH

A Thingworx based solution was utilized to build mashup screens, generate reports, and build analytics to detect painting quality. Data from various IT/OT systems like MES, historian, EWI, and 17 different PLCs are integrated into a data mart, and the Thingworx IoT platform consumes the data. Alerts, events, and subscriptions are configured per the user's requirement.

## BUSINESS & COMMUNITY IMPACT

Tech Mahindra's engineering services team helped the client implement the Thingworx IoT platform and analytics solutions to realize their I4.0 vision

- 25%-30% Reduction in paint rework
- 10% - 20% Reduction in scarp due to paint related issues
- 25% - 30% Reduced in paint warranty cost
- 10% - 15% Reduction in the offline inventory of trucks and holding cost
- 30% - 40% Improvement in plant white collars productivity

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