

Improved Maintenance with Predictive Analytics



*An AI use case for improving manufacturing
workflows*

BACKGROUND

A Bulgarian food company, producing salty and sweet snacks, faced frequent equipment breakdowns due to reactive maintenance practices and a lack of preventive maintenance programs.

LEVERAGING AI AGENTS FOR EARLY DETECTION AND FORECASTING

To create the monitoring infrastructure, our team utilized AI-powered smart sensors that monitored the equipment performance and HyperAspect Cognitive Cloud platform to analyze the gathered data and transform it into real-time feedback regarding daily targets and performance as well as into predictions about maintenance needs.



THE APPROACH

Hidden failure agents

Specific sensors were placed on critical units, with failure detection agents monitoring historical data patterns and identifying potential faults.

Deviation protection agents

Identified deviations from standard operating modes and provided alerts for immediate corrective action.

Hidden failure agents

These agents detected hidden failures that weren't visible under normal operating conditions, ensuring early identification of issues that could otherwise lead to severe breakdowns.

Predictive Forecasting

Machine learning models created performance forecasts for the next 24 to 720 hours, allowing operators to predict potential equipment failures and optimize maintenance schedules.

Predictive Maintenance Impact on Equipment Uptime



RESULTS

The predictive maintenance solution improved equipment uptime.

Internal Transport

Availability increased from 77.1% to 86.4%, while MTBF improved from 284 hours to 875 hours.

Hydraulics

Availability rose from 85.3% to 97.3%, and MTBF improved from 1491 hours to 2720 hours.

Recipe

Availability improved from 85.1% to 94.1%, and MTBF increased from 523 hours to 1380 hours.