

Auto-Bake

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Paul Brennan
Senior Electrical Engineer

Auto-Bake Uses Wonderware Supervisory HMI Software Solution to Provide Baking Systems that Make Mouths Water

Goals

- Provide a baking system that blend traditional practices with modern technology to provide baked goods that look, feel and taste "homemade"

Challenges

- Create a fast yet secure production system
- Design a vertical oven with a reduced footprint with increased production flexibility

Solutions and Products

- Wonderware InTouch® HMI
- Wonderware Industrial Computers

Results

- Increased plant uptime through improved diagnostics and troubleshooting functionality
- Reductions in the number of personnel required to operate the baking line
- Data logging of process values and a historical audit trail of alarms and events
- Decreased overall testing and commissioning times
- Global language support, in which a single button enables language switching



Sydney, Australia – Auto-Bake, a producer of commercial machinery for the baking industry, has been in operation for thirty years. With headquarters in Sydney, Australia, Auto-Bake Pty Ltd. designs and produces automated continuous baking systems for its global commercial food customers.

As a Registered member of the Wonderware SI Program, Auto-Bake first deployed an operator interface using Wonderware's InTouch HMI software in 1999. At the start of 2003, Auto-Bake standardized on the Wonderware Supervisory HMI Software Solution with Touch Panel Computers from Wonderware's line of Industrial Computers. To date, more than twenty Auto-Bake lines have been installed or upgraded to the Wonderware Supervisory HMI Solution featuring Industrial Computers bundled with InTouch software.

Wonderware Distributor Metquip Systems Pty Limited helped Auto-Bake upgrade its legacy touch-screen panels to Wonderware Touch Panel Computers.

"Auto-Bake engineers were looking for an independent supplier of touch panels to replace some [proprietary] technologies that had become outdated. They also needed an interface that would work equally well with both Rockwell Automation and Siemens programmable logic controllers (PLCs). They felt that Wonderware was the best partner for this," said Kevin Adair, senior technical applications consultant with Metquip Systems.

While Auto-Bake personnel have enjoyed the attractive stainless steel appearance of their Wonderware Touch Panel Computers, what they especially appreciate is the time and effort they have saved from the pre-installed InTouch software.

Pre-installation means that the operating system and Wonderware software have been installed and configured to work optimally together – significantly reducing potential end-user issues with pre-requisite software, configuration and compatibility.

Auto-Bake's Serpentine System

Auto-Bake's Serpentine systems blend traditional baking practices with modern technology to provide baked goods that look, feel and taste "homemade." The baking system uses a vertical oven, through which chain-suspended pans and trays move along a vertical "S" serpentine path.

The advantages of this method over a conventional oven system include reduced footprint for the same baking capacity and increased flexibility. Simply changing the trays and pans in the oven enables the bakery to change products, for instance, from cakes to muffins or cookies. In addition, the compact vertical ovens facilitate more precise control of temperatures for each level or zone, resulting in more even baking and improved consistency.

Benefits of the Wonderware Supervisory HMI Software Solution

"Wonderware Touch Panel Computers and InTouch software cut down development time, so that we can put more time into improving the functionality and aesthetics of the operator interface," commented Peter Collett, Electrical Engineer of Auto-Bake.



Other significant benefits enjoyed by Auto-Bake include:

- Increased plant uptime through improved diagnostics and troubleshooting functionality. (These features are built in and thus do not require additional software or PLC programming.)
- Remote troubleshooting via an HMI that provides both visualization and control
- Reductions in the number of personnel required to operate the baking line
- Data logging of process values, and a historical audit trail of alarms and events
- Decreased maintenance costs and downtime
- Fewer on-site visits, which reduces travel costs
- Decreased overall testing and commissioning times
- Global language support, in which a single button enables immediate switching between English and other local languages online
- More attractive and intelligent graphics that leverage Wonderware's SmartSymbol technology
- Internet Protocol (IP) cameras that monitor and control the production line from a single location

Faster Yet Secure Production

Wonderware Touch Panel Computers provide both historical data logging and alarming. Once records are stored, the production-line operator simply selects a product or recipe name from the menu to load a parameter set to the control system.

This technique automatically populates individual control settings, which enables very quick changeovers between production runs without having to reprogram for each product. Moreover, the Touch Panel Computers provide simple access to stored baking schedules, so that operators can execute product changeovers with the touch of a finger.

Additionally, as a result of the InTouch software's integrated security functions, only operators with the appropriate security levels can modify, delete or save existing product recipes. Recipe profiles are saved to the internal hard disk, permitting very large numbers of files to be stored. The



InTouch software's connectivity options also permit straightforward back-up and synchronization to external systems and devices.

Worldwide Language Support: A Deciding Factor

The InTouch software's multiple-language support was the deciding factor for Auto-Bake's upgrade to Wonderware Touch Panel Computers. Auto-Bake markets its products worldwide and, thus, must support numerous local languages.

The ability to develop a project in a single language and then export all text via industry-standard eXtensible Mark-up Language (XML) has reduced the time and cost to develop and support multiple language translations. Once exported, the XML files can be sent to a translator and later re-imported to the application without requiring developer expertise. Minor additions or grammatical corrections can be easily implemented on site by the customer and updated into the application.

During training sessions, product development stages and support situations, the local operators and English-speaking Auto-Bake staff can work alongside each other by quickly toggling between languages. Previously, either no English language existed after translation, or two separate developments of the same application were required. This was very difficult to manage, and inevitably, revisions were not kept up-to-date in both applications.

Since the InTouch software has given Auto-Bake language-switching capability, Auto-Bake has shipped several baking machines that offer support with English and a second language – including Spanish, Norwegian and Japanese.

Consistent Software and Data across All Machines

The earlier problem of developing HMI applications in multiple packages extended beyond issues of language translation because Auto-Bake's previous system consisted of proprietary hardware and software on different isolated machines. Extraordinary effort was required to keep data consistent and up-to-date because the engineers had to develop on separate, disconnected systems.

"Before, we had to do some work on one computer and some on another, and the two systems were too hard to synchronize. Now, with Wonderware, we can do all of the work in a single HMI application. We don't have to waste time catching up between the different platforms. The Wonderware software works with all of the different brands of PLC hardware," explained Paul Brennan, Senior Electrical Engineer, of Auto-Bake.

Simplified System Monitoring via Integrated IP Cameras

The Auto-Bake Serpentine line is fitted with several IP cameras that are connected to the dedicated Ethernet local area network (LAN) of the line. Through Wonderware's InTouch HMI, personnel can select a camera and view the images captured by the camera as a video stream directly into the software. The IP cameras enable a single operator to monitor and control the complete production line from one location.

Improved Support through Remote Troubleshooting

What's more, Auto-Bake employees can now monitor equipment and processes from a remote location, saving significant time and expenses by reducing travel to each individual customer site. By enabling its staff to see what's happening in the plant without actually being there, the support and response times that Auto-Bake can provide to its customers is greatly improved. Now Auto-Bake personnel can usually resolve equipment issues and provide advice on optimal baking processes and oven adjustments remotely from Auto-Bake's offices in Sydney.

Higher-Quality Products, Delivered Faster

"The Wonderware software's standardized development tools make it easier for us to handle a variety of modules and configurations," added Peter Collett. "We can now manage a higher volume."

In addition, Paul Brennan has noticed that "the quality of our end-products has improved because we can now spend more time on quality assurance and less time replicating the same data on multiple computers."

After installing Wonderware Touch Panel Computers, Auto-Bake has enjoyed the advantages of greatly improved graphics, built-in diagnostics, increased reporting, and reduced worldwide travel because of the ability to troubleshoot remotely.

The Wonderware Supervisory HMI Software Solution has helped Auto-Bake Pty Ltd. improve its operational flexibility and product consistency, increase plant uptime, improve diagnostics, reduce costs, and reduce workload.



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