

Gearbox Housing Inc IoT implementation

Business Request

Background:

As a dedicated manufacturer of gearbox housings, we face persistent challenges such as production inefficiencies, quality inconsistencies, and limited real-time oversight of factory operations. These issues result in higher defect rates, delays, and operational costs, impacting our ability to meet customer demands effectively.

To address these concerns and align with Industry 4.0 best practices, we propose transitioning our factory to a smart manufacturing setup. By leveraging IoT devices, automation, and data analytics, we aim to revolutionize our operations and secure a competitive edge.

Objectives

Increase production efficiency by 25%.

Reduce defect rates in gearbox housings by 15%.

Enable real-time monitoring of production metrics for better decision-making.

Streamline workflows through automation and reduced manual interventions.

Enhance workforce capability with training on smart systems.

Project Scope

- **IoT Integration:** Install sensors to monitor production in real-time and collect actionable data.
- **Automated Quality Checks:** Implement AI-driven vision systems to detect defects.
- **Centralized Monitoring:** Develop dashboards for live production insights.
- **Pilot Project:** Deploy in a single production line for scalability.
- **Employee Training:** Equip teams with skills to operate and maintain the new systems.

Teams:

- **Operations Team:** Oversees production process adaptation and workflow adjustments.
- **IT Department:** Ensures seamless integration of IoT devices, software, and data infrastructure.
- **Quality Control Team:** Verifies the efficacy of automated quality checks and validates defect detection metrics.
- **External Consultants:** Experts in Industry 4.0 and smart manufacturing systems.

