

Case Study:

ENHANCING MANUFACTURING EFFICIENCY WITH MES SYSTEM

(Client's Success Story)

Introduction:

The Initial State of Company Manufacturing Operations

- They faced several challenges, including a lack of real-time machine performance monitoring and downtime analysis
- Identifying the root causes of production stoppages was difficult, leading to inefficiencies and increased costs
- Manual reporting processes were time-consuming and error-prone, hindering data-driven decision-making

The ANT Solutions Approach:

- ANT Solutions conducted an in-depth analysis of Apator's manufacturing operations to understand their specific challenges and needs.
- They identified the need for a comprehensive MES system to address machine connectivity, production execution, quality inspections, defect handling, and more.
- The proposed solution included the implementation of the MES system, with modules tailored to Manufacturer's requirements.

Implementing ANT Solutions' MES System at Producer:

- The implementation process was swift, taking three weeks for on-site analysis and three months for a full system rollout.
- Hardware components were installed, and machine connectivity was established in total of 126 machines with 56 connected for real-time data collection
- Integration with Company's existing IT systems, including the ERP system to reduce manual reporting
- Staff training workshops were conducted to ensure that the team was well-versed in using the new system.
- ANT Solutions provided technical and project documentation to support Manufacturer's ongoing operations.

Key implemented features:

- The MES system enabled real-time production monitoring, allowing Company to track machine performance and production progress.
- Quality inspections were integrated into the MES system, and a defect handling module was implemented to reduce defective products.
- Customized dashboards and reports were developed to provide insights into production trends and performance.
- Overall Equipment Effectiveness (OEE) analysis tools were deployed to measure machine efficiency and identify areas for improvement.
- Digital documentation capabilities streamlined record-keeping processes, reducing paperwork and improving data accuracy.
- Enhanced traceability features allowed Producer to track the production history of each product

The Outcome:

50.1% to 76.3%

Increasing of average efficiency for injection molding machines

Quality performance showed remarkable progress. In July, with **864,909** units produced, there were **1,011 defects**. In November, with **1,797,050** units produced, only **317 defects** were recorded

39.4% to 85.7%

Improving of Machine performance for injection molding machines

31.8% to 65.0%

Overall OEE for injection molding machines before and after ANT System implementation