Automation Technologies Overview

A commitment to simplicity, strength and service

Results-Driven **Automation**

Defining the challenges...

Investing in automation products and systems involves far more than just selecting the right devices. Achieving a *measurable return* has become the critical goal, creating both challenge and opportunity.

Capacity utilization among most world manufacturers is down. Process and discrete operations are merging to form new requirements for hybrid automation. Regulatory processes are driving the need for greater traceability. Competitive and shareholder pressures are growing.

In this difficult environment, squeezing performance and productivity from business assets comes down to a few seemingly simple tasks:

- Engineering for performance and speed of deployment
- Reducing the time to decision and action
- Optimizing asset availability
- Integrating information for greater visibility
- Leveraging installed assets through planned evolution

Amidst these challenges, the automation landscape is fundamentally changed: Local suppliers have given way to a few global leaders. Advancing technology continues its drive. Capital and operational expenditures are locked in a delicate balancing act.

Automation needs may encompass stand-alone products, integrated solutions, or optimizing services. Or some combination of each. Regardless of the scope, the criteria for selection come down to one factor: achieving *results.*

- Actuators
- Analyzers
- Building Automation
- Circuit Breakers
- Connection and Pilot Devices
- Contactors
- Control Systems
- Crane Solutions
- Drives
- Enclosures
- Energy Management
- Environmental Services
- Fieldbus Solutions
- Generators
- Instrumentation
- Lifecycle Services
- Logistics Solutions
- Marine Systems
- Measurement
- Motors
- Metering
- Network Management
- Offshore Systems
- Positioners
- Power Electronics
- Power Plant Automation
- Power Quality
- Process Automation
- PLCs
- Propulsion Systems
- Recorders
- Relays
- Robotics
- Safety Systems
- SCADA
- Sensors
- Soft Starters
- Simulation
- Switches and Fusegear
- Training
- Turbochargers
- Valves
- Wiring Accessories

Shaping the response...

As the world's largest automation supplier, ABB has built a value chain geared to the singular goal of achieving *results* for customers. Our technical, financial, and human resources reflect both the *strength* of a global leader and the *simplicity* of a willing partner.

Quick Facts: ABB Automation Technologies

- More than 50,000 employees
- Worldwide partner network of distributors, integrators and OEMs.
- 150 manufacturing, software and application centers
- Over 500,000 automation products shipped daily
- Annual revenues of US$ 10 billion
- Over US$ 100 billion automation technologies installed base

Best-in-Class Products

We ship more than 500,000 automation products every day, meeting user needs for motion, measurement, power, protection, control, and optimization. These premium "building blocks" leverage more than 100 years of experience from ABB and heritage companies such as AccuRay, Bailey, Entrelec, Fischer & Porter, Hartmann & Braun, Kent-Taylor and more.

While some of the names may have changed, the commitment to *results* has not: Our best-in-class products provide superior functionality, highest reliability, and lowest lifecycle cost.

Value-Added Solutions

The world's commercial, institutional, and utility pioneers turn to ABB automation for one reason: We *understand* their business. Our solutions shorten the leap from planning to profits through expertise that is engineered for repeatability. The first time around is always difficult. We've seen most customers' challenges *thousands* of times.

Through our Industrial IT commitment, we've built a portfolio of solution components that bridges the gap between business assets and the value of information. The result: faster engineering, predictable deployment, and assured performance.

Performance Services

Recognizing the balance between capital and operational investments, we're also ready to help extend the performance and life of *existing* assets. Our portfolio of optimization services goes far beyond parts and repair, and even beyond our own products. We're prepared to share the risks and rewards of managing the *total* asset lifecycle.

Our service, migration, and performance management programs help customers focus on their core business while ABB performs the task we know best: optimizing asset performance, cost, and reliability.

Partnership Focus

Automation leadership comes with the responsibility of a logical, results-oriented value chain. ABB's global network of direct and partner resources is organized for simplicity, strength and service.

Our broad portfolio spans just three world-class business areas for ease of communications. Fewer than 20 executive managers shape the consensus of global decisions. Cross-functional support teams ensure the optimum balance among strategic, commercial, and geographic customer needs. The bottom line: a client-focused partnership for results!

Welcome to the world of ABB Automation Technologies!

Achieving the results...

Tapping nature's precious resources

To optimize its harvest of energy from the Norwegian shelf, leading oil producer Norsk Hydro turned to ABB. Our Industrial IT systems form the nerve center of the offshore Grane platform, built to recover unusually heavy crude oil from 1700 meters below the surface. With *214,000 tons of oil production daily* as its production target, the Grane platform is an important tool for meeting European energy needs.

ABB systems handle control, supervision, safety, emergency shutdown, utility automation, and process information, plus interface to fire and gas systems. Management of data across the 40,000-ton platform puts operators in real-time command of safety, productivity, and environmental impact.

Improving asset life and availability

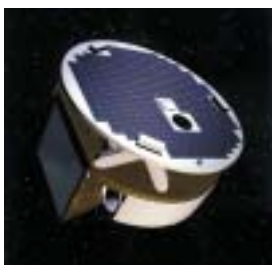
Carter Holt Harvey, a unit of International Paper, sought a way to concentrate on its core business and increase overall equipment effectiveness. The result: A five-year ABB Performance Services contract covering motors and drives, electrical systems, power distribution, spare parts, inventory, and subcontractors.

US$ 40 million in cost savings are targeted through implementation of best practices proven by ABB around the world. Mr. Peter Springford, CEO at Carter Holt Harvey, summed up the team's expectations, reporting, "This contract will play an important role in giving the mill a sustainable future."

Putting flexibility under the hood

Flexible ABB manufacturing solutions are at the very heart of the versatile new Mégane from leading automaker Renault. Over *US$ 160 million in ABB automation technologies* are at work for Renault and its top suppliers on the new model.

With the world's largest installed base of industrial robots (over 115,000 strong), ABB had the high-performance experience to help the new model cross the finish line. Eight Tier One suppliers joined Renault in turning to ABB for critical portions of the Mégane project, spanning operations such as arc welding, painting, water jet cutting, trimming and foam deposition, and body-in-white fabrication.



Expanding scientific knowledge

When the Canadian Space Agency launched its *SciSat1* orbiting laboratory, ABB rode along as supplier of the satellite's primary instrument for studying changes in the earth's ozone layer. Taking precision scientific *measurements from 650 kilometers above the earth,* our Fourier Transform Spectrometer evaluates temperature, trace gases, thin clouds, and aerosols found in the atmosphere up to 30 times daily.

Closer to home, ABB instrumentation devices are the "eyes and ears" of worldwide plant and process efficiency. Unrivalled in product scope and applications expertise, ABB is a global leader with solutions certified to international standards, and a worldwide network of manufacturing plants, calibration labs, and distribution partners.

Increasing production capacity

China's Ningbo Baoxin Stainless Steel contracted with ABB to provide the world's largest hot and cold annealing and pickling lines. Part of a corporate program for *increasing annual output by 130%,* the work spans ABB drives and motors, and process control, plus systems for rolling, flatness, and metal conditioning.

ABB is the world leader in solutions for stainless steel rolling mills, blending proven skills in metallurgy, hot and cold rolling, force measurement, and more. Through its centers of excellence in North America, Europe and Asia, ABB has engineered and commissioned similar projects for the world's leading metals producers.

Saving energy and the environment

Variable-speed drives are a proven tool for increasing the efficiency of electric motors. By constantly regulating speed and torque to fit current demand, drives extend asset life while dramatically reducing energy consumption and environmental impact.

In little over a decade, ABB drives have *reduced CO_2 emissions by 60 million tons* worldwide while saving enough electrical energy to power millions of homes and businesses. By developing drives that are smaller and easier to operate, ABB is helping customers improve both performance and sustainability.

Preserving a cultural landmark

The operators of London's historic Tower Bridge turned to ABB for an innovative load monitoring system that measures weight distribution across the span. Based on precision feedback from ABB load cells, operators can adjust the bearing points for uniform load. The result: Reduced wear and *20 years of additional service life* before major bridge maintenance is expected.

ABB measurement, control and low voltage products play a vital role in facilities management around the world. From office towers in the Middle East to wind farms in Scandinavia, we're a key part of the infrastructure.

Smoother sailing with ABB

Working with the world's leading shipbuilders, ABB revolutionized the concept of marine propulsion by blending high-performance electric motors and variable-speed drives to form the patented Azipod® system. This modular, podded propulsion unit is fitted outside the vessel like a huge "outboard motor" that is capable of self-steering over a 360-degree range.

Along with superior maneuverability, Azipod offers reductions in noise and vibration, while opening up interior space once required for conventional drive components. *Fuel savings of 10-12%* have been validated by leading cruise, ferry, offshore, and naval customers.

Moving mountains more efficiently

The world's leading engine suppliers depend on ABB turbochargers for increased power, fuel savings and environmental efficiency. With over 180,000 units in operation, ABB helps the operators of construction equipment, locomotives, and marine vessels get the job done. Up to *300% gains in engine output* may be achieved.

Recognizing the harsh environment in which many customers work, ABB operates a worldwide network of more than 70 turbocharging service centers on six continents. Remote monitoring of machines in the field and online access to ABB factory records ensures optimized, proactive customer support around the clock.

For the inside story on *Results-Driven* Automation, visit us at www.abb.com

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