

ABB delivers optimization services remotely at U.S. Corrugated.

As U.S. Corrugated's 100 percent recycled containerboard mill in Cowpens, South Carolina, adapted to meet changing market conditions, managers faced a dilemma: they wanted to find cost-effective new ways to receive optimization services that would match their need for streamlined operation while still delivering on product quality.

Cowpens turned to longtime supplier ABB to provide optimization through a modular, flexible approach to service delivery. ABB now uses remote connectivity to monitor systems and troubleshoot problems from outside the mill.

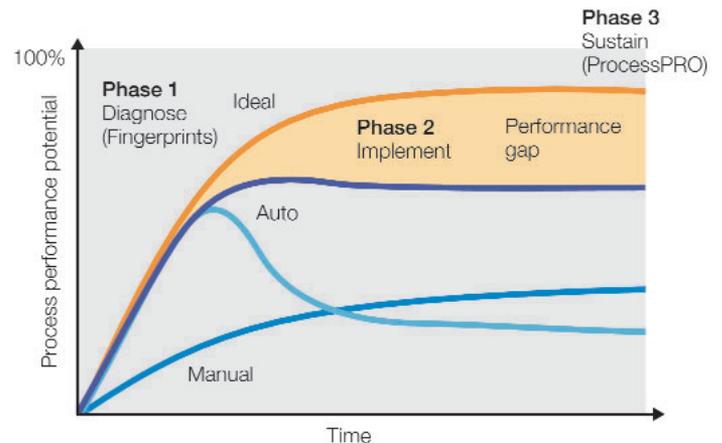
"Remote services are a very efficient way to cost effectively give customers what they need," says William Dannelly, Director of Marketing for ABB's Pulp and Paper Business Unit. "They can provide high level optimization."

Since the recession began, paper mills around the world have downsized – often cutting their engineering staff to the bare minimum. "They depend on people like ABB to come in under contract and provide critical services," says Dannelly, "and we have a responsibility to our customers to do that in the most cost-effective way."

One of the world's greenest mills

The Cowpens mill, which began production in May 1992, currently produces more than 700 tons of products per day. The mill recycles old corrugated containers and other papers to create corrugated and linerboard products.

Unique water cleaning and fiber recovery systems make the Cowpens mill one of the world's greenest paper operations. The mill is the winner of environmental awards that include the South Carolina Environmental Shining Star award and the South Carolina Department of Health and Environmental Control's Best Industry Recycling Program award.



Papermakers can achieve sustained equipment performance improvements through our results-driven automation services programs. Mills remove the performance gap to operate at the ideal and safe mechanical constraints of the process.

Importantly, the mill recycles and reuses all of its water, keeping all of its process water out of the local streams, rivers and sewers.

Cowpens also tries to prevent unpleasant paper production odors from spreading through the surrounding area by using natural gas and electricity to generate steam production for its paper drying process.

Monitoring and troubleshooting

Cowpens has had a strong partnership with ABB since the mid-1990s. The mill's core automation is an ABB Distributed Control System that controls its production processes. Cowpens uses advanced ABB Quality Control Systems to ensure product quality.

After adding ABB's quality control, the mill consulted with ABB on how they could cut costs on service delivery while still optimizing process performance. ABB responded with a

plan for providing Fingerprint™ diagnostics and ProcessPRO™ scalable services. To keep costs low and provide products flexibly adjusted to Cowpens' needs, after initial onsite set up, ABB would deliver on-demand diagnostic and troubleshooting support remotely.

ABB's Fingerprint and ProcessPRO give mills modular services that identify and solve problems. Customizable Fingerprint services improve a mill's processes by pinpointing any malfunctions.

ProcessPRO helps mills maintain smooth, trouble-free performance by monitoring systems and providing mill personnel with an easy-to-follow maintenance schedule. ProcessPRO includes troubleshooting for specific problems or system failures, periodic maintenance (SCANS) with detailed health check reports, and system monitoring (TRACK) services. Delivered remotely, these services provide effective maintenance and considerable cost savings without supplier staff having to travel onsite.

ProcessPRO - Diagnostic Modules
Combine to make over 18 service packages

Boiler Combustion Test	Vibration Tracking
Control Utilization	VPA Analysis
Hardware Checkout	CD Water/Steam Optimization
Frame High speed Analysis	MD - Transition - Control Performance
Loop Stability (up to 300 loops)	MD - Transition - Time
Loop Response (up to 3 loops)	CD - Recovery - Control Performance
Profile Response	CD - Recovery - Time
CD Scheduled Bump	Transition - Moisture transition analysis
MD Scheduled Bump	Transition - Level 1 prediction performance
Pressure Pulsation Tracking	MD - Recovery - Control Performance
Process vs. Sheet Property tests	MD - Recovery - Time
Product Variability (1 frame)	Recovery - Steam Conservation
Profile Capability (up to 3 loops)	Process Interactions Matrix
Root Cause Analysis	MD - Simulation
Sensor Correlation	CD - Simulation
Stock Stability	Financial and Production Analysis
Tuning Number Evaluation	Data Setup

A rise in productivity

Remote services save money, especially for mills located in areas that are difficult and time-consuming for service personnel to reach.

To provide remote services to paper mills, Dannelly says suppliers need staff with a very rare skills set. Their special-

ists must have three areas of expertise: an in-depth understanding of the pulp and paper process, controls and the system that operates the process.

"There are only a few people around the world with the skills to give the customer what they need to optimize their systems," says Dannelly. "It understands how the many different process components work together and which ones are the critical ones for you. We provide an analysis of the process to see which parts are having the most impact on the variability or problems."

ABB uses best practices from around the world to analyze data and standardize the papermaking process. "We've really strived very hard to standardize the delivery to make sure each customer gets value out of the program," says Dannelly.

Remote services give ABB the capability to access system data from both inside and outside the Cowpens mill. The result: ABB specialists can effectively monitor and troubleshoot without having to be onsite. At Cowpens, which is a three-hour drive from the Hartsfield-Jackson Atlanta Airport, this has meant considerable savings in time and cost.

ABB's optimization services have helped Cowpens increase product quality. US Corrugated says their product's average basis weight 2-Sigma is below .5 and their average moisture is below 2. By keeping quality high, customer complaints have been eliminated while production has increased, giving Cowpens the solid bottom line benefits they wanted.

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