

CASE STUDY

How DT4o enabled innovation, sustainability and human-machine collaboration for Amatrol



Amatrol, a leader in interactive and skills-based technical learning, specializes in designing, developing, and manufacturing training systems for a global workforce across a multitude of industries. With about 10,000 customers served and hundreds of products in their line, Amatrol consumes about \$120K a year in electricity and are looking to optimize their own manufacturing process to reduce electrical energy consumption.



THE PROBLEM

Like the majority of manufacturing customers worldwide, Amatrol has automation equipment and connected machinery at their plant, all of which house millions of untapped data points. However, it has been challenging for Amatrol to discover, liberate, and, most crucially, gain insights from their data. As IIoT technology and digital industrial transformation become standardized, Amatrol needed to leverage their machine data to generate insights and improve the operating efficiency of their plant and processes.



THE SOLUTION

With DT4o's AI powered applications, Amatrol was able to automate their data pipeline and access an insights visualization layer to drive connectivity, efficiency, and sustainability in their operations.

These pre-built AI applications leverage foundational IoT and Artificial intelligence/Machine Learning services from AWS which allows customers to accelerate their digital transformation and Industry 4.0 projects by providing visibility around asset performance in their plants. This visibility then allows DT4o to optimize the performance of physical assets and key process metrics including energy, OEE, cycle time, throughput, quality, and maintenance with pre-built solutions. This is accomplished by enabling connectivity on the edge and building an operational dashboard with near real time energy insights and ML forecasting. Amatrol was able to use Optimize to visualize metrics for their HVAC and CNC machines, break silos, and ultimately streamline their operations.

PROJECTED METRICS

The Metrics

Projected energy consumption reduced by **5%**

Projected overall manufacturing efficiency improved by **8+%**

The Impact

Performance improvement metrics

Energy savings

Cost savings

Reduce greenhouse gas emissions

Testimonial

"Working with the DT4o team, we were able to successfully implement ideas into digital solutions which helped us to discover and liberate the most crucial data for gaining operational insights. The entire team worked rigorously towards building the AI powered intelligent applications to generate predictive insights and improve the operational efficiency of the entire plant."



AMATROL[®]

Intelligent App

At its core, DT4o's Intelligent Apps are AI/ML powered operational and energy insights solutions that provide Edge data connectivity with an invariant asset hierarchy definition between the edge and the cloud. Through this solution, DT4o builds a robust data pipeline from the Edge to a VPC for telemetry data bolstered by security and best practices pre-configured from AWS.

CAPABILITIES:



Pre-built framework which can support the ingestion of relevant IT data sets from ERP, MES, QMS, and maintenance systems etc..

Manufacturing data lake foundation which can combine, correlate, and intertwine IT and OT data to accomplish not only energy optimization but all and any of the Industry 4.0 value additions



A templated and selectable visualization layer of electric, natural gas, diesel, and water consumption for operator interactions at an enterprise, plant, or machine level.

Conditional monitoring and alerting functionalities easy deployment



Greenhouse gas emissions from the same energy sources with the same granularity

AI/ML powered energy anomaly detection with demand side energy forecasting



A resulting 10% decrease in demand side energy consumption

SERVICES USED

AWS IoT Core

AWS IoT Sitewise

AWS Glue

Amazon S3

Amazon Athena

Amazon Lookout for Equipment

Amazon Sagemaker