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Distributed Control Systems
for Industrial Automation

ABB



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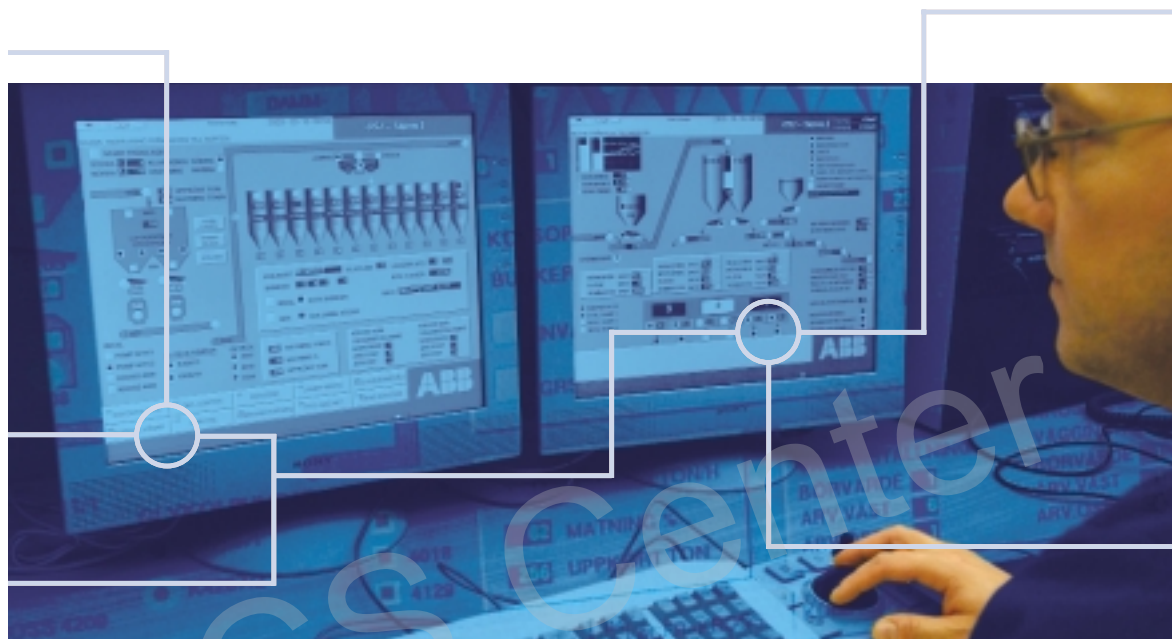
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Advant Master Evolution

A platform for utilizing your past investment
to secure future competitiveness





Upgrade for success. No more. No less.

Increased productivity. Shorter lead-times. Improved quality and consistency. Higher throughput. Minimal or no downtime. Maximum plant utilization and greater business profitability. These are just some of the real benefits you earn when you upgrade your process control and supervisory systems with ABB.

ABB's upgrading solutions let you add new capabilities to your existing system at a pace that fits your requirements and your budget. You don't have to start from scratch.

By utilizing what you already have, and extending it with new features, functions and technologies through a simple upgrade, you are making the wisest investment choice you possibly could. You can exploit your existing infrastructure and the millions you have already invested to their full capacity with an ABB upgrade.

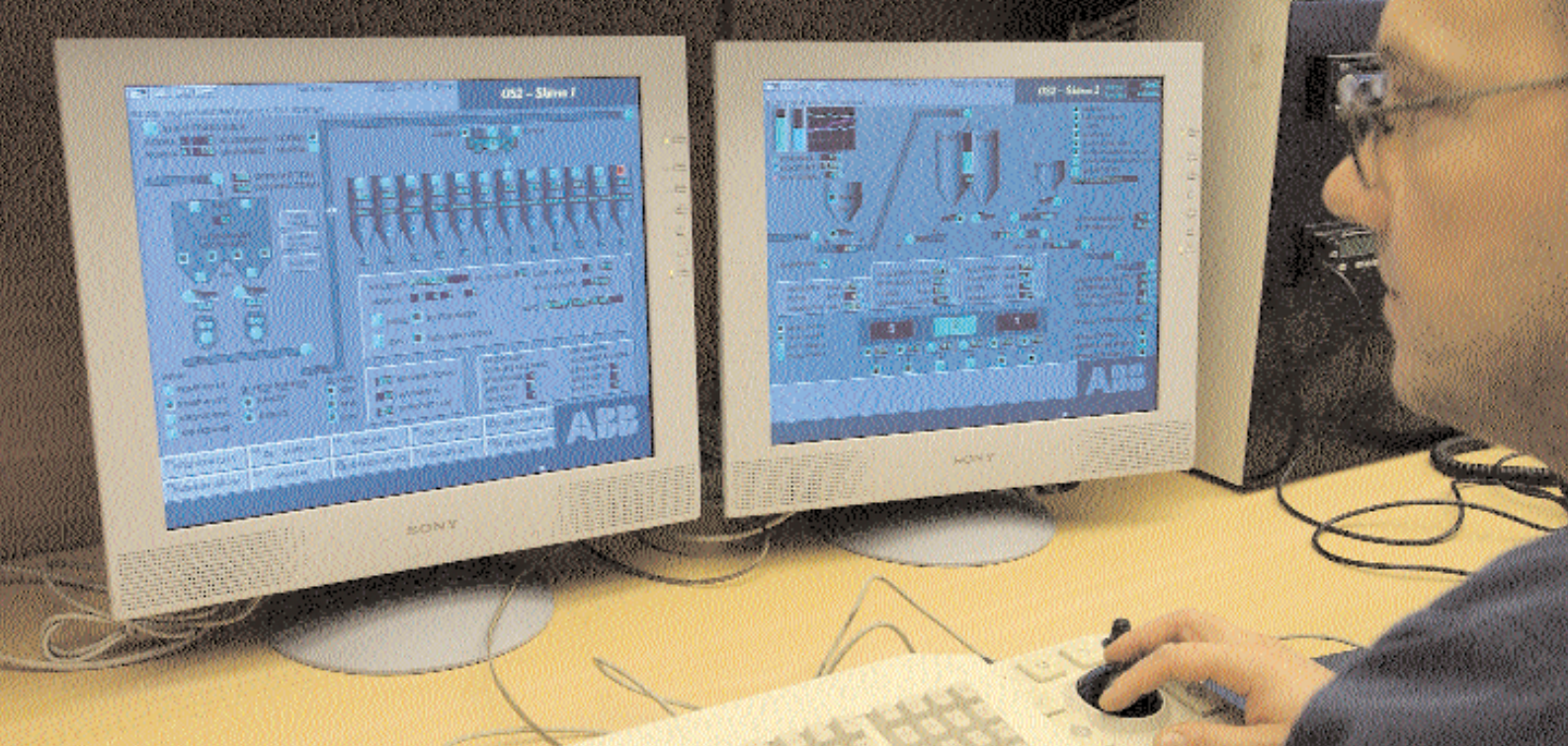
Advant Master Open Control System is the ideal platform for implementing the full benefits of Industrial^{IT} System 800xA, our top-of-the-line process control platform. But you don't need to go all the way. You can choose to move towards it incrementally.

With a step-by-step capital investment approach, you can stay in full control of your process costs and secure your profitability. Our experience will enable you to upgrade your processes in as little as an hour (see SSAB success story). Or use your old workstations in parallel with your new work-stations without a moment's downtime (see Södra Cell Mörrum success story).

Or you can modernize and integrate your entire plant's control environment in an incredibly smooth manner and ensure you are ready for future functionality (see Danish Distillers success story).

In the following pages, you'll find out more about the benefits you'll gain when you choose ABB's proven and secure evolution roadmap.





Maximize your return on investment

When making an upgrade, you need the assurance that your investment will generate concrete process-related benefits. ABB can confidently make the claim that upgrading will result in securing a profitable return on investment.

Measurable improvements

A control system upgrade will reduce your long-term life-cycle costs in ways that are measurable. The upgrading steps follow our “evolution roadmap,” which guides you and protects your investments because you will be able to reuse many parts of your existing software/hardware.

Furthermore, since evolution is a step-by-step approach, you pay as you go. ABB is delivering products that are compatible with and enhance automation systems you already own. In taking a long-term investment strategy, you can move up the upgrading ladder as you need, or opt for the complete Industrial^{IT} solution.

The choice is yours.

Improve your performance

A real measure of your evolution strategy is whether it improves your performance. ABB’s evolution strategy will do exactly that because it will help you reduce your maintenance costs and unplanned stops.

Remove bottlenecks and raise performance

Because more information is better available to operators and other frontline personnel through improved process integration and information retrieval, you will improve your productivity as well as your decision making process. Performance is also improved and

costs are controlled through more secure management and supervision of your processes. When upgrading to a new control system you will be able to reuse your existing application programs, I/O, field wiring and displays as well as engineering, operations and maintenance competence.



Krister Johansson, control system expert at SSAB Tunnlåt:

"The co-operation with ABB was done in a true spirit of win-win. By upgrading from MasterPiece 200/1 to Advant Controller 450 we were able to use existing hardware and controller software, which reduced risk and cost.

A well-done preparation and pre-testing of the system together with openness in communication and willingness from both parties to help each other was significant through the whole project.

All of this made it possible to make the change of systems in about one hour – less than expected – without stopping the process before, during or after installation."

A record-breaking one-hour upgrade

SSAB Tunnlåt, a coking plant in Luleå, Sweden, is charged with converting imported coal to blast furnace coke – a process that takes place in 54 ovens operating year round at temperatures between 1,200 and 1,300 degrees C. To support the parent company's production of more than two billion tons of steel per year, SSAB Tunnlåt is under constant pressure to maintain production volume and quality.

As SSAB Tunnlåt expanded over the years, it outgrew its MasterPiece 200/1s in capacity. The system had reached a CPU load of 80%, limiting growth and the ability to install new applications. If the company was going to increase productivity, maintain product quality and environmental standards, while at the same time streamline the organization, new capacity was urgently required.

Management decided to upgrade the system from MasterPiece 200/1 to Advant Controller 450, a system that was able to reuse the existing infrastructure, including controller application, I/O, field wiring and control network MB 300.

The actual switchover beat all expectations.

Plans were made to shut the system down for eight hours, but it took only one hour without stopping the process before, during or after installation.

Prepared for growth

With the Advant Controller upgrade, the CPU load reduced from 80% to 30%, process control and quality output improved, as did the ability of operators to monitor and manage the entire process, as well as the coal use and storage. The system also allowed SSAB to improve their ability to reprocess waste as raw material for asphalt and perfume, as well as improve the ability to detect the conditions of the ovens.



Choose your evolution path

The beauty of ABB's evolution strategy is the flexibility you have to upgrade step-by-step. This allows you to spend as you go, depending on your needs, budget and ambitions. Our solutions are designed to be forwards and backwards compatible, protecting your investment.

Smooth evolution is a cornerstone

Old and new ABB products, such as controllers, and applications, can communicate with one another across generations. You never need to worry about whether you've locked yourself into a deadend position. You can decide when and what products or applications to upgrade, as well as the size and scope of your upgrade

in a step-by-step process that match your needs.

Or you can opt for a long-term partnership with ABB, in which all your future upgrading needs will be taken care of.

Afterall, it is our core business. Either way, you never lock yourself in from an evolution point of view.

Always stay competitive

To stay profitable, you need the solutions that can sharpen your competitive edge. ABB's solutions will let you meet your most demanding accessibility, connectivity and performance requirements.

Make the right decision

When you upgrade, you will be able to utilize the latest functionality of Advant Master and Industrial^{IT} System 800xA, giving you the possibility to integrate at every level and process of your enterprise. We can help you link your

factory floor processes with your business or customer management systems, back-office record-keeping and ordering systems and so on, making sure the right person gets the right information to make the right decision. Either choice you make, you'll stay competitive.



Jens Jochumsen, process engineer at Danish Distillers' yeast plant in Grenå:

"We decided to contact ABB with a project for replacement of the complete process control and monitoring system," explains Jochumsen.

"We did so because we had previous experience with ABB since they installed the control system for our yeast tanks.

And based on our positive impression both of the expertise of ABB Denmark and the function and durability of the Advant system, we decided to let them develop what could be seen as a complete modernization and integration of the plant's control environment."

Clean solutions in a delicate environment

A leading producer of potable spirits and yeast in Denmark and worldwide, Danish Distillers had reached an impasse in their installed control system, a system used for process control and monitoring. The system was outdated, spare parts and qualified service were becoming increasingly difficult to acquire and the risk for production disturbances had increased – an unacceptable position for a company that needed a reliable system for the complicated and delicate process of industrial yeast production.

Danish Distillers also needed a new control system that would meet the new government regulation about traceability in yeast production. This meant that from 2005, Danish Distillers will be required to keep very precise track records of production, a requirement their old system would be unable to fulfill.

The company wanted an open system with an interface that was easy to work with, and a system setup that allowed easy access to documentation concerning the processes and products across all departments involved.

A secure evolution strategy

ABB's Industrial^{IT} system met all these – and other – requirements. The advantage of the new Process Portal workstations is the possibility to present information in layers and to have easy access to all relevant information from one source only. They are also flexible enough to allow for individual programming of screens and information access.

The new system is flexible enough to accommodate future expansions and growth, giving Danish Distillers the ability to always choose their own evolution path.



Reduce your risks

With ABB's evolution process, you will eliminate or significantly reduce any disruptions.

Keep risks down, options open

Your low-cost investment is painless and profitable, ultimately resulting in higher productivity and value to your shareholders.

Part of our offering includes guaranteed access to support, training and spare parts. You will also receive backup from our highly experienced and competent staff in the upgrading process.

Maintain your leadership position

As a leading player in your industry, you need to make sure that any evolution step you take offers the lowest possible risk with the highest possible benefit. Our secure evolution strategy and roadmap will ensure that they deliver exactly that.

Stay on the cutting edge

Our evolution roadmap will allow you to maintain your leadership position because your process will always stay on the cutting edge of productivity, quality and cost-effectiveness. When you upgrade to ABB's latest products

and applications, you are effectively confirming your reputation as an early adapter, which also has its advantages. You will find it easier to keep and retain top-of-the-line operators and other personnel. All of which leads to good return on investment and profitability.



Magnus Andersson, control system manager at Södra Cell Mörrum:

"When we started out with this upgrade project we wanted to build on what we had. It was unthinkable not to retain all the money and competence that were invested in controllers, controller application, I/O, field wiring etc. Therefore the ability to replace the MasterView 800 workstations with the Process Portals and keep everything "underneath" was a huge benefit for us. It also meant considerable lower risk for us.

We are expecting a lot from the integration of different information such as P&I, CAD, interlocking diagrams and maintenance. We have not seen the full realization of these benefits yet, but from what we have seen so far we know it will save us a lot of time, make us increase the uptime and in the end the productivity."

Speeding up productivity

Södra Cell Mörrum is a steadily growing pulp mill on the southern coast of Sweden facing a strategic question: what changes in the workplace can support the mill's productivity objectives? The age of the existing ABB MasterView workstations, installed during 1987-88, proved to be a barrier to growth. Shutdowns were a possibility Mörrum needed to preclude. Plus, keeping the old stations up and running were expensive because of the rising costs and poor availability of spare parts and technical support.

Management also wanted to support the ability of their staff to make better-informed decisions more quickly. By giving operators access to the latest information, such as P&I diagrams, CAD drawings and process descriptions, from any workstation, they would be able to increase productivity. Existing workstations were stand-alone systems.

Protecting past investments

Another priority was to retain the existing infrastructure, including controllers, controller applications, field wiring and I/O, in any upgrade. Management also wanted to improve system monitoring through better trend identification.

To solve these problems, management chose to upgrade to ABB's highly advanced Industrial^{IT} Process Portal workstations that enabled operators to access mission critical information and make better decisions faster. Process Portal's compatibility with the existing system also allowed Mörrum to reuse existing infrastructure and keep costs down.

During the actual replacement, Mörrum was able to keep the MasterView 800s running in parallel, which meant there was no production slowdown at all.

DCS Center

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