PULP AND PAPER

US paper mill avoids costly downtime with proactive alert from ABB

ABB Ability™ Advanced Digital Services allow mill to correct issues before they compromise quality

Email notification saves mill $100,000

01 A southeastern US paper mill relies on ABB Ability™ Advanced Digital Services to increase production and avoid unplanned downtime.

Ensuring product quality
A major paper mill in the southern United States that manufactures high-quality consumer items such as paper plates, food containers and beverage cups utilizes technology from ABB to ensure its products are made to exact specifications.

To optimize productivity and quality, the mill relies on Advanced Digital Services such as ABB Ability™ Performance Optimization for QCS that allows the mill to detect and correct issues early before they can compromise product quality.

The mill also relies on ABB ServicePro Service Management Platform to report on maintenance activities and quickly access parts inventories and ABB best practice maintenance procedures. ServicePro significantly increases management's visibility into service and maintenance activities so they can increase operational efficiency by dealing with problems and maintenance proactively.

Customer challenge
- Ensure quality for products that include food packaging
- Accelerate problem solving
- Improve production uptime
- Avoid unplanned downtime

Solution
Automating production requires processing large amounts of data. ABB Advanced Digital Services are designed to use that data to identify issues that impede productivity and provide recommendations to mitigate issues quickly. Supported by experienced ABB service engineers, Advanced Digital Services are available on-site and remotely.

Specifically, ABB Ability™ Performance Optimization for QCS identifies, categorizes and prioritizes opportunities to improve product quality, control utilization, equipment health, and measurement and control. These services provide fast and accurate troubleshooting by analyzing sensor stability, control utilization and process variability.

To meet high customer demands associated with food packaging, the mill requires that all paper produced at the site be measured with the quality control system before it can be shipped to customers. The quality control system employs 31 sensors mounted on eight scanners that traverse the moving sheet while the paper is being produced.

Each sensor has an average of 15 standardized variables per sensor. This means that 465 values are updated every 30 minutes, for a total of 22,320 data points per day. While these updates contain the information necessary to identify potential issues the magnitude of the data makes it difficult to quickly detect trends indicating impending failure.

Because these sensors operate in hot caustic environments, performance degrades over time. As the sensors age, electronics become less sensitive, and reliable sensor readings become increasingly difficult to obtain.

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02 a/b: As moisture sensors age and degrade, reliable readings become increasingly difficult to obtain. ABB ServicePro data in graph 02a shows moisture gain measurement for a sensor. The levels are satisfactory but on the higher end of the acceptable range. Looking at the data six months later (graph 2b) shows the frequency increasing, indicating the sensor is likely to fail.
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03 Customers and ABB service professionals use the ABB Ability™ Performance Optimization for QCS to set key performance indicator (KPI) parameters. Any KPI that tracks outside those parameters triggers an alert. The tall red bar in the Track view is a clear indication that moisture gain thresholds have been exceeded.

Understanding the importance of accurate sensor readings to the mill's operation, ABB's on-site service engineer set ABB Ability™ Performance Optimization for QCS to notify him if sensors exceeded set parameters, indicating that sensor was degrading. It was this setting that alerted the engineer to find and fix a failing moisture sensor. To provide a remedy for the situation, the engineer used ABB's ServicePro to check that a new sensor replacement was in stock and scheduled a time to change the sensor during planned downtime.

Results

An emergency moisture sensor replacement would have meant costly lost production. With the action taken by the ABB service engineer, the mill was able to replace the moisture sensor proactively and cost-effectively. The mill avoided quality losses and unscheduled downtime that could have cost it more than $100,000.

Benefits

- Ability to achieve optimum uptime
- Improved product quality
- Fewer maintenance emergencies
- Reduced costs

Featured Solutions

ABB Ability™

ABB Ability™ is our unified, cross-industry digital capability — extending from device to edge to cloud — with devices, systems, solutions, services and a platform that enable our customers to know more, do more, do better, together. ABB Ability™ connects our customers to the power of the Industrial Internet of Things (IIoT) and, through our services and expertise, goes further by turning data insights into the direct action that "closes the loop" and generates customer value in the physical world.

ABB Ability™ Advanced Digital Services

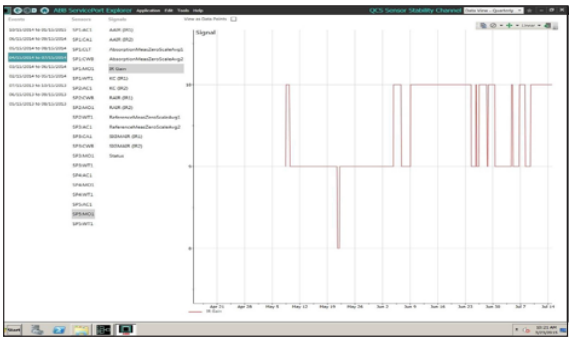
Digital Services are a portfolio of remote-enabled,software-assisted services that generate actionable insights that optimize operations, increase productivity and enhance safety and security. These services use the ABB Ability™ platform to automatically collect and analyze data from industrial control systems to identify, categorize, and prioritize opportunities to extend asset life, improve process performance and mitigate risks.

ABB Ability™ Performance Optimization for QCS

ABB Ability™ Performance Optimization for QCS provide a range of services that ensure high-availability of quality control systems, improve plant performance and to proactively alert users about impending issues so they can be addressed before they become problems that affect quality or production.

ServicePro

ABB's ServicePro Service Management System is used by service engineers to collect, manage and apply best practices for servicing ABB automation and ABB-automated processes. With ServicePro, service engineers in your facility benefit from knowledge accrued from years of ABB's experience in delivering proven and consistent service for all types of automation equipment and industrial processes.



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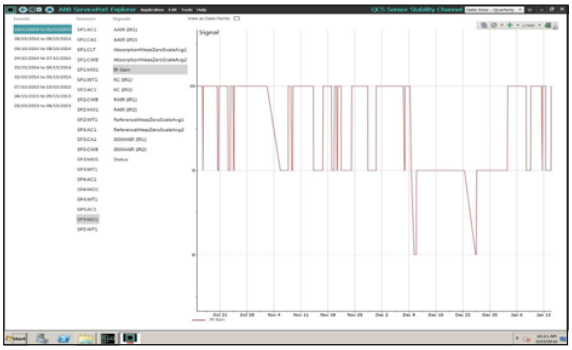

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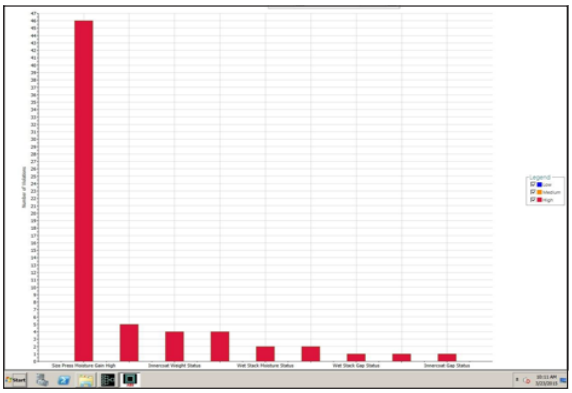

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