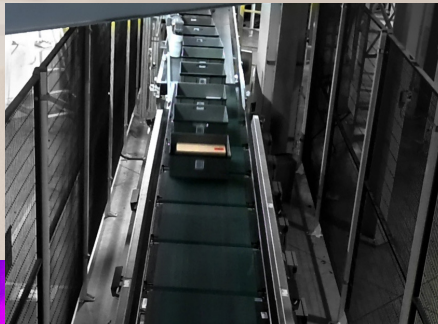


CASE STUDY

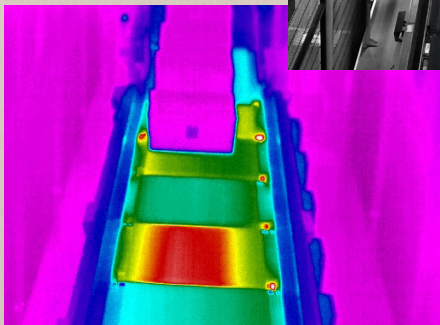
MSAI Successfully Upgrades Condition Monitoring and Predictive Maintenance Processes in Distribution Center for Fortune 50 Manufacturer

OVERVIEW

MSAI was approached by a Fortune 50 online retailer and manufacturer who was experiencing regular unplanned downtime caused by unexpected failures of critical equipment throughout their distribution facilities, despite monthly inspections with handheld thermal imaging devices. To address these failures, the client worked with MSAI to install a continuous monitoring solution that integrates thermal, electrical and mechanical signals into a single analytics platform called **MSAI Connect**. After one month, the savings had already paid for the cost of the solution.



Visible



Infrared

THE INDUSTRY

Online retailers and large manufacturers rely on complex supply chains and highly efficient distribution systems as well as processes to deliver millions of products all over the world. In a distribution facility, even a short stoppage of one or two hours results in tens of thousands, if not hundreds of thousands of dollars in lost throughput and wasted wages of stagnate workers.

Oftentimes, these production stoppages are caused by failure of a mechanical system, such as a conveyor belt or motor, critical to the distribution or manufacturing processes.

MSAI's continuous monitoring solution and reliability platform MSAI Connect monitors critical assets 24/7, sending alerts to help businesses schedule repairs before major breakdowns occur.

APPLICATIONS:

- Monitor motors, belts, and bearings
- Inspect electrical equipment and controllers
- Security and human detection
- Early fire detection
- Leak and spill detection
- and more!

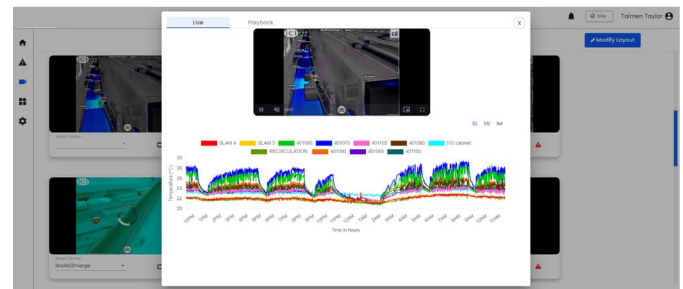
CHALLENGE

A major online retailer was experiencing issues in their distribution facilities, with regular unplanned downtime caused by failures of three high-criticality conveyance assets that were responsible for moving and sorting thousands of packages daily. The facility calculated that the average cost to pay warehouse employees during one hour of downtime was \$5000/hour and the average time to repair or replace equipment after an unexpected failure was 2 hours. This \$10,000 cost in stagnate wages represents only a fraction of the waste, as the downtime also caused lost productivity and product throughput. Overall waste and lost productivity was measured in the hundreds of thousands of dollars within the facility. These critical failures continued to happen, despite leveraging handheld infrared cameras for routine inspections.

STRATEGY

MSAI's solution included three FMX 400s cameras, paired with the **MSAI Connect** platform for continuous monitoring and predictive maintenance of their most critical assets. The continuous monitoring of these assets allowed for constant, 24/7 monitoring and automated alerts should a temperature anomaly be detected, indicating a potential maintenance requirement. The solution was specifically designed to identify issues before failure to make the most of scheduled facility downtime and reduce costs.

The solution also provided the customer with the ability to access live video feeds globally, receive instantaneous alerts and notifications, and maintain data archival to improve the decision-making process of management.



RESULTS

The MSAI solution **provided a positive ROI after approximately one month** for this 24/7 continuous monitoring project. The customer has since socialized this product internally to other facilities and has engaged MSAI to install these solutions worldwide in their distribution facilities.



MSAI Connect identified a conveyor belt that was running ~20°C hotter than normal. Finding and repairing the issue before failure saved the retailer an estimated \$10,000.



MSAI Connect identified a motor 30°C above the expected temperature range. The motor was replaced during scheduled maintenance and saved the retailer nearly \$15,000.



An angled induct belt alarmed in MSAI Connect, where workers found it had tracked and was starting to rub. The belt was repaired and realigned, saving the company \$10,000.