Paper manufacturer focuses on reducing energy consumption

Mondi: Reducing environmental impact and increasing production

Introduction:
Mondi Steti, Europe's largest pulp and paper manufacturer, extended the use of PI System to improve the visibility across its Czech factory's production lines, while decreasing environmental impact and preserving quality.

Key Objectives: Reducing environmental impact while meeting increased production targets

Background: The Mondi Group is a British multinational paper group with around 100 manufacturing locations spread across more than 30 countries. Mondi Steti, the company's Czech based facility, is the largest paper mill in Europe. For the past 19 years, the plant has used a data historian (OSIsoft's PI System) to collect real-time intelligence. In 2014, Mondi extended its data modelling and visualisation abilities by extending the historian across the facility.

Recently, the company expanded its manufacturing facility by acquiring additional equipment to reach its 2020 output objective of generating one million tons of paper goods. Mondi now intends to link new equipment to the current data historian to improve efficiency and recovery across the manufacturing line.

Also, Mondi is looking to connect new equipment with the existing PI system to increase efficiency and recovery across the production line.

Challenges: The following are major challenges with paper manufacturing:

- Incidents such as paper break disrupts production and increases energy requirements.
- Minimize environmental effect of pollution and emissions.

These factors could prevent Mondi from reaching its production goals.

Mondi: Solution and implementation

Solution:

Extending the historian to the new equipment would give the visibility needed to optimize equipment and processes.

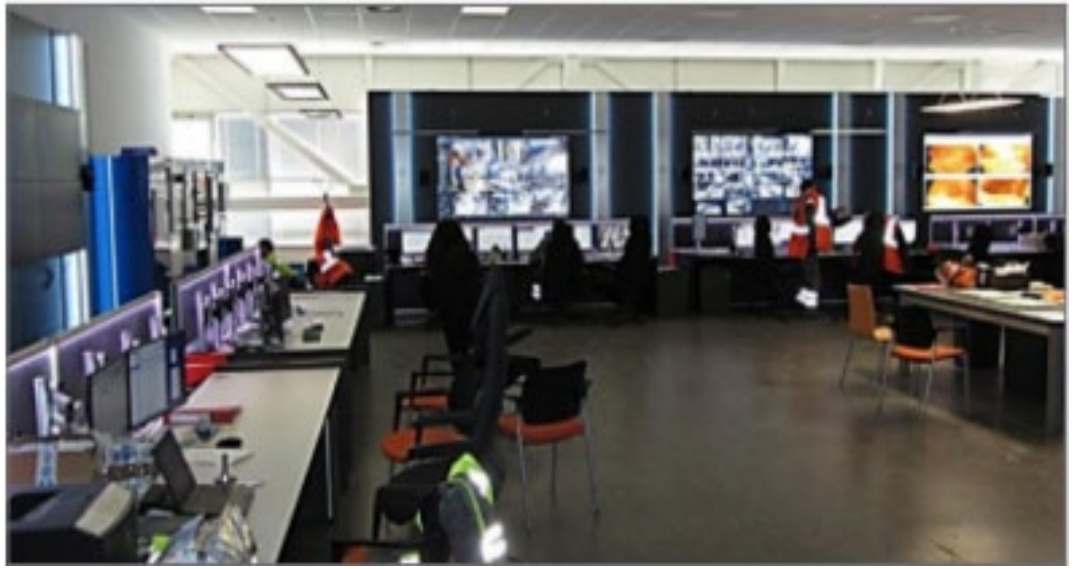
This would in turn help to build digital production models with Asset Framework (AF), a PI server contextualization layer that create displays, and visualize results, enable engineers within the control room to get a rundown of the whole factory in real time.

Implementation:

In 2018, Mondi expanded the use of historian to create its EcoFlex platform providing Mondi's engineers with a centralised and real-time overview of its factory including a range of its equipment. This was used to display production metrics in real time across various stages of the process, as well as steam and electricity consumption.

The system enabled users to:

- Support energy dispatchers in managing energy utilization and making by decisions for use of internal energy sources vs. buying in or selling excess energy
- Improved maintenance strategies by measuring usage of equipment and asset health related data such a motor vibration to plan out future support and repair costs.



Source: OSIsoft.

Mondi monitors the production of over 500,000 tons of pulp and paper annually using the PI System.

Results: Energy consumption and environmental Impact

Energy Consumption:

The energy consumption is directly related to the operational efficiency, since paper breaks increase consumption and upset production. Mondi saved €38,000 annually just by visualizing the production line. To check that energy usage was within limits, the team performed calculations to illustrate actual and predicted future use. Operators are taking measures to reduce usage and are saving an estimated €14,000 annually.

Environmental Impact:

With the EcoFlex platform, Mondi aims to reduce pollution and emissions. Its process control chart, which includes quality criteria, is used in conjunction with allowing engineers to collect and evaluate significant process events. This information can identify which assets are the source of emissions, and its cause.

Results:

62,000 EUR

Saved annually with the PI System just by increasing visibility across organization

14,000 EUR

Saved annually with operators able to see current and predicted future energy usage

5-7.5%

Improvement in environmental KPIs