

Leading manufacturer in Africa enhances enterprise productivity, improves energy efficiency by 15%



CASE STUDY
MANUFACTURING

ecoaxis

‘Operational inefficiencies and burgeoning costs can hurt business significantly and reduce competitiveness.’

Business challenge

- Improve enterprise productivity
- Reduce energy costs
- Improve operational efficiencies including employee and equipment performance
- Attain real time visibility across the shop floor, empower stake holders to better manage operations and maintenance tasks
- Implement a scalable solution that could contend with a diverse product portfolio and integrate a variety of machines
- Link ERP and production planning systems

The client

Headquartered in Africa, the client is a leading manufacturer of a wide range of plastic products.

A state-of-the-art manufacturing facility enables them to service multiple industries including edible and motor oils, agro chemicals, pharmaceuticals and veterinary.

To address this issue, the client chose to partner with EcoAxis, a technology pioneer with a proven track record in Industrial IoT. EcoAxis was chosen for its ability to capture the right kind of data from across the plant-floor and use it to generate business insights that help improve productivity.

The solution

EcoAxis worked closely with the client to develop a scalable, integrated solution that monitored energy usage and operational efficiency, leading to a significant improvement in OEE (Overall Equipment Effectiveness) of the client’s sizable plastic product manufacturing plant.

Capturing the right kind of data

In the first phase, the EcoAxis team set up a local network for capturing individual machine production data such as number of strokes, zone temperature, energy and chilled water temperature etc. This was accomplished using data loggers which continuously capture information either directly from installed sensors or by communicating with individual machine controllers and PLCs every few seconds. Additionally HMIs (Human Machine Interfaces) were set up for operators to key in data (other than what can be captured directly from machines itself) such as reason for stoppages, rejection, operator login, etc. Furthermore, SuperAxis™ directly integrates with the existing ERP system for exchanging product masters and operation masters and production plans.

By implementing the EcoAxis solution setup, the client has achieved better control over day to day operations.

Benefits

- EcoAxis digitally integrated 150 machines (135 process, 15 utility machines) of 20 different makes and 33 different models across the client's plant-floor, on the cloud. Thus achieving real-time visibility across the manufacturing enterprise
- Achieved a boost in energy efficiencies of close to 15%. Projected improvement is a further 10% in the succeeding year
- Overall Equipment Effectiveness (OEE) driven up by 10%
- Enabled informed decision-making for the management on supplier selection and plant operations leading to improved ROI
- Reduced unscheduled stoppages and downtime as a result of decisions enabled by analytics from the system
- Implemented machine and operator performance benchmarking across the division
- Improved operator performance and employee efficiency
- Enhanced product quality, customer service as a result of rejection analysis enabled by the system

Analyzing the data to generate targeted insights

The data is transferred to the SuperAxis™ cloud-based framework, where it is analyzed and converted into meaningful intelligence in the form of easy-to-assimilate dashboards and reports. Customized dashboards based on the analysis of the continuously monitored data conveyed critical information quickly, which in turn helped production managers take corrective action at appropriate times. Any deviations from the normal operating ranges led to notifications and alerts being generated according to specific requirements, thereby accelerating response to deviation.

The integrated analytics help benchmark asset performance across the enterprise, provide inputs regarding efficiency profile of installed machines, performance profile of operators, energy consumption product wise / machine wise, most common recurring downtime reasons, causes of rejections etc.

The SuperAxis™ analytics framework is hosted on the cloud, providing a DSS (Decision Support System) to the client with information that could be accessed on *any device at any time*. As the solution is cloud-based, offered to customers in a SaaS model, it eliminates the need for customers to procure, manage, and maintain high-end hardware and software and helps them focus only on their primary task-manufacturing.

“Energy and operational efficiency improvements were our immediate business goals. We decided to go for EcoAxis’ solution digitising our complete plant floor with access to analytics on anytime anywhere basis...we have achieved close to 15% energy efficiency...we are confident of achieving further 10% improvement on energy costs in the current year...and are confident that we would be able to drive upto 10% OEE improvements at the factory level”

Mehul Shah

Production Director at

Ashut Engineers Ltd.

Nairobi, Kenya.

Outcome

As a result of implementing the EcoAxis solution setup, the client has achieved better transparency and hence control over day-to-day operations. The company today has access to a centralized on-line, real-time DSS that empowers personnel with concise information on the device of their choice.

Additionally, they’ve gained the capability to perform continuous monitoring of remote plant assets for getting real time information on production, productivity, availability, losses and OEE (Overall Equipment Efficiency). The machine-efficiency across the floor has increased due to effective management of unscheduled stoppages.

Today, the client can automatically conduct an in-depth analysis of operations, productivity, availability and losses. They now have the ability to analyze and compare year-on-year and month-on-month performance. This has been possible due to the consolidation of critical manufacturing data from a multitude of automation systems in a unified manner, which is crucial for technicians and operation managers to provide effective interventions and support to avoid plant downtime.



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A.T.E. ENTERPRISES PRIVATE LIMITED
(Business Unit: EcoAxis)

T 126, T Block, MIDC, Bhosari,
Pune 411026, India

T (Board): +91-20-30881100 Ext: 199
F: +91-20-30881111

www.ecoaxisindia.com