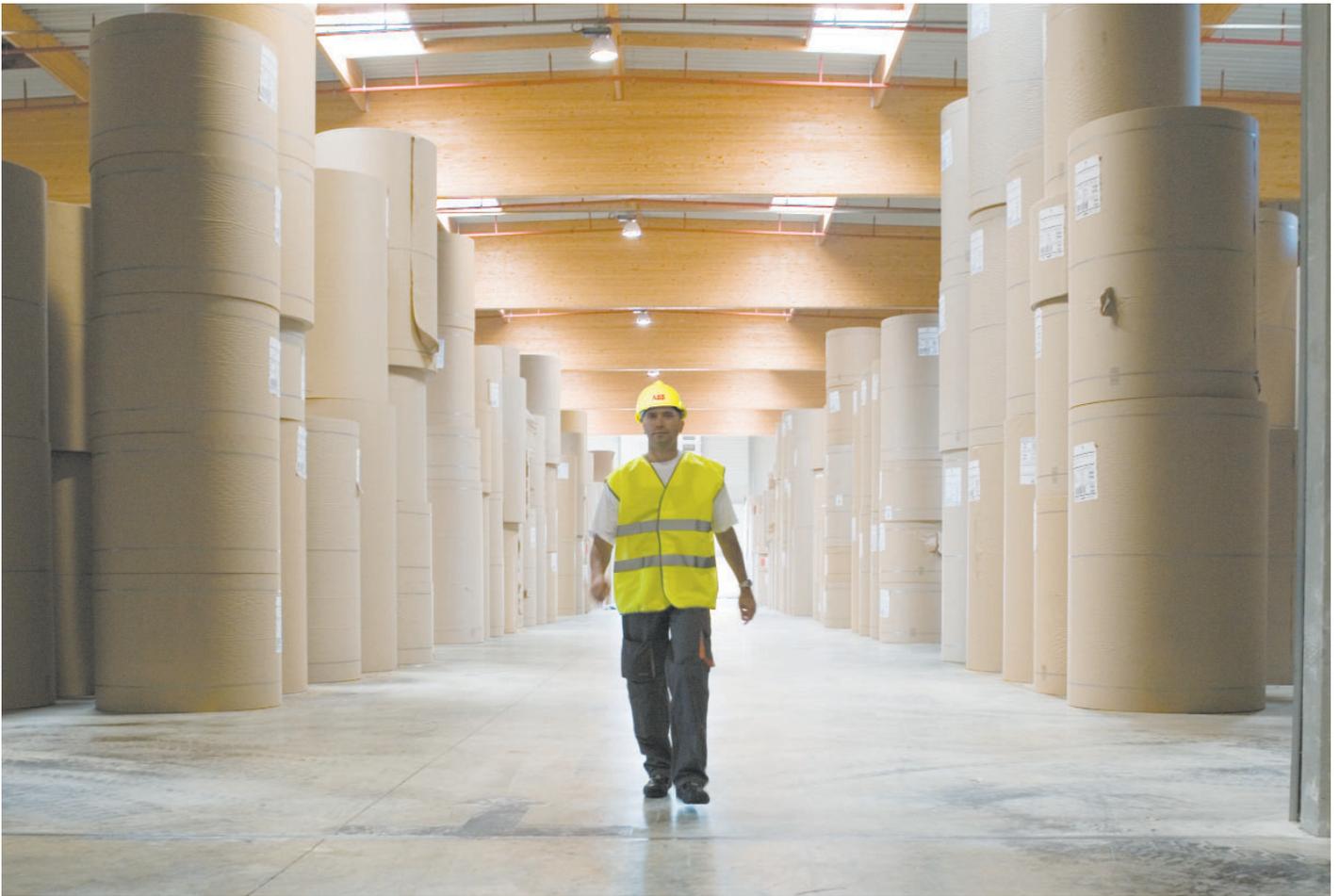




Services for pulp and paper  
Service is core



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# Navigating the challenges

Unpredictable energy costs, intense global competition, rising raw material prices, diminishing product lifecycles, increasing technology changes, tightening environmental standards, a shrinking skilled labor force – papermakers today face greater challenges than ever before. ABB has the expertise and flexibility to respond quickly to the issues that keep everyone from managers to maintenance up at night. **For ABB, service is core.**

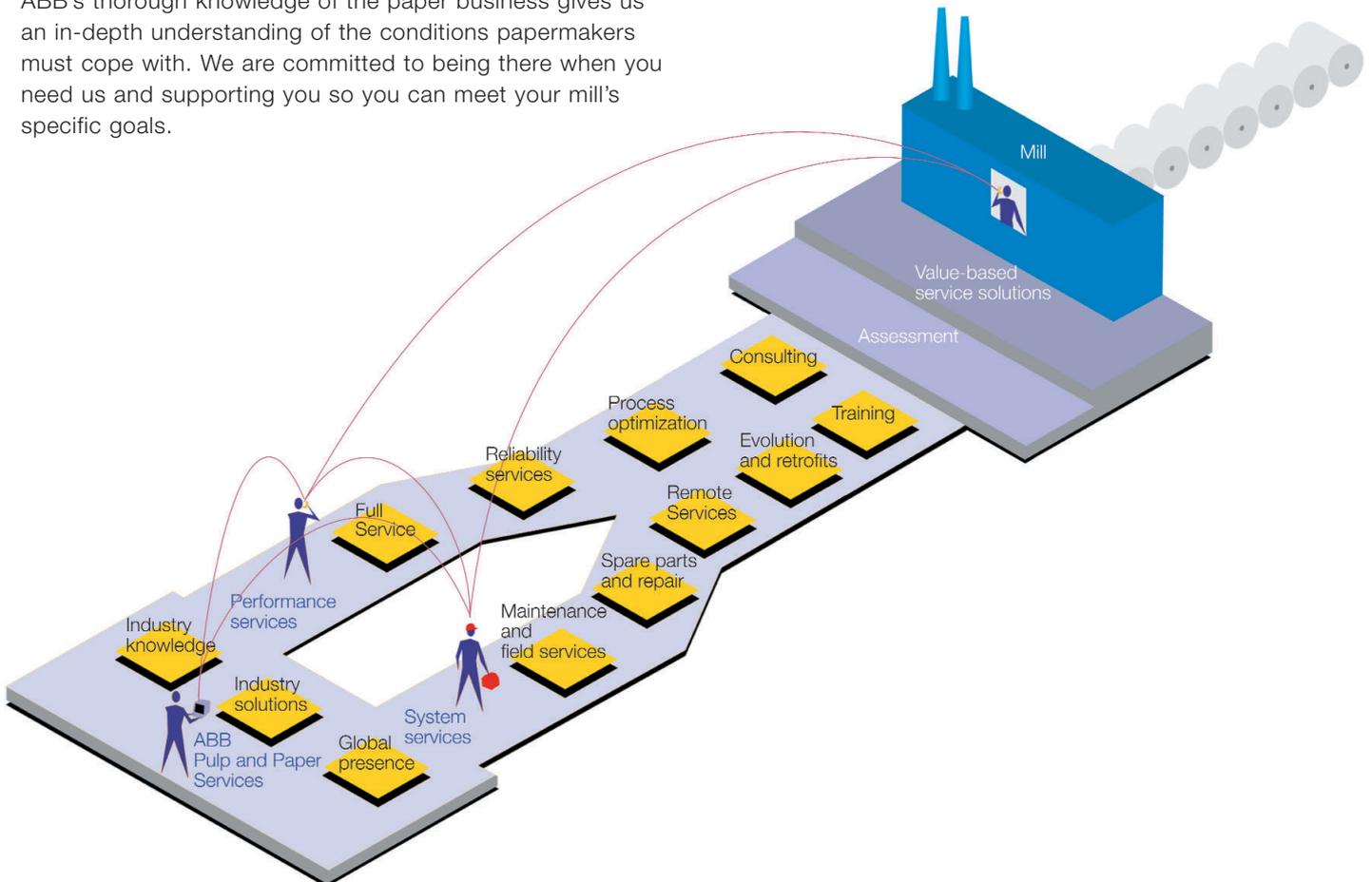
ABB's thorough knowledge of the paper business gives us an in-depth understanding of the conditions papermakers must cope with. We are committed to being there when you need us and supporting you so you can meet your mill's specific goals.

As their equipment ages, papermakers face hard decisions about system migration. ABB's lifecycle support and migration strategies give businesses the help they need for planning, getting the most out of their existing asset base and migrating to new automation. Mills intent on extending the life of their equipment have found that even ABB scanning platforms that are more than 25 years old – and many are – can still be serviced and upgraded.

ABB's broad portfolio of services helps mills:

- Maximize equipment productivity
- Extend equipment life
- Keep pace with changing technology
- Minimize costs throughout the equipment lifecycle
- Ensure personnel can make the best use of automation

We bring the full spectrum of our automation and technology capabilities to your mill, so you can concentrate on what you know best – your core paper business.



# Maintenance Support Agreements

## Service for every phase of your mill's equipment life

A partnership with ABB gives you instant access to years of pulp and paper experience and expertise. We enhance the use and productivity of your assets, processes and people.

### Maintenance and Field Services help you avoid downtime and get back online swiftly

The ABB Maintenance Support Agreement supplements your in-house expertise and capabilities with a modular and scalable solution custom-tailored to meet your mill's specific requirements. With more than 3,000 industry employees worldwide and six R&D centers dedicated to pulp and paper, ABB has the resources to develop and implement the best service solutions to provide fast and efficient response – wherever your mill is located.

Process Optimization Services provide access to the valuable process data you need to make sound decisions and find improvement opportunities hidden in your production assets.

The PROseries™ of maintenance tools helps your mill close the knowledge gap. With PROseries, your personnel can effectively distribute their time between preventive and corrective maintenance.

- ServicePRO™ is a maintenance management tool used to maintain ABB equipment at peak levels
- PartsPRO™ is a parts management tool for spares, PM kits and obsolescence planning
- ProcessPRO™ and DataPRO™ are key tools to maintain the health of your process through remote support by process experts

ABB service advisors help you select the services you need, including: remote diagnostics, software management, system evolution support, parts cost optimization, technical support, skills development, maintenance and application engineering labor, process optimization and more – to help you meet your operational targets.





**Web-Based Support** gives mills instant online access to a comprehensive set of technical documents, including product documentation and software downloads, saving papermakers money.

**Phone Support** is available 24/7, and is reliable and quick to access for problem resolution and emergency help.

**Remote Services** connect mills with fast expert technical support, no matter where they are located. ABB Advanced Remote Services DriveScan™ and LoopScan™ focus on improving system and process performance.

- Real-time visibility into system information
- Equipment-specific diagnostics
- Condition-based monitoring
- Real-time alarming

**Spare Parts** are available – fast – through easy online ordering. Mills can count on guaranteed availability of certified ABB parts for all generations of their equipment.

**Lifecycle management** helps your mill protect its automation investment through evolutionary services that maximize availability and performance throughout the life of your ABB equipment.

- Lifecycle planning that follows your mill’s specific strategy
- Analysis that helps you know whether it’s best to replace, migrate or maintain
- Practical ways to expand product functionality and lifecycle

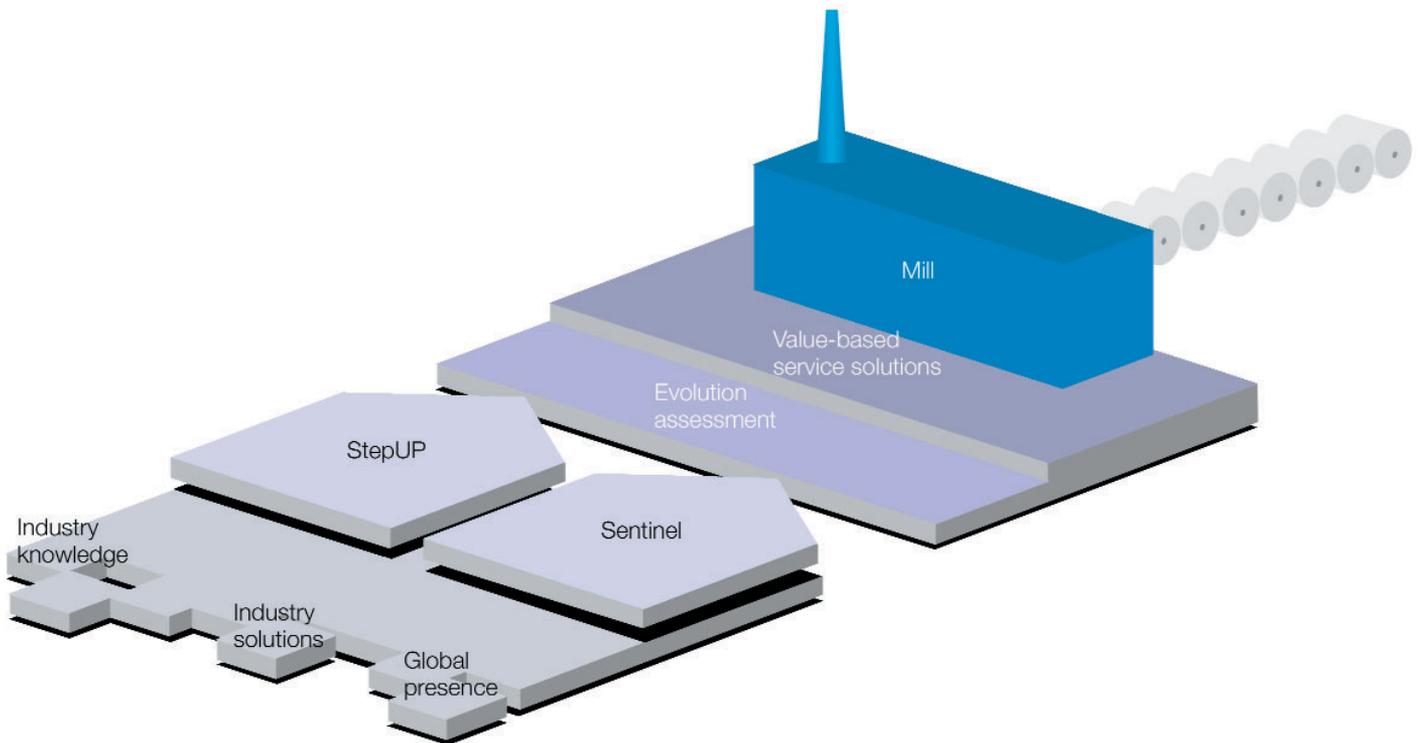
**Training/Skills Development** helps you increase your people’s skill levels and knowledge.

- Helps engineers, programmers, maintenance and operations staff stay up-to-date on technology
- Customized for your mill
- Classes can be held on-site at your mill, at an ABB training facility or online

# Lifecycle evolution

## Making the most out of your automation investment

Lifecycle management provides Evolution Through Enhancement strategies that optimize asset performance and maximize ROI.



The big automation and information capital improvement era is over and papermakers today face significant pressure to lighten their balance sheet, increase cash flow and improve earnings. Mill managers have learned that the purchase and start-up of their automation projects is only the beginning – and in many cases the least expensive part—of their systems' lifecycle. To keep your costs down, ABB focuses on helping you make the best possible use of your existing assets.

**Developing your long-term evolution roadmap**

ABB's unique service approach to migration planning follows your strategy – not ours. We provide the technical information you need to determine which evolution approach is compatible with your current strategy and would provide the most benefit.

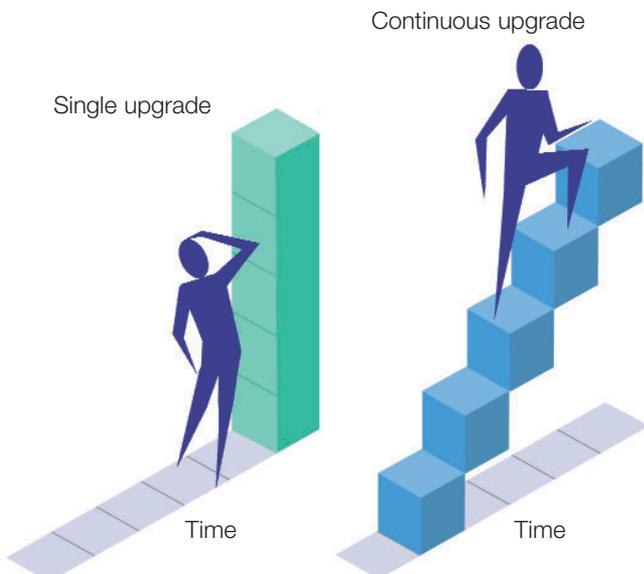
- ABB migration team ensures equipment compatibility and smooth transition to next-generation technology
- ABB service support engineers provide the level of help your mill needs, from occasional assistance to complete software program management

**StepUp Programs** simplify the upgrade process, providing enhanced performance capabilities and maximizing the value of your installed systems and components. ABB StepUp programs also reduce maintenance costs and downtime. As an added advantage, all StepUp services allow existing data to be used with upgraded systems.

- Low risk migration
- Reduced downtime
- ROI-based upgrades

**Sentinel Software Management Program** extends support for existing ABB control software investments and increases their value. Mills can keep their installed software products up-to-date and maintain a flexible, affordable path forward so they can evolve to newer system software technology at their own pace.

- Simplified software upgrade process
- Validation of Microsoft security patches
- Support for updated PC hardware and drivers
- 24/7 online access that includes documentation and software downloads



## Advanced PROseries of service solutions

Empowered by advanced tools, novices can perform at the same level as seasoned engineers

Papermakers are striving for operational excellence and a competitive advantage while running lean – but it's a tough balance. Especially when your mill has to cope with the skill gaps left by a departing workforce. To keep equipment and processes performing at the best-in-class levels needed to meet the highest Overall Equipment Effectiveness (OEE), mills are using ABB's PROseries tools, developed to ensure maximum performance from your ABB automation equipment investment.

ServicePRO is maintenance management software that helps mills ensure equipment reliability and longer life spans.

- Engineers can follow automatically scheduled preventative maintenance work orders
- Contains ABB's best maintenance practices for improved reliability, increased return on assets and consistent service compliance
- Maintenance personnel are empowered to be productive and consistently deliver high quality service regardless of their experience level
- Configurable screens, trends, profiles and reports give management total control and visibility
- Ability to view maintenance activities at a single mill or across multiple mill locations for more operational understanding and better tracking of labor and material costs
- Real-time information and reporting





PartsPRO ensures that your mill can get the parts you need when you need them.

- Fast access to parts needed to maintain ABB systems
- Convenient list of recommended spares
- Preventive maintenance schedules delivered at regular intervals to reduce system failure
- Ability to see parts inventory so your mill can make advance purchases at potentially lower costs
- Documents the lifecycle status of subsystems

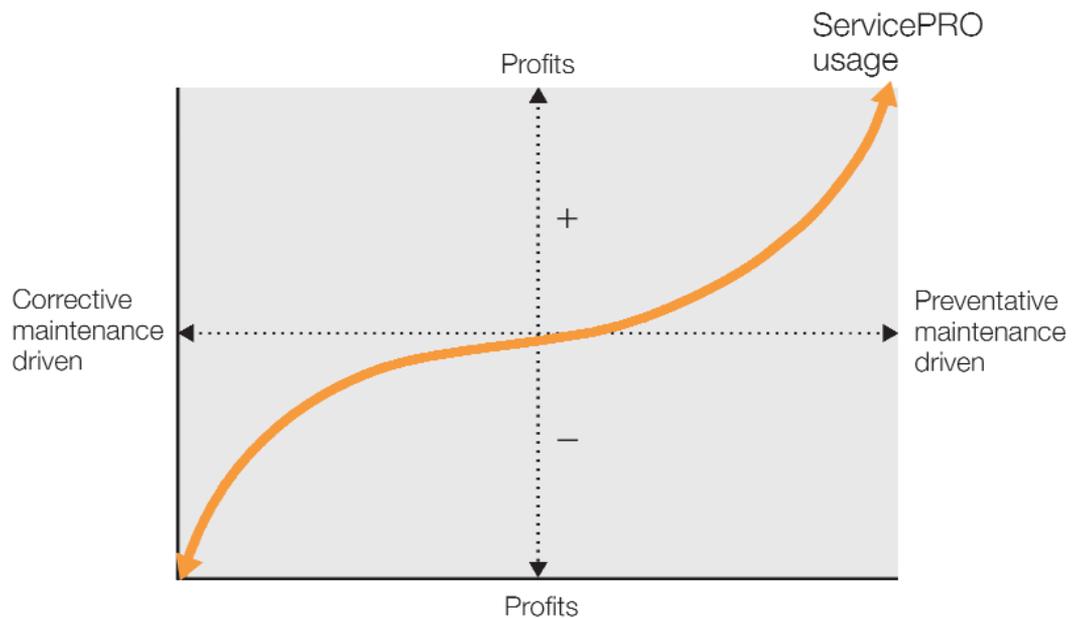
DataPRO provides papermakers with the data they need for troubleshooting and visualization.

- Event-based storage unit that provides fast extraction of data
- Mills can store QCS reports, tuning numbers, transitions and high speed data
- Ability to save data that engineers can tap into for root-cause analysis, troubleshooting system problems and KPI tracking

ProcessPRO fills the gap at mills with few – or no – process engineers by automatically scheduling optimization services. ABB’s process experts and advanced service tools are delivered on-site or remotely.

- Improve process stability and performance
- Increase return on aging assets
- Preventative Maintenance modules to maintain a healthy process

ServicePRO best practice maintenance software optimizes the balance between corrective maintenance and preventive maintenance to lower cost and increase profit at the bottom line. By shifting from reactive and high cost Corrective Maintenance that often results in unplanned shutdowns to a proactive Preventative Maintenance mills can fix equipment before it fails.



# Advanced Optimization Services

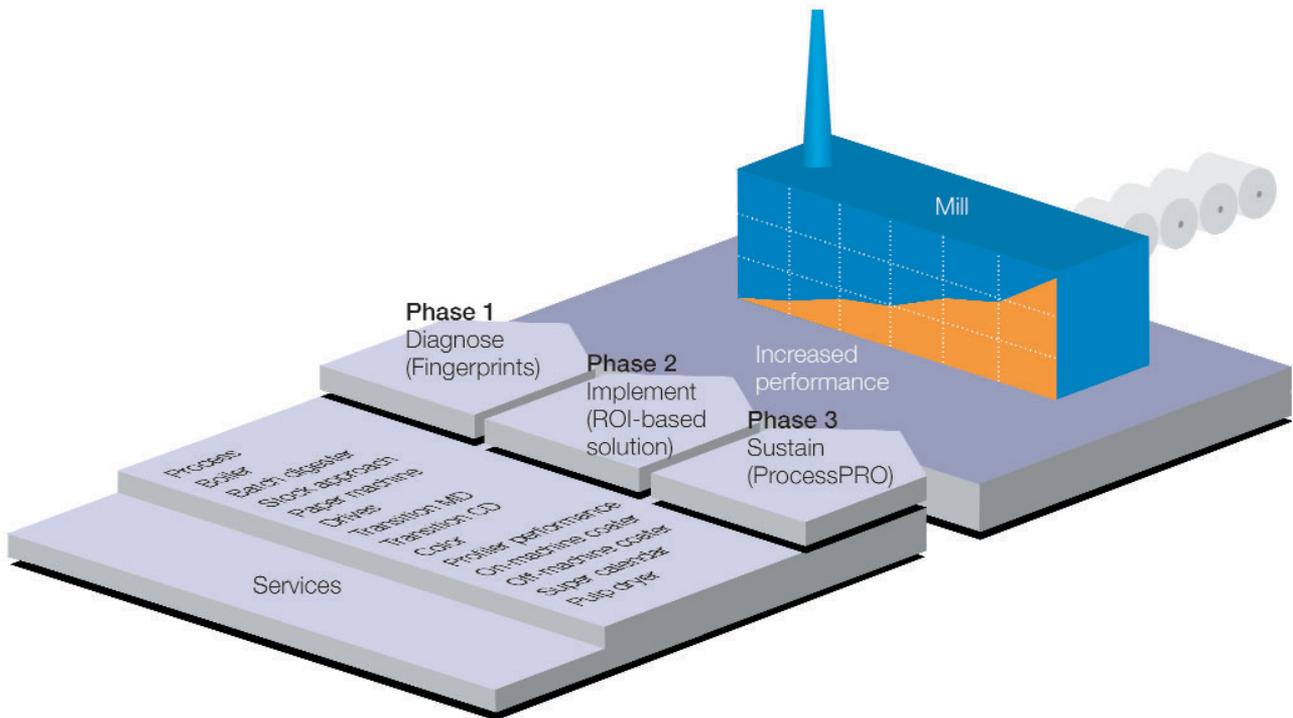
## Finding hidden process improvement opportunities



It's the biggest challenge facing papermakers today: improving mill performance by making the most out of their existing asset base. One of the main obstacles is the loss of knowledge and expertise when experienced personnel retire. ABB's Advanced Optimization Services help mills compensate by providing access to the valuable process data needed to make sound decisions and maintain safe, profitable operations.

### **Proven Optimization Services generate dramatic financial benefits**

ABB's Advanced Optimization Services generate tremendous financial advantages for mills, including measurable benefits like process enhancements, production increases and direct cost savings. A mill's typical savings range from USD 100,000 to USD 500,000 annually, which they achieve with little or no capital investment.



### Phase 1 - Diagnose

Using packaged Fingerprint services, ABB identifies the underperforming assets that cause reductions in production and conversion efficiencies. ABB can diagnose and identify existing barriers to optimization and performance improvements in specific process areas.

### Phase 2 - Implement

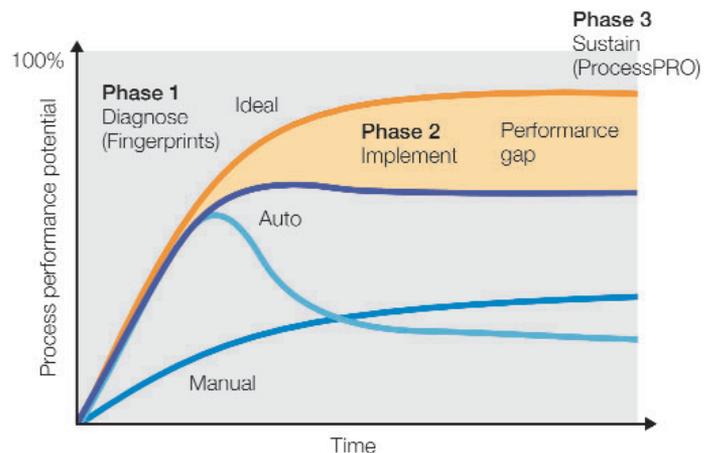
After the Fingerprint diagnosis is complete, ABB implements a detailed ROI-based solution designed to improve efficiency, quality and production. ABB clearly spells out their diagnosis and recommendations. Historically, ABB Fingerprints have uncovered savings that are in excess of 10 times the cost of implementation. Return on investment in less than six months is expected.

### Phase 3 - Sustain

Once performance improvements have been achieved, ABB works to sustain that performance using tools like ProcessPRO.

Optimization Services Collection, Analysis and Tuning Tools help mills use data to meet business goals. These include:

- DL200 - OPC Data Logging
- OPX100 - OPC Data Extraction
- AGP400/HSD500 - High Speed Data Collection
- VPA200 - Reel Report Analyzer
- CTL100 - Control Utilization Analyzer
- LS200 - LoopSCAN Analyzer
- TR100 - Grade Change Transition Analyzer
- MD500/CD500 - Loop and Profile Performance Analyzer and Tuning



Clients 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.

## Remote Services

Fast, direct access to technical expertise



Not every mill has access to world-class control expertise in-house. Not every mill is in a location that's quickly accessible to outside assistance. ABB's Remote Services supply papermakers with powerful resources to help them troubleshoot, respond to emergencies and operate at maximum efficiency – no matter where they are located.

From telephone and self-service web support to direct and secure system interaction, remote services provide real-time access to technical specialists whenever you need them, giving your mill:

- Faster service response time
- Reduced maintenance effort and cost
- Increased productivity
- Improved production quality

**Basic Remote Services provide your mill with real-time visibility into the information you need to solve and prevent problems**

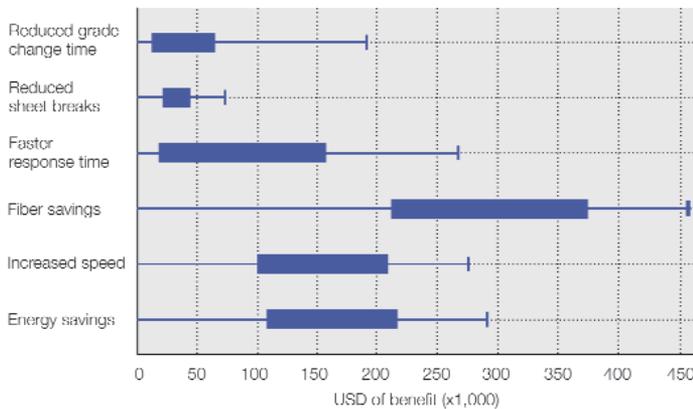
Troubleshooting provides on-demand remote diagnostic support for a specific problem or failure.

Periodic Maintenance provides scheduled asset SCANS™ and evaluation against established benchmarks. A detailed health check report includes a summary of findings and recommended preventive and corrective maintenance.

Remote Services Condition Monitoring employs 800xA Asset Optimization to TRACK™ the condition of your critical assets. Conditions exceeding pre-established thresholds trigger immediate response through the escalation process.

**Advanced Remote Services can dramatically improve equipment and process performance**

- LoopSCAN uses the LS200 tool to analyze 200-300 DCS loops and output performance ranking, loop criticality ranking, and root cause analysis
- DriveSCAN monitors drive and process parameters to improve expert level troubleshooting, allowing for remote audits and condition-based process and drive monitoring



Typical benefits achieved from implementation of ABB Process Optimization Services in pulp and paper.

Process industry companies are turning increasingly to their suppliers for remote services that improve the effectiveness of their maintenance and process control programs.



**Remote connectivity: leveraging technology for enhanced return on assets**

The ABB Global Pulp and Paper division is so committed to bringing the value of remote connectivity to our clients that we now include remote connectivity capability with every pulp and paper project. Remote connectivity, used by engineering for new installations and upgrade projects for system configuration, shortens the cycle of project delivery and acceptance, while giving mills 24/7 accessibility during project delivery and providing the technology for ongoing site support after project completion.

*Roger Bailey, Group Vice President, Global Pulp and Paper, ABB Group, stresses that this commitment to remote connectivity is significant. "Remote connectivity offers a winning strategy for both customers and ABB. It assists project commissioning and support services by providing a virtual link to high-level technical resources, reducing travel time and lowering cost for our customers. When remote connectivity is introduced at the project and platform level, ABB has the embedded infrastructure necessary to deliver remote technical support and many other ABB services to best support our customers," says Bailey. "Remote for us ranges from being able to see and diagnose a problem to being able to analyze data and predict problems or optimize a process."*

## Full Service

Your partner in achieving operational excellence

Whether it's the timing for a minor equipment adjustment or the response to fixing a problem, each day, your people are making choices that will impact your business. ABB Full Service® gives your mill direct access to high-level expertise so you can increase asset effectiveness and lower operating costs.



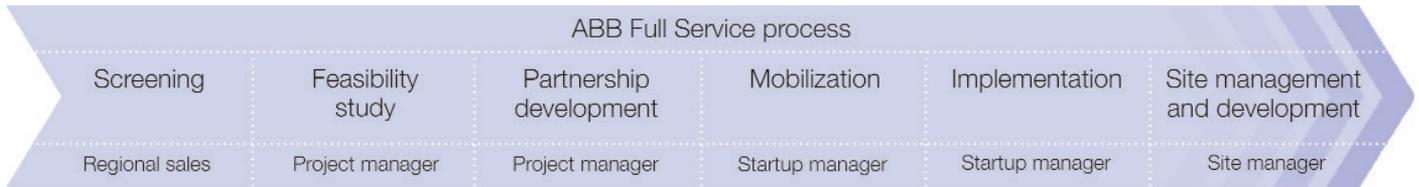


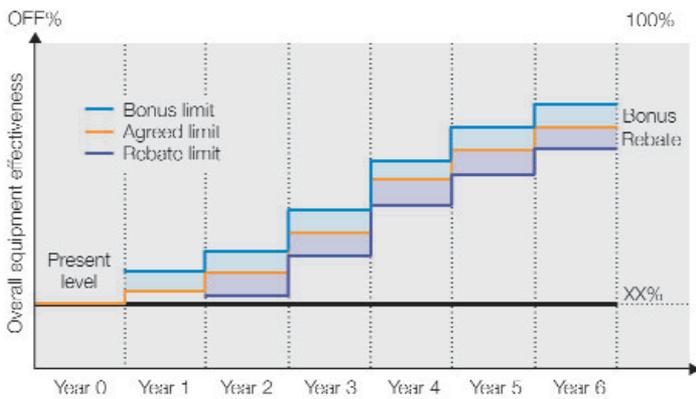
ABB Full Service is a complete partnership where ABB shares risk and assumes full responsibility of customers' maintenance operation by contractually committing to performance improvements, such as increased Overall Equipment Effectiveness and reduced Total Maintenance Costs.

ABB's world-class maintenance and reliability methodologies enables customers to optimize their maintenance functions while increasing plant efficiency and sustaining long-term plant productivity. With ABB Full Service, we collaborate with customers to help deliver operational success by designing, executing and managing:

- Maintenance personnel
- Maintenance-related activities
- Maintenance equipment

**Since 2005, ABB Full Service has driven our pulp and paper customers to:**

- Showed consecutive year-over-year improvement for machine availability in a pulp and paper mill
- Drove a paper mill's only operating machine from worst within the company globally to number one
- Achieved the historically highest production record, which was an increase of 25% from the previous year, in a fiber board mill



**Contractual commitment to productivity, reduced maintenance costs**  
 ABB contractually commits to improvement in OEE over the span of the full service agreement. This commitment includes a bonus for exceeding OEE goals and a rebate for papermakers if the goals are not met. ABB also contractually commits to reducing overall maintenance costs.

# Energy savings

## The profit opportunity is yours

With the costs of powering a mill increasing and profitability directly tied to energy efficiency, energy savings are critical to every papermaker.

ABB provides the practical expertise needed to identify energy savings solutions for virtually any type of mill. While every operation is unique, all mills have areas where they can achieve substantial energy savings – and ABB products and services can reduce energy waste by 20 to 30 percent.

### Consulting energy assessment

ABB's paper mill consulting service team knows the paper industry and can objectively evaluate your operation. ABB will analyze your operation, from electrification to motors and drives, to advanced process control and optimization, and identify opportunities for energy savings.

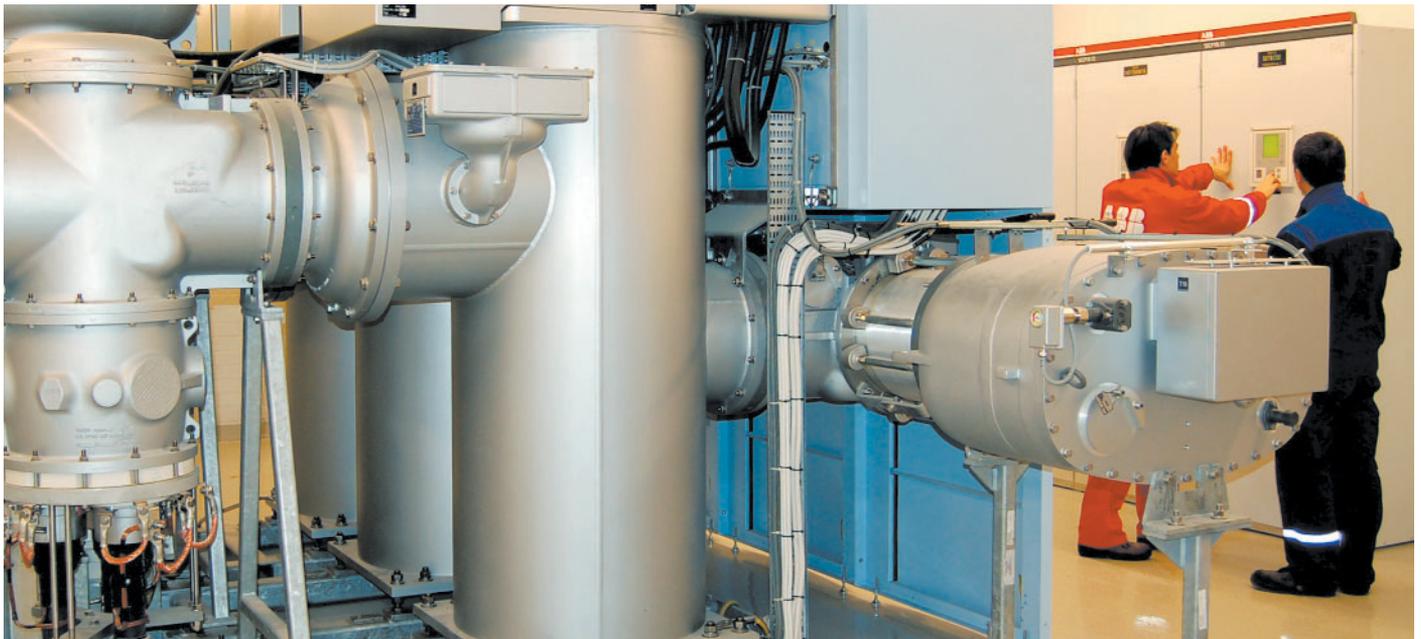
The outcome is a comprehensive report on the current status with a forward view of potential power and steam efficiency recommendations. You end up with a blueprint that shows how to improve, assure and maintain the efficient performance – and energy savings – of your manufacturing operation. The ABB team then provides

the guidance and implementation strategies needed to implement the plan.

### Energy savings through optimum paper machine performance and control

ABB Optimization products and services help mills operate in the black, with energy, raw materials and runtime managed for the highest possible efficiency levels.

- ABB can model your power network assuring a properly sized network dimensioning to save energy from day one
- Energy Management Software applies business intelligence to your company's energy policy to ensure you never miss savings opportunities
- Fingerprint services identify and document the opportunities for performance improvements in a specific process area, such as, stock approach, paper machine, coater, supercalender, transition (grade change), color, CD grade performance and industrial boilers
- Migration to the latest 800xA Control System, high efficiency and right-sized motors and the replacement of mechanical drives by electric drives using variable speed can cut energy bills by as much as 60%
- Advanced Moisture and Steam Conservation CD Control is easily adapted to existing rewet and steambox CD moisture controls to realize a 25% or more water usage reduction allowing decreases in dryer loading for significant energy savings or production increase



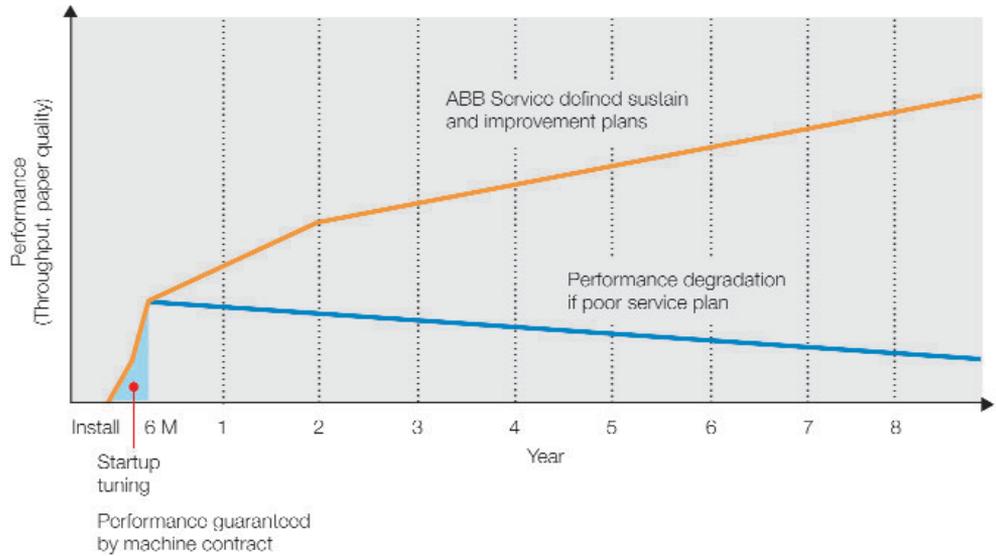


# ABB's mission

## It is all about performance

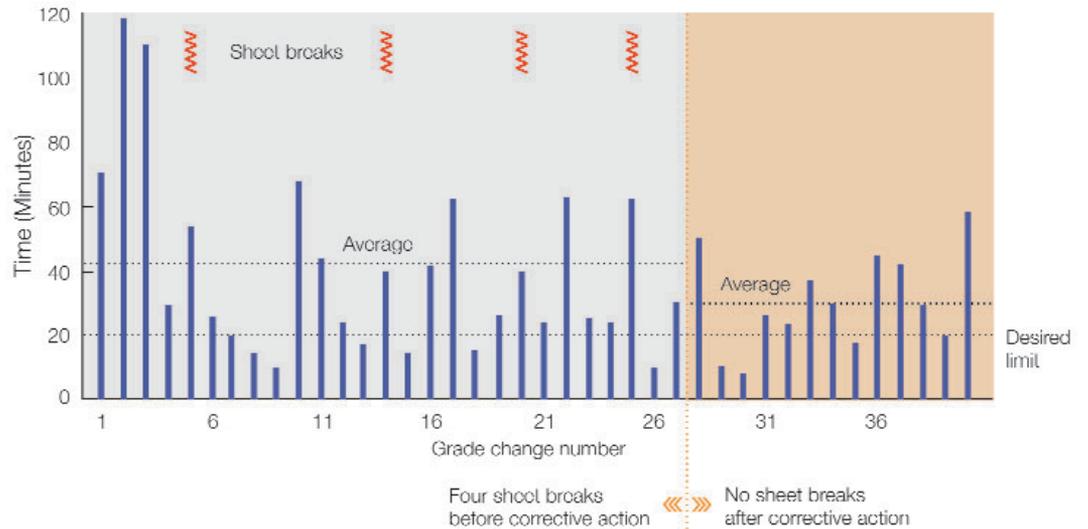
### ABB Maintenance Support Agreement Extend system lifecycle and process performance

ABB Maintenance Support Agreement ensures your investment in ABB automation equipment brings you optimal performance. Our complete portfolio of services – from spare parts to optimization, consulting to outsourcing services – helps you maximize your investment and lower your Total Cost of Ownership.



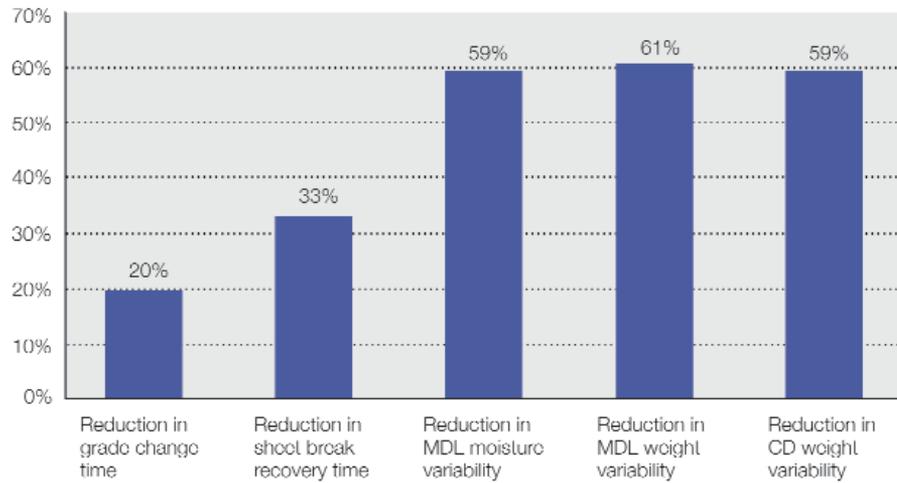
### Transition fingerprint - Value

ABB Transition Fingerprint identifies and documents opportunities for machine transition (grade change) improvement. For this paper machine, the average grade change time was reduced by 24% and sheet breaks were eliminated after the corrective action was implemented.



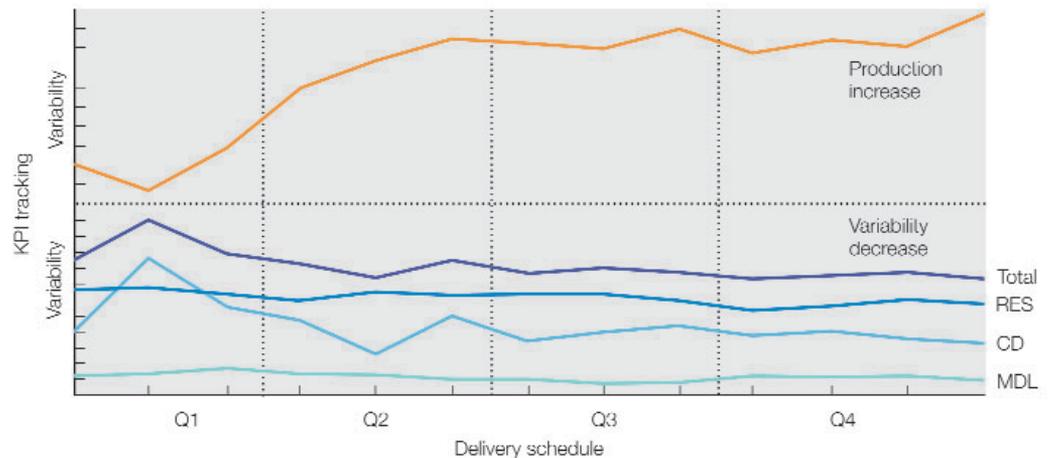
## Advanced Optimization Services Improved overall machine runnability

In this example, ABB Advanced Optimization Services use special tools and knowledge of the systems and processes in your operation to identify and release valuable improvement opportunities currently hidden in your production assets. A 50% reduction in variability generates dramatic financial benefits.



## ProcessPRO - Remote modular optimization service delivery Continuous improvement

Remote delivery of ProcessPRO modules provides a cost effective means to keep your process performing at the highest level and not deteriorate over time. ProcessPRO modules delivered over a one year period helped increase production and improved quality at this client's mill.



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