World Pulp & Paper

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Meeting papermaking challenges with service

By **Dan Overly, VP Pulp & Paper Service, ABB Inc.**

As technology evolves, pressures to lower business costs intensify, energy prices become more unpredictable, environmental regulations tighten and a skilled labour force becomes even harder to recruit and retain – papermakers find themselves facing greater challenges daily. From the economy to the environment, to global competition, mills are buffeted by changes that are difficult to control.

Throughout the pulp and paper industry, companies are scrambling to find better ways to meet today's demanding conditions. Most mills are trying to stretch as much life as possible from their existing automation and get the most production out of every piece of equipment. They are working hard to keep their workforce trained and able to handle updated technology. For many mills, this means reaching outside of their in-house capabilities to find the solutions they need.

Increasingly, ABB has heard from our clients around the world about the obstacles they face and we have assessed ways that we could help. After analysing what we bring to paper mills now and what we could offer in the future, we recognised that one of the best ways we could assist mills would be to offer increased and customised services.

To provide mills with the kinds of services that are right for current market conditions, we redesigned our service delivery model from the ground up. Service has always been a priority for ABB and our expanded pulp and paper offering underscores this importance. A renewed emphasis on service reflects our strategy to provide papermakers with realistic ways that they can navigate the current tough industry conditions.
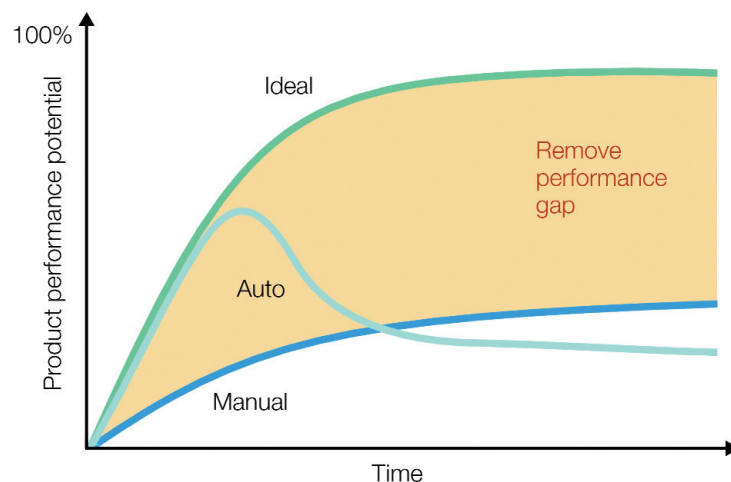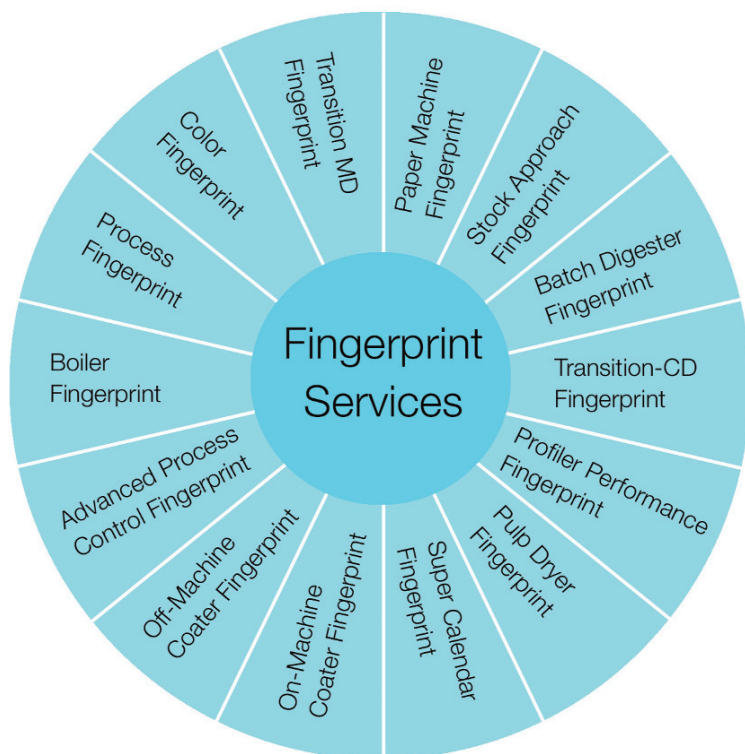
Above and right: ABB's Fingerprint services identify the underperfoming assets that cause reductions in production and conversion efficiencies

RANGE OF OPTIONS

To cover papermakers' needs, ABB transformed its entire service delivery model. At the core of our service business: a maintenance support agreement that covers the complete range of services, including traditional services, advanced process optimisation, remote services, our targeted PRO-Series™ tools and a full service option. ABB learned that to meet changing conditions at their mills, our clients wanted services customised for their unique situations. Their service needs include everything from call-up support services to complete maintenance outsourcing. As a response, ABB tailors its maintenance support agreements to encompass a mill's specific requirements. By supplementing in-house expertise and capabilities with modular, scalable services, ABB can give mills the flexibility to build an agreement with the amount of service that's right for them.

ABB service advisors work with mills to select the services they need to reach operational targets. These include: remote diagnostics, software management, system evolution support, parts cost optimisation, technical support, skills development, maintenance and application engineering labour, and process optimisation.

NEW IMPORTANCE FOR LIFECYCLE MANAGEMENT

Most mills are coping with the tough economy by trying to make every piece of their equipment last as long as possible. System migration is a major issue that requires them to make hard decisions about their future platforms and automation strategies.

ABB determined that a top priority would be to ensure mills get the maximum performance from their ABB automation investment. As a result, ABB now provides service and upgrades for its older scanning

platforms – even those that are 25 years old. Many ABB products are useful for 20 years or more. Throughout the product lifecycle, we provide ways to expand their functionality and extend their lifecycle.

ABB developed lifecycle support and migration strategies that help mills in planning, getting the most out of their existing asset base and migrating to new automation. ABB found that it worked best when lifecycle planning could adapt to a specific mill's strategy. To do so, we provide the technical information a mill needs to determine which evolution plan is most compatible with its current course of action and which would provide the most benefit. Our analysis helps papermakers clarify their options so they know whether it's best to replace, migrate or maintain.

COPING WITH EMPLOYEE TURNOVER

One of the biggest problems for mills today is dealing with the loss of

ABB provides the technical information a mill needs to determine which evolution plan is most compatible with its current course of action

compare existing controls to industry standards and actual operating data to set standards for future performance.

After the diagnosis is complete, ABB will implement the recommended changes to improve the mill's efficiency, quality and production. Fingerprint diagnostic services have uncovered potential savings that are as much as 10 times the cost of the service.

ADVANCED PRO-SERIES™ OF SERVICE SOLUTIONS

Mills dealing with the skill gaps left by a departing workforce have also benefited by using ABB's PRO-series, tools developed to help papermakers maintain ABB equipment to meet OEE standards and optimise their process. With PRO-series tools, a novice engineer can perform at the same level as an engineer with 20 years of experience.

● ServicePRO™ automatically schedules and implements maintenance work orders. Using ServicePRO, engineers can effectively divide their time between preventive maintenance and corrective maintenance. Additionally, ServicePRO includes a comprehensive database of service best practices data for ABB equipment that a mill's maintenance personnel can use for help in decision-making on service issues.

● PartsPRO™ ensures that mills have the needed parts available to maintain their ABB systems. In addition to defining a list of recommended spares based on the site configuration for ABB equipment, PartsPRO schedules maintenance kits (six month, one year, three year, five year) as part of preventive maintenance to reduce system failure. Maintenance personnel will see inventory visibility to the parts on-hand, giving the ability to advance purchase parts at potentially lower costs. PartsPRO also documents the lifecycle status of subsystems with defined upgrade kits to keep systems

knowledge and expertise that occurs when experienced operators, engineers, technicians and managers retire. Losing skilled workers reduces a papermaker's ability to fix complicated problems or maintain continuous improvement.

To help papermakers cope with the shrinking pools of process experts, ABB developed Advanced Optimization Services, and tools that help mills obtain the process data needed to reduce perform gaps, so they can make sound decisions and maintain safe and profitable operations.

ABB created Advanced Optimization Services by drawing on proven methodology, special tools and their

team's accumulated process knowledge. Designed to help papermakers find the improvement opportunities hidden in their assets, Advanced Optimization Services have generated financial advantages for mills that include measurable benefits like process enhancements, production increases and direct cost savings. A mill's typical savings range from $100,000 to $500,000 annually or more, which is often achieved with little or no capital investment.

ABB's Fingerprint services identify the underperforming assets that cause reductions in production and conversion efficiencies. Used as diagnostics, Fingerprint services

at a current level.

● ProcessPRO™ is an interactive module that enables the scheduling and delivery of modular optimisation services either on-site or remotely. ProcessPRO fills the gap at sites with no process engineers or sites that need additional process engineering help. ProcessPRO generates a schedule of recommended services that includes how frequently these services should be performed.

● DataPRO™ is a central storage unit for all system reporting, that provides a fast way to extract data for enhanced troubleshooting visualisation. DataPRO's storage utilities include tuning numbers, transitions, high speed data and event-based storage needs. Engineers can tap into DataPRO for root-cause analysis to troubleshoot process and system problems.

FULL SERVICE

Under the current challenging conditions, more and more papermakers need expanded services. ABB offers Full Service programmes that give mills direct access to high-level expertise they can access at any time. One of the chief advantages of Full Service is that it helps mills develop effective plans for lifecycle management. Papermakers can save money by extending the life of the existing assets and delay, avoid or shift expenditures on new equipment. Importantly, Full Service also helps mills increase their productivity.

ABB helps each mill opting for full service to develop a Maintenance Management Master Plan and five-year performance objectives. With planning in place, mills obtain a true understanding of the current state of their assets and the steps needed to take advantage of future financial opportunities.

ABB also works with mills to create a

reliability-minded culture in their workforce so papermakers can sustain productivity. To give mills added security, ABB includes risk and reward sharing in its Full Service Agreements. In this way, ABB links it financial outcome directly to a mill's performance. Additionally, ABB measures its Full Service Agreements against key performance indicators developed for the specific mill.

REMOTE SERVICES

In the fast-moving world of paper production, most paper mills have a need for on-demand remote diagnostic support. For mills located in areas that are miles from the nearest technical support, the need for remote support is even more critical. ABB's Remote Services supply resources that help mills troubleshoot, respond to

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emergencies and operate at maximum efficiency, no matter where they are located.

Papermakers use Remote Services for immediate assistance when they need to diagnose problems or implement corrective strategies.

Mill personnel can access technical specialists by telephone and secure system interaction as well as self-service web support.

Case study: Hindustan Paper Corporation - Success Story

An example of how ABB's remote services can work: One of India's largest papermakers, the Hindustan Paper Corporation, operates two paper mills in India's remote northeastern region. Both mills are isolated, with little or no public transportation nearby, making it difficult and expensive to bring in service engineers from companies like ABB. However the mills needed real-time visibility into their equipment performance and their personnel wanted to access that visibility in the most timesaving method possible. The mills used ABB's Remote Services to fine-tune their automation without a time-consuming engineer site visit.

Hindustan Paper's ABB Industrial IT 800xA system controls each of the mill's massive paper machines. The 800xA system monitors each machine's key components and processes to ensure it remains within carefully calibrated operating parameters. If there's a problem, the 800xA sounds an alarm.

ABB installed Remote Service on the 800xA that serves as a remote desktop server application for the mills' intranet system. The Remote Service connection is the gateway that allows ABB engineers headquartered in various locations around the world to download operating data and quickly analyse and resolve problems.

Commissioning any new control system – especially one as sophisticated as the 800xA – is usually a two-step process. After the start-up phase, mills often want to make adjustments by reconfiguring various system and process settings. ABB engineers usually have to return to the mill to accomplish this. ABB's Remote Service allowed Hindustan Paper to eliminate the need for a second visit. ABB engineers accessed the control system remotely, in real time and — looking at the same data screens as the customer —
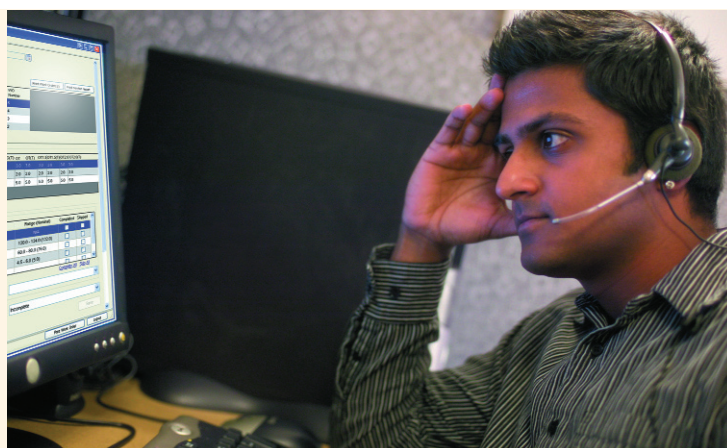
worked with mill engineers to make the changes they wanted without having to wait for an ABB engineer to visit the site. ABB identified and implemented new settings in a matter of days, instead of weeks.

Along with remote troubleshooting and system configuration, Remote Service is used at Hindustan Paper to remotely monitor both the process and machine performance. The mills also use Remote Service for remote control loop tuning and machine stability monitoring. The system performs remote loop tuning of loops with simple bump tests, which are then sent for analysis using the remote connection.

Hindustan Paper has found that using Remote Service has significantly reduced their response time for troubleshooting system problems. The mills also save on the costs for travel time and expenses that would be incurred by bringing an engineer on-site to their isolated locations. Importantly, with continuous monitoring of machine performance Hindustan Paper has ensured that their equipment will operate smoothly in the future.

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