

Service from afar

ABB's Remote Service concept is revolutionizing the robotics industry

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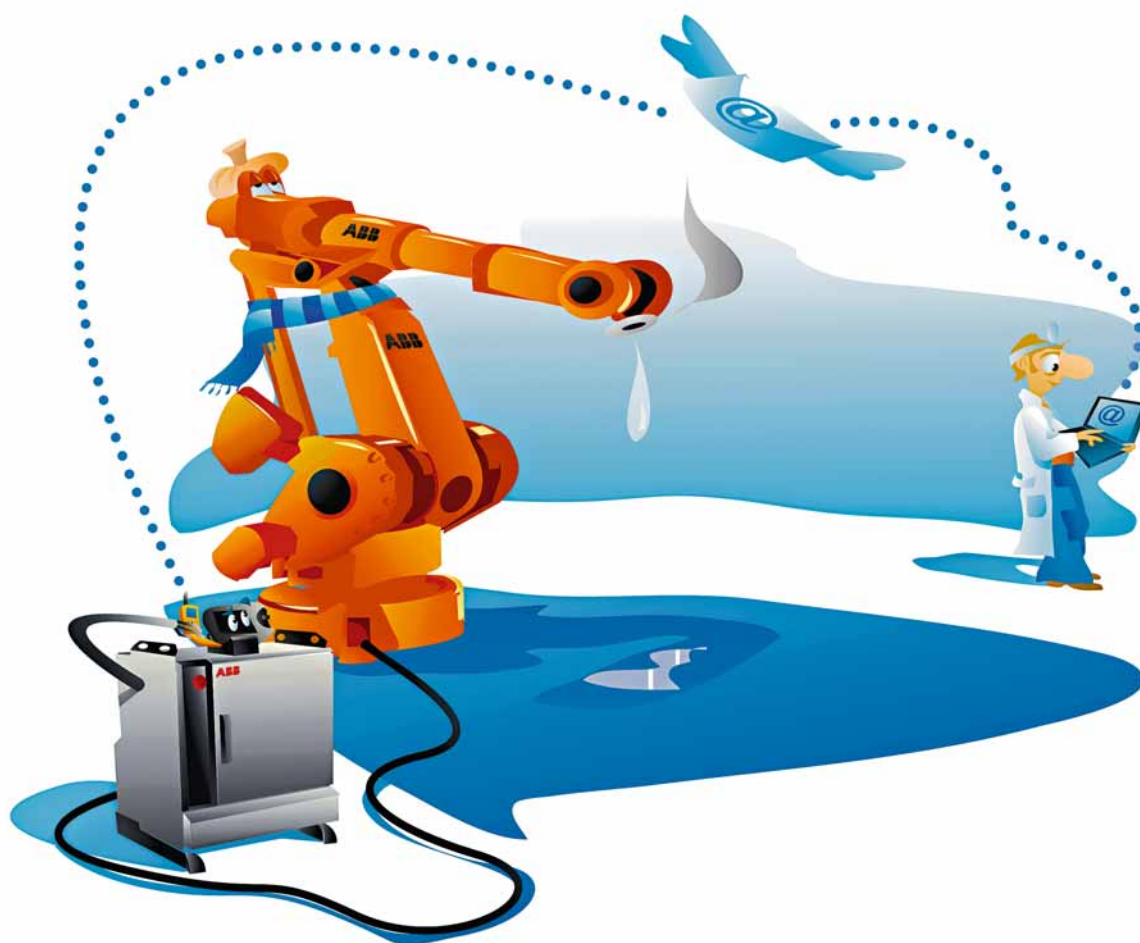


ABB robots are found in industrial applications everywhere – lifting, packing, grinding and welding, to name a few. Robust and tireless, they work around the clock and are critical to a company's productivity. Thus, keeping these robots in top shape is essential – any failure can lead to serious output consequences. But what happens when a robot malfunctions?

ABB's new Remote Service concept holds the answer: This approach enables a malfunctioning robot to alarm for help itself. An ABB service engineer then receives whole diagnostic information via wireless technology, analyzes the data on a Web site and responds with support in just minutes. This unique service is paying off for customers and ABB alike, and in the process is revolutionizing service thinking.

Partnership and productivity

Every minute of production downtime can have financially disastrous consequences for a company. Traditional reactive service is no longer sufficient since on-site service engineer visits also demand great amounts of time and money. Thus, companies not only require faster help from the service organization when needed but they also want to avoid disturbances in production.

In 2006, ABB developed a new approach to better meet customer's expectations: Using the latest technologies to reach the robots at customer sites around the world, ABB could support them remotely in just minutes, thereby reducing the need for site visits. Thus the new Remote Service concept was quickly brought to fruition and was launched in mid-2007. Statistics show that by using the system the majority of production stoppages can be avoided.

Reactive maintenance

The hardware that makes ABB Remote Service possible consists of a communication unit, which has a function similar to that of an airplane's so-called black box **1**. This "service box" is connected to the robot's control system and can read and transmit diagnostic information. The unit not only reads critical diagnostic information that enables immediate support in the event of a failure, but also makes it possible to monitor and analyze the robot's condition, thereby proactively detecting the need for maintenance.

If the robot breaks down, the service box immediately stores the status of the robot, its historical data (as log files), and diagnostic parameters such as temperature and power supply. Equipped with a built-in modem and using the GSM network, the box transmits the data to a central server for analysis and presentation on a dedicated Web site. Alerts are automatically sent to the nearest of ABB's 1,200 robot service engineers who then accesses the detailed data and error log to analyze the problem.

A remotely based ABB engineer can then quickly identify the exact fault, offering rapid customer support. For problems that cannot be solved re-

motely, the service engineer can arrange for quick delivery of spare parts and visit the site to repair the robot. Even if the engineer must make a site visit, service is faster, more efficient and performed to a higher standard than otherwise possible.

Remote Service enables engineers to "talk" to robots remotely and to utilize tools that enable smart, fast and automatic analysis. The system is based on a machine-to-machine (M2M) concept, which works automatically, requiring human input only for analysis and personalized customer recommendations. ABB was recognized for this innovative solution at the M2M United Conference in Chicago in 2008 **Factbox**.

Proactive maintenance

Remote Service also allows ABB engineers to monitor and detect potential problems in the robot system and opens up new possibilities for proactive maintenance.

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The service box regularly takes condition measurements. By monitoring key parameters over time, Remote Service can identify potential failures and when necessary notify both the end customer and the appropriate ABB engineer. The management and storage of full system backups is a very powerful service to help recover from critical situations caused, for example, by operator errors.

The first Remote Service installation took place in the automotive industry in the United States and quickly proved its value. The motherboard in a robot cabinet overheated and the rise in temperature triggered an alarm via Remote Service. Because of the alarm, engineers were able to replace a faulty fan, preventing a costly production shutdown.

MyRobot: 24-hour remote access

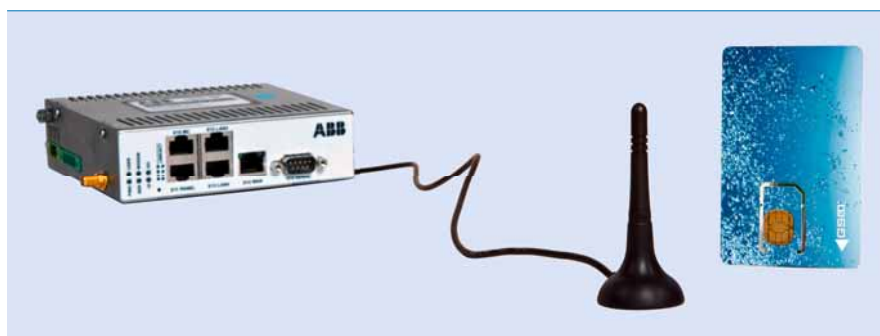
Having regular access to a robot's condition data is also essential to achieving lean production. At any time, from any location, customers can verify their robots' status and access maintenance information and performance reports simply by logging in to ABB's MyRobot Web site. The service enables customers to easily compare performances, identify bottlenecks or developing issues, and initiate the most

Factbox Award-winning solution

In June 2008, the innovative Remote Service solution won the Gold Value Chain award at the M2M United Conference in Chicago. The value chain award honors successful corporate adopters of M2M (machine-to-machine) technology and highlights the process of combining multiple technologies to deliver high-quality services to customers. ABB won in the category of Smart Services.



1 Remote Service "service box," antenna and GSM card



Partnership and productivity

appropriate and timely improvement activities. MyRobot contributes greatly to waste reduction and improved production outputs.

Case study: Tetley

Tetley GB Ltd is the world's second-largest manufacturer and distributor of tea. The company's manufacturing and distribution business is spread across 40 countries and sells over 60 branded tea bags. Tetley's UK tea production facility in Eaglescliffe, County Durham is the sole producer of Tetley tea bags ².

ABB offers a flexible choice of service agreements for both new and existing robot installations, which can help extend the mean time between failures, shorten the time to repair and lower the cost of automated production.

Robots in the plant's production line were tripping alarms and delaying the whole production cycle. The spurious alarms resulted in much unnecessary downtime that was spent resetting the robots in the hope that another breakdown could be avoided. Each time an alarm was tripped, several hours of production time was lost. "It was for this reason that we were keen to try out ABB's Remote Service agreement," said Colin Trevor, plant maintenance manager.

To prevent future disruptions caused by unplanned downtime, Tetley signed an ABB Response Package service agreement, which included installing a service box and system infrastructure into the robot control systems. Using the Remote Service solution, ABB remotely monitors and collects data on the "wear and tear" and productivity of the robotic cells; this data is then shared with the customer and contributes to smooth-running production cycles.

² Tetley factory in Eaglescliffe, County Durham



Higher production uptime

Since the implementation of Remote Service, Tetley has enjoyed greatly reduced robot downtime, with no further disruptions caused by unforeseen problems. "The Remote Service package has dramatically changed the plant," said Trevor. "We no longer have breakdown issues throughout the shift, helping us to achieve much longer periods of robot uptime. As we have learned, world-class manufacturing facilities need world-class support packages. Remote monitoring of our robots helps us to maintain machine uptime, prevent costly downtime and ensures my employees can be put to more valuable use."

Service access

Remote Service is available worldwide, connecting more than 500 robots. Companies that have up to 30 robots are often good candidates for the Remote Service offering, as they usually have neither the engineers nor the requisite

skills to deal with robotics faults themselves. Larger companies are also enthusiastic about Remote Service, as the proactive services will improve the lifetime of their equipment and increase overall production uptime.

In today's competitive environment, business profitability often relies on demanding production schedules that do not always leave time for exhaustive or repeated equipment health checks. ABB's Remote Service agreements

are designed to monitor its customers' robots to identify when problems are likely to occur and ensure that help is dispatched before the problem can escalate. In over 60 percent of ABB's service calls, its robots can be brought back online remotely, without further intervention.

ABB offers a flexible choice of service agreements for both new and existing robot installations, which helps extend the mean time between failures, shorten the time to repair and lower the total cost of ownership. With four new packages available – Support, Response, Maintenance and Warranty, each backed up by ABB's Remote Service technology – businesses can minimize the impact of unplanned downtime and achieve improved production-line efficiency.

The benefits of Remote Service are clear: improved availability, fewer service visits, lower maintenance costs and maximized total cost of ownership. This unique service sets ABB apart from its competitors and is the beginning of a revolution in service thinking. It provides ABB with a great opportunity to improve customer access to its expertise and develop more advanced services worldwide.



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