ABB Solutions for Asset Management

The Competitive Advantage for Every Industry

Introduction and benefits

Introduction

Knowledge is the most precious commodity in business today. Production facilities employing real-time Plant Asset Management (PAM) systems significantly increase process uptime while reducing maintenance costs. The typical plant is teeming with information. The challenge, however, is having relevant information available at the right time, in the right form and to the right people.

ABB provides asset management solutions that present real-time asset information seamlessly and in the proper context, to operations, maintenance, engineering and management. As a result, continuous improvement initiatives such as Reliability Centered Maintenance (RCM) strategies, plant-wide adoption of proactive maintenance practices and autonomous maintenance minimize unscheduled shutdowns, optimize product quality and become more effective. These activities can be employed regardless of industry. The results are higher return on assets and greater profitability.

Your Optimization Strategy

An effective asset management strategy combines the needs of the production and maintenance organizations. It increases both equipment availability and production rate by providing insight into asset health, corrective action instructions and organizational visibility. It reduces time-to-decision and coordinates production and maintenance activities.

The primary benefits of an asset management strategy are increased asset availability and performance, and maximized operations and maintenance effectiveness.

What ABB provides

ABB has a unified approach to Asset Management, with a portfolio of solutions that is unmatched in today's market, as you can see from the chart below. ABB has at least one solution (usually a few!) for every asset management need, regardless of industry or scope. ABB offers solutions supporting the following asset management tools and strategies:

- Condition Based Monitoring
- Predictive Maintenance
- Instrumentation Health
- Process Optimization
- Energy Management
- Alarm Management
- Green Initiatives
- Operator / End-User Training
- Reliability Dashboards
- Historical Analysis
- Tracking Assets
- Lifecycle Cost Planning
- Best Maintenance Practices & Strategies
- Hazard and Risk Studies
- Health, Safety, and Environmental Issues
- Compliance Issues
- Asset Management Benchmarking Services
- Field Service
- Remote Diagnostic Services
  - o Service Reports
  - o Periodic Audits
  - o Remote Connections
- Support Line
- CMMS Capabilities
- Mobile Worker Concept
  - o Terminal Services
  - o IE 6.0
  - o Smart Client
- Back Office Maintenance Department Concept
- Risk Management
- Employee Health and Safety
- Collaborative Device Communities
- IT Security

Asset Management needs!

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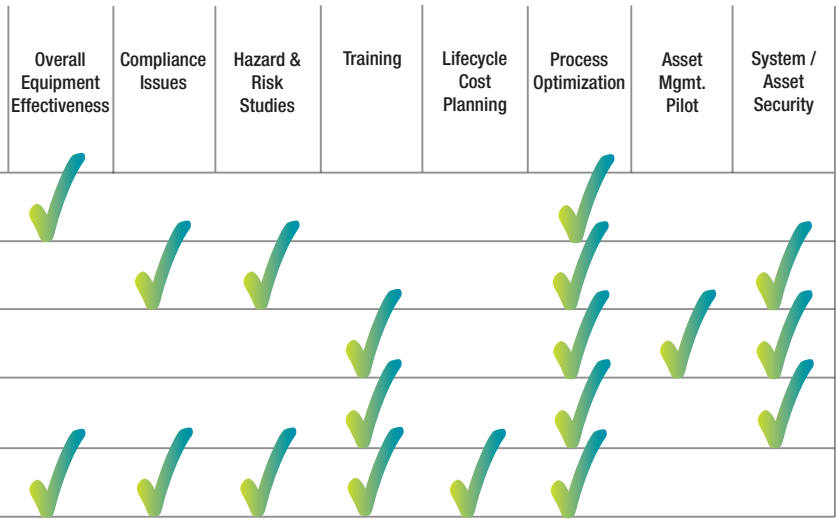


ABB's answer to meeting the asset management needs of the process control industry is our Asset Management Portfolio (AMP). AMP includes the following:

- Engineering Excellence – Engineering Services Group
- Maintenance Methodology - Reliability Services Group
- Hands-on Expertise - Full Service Sites
- Implementation Capabilities – Consult IT & Projects Groups
- Remote Diagnostic Services - Service Group
- All Encompassing Asset Monitoring capabilities with System 800xA

In this brochure, we've described most of ABB's Asset Management offering. We are constantly adding to this portfolio. For the latest information, contact your ABB representative or visit www.abb.com.

ABB System 800xA Asset Optimization

Description

ABB provides 800xA Asset Optimization - a plant asset management solution that presents real-time information seamlessly and in the proper context to operations, maintenance engineering and management.

800xA Asset Optimization provides real-time asset monitoring, notification and maintenance workflow optimization of automation equipment, plant infrastructure, plant equipment, field devices, IT assets and production processes. 800xA Asset Optimization (AO) is unique in the marketplace, in that it brings together, in one user interface, all information resident in different, traditionally disparate, automation and monitoring systems to provide a composite view of the health and performance of an asset. Transparently maintaining all the richness of information, advantages and capabilities of each specialized system, AO eliminates the need for the user to switch between several systems, workplaces, application environments and navigation schemes.

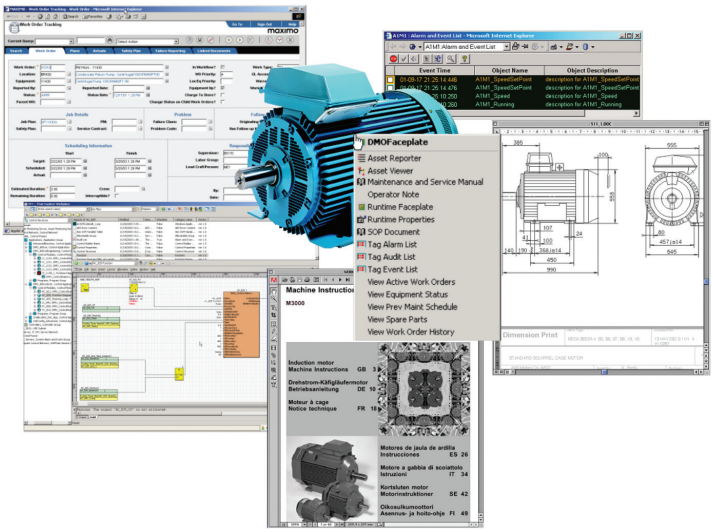


Figure 1. Single-click access to Plant Asset Information-Rich Aspect Systems

AO features are provided as extensions to Process Portal. While this solution functions as fully integrated capabilities of ABB's System 800xA, it is also available as a stand-alone solution.

Using Industrial IT patented Aspect Object™ technology, System 800xA collects and displays all information required to install, operate and maintain each component with a single click of the mouse (Figure 1). For asset optimization features, these aspects are simply assigned to the appropriate object (asset); making them automatically available in each object's use instances.

In general, 800xA Asset Optimization features can be categorized into two user beneficial areas:

- Increased asset availability and performance
  - o Asset Condition Monitoring
  - o Asset Condition Reporting
- Optimized Operations and Maintenance effectiveness
  - o Computerized Maintenance Management System (CMMS) Integration
  - o Device Management System (DMS) Calibration Integration

AO includes software that monitors asset performance. While retrieving data from and interacting with multiple data servers (real-time data servers, OPC® servers, etc.), asset monitors use real-time plant information as inputs to detect health and performance conditions, assist in diagnosis of the problem and to offer correction recommendations.

AO includes a base set of asset monitors. Asset monitors vary in complexity from those that simply identify status changes in an intelligent device or identify high, low, or deviation limit conditions in the control system, to those that utilize advanced process equipment condition monitoring applications. When a performance condition is detected, the asset monitor issues an Asset Condition Document (ACD) and notifies the system.

An ACD contains all information necessary to describe an asset condition. In turn, this information may be used to generate a work order for maintenance purposes. Asset monitors can exist in any part of the plant hierarchy, such as the device, loop, equipment, process, plant or enterprise. They can be written for higher-level assets (parents) that are themselves composed of many subassets (children). In addition, System 800xA pre-configured asset monitor types are available for assignment to assets of all levels.

Field Device asset monitors for HART®, FOUNDATION Fieldbus™ and PROFIBUS devices are available as part of the respective Device Libraries provided with System 800xA Device Management. Field Device asset monitors can be generic or device-specific. The proper asset monitor is automatically assigned to individual plant devices.

The Device Libraries are extended with devices from ABB and other manufacturers on a continuous basis.

ABB also offers complex and custom asset monitors. Here's a short list.

Heat Exchanger Asset Monitors alert process and maintenance personnel when the operation of a Heat Exchanger has indicated a significant decline in performance, due to either fouling, or a significant change in operating point.

The Drives Monitor enables careful monitoring of the condition and performance of an MV drive system, collection of data and historical data storage; all from a remote computer. The Drives Monitor is explained in greater detail elsewhere in this document.

Based on ABB's Drives Monitor system, the PCMS (Propulsion Condition Management System) integrates data from propulsion chain assets and creates predictive diagnostic algorithms for optimizing energy efficiency and performance of the propulsion system at the latest stage.

The MNSiS Asset Monitor is an intelligent supervisor of MNSiS low voltage switchgear. It uses several tools and functions to provide information for Failure Management, Maintenance Management and Asset Management.

Compressor/Pump Curves Asset Monitors monitor the health of rotating equipment such as compressors, turbines, pumps and fans; using a performance approach. Information such as pump curves is digitally scanned and imported into System 800xA. The expected performance information is then compared to the actual performance.

ABB's Universal Motor Controller, the UMC22, is designed for protection and supervision of fixed speed low voltage AC motors. It is based on Device Type Management (DTM) for user friendly configuration and parameterization. It monitors both electrical and mechanical conditions of the motor, UMC22 electronics plus issues related to Contactors.

The Control Loop Asset Monitor (CLAM) is designed to monitor in real-time the quality and performance of process control loops in control systems in order to bring actionable information on loop quality and performance to control engineers. By providing this information on control loops directly to the operator screen, information is delivered to plant operations and maintenance personnel in a timely manner. It requires only three inputs: Process Value, Setpoint and Control Output.

Additionally, ABB creates custom asset monitors using ABB's Asset Optimization Software Development Kit. For the latest list of integrated devices and their corresponding asset monitors, please contact your ABB representative.

Benefits of 800xA Asset Optimization (AO) include:

- Complete Asset Optimization
  - o A single interface for operations, maintenance, engineering, and management to optimize asset availability and utilization
- Reduced Time to Repair through Optimized Work Processes
  - o Integration of disparate Computerized Maintenance Management Systems (CMMS), DMS Calibration Systems, Dynamic Overall Equipment Effectiveness (OEE) Tools and control systems streamlines work flow between operations and maintenance to reduce downtime
- Automatic Monitoring of Maintenance Conditions
  - o Real-time monitoring and alarming of asset Key Performance Indicators (KPI's) facilitate fast, reliable implementation of corrective actions
- Plant-Wide Adoption of Predictive and Proactive Maintenance Strategies
  - o AO collects, aggregates, and analyzes real-time plant asset information to provide advanced warning of degrading performance and impending failure, a critical component of any Reliability Centered Maintenance (RCM) strategy
- Consistent Reporting of Plant Asset Health
  - o Visualization of current health conditions with Analysis features provides the ability to drill down to the root cause of failure
- Regulatory Compliance
  - o With integration of the Device Management System (DMS) software, AO can provide users with traceable device calibration solutions for 21 CFR Part 11 compliance

800xA Asset Optimization PC, Network and Software Monitoring

ABB's PC, Network and Software Monitoring (PNSM) Solution will tell you about software and hardware issues before they affect production. 800xA Asset Optimization provides asset monitor types for a predefined set of IT assets commonly associated with the 800xA system, such as printers, computers, switches and software programs. The optimal behavior of these assets has significant impact on daily performance. For example, consider the impact when performing with low free disk space, at a high CPU load, with high amounts of network traffic or with faulty switch ports. Specifically, these asset monitors can identify the root cause of IT performance problems by assessing conditions from the simple (printer out of paper), to the sophisticated (detection of a slow memory leak in the computer).

Other well known solutions available on the market today are very costly or offer limited monitoring of hardware only. ABB's PNSM provides a cost effective solution with a far broader range of monitored components. It is also delivered complete with pre-configured libraries of IT Assets representing devices and system processes widely used within industrial businesses.

Asset Vision Professional

Asset Vision Professional is a software application from ABB that runs on a standalone desktop or laptop PC. Intended for engineering and maintenance personnel, Asset Vision Professional supports ABB and 3rd party devices communicating via HART, PROFIBUS, and FOUNDATION Fieldbus. As a comprehensive asset optimization tool, it provides online and offline device configuration, parameter setting functions, online monitoring and tuning, diagnostic alerts, asset monitoring, calibration management and integral work order processing.

Asset Vision Professional leverages off of ABB's existing 800xA System software by re-using its powerful device management capabilities. Greater integration with a control system at the field instrument level allows customers to start with a small maintenance based application like Asset Vision Professional and grow it into a larger 800xA

AO offers reduced time to repair and consistent reporting of plant asset health.

control system using the same configuration data and navigation methods for both. In addition to support of the 3 major fieldbuses, Asset Vision Professional supports a number of other options. Integrated calibration using the Mobility hand-held calibrator is one. Additional options for adding asset condition monitoring and CMMS interface are provided in support of asset optimization. An option for SMS messaging to cell phones and pagers is also supported. Benefits of Asset Vision Professional include:

- Integrated Extended Automation Environment
  - o Seamlessly integrates fieldbuses and field devices enabling system level engineering and maintenance
- Freedom of Choice
  - o Supports a full range of fieldbus and HART-enabled devices
- Information Availability
  - o The right information is available at the right time and place. All relevant device status and diagnostic information is available across the whole lifecycle
- Complete Asset Optimization
  - o Provides a single interface for engineering and notification of plant maintenance and asset optimization information
- Automatic Monitoring of Maintenance Conditions
  - o Real-time monitoring and alarming of asset Key Performance Indicators (KPI) facilitates fast, reliable implementation of corrective actions
- Plant-Wide Adoption of Predictive and Proactive Maintenance Strategies
  - o Collects and analyzes real-time plant asset information to provide advanced warning of degrading performance and impending failure
- Consistent Reporting of Plant Asset Health
  - o Reporting features provide visualization of current health conditions via the Asset Vision Professional workplace
- Regulatory Enabled Calibration
  - o Provides 21 CFR Part 11 enabled calibration solutions with integration of Mobility Device Management Software (DMS)
- Reduced Time to Repair via Optimized Work Processes
  - o Integration of computerized Maintenance Management System (CMMS) and DMS provides users with a single view, leading to an efficient maintenance response

DriveMonitor™

Effective drive system lifecycle management requires continuous tracking of asset history – operation, wear, damage and maintenance. Careful monitoring of the condition and performance of assets allows the implementation of predictive maintenance programs that significantly reduce maintenance costs and the risk of failure. Without this information, performance suffers and maintenance costs rise.

ABB Medium Voltage (MV) Drives, in cooperation wih ABB Corporate Research, has developed the DriveMonitor™ – a customer support software package that allows an operator to monitor the performance of an MV drive system, collect data and store the drive's history, all from a remote computer. DriveMonitor offers:

- Cost-effective data collection and processing
- Scalable tools that can be adapted to the nature of an asset (value, status)
- Expandability, to accommodate single or multiple asset objects able to apply rules of varying complexity to the assets
- Ability to acquire data from various sources, eg, drive systems, control systems, vibration measuring tools, manual entries and the asset itself

Due to their complex role in industrial processes, drives generate and have access to large quantities of data. Though normally used to support a drive's controlling function, these data can also be used for diagnostic purposes. No additional measures are necessary as the data are already available. ABB's DriveMonitor solution exploits this opportunity to the benefit of its customers.

ABB Services

Description

ABB Services Group offers traditional field service, support line and training via ABB University. They also provide value added services including:

- Remote Diagnostic Services (RDS)
- ULMA Web Inspection System Service
- Performance Improvement Fingerprints

Remote Diagnostic Services

ABB Remote Diagnostic Services (RDS) combine secure remote connectivity with technical support capabilities to deliver enhanced support options. RDS enables real-time visibility of asset information. Asset specific diagnostic applications perform condition-based monitoring and real-time alarming. The ABB global support network offers the industry and product knowledge of experts from around the world. This, coupled with immediate availability of critical asset information significantly improves diagnostic and response time. Benefits include:

- Reduced overall maintenance costs
- Optimized asset performance
- Real-time access and support
- Fast and automated information retrieval
- Condition reporting enhancements

ABB Remote Diagnostic Services enable reduced overall maintenance costs, optimized asset performance, and real-time access and support.

ULMA Web Inspection System Service

ABB's Web Inspection System Service provides a cost-effective audit of ULMA web inspection systems. ABB experts review preventive and corrective maintenance practices, tuning, calibration, training and spare parts inventories and provide recommendations for improved system performance and availability. Benefits of ABB's Web Inspection System Service include:

- Maximized system performance, availability and data integrity
- Minimized maintenance cost and downtime
- Enhanced system capability
- Lower overall system lifecycle cost

Performance Improvement Fingerprints

ABB's Process Improvement Fingerprint solutions facilitate the managerial decision process by focusing on high impact opportunities for improvement. Features include:

- Access to ABB optimization experts
- Process performance benchmarking
- Detailed ROI-based improvement plan
- Clear communications during data collection and diagnosis activities

Performance Fingerprints provide a clear path to quickly close performance gaps by using the proposed improvement plan. They also offer a solid foundation for continuous improvement based on data. There are Process Improvement Fingerprint solutions in multiple industries, with more additions always being made.

Description

ConsultIT is ABB's technical construction arm. It provides high value services that go beyond ABB's traditional projects and services groups. ConsultIT is a global community of know-how, competence and experience. Its expertise covers:

- Application Consulting
- Custom Asset Monitor Development
- IT Security / Networks
- Fieldbuses and Devices
- Data Management
- Engineering Efficiency
- Software Solutions
- Improving Operator Effectiveness
- Project Risk Reduction

Benefits include avoiding:

- Redesign in late stages due to insufficient system performance
- Rework of configurations as a result of poor product utilization
- Time delay because of inefficient fault analysis or troubleshooting
- Budget overrun due to engineering time and wasted effort

ABB Engineering Services

Description

ABB Engineering Services provides a wide range of professional engineering services to a broad spectrum of process industry and manufacturing customers.

With a resource base of over 550 professionals with an unrivalled knowledge of project management and functional engineering, uniquely coupled to a true operator's perspective, ABB Engineering Services has the technology to provide clients with practical, cost effective solutions to problems in both batch and continuous manufacturing environments.

The real focus of ABB Engineering Services is on bottom line profits and compliance issues.

Services Include:

- Operations & Maintenance
- Hazard & Risk Studies
- Health, Safety and Environmental Issues
- Reduction of Energy Consumption
- Improved Reliability
- Improved Asset Integrity
- Resolution of Compliance Issues

Two examples of Engineering Services are Integrity Management and Total Asset Management.

Integrity Management

Integrity Management means different things to different people. ABB's approach is applicable regardless of industry sector. We support our customers in all aspects of integrity, process safety and risk management. We help them assess risk throughout the asset lifecycle. With our approach, companies can enhance their understanding of key vulnerabilities and risks, long-term investment planning, best practices, system and procedure updating and personnel training and development.

We help customers optimize Integrity Management throughout the lifecycle of their enterprise. Our approach is flexible enough to enable review of a complete plant or to concentrate on a particular problem on one piece of equipment. Whatever we do, it is accompanied by knowledge transfer, tailored to the user's needs.

Unlike others we only do detailed equipment analysis when it is beneficial to the customer - this highly cost effective approach is only possible because our industry recognized consultants apply their professional judgement, supported by our leading methodologies and tools. If you have an existing approach we help you improve it. If you don't; we can help you develop one. Benefits of ABB's Integrity Management include:

- Improved asset integrity and safety
- Legislative and regulatory compliance
- Best practices and performance improvements
- Maintaining production
- Enabling informed business decisions
- Recognition of the real issues and focus on the real needs - saving time and money
- Knowledge transfer - letting you continue Integrity Management into the future

Total Alarm Management

Are you familiar with the guidance in EEMUA 191?

Do you wish to improve the performance of your alarm systems?

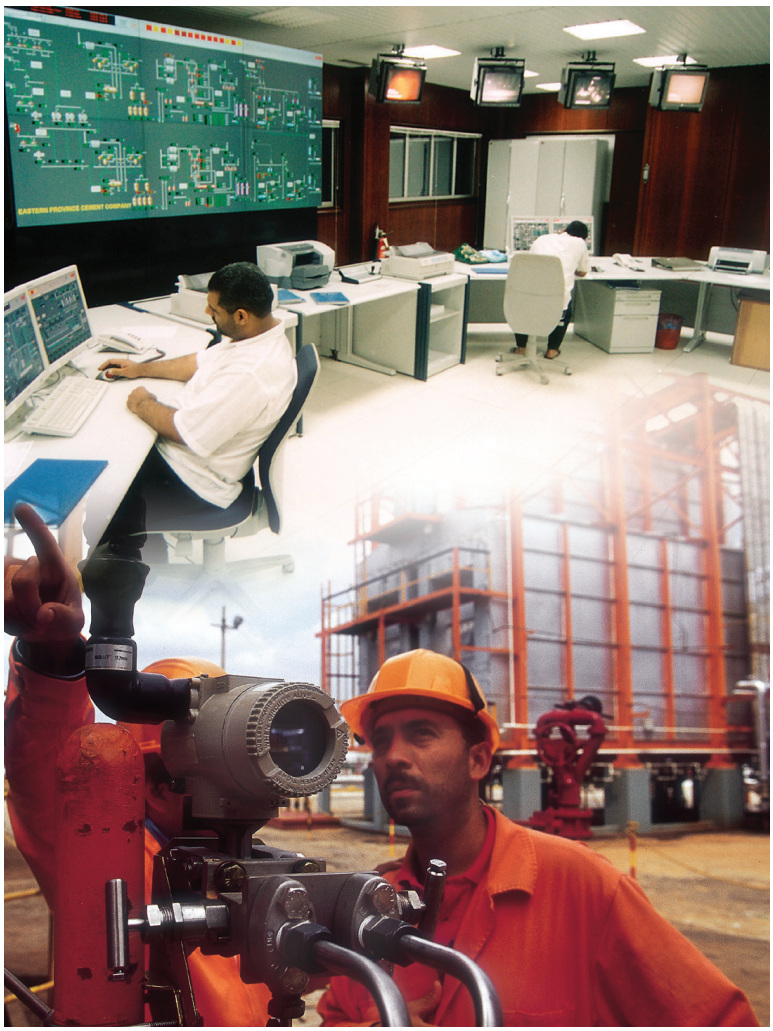
Can you demonstrate good management of your alarm handling systems?

ABB has a significant history of successful alarm improvement projects based on our operational experience and a broad range of professional skills, supported by a wealth of expertise in related topics.

We have experience with continuous processes and the special requirements of batch systems. We can help with the practical implementation of all phases of an alarm improvement initiative. Our expertise is backed by tools and techniques. Our service focuses on operational issues, not the technology. Components include initial health check, followed by planning for improvement, implementation, review and training.

ABB's Total Alarm Management provides technical services including license to operate, integrity management, operations improvement and capital investment to customers in the chemical, petrochemical, oil & gas, pharmaceutical, metals, pulp & paper and consumer industries worldwide. Total Alarm Management from ABB helps you achieve:

- Improved HS&E performance
- Fewer and shorter plant outages
- Improved product consistency and quality
- More focused maintenance
- Improved operator environment and reduced operator stress



The real focus of ABB Engineering Services is on our customers' bottom line profits and compliance issues.

ABB Reliability Services

When your plant operates well, capacity increases and manufacturing costs decrease.

Description

ABB offers a full range of services to improve the reliability and performance of manufacturing plants. When your plant operates well, capacity increases and manufacturing costs decrease. We help you to optimize the performance of your plant through its lifecycle with consulting services in the following areas:

- Asset Care
- Operational Plant Support
- Total Plant Reliability®
- PM30 Plus
- Asset Performance Management
- Plant Performance Benchmarking
- World Class Reliability®Assessment
- CMMS Assist
- Real Time Production Intelligence

ABB's Reliability Integrated Solution

ABB's Reliability Integrated Solution increases asset reliability and productivity while maximizing the return on your maintenance investments. Our solution provides you with insight into your assets' health, corrective action instructions and organizational visibility. We begin with a site audit, which provides benchmarking data to establish the baseline for improvement. Using this gap analysis, we develop a customized plan by leveraging the experience of our people as well as the extended features of our products. Our approach results in continuous service improvements and sustainable maintenance operations while minimizing safety and environmental risks.

The world-class Overall Equipment Effectiveness (OEE) score is 85%. Do you know where you stand? Unexpected failures and poor quality products can be devastating to profit goals. You need to know how your equipment is performing, how to avoid failures and where you have production losses.

ABB's Reliability Integrated Solution enables you to measure OEE, monitor production assets and control loops as well as manage device calibration.

ABB has developed a phased implementation approach that consists of benchmarking assessments, database development, CMMS deployment and continuous service improvements.

Total Plant Reliability

ABB Reliability Services offers an improvement strategy for process plants that works – Total Plant Reliability (TPR). TPR helps corporations increase profits and maximize production of quality products. Through TPR, corporations can achieve a return on investment of three to one.

TPR is a multi-staged improvement program comprised of four key elements. These elements focus on improved leadership for and management of your organization's assets and people:

- Focused Empowerment
  - o Shared vision, mission & expectations, roles & responsibilities, operator driven reliability, market-based maintenance, lean organization, end entitlement and leadership skills
- Asset Management
  - o Proactive planning, scheduling, turnaround optimization, CMMS, materials management, operator maintenance and outsourced asset management
- Maintenance Prevention
  - o Preventive & predictive maintenance, failure analysis, de-bottlenecking optimization, RCM2, RBI, concurrent engineering, process engineering and skills training
- Balanced Scorecard
  - o Align incentives, communicate goals, performance development, financial performance, learning & growth, customer / partner and internal systems

PM30 Plus

ABB Reliability Services offers a disciplined reliability process that drives improved utilization of assets and resources, increased efficiencies and reduced costs. ABB uses CMMS/EAM software as an enabler for the entire reliability process. The process works with any well-developed CMMS - or customers can opt to use ABB's software, PM30 Plus. Our software grew out of 35 years of experience in implementing and administering over 1,500 reliability initiatives. Each function within your organization can access consistent information and expert analysis on how your business is running. Improve data quality and increase planning accuracy with ABB's PM30 Plus.

World-Class Reliability® Assessment

ABB Reliability Services provides solutions that improve safety, compliance, and profitability. The World Class Reliability™ (WCR) Benchmark is a product of 40 years development. The benchmark process identifies best practices and compares an organization's performance level with other companies and industries in order to set an improvement goal. Qualitative and quantitative analyses are conducted of both reliability and maintenance practices, resulting in:

- Identification of performance gaps
- Development of strategic and tactical plans to close performance gaps
- Creation of a business case documenting the financial impact of addressing areas of opportunity

ABB Reliability Services offers a disciplined reliability process that drives improved utilization of assets and resources, increased efficiencies and reduced costs.

Experience has demonstrated that objective evaluation is the indispensable first step in developing a manufacturing process that integrates departments, fosters teamwork and promotes employee involvement. The bottom line is measurable performance improvement in:

- Capital and operating costs
- Maintenance labor and materials
- Production throughput
- Equipment availability, run rates and quality
- Safe work practices
- Environmental compliance

CMMS / EAM Implementation Services - CMMS ASSIST

ABB Reliability Services' team is comprised of experienced maintenance and reliability professionals, with a track record of many CMMS / EAM (Computerized Maintenance Management / Enterprise Asset Management System) implementations and management consulting engagements for over 40 years. Our reputation is based on developing successful implementation strategies that are rapid, business driven and focused on accomplishing corporate reliability goals and maintenance spending targets. Our approach is unique with a strong emphasis on Reliability Centered Maintenance. We apply the following principles to all our EAM implementations:

- Business Process Prototyping
  - o defining detailed application functionality based on "optimized", "to-be" business processes
- Package Deployment
  - o highly modular
- Total Training Solution
  - o leading edge, hands-on, multi-medium training solutions are absolutely necessary for organizational assimilation of today's highly complex, IT driven EAM applications
- Full Knowledge Transfer
  - o ensures that your team becomes self-sufficient, rather than consultant-dependent
- Three (3) Tier Reliability Metrics Hierarchies
  - o well defined, cascading metrics for Shop Floor, Line Management and Executive levels

Our consultants have assisted companies in Pulp & Paper, Pharmaceuticals, Cement, Plastics, Steel, Mining and Metals processing and Refining. ABB supports the following popular EAM applications:

- SAP-PM, MM and PS modules – from SAP
- MAXIMO (Version 4 and 5) from MRO software
- MP2, MP5 and D7i from Data Stream
- Passport and EMPAC from Indus Corporation
- EAM and EXP (Version 3) from IVARA Corporation

ABB offers a highly detailed, rigorous, business mapping and system configuration engagement that has enabled many companies to enhance the service management functionality in their CMMS/EAM.

Real Time Production Intelligence

One of the most difficult issues facing manufacturers today is optimizing existing production operations. Companies are striving to meet business objectives while facing an estimated 40% waste of productivity through unplanned stops, interruptions, speed losses, and quality defects. These undetected losses comprise a company's "hidden plant" productivity opportunities.

Leveraging "hidden plant" opportunities requires intimate knowledge of the factory's true performance. Only through consistent, real time measurement and analysis of the business's Key Performance Indicators (KPIs) is true performance measured and improved.

Real Time Production Intelligence (Real-TPI) is a real time performance measurement and analysis software solution that improves plant productivity by identifying ways to increase Overall Equipment Effectiveness (OEE), a crucial KPI that drives return on assets. This user-friendly software automates data-collection and analysis, and provides customized reports tailored to plant management's needs. Real-TPI harnesses the analytical power of three of the standard production evaluation processes:

- OEE
- Root Cause Analysis (RCA)
- Total Productive Maintenance (TPM)

When OEE indicates poor plant performance, RCA is utilized to determine what the problem is and where it is located so the corrective action can be taken. TPM is a process to adjust production equipment procedures with the aim of improving efficiency. Real-TPI is designed to improve efficiency and positively influence ROI by facilitating the elimination of failures in the early stage. Real-TPI:

- Provides solid, real-time performance data and advanced tools for analysis
- Complements production planning, production tracking and financial systems with real-time production efficiency data
- Supports TPM, SixSigma, Failure Modes Effects and Criticality Analysis (FMECA) and other improvement methodologies
- Easily tracks the daily progress and identifies possible problems in the production line
- Supplies critical equipment behavior information, enabling preventive maintenance
- Eliminates inaccurate, time and labor-intensive manual logs
- Enables the plant to perform smarter and at substantial cost savings, resulting in sustainable competitive advantage

Description

An ABB Full Service® partnership is a globally supported long-term, performance-based agreement in which ABB commits to maintain and improve the production equipment. With a Full Service agreement, ABB takes over responsibility for the engineering, planning, execution and management of an entire plant's maintenance activities.

ABB Full Service is a plant reliability management program that turns maintenance operations into profit centers. By assuming responsibility for a plant's maintenance operations, ABB helps improve and sustain the performance of production assets. ABB brings together world-class maintenance and reliability methodologies, parts management, online tools, domain expertise and professional maintenance and P&L leadership to increase asset effectiveness while reducing maintenance costs.

ABB contractually commits to improvement in Overall Equipment Effectiveness (OEE) over the span of the Full Service Agreement. OEE, the industry-accepted measurement of production performance, is a function of three basic indicators: availability, performance efficiency and rate of product quality output. ABB's contractual commitment to OEE includes a bonus for exceeding OEE goals, and a rebate for customers if the goals are not met.

In addition to OEE, ABB contractually commits to reduce overall maintenance costs. Increased OEE and reduced costs yield bottom-line results for ABB's Full Service customers. Coupled with the new ability to focus on core business (rather than maintenance), Full Service improves the business on many levels, making ABB customers even more competitive. Its benefits include:

- Improved plant performance
- Increased reliability and lifecycle of production equipment
- Managed maintenance as a core competence
- Managed change and creation service culture
- Access to resources and knowledge of ABB's global network

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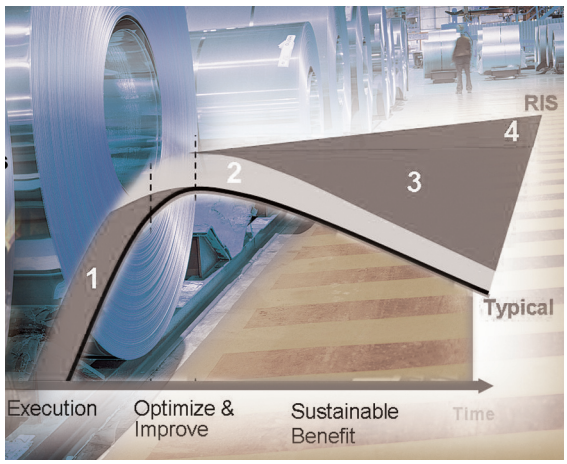

Conclusion

Benefits of an asset optimization strategy extend beyond the maintenance organization to all the stakeholders throughout the enterprise. An effective asset management strategy combines the needs of the production and maintenance organizations. It increases both equipment availability and production rate by providing insight into asset health, corrective action instructions and organizational visibility. Its ability to share contextual information to those who need it — when they need it — reduces time-to-decision and coordinates production and maintenance activities. Executing an asset management strategy to increase OEE and reduce maintenance costs can be a highly effective means to remain competitive in the marketplace.

Executing an asset management strategy to increaase OEE and reduce maintenance costs can be a highly effective means to remain competitive in the marketplace.

ABB provides asset management solutions that present actionable data seamlessly and in the proper context, to operations, maintenance, engineering and management. As a result, continuous improvement initiatives such as Reliability Centered Maintenance (RCM) strategies, plant-wide adoption of proactive maintenance practices and autonomous maintenance minimize unscheduled shutdowns, optimize product quality and become more effective. These activities can be employed regardless of industry. The results are higher return on assets and greater profitability.

For the latest information on Asset Management at ABB, visit us at www.abb.com.

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