

# BREAKING THE BARRIERS

TO ACHIEVING  
OPERATIONAL EXCELLENCE

Supplement to

**AutomationWorld**  
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Invensys

Wonderware

Powering intelligent plant decisions in real time.

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# Making the Complex, Easy

Wonderware's new InTouch 10.0 HMI and System Platform 3.0 software are helping manufacturers achieve new levels of operational excellence by breaking the old barriers to information access and integration. In this interview, Mike Bradley Sr., president of Wonderware, a business unit of Invensys, explains how these solutions make the complex, easy, with graphical, editing, security and integration

**Automation World:** These are interesting times for manufacturers. Global competition has forced businesses to retool their manufacturing strategies, while new technology has provided ways to drive impressive productivity gains. How has operations management software played a role?

**Mike Bradley Sr.:** What we're seeing is that the operations view itself has changed. It has now become a production, product and business view, not just a manufacturing view. Operations management software—which includes human-machine interface (HMI), supervisory

## "Manufacturers who implement operational excellence are in a better position to compete on a global stage."

control and data acquisition (SCADA), manufacturing execution systems (MES), manufacturing intelligence and Enterprise Resource Planning (ERP) integration applications—is filling a much broader role and addresses a much broader audience.

In addition to the operations functions, operations management software needs to meet the concerns of IT (information technology) for security and maintainability across all of the integrated manufacturing and business systems. And for engineering, operations management software needs to reduce development time, effort and errors.

**AW:** Wonderware has been at the forefront of developments in operations management software since its launch, in 1989, of the first Microsoft Windows-based HMI package. Provide a historical perspective on how the evolution of Wonderware offerings meets the challenges of today's definition of operations management.

**Bradley:** Software has evolved from easy-to-build, single-node, single-machine and process HMI applications, to multi-node, multi-machine and process applications, to the integrated suites of software for factory applications that we introduced in the 1990s.

Since 2000, we have worked with leading companies to understand their challenges with integrating

all aspects of their operations, including the plant, IT and business systems. Invensys' significant investment to address these challenges resulted in the introduction of the ArchestrA software architecture, which is based on industry standards and includes common industrial software services that we call Industrial SOA (for service-oriented architecture).

ArchestrA technology supplies three key benefits to our customers. One, it meets today's demanding integration needs, with a focus on ease-of-use that hides complexity. Two, it emphasizes ease of connectivity to existing plant and business systems across the enterprise. And three, it delivers speed of implementation, allowing faster roll-out of the solution over multiple plants to realize company-wide benefits more quickly.

**AW:** Now Wonderware is pioneering another major breakthrough for operations management software, with the launch of InTouch 10.0 HMI and System Platform 3.0 software. How will these solutions change the game for manufacturers?

**Bradley:** Here again, I'll answer your question by focusing on the three main benefits that our software provides for the market. First, to improve engineering effectiveness, the feature sets of the InTouch 10.0 HMI and System Platform 3.0 software enable engineers to build intuitive, reliable and maintainable HMI, SCADA and MES applications using a single, high-productivity software platform that helps reduce time, costs and errors. Second, to improve IT effectiveness, this latest software platform makes it much easier, less time-consuming and less costly to integrate and manage secure, integrated operations applications on an ongoing basis. And third, to improve operational effectiveness, these software solutions empower operations personnel with intuitive views of the right enterprise-wide information in order to improve operational efficiency, reduce training costs, and minimize unplanned application downtime.

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Invensys' significant investment to address integration challenges resulted in the introduction of the ArchestrA software architecture."

—Mike Bradley Sr., President, Wonderware



# Software Users Take a Team Approach

When it comes to Operations Management software, manufacturing organizations rely on a team approach to purchase, implement and manage their applications. In this summary of results from our exclusive *Automation World* survey, learn about best practices for applications and find out who users trust most when it comes to making important software decisions.

**By Jane Gerold**, Custom Content Director, *Automation World*

**OPERATIONS MANAGEMENT** software plays a critical role in manufacturing—from visualization and data collection applications through integration with corporate business systems. Robust software applications that deliver proven results provide competitive advantage in the global marketplace.

How is industry stacking up? What are the best practices to purchase, implement and manage Operations Management software? And whom do manufacturers turn to for information and application assistance?

To answer these questions, *Automation World* conducted an exclusive survey of manufacturing software users and system integrators (SIs) who work in industries that span automotive, food and beverage, and pharmaceutical to chemical, petroleum and fabricated metals, among others. The survey, conducted in June, asked respondents about their purchasing, implementation and management practices for Operations Management software, which includes human-machine interface (HMI), supervisory control and data acquisition (SCADA), manufacturing execution systems (MES), manufacturing intelligence and Enterprise Resource Planning (ERP) integration applications. More than 350 recipients completed the survey, with some surprising results.

**OPERATIONS MANAGEMENT SOFTWARE** is no longer the exclusive domain of engineers and operators. In fact, in 21 percent of organizations, the Information Technology (IT) department has primary responsibility for the ongoing management of Operations Management software. Engineering has primary responsibility in 48 percent of organizations, while Maintenance is primary in 15 percent and Operations in 13 percent of organizations.

Overall, 71 percent of respondents say that engineering plays a role in the ongoing management of Operations Management software, almost 50 percent say IT shares a role, 32 percent say maintenance has a role and 31 percent say operations shares a role in the ongoing management of applications.

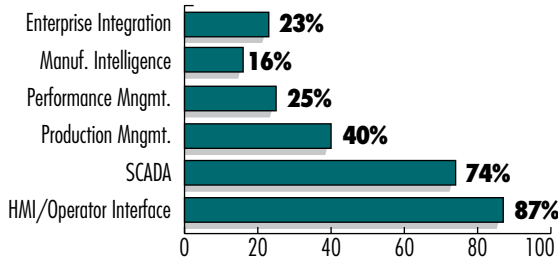


When it comes to purchases of Operation Management software, again there is a team approach. While 82 percent of respondents say they are personally involved in the purchase of Operations Management software, these respondents represent a multitude of departments. Asked to select all departments in their organizations who are involved in purchasing decisions for Operations Management software, 69 percent of respondents say engineering is involved; 48 percent say plant management is involved; IT, operations and maintenance are involved at 38 percent, 36 percent and 34 percent respectively; and the executive C-level is involved in 33 percent of purchases. Curiously, respondents say the purchasing department is involved in only 20 percent of organizations.

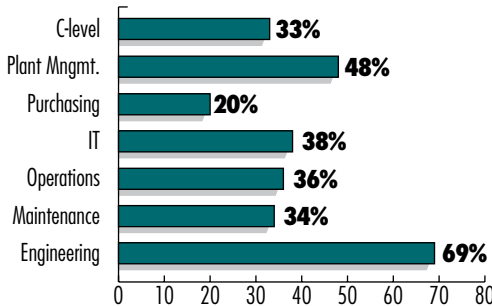
**OPERATOR INTERFACE/HMI** was the most widely selected type of Operations Management software used in manufacturing organizations, as indicated by 87 percent of the respondents. SCADA software was second, selected by 74 percent of respondents. Other types of Operations Management software used by manufacturing organizations include Production Management (40 percent), Performance Management (25 percent), Enterprise Integration (23 percent) and Manufacturing Intelligence (16 percent).

Operations Management software is no longer the exclusive domain of engineers and operators  
—IT plays a crucial role.

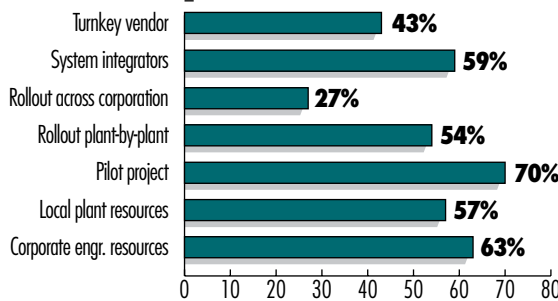
#### TYPE OF OPERATIONS MANAGEMENT SOFTWARE USED



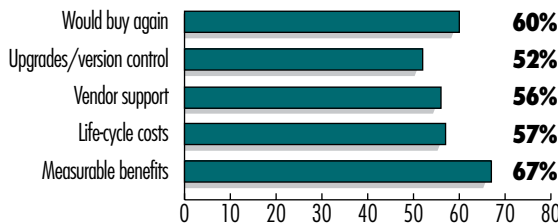
#### DEPARTMENT(S) RESPONSIBLE FOR PURCHASING OPERATIONS MANAGEMENT SOFTWARE



#### THE MOST SUCCESSFUL METHODS FOR IMPLEMENTING SOFTWARE APPLICATIONS



#### SATISFACTION WITH THE ONGOING MANAGEMENT OF OPERATIONS MANAGEMENT SOFTWARE



Manufacturing organizations are results-driven, with 72 percent of organizations saying they purchase and use Operations Management software to increase productivity, 68 percent buy to provide greater process visibility, and almost 60 percent buy to reduce downtime and increase quality. These performance issues will likely increase the popularity of Performance Management and Manufacturing Intelligence software applications for future purchases.

A second tier of factors driving the purchase and use of Operations Management software includes connection to corporate business systems (38 percent), to increase throughput (37 percent), to reduce labor costs (37 percent) and to reduce material and/or energy costs (36 percent). To expand capacity (32 percent) and for regulatory compliance (27 percent) were also reasons to purchase and use Operations Management software.

Of the various ways to purchase software, the largest percentage (44 percent) purchase through distributors. Additionally, 41 percent purchase software through system integrators (SIs), 35 percent through a global contract with a software supplier and 35 percent purchase locally, on a project-by-project basis. Only 17 percent of respondents purchase software through a corporate department and 11 percent purchase on a global basis.

**MANUFACTURING ORGANIZATIONS** use a variety of sources to research Operations Management software. These include vendor and/or distributor salespeople (58 percent), Internet searches/vendor Web sites (49 percent), corporate engineering (48 percent), vendor events (41 percent), references from industry users (40 percent) and industry publications (39 percent).

Of these, software users place the greatest amount of trust in their corporate engineering departments (ranked high by 68 percent of respondents) and in references from other industry users (65 percent). Much less trust is placed in vendor and/or distributor salespeople (ranked high by only 37 percent of respondents).

To implement software applications, respondents use the following methods: internal corporate engineering resources (61 percent), system integrators (51 percent), pilot projects (43 percent) and local plant resources (40 percent).

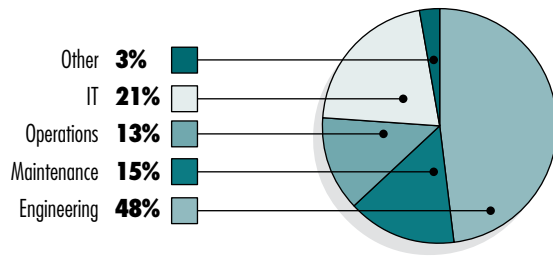
For the highest level of implementation success, software users say the best practice is to run a pilot program (ranked high by 70 percent of respondents), followed by using internal corporate engineering resources (63 percent) and system integrators (59 percent). A major simultaneous rollout across the corporation was voted as the least successful way to implement projects, with only 27 percent of respondents ranking this method as high.

For the highest level of implementation success, software users say the best practice is to run a pilot program.

Survey recipients were asked how satisfied they are with the purchasing process, implementation process and management of their Operations Management software. Those factors ranked highest in purchasing satisfaction include: on-time delivery (given a high ranking by 58 percent of respondents); knowledge of the salesperson (55 percent); and ongoing service contract (50 percent). While software users may not have the highest level of trust for salespeople, they acknowledge that salespeople know their products.

In the implementation process, highest satisfaction ratings were given to “software delivered expected results” (62 percent of recipients), “software integrated well with existing systems” (56 percent) and “project was on schedule” (52 percent). Respondents were not as satisfied with factors such as “no hidden costs” and “software was bug-free.”

PRIMARY RESPONSIBILITY FOR THE ONGOING MANAGEMENT OF OPERATIONS MANAGEMENT SOFTWARE



In rating their satisfaction with the ongoing management of their Operations Management software, respondents in general were very satisfied with their software applications, with every factor listed attaining a better than 50 percent high-satisfaction rating. These include: software provides measurable benefits (67 percent); life-cycle costs meet budget requirements (57 percent); vendor provides ongoing service and support (56 percent); and upgrades and version control are well managed (52 percent).

Clearly, the market for Operations Management software is looking for performance-driven results across a variety of operational and management parameters. Survey results indicate that successful applications share these characteristics:

- Leverage a team that includes engineering, IT and operations
- Access the capabilities of corporate engineering, system integrators and other industry references
- Roll out software using pilot projects
- Deliver measurable benefits and results-driven performance.

While manufacturers demand a lot from their Operations Management software, they are generally happy with their decisions. Asked if they would make the same purchase decision again, 60 percent of respondents ranked this factor as high, with only 3 percent ranking satisfaction with their purchase decision as very low. In the final analysis, Operations Management software is delivering the goods. ●

**Continued from p. 2**

**AW:** The theme for this special issue is, “Breaking the Barriers to Achieving Operational Excellence.” What boundaries are manufacturers having difficulty breaking through, and how can Wonderware help them achieve sustainable operational excellence?

**Mike Bradley Sr., president of Wonderware:** Operations personnel are having difficulty getting easy access to the right information needed to improve efficiency and lower costs. These latest offerings provide exciting new ways to view all of the required operational information graphically, and in context—not just as a sea of tag data. This will help operations increase productivity as personnel readily visualize integrated application information from across the entire manufacturing enterprise.

Engineering personnel have challenges with designing and building intuitive, secure, reliable and maintainable applications while reducing application development time, errors and costs. Because these offerings are based on ArchestrA technology, they provide engineering personnel with unprecedented graphical and editing tools, and support collaborative team engineering, application standardization and easy change management and propagation.

IT personnel need to manage business-to-manufacturing application integration in a fashion that is much easier, less time-consuming and less costly, especially for large-scale deployments. The new offerings provide centralized application deployment, built-in diagnostics, security and unprecedented compatibility with other business and manufacturing systems.

In short, the new InTouch 10.0 and System Platform 3.0 software from Wonderware address the specific needs of all three manufacturing audiences—operations, IT and engineering—so that they can break through traditional barriers and collaborate in unprecedented new ways, in order to achieve operational excellence. ●

"The new software from Wonderware allows users to break through traditional barriers and collaborate in new ways."

—Mike Bradley Sr., President, Wonderware

# Next Generation HMIs ARE MORE THAN PRETTY PICTURES

The new Wonderware InTouch 10.0 HMI and System Platform 3.0 software provide system-wide visualization with a common integration architecture that meets the information requirements of operations, IT and engineering personnel.

**By Rashes Mody,** Vice President, HMI & SCADA Business Focus Group



## FOR DECADES, THE HUMAN-MACHINE INTERFACE

(HMI) has been the window on the process for plant-floor personnel, and the means for operators to interact with manufacturing. The Microsoft Windows operating system, introduced in the mid-1980s, provided a way to create graphics with screen navigation, and transitioned many hardware-based HMI systems to software-based HMI systems. In 1989, when Wonderware, a business unit of Invensys based in Lake Forest, Calif., introduced the first Windows-based HMI process visualization package, true operator interface evolution really took off—and developments have not slowed since.

Advances in networking technology, database technology and enterprise applications changed many user requirements, and HMI technology evolved to respond. The advent of the Internet era introduced additional technologies and provided a vehicle for remote management, thin clients and other Web-based applications. The modern HMI is more than just pretty graphics—it's a complete plant visibility and operations interface for manufacturing personnel.

In today's global manufacturing environment, manufacturing applications extend beyond the

traditional plant-floor personnel to involve users from three domains: Operations; Information Technology (IT); and Engineering. Information and visualization needs have changed. Operations teams deal with a lot of information from many disparate sources. They want a robust, reliable and consistent interface to plant data with clutter-free and intuitive displays, built-in diagnostics, and compatibility with their existing systems. The IT and infrastructure team is interested in hardware and software deployment, patch management, security infrastructure, database maintenance, user accounts and high availability solutions. The engi-

*The modern HMI is more than just pretty graphics—it's a complete plant visibility and operations interface for manufacturing personnel.*

neering and maintenance teams are more focused toward building and managing HMI applications. They want to reduce the amount of scripting, easily maintain many different HMI applications and use the latest tools to develop applications.

**TO ADDRESS THESE USER CHALLENGES,** industry needs a new version of HMI software that is better equipped for today's business needs. In parallel, industrial and manufacturing operation facilities have a need for solutions to address system-wide issues, for example:

- A hardware-independent software solution to interface to more than one vendor's equipment
- Common naming to remove physical location/computer naming conventions and establish a common global namespace
- A common platform for different types of applications such as HMI, Supervisory Control and Data Acquisition (SCADA), Manufacturing Execution Systems (MES), Quality Management, Operation Management, Performance Management and Enterprise integration
- The flexibility to change software configuration as often as required.

The common integration architecture deployed by InTouch 10.0 HMI and System Platform 3.0 software can reduce IT costs, drive standardization and easily accommodate changes.

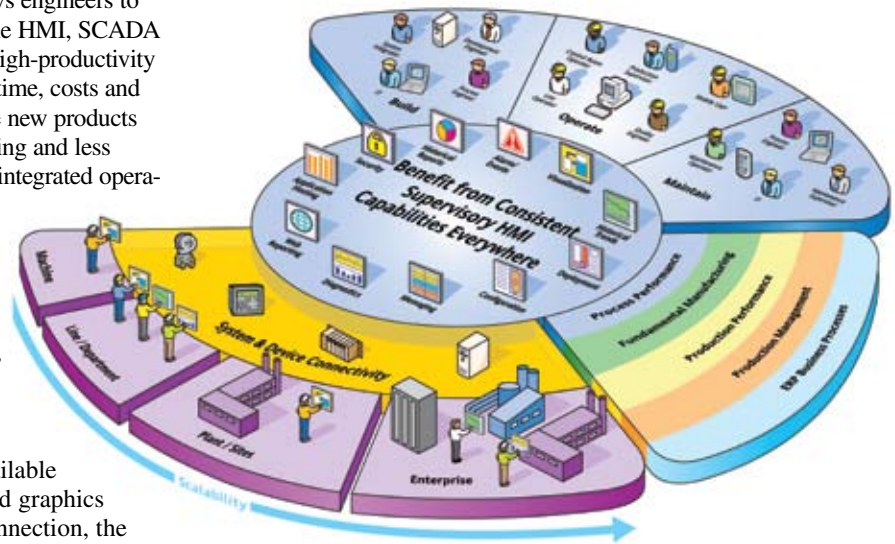
What is really needed is an application platform built upon industry standards, which provides common industrial application services and which can reside on top of virtually any existing system. A common integration architecture, where interfaces are configured once and made available to any application in the system, can reduce IT integration costs, drive standardization across the company and easily handle changes. Such an architecture allows continuous operations improvement rather than a “big-bang” approach, which is more costly and takes a great deal longer to implement.

Wonderware recently announced that the InTouch 10.0 HMI and System Platform 3.0 software products meet the needs for system-wide visualization, common integration architecture and a platform that delivers the information requirements of operations, IT and engineering. To improve engineering team effectiveness, the InTouch 10.0 HMI feature set allows engineers to build intuitive, reliable and maintainable HMI, SCADA and MES applications using a single, high-productivity software platform that helps to reduce time, costs and errors. To enhance IT effectiveness, the new products make it much easier, less time-consuming and less costly to integrate and manage secure, integrated operations applications on an ongoing basis. To improve operations effectiveness, the new solutions empower operations personnel with intuitive views of the right enterprise-wide information in order to increase operational efficiency, reduce training costs and minimize unplanned application downtime.

**WHILE MOST OF THE HMI** software available in the market today provides animated graphics rendering with Input/Output (I/O) connection, the InTouch 10.0 HMI raises the bar significantly with many new features:

- Vibrant graphic capabilities
- Multi-user development and editing environment
- Self-contained graphical symbols for re-use and standardization
- Comprehensive scripting and graphical animation capabilities
- Centralized management and remote deployment
- Scalability from simple single-node HMI to enterprise-wide supervisory solutions
- Library of pre-built graphical symbols and faceplates
- Extensibility using .Net controls and support of common data types
- Change propagation.

All of these features enhance engineering efficiency significantly. Users can create a standalone symbol and then use it in many places with different I/O binding without scripting. Users can change binding at runtime to different object instances or different tags using a function call. Users can also use drop-down list controls to browse all the instances of an object and then select a particular object from the list. Now, when a user makes any changes to the original graphics, all of the usages will get notified and the changes propagated automatically, saving a lot of time. Scripting and support for .Net controls provide an easy integration capability to Structured Query Language (SQL) databases, eXtensible Mark-up Language (XML) documents, workflow applications and many enterprise applications.



Wonderware’s new InTouch 10.0 HMI and System Platform 3.0 software products meet the needs for system-wide visualization, common integration architecture and a platform that delivers the information requirements of operations, IT and engineering.

These new HMIs provide the next generation of graphics editing tools, including standard graphics primitives, arcs, curves, pie, windows controls, calendar control, multi-line text controls and many others. They also provide many advanced graphics manipulation tools such as color gradient selection, resolution neutral vector based, smoothing, transparencies, fills, gradients, patterns, textures, group editing, rotation anchors, advanced animations, path builder, scripting, custom property pane and alignment toolbox.

Advanced HMIs provide the ability of central management where users can configure applications from a common Development Studio and store them in a common repository.



Wonderware's InTouch 10.0 HMI provides the next generation of graphics editing tools and advanced graphics manipulation tools.

**PRESENTLY**, most HMI applications are stored in individual file directories or file servers and managed individually by users. This process is prone to errors and requires maintenance on a regular basis with good discipline. To address the manageability of HMI applications, advanced HMIs—such as InTouch 10.0 and System Platform 3.0 software—provide the ability of centrally managing HMI applications. This capability enables applications to be stored centrally in a repository and to be managed from one development tool.

A powerful additional capability is that users can create an HMI application template and manage it as an object throughout its lifecycle. Users can also create, edit, change, delete and deploy HMI applications from a centralized location. Change propagation and auditing capabilities are provided to keep track of notes.

Users can configure the applications from a common Development Studio and store them in a common repository. Applications can be designed and deployed to an engineering station, operator station, terminal server thin client, MES application station, touch panel personal computers (PCs), industrial PCs or Windows CE-based compact operator interface nodes.

Wonderware InTouch 10.0 HMI and System Platform 3.0 software use a common “plant model,” which is the logical representation of the physical processes being controlled and supervised with the software application. The plant model provides a single consistent definition of the physical equipment—how data is acquired, how alarms are defined and

who has access to them—in meaningful terms and organized as reusable templates.

Through a hierarchical model of industrial operations, the plant model presents a convenient abstraction of the physical equipment and systems into a more powerful and productive application development environment, including equipment, areas, work processes, Key Performance Indicators (KPIs), calculations, interfaces, computers, controllers, databases and any other parameters that can be modeled in the form of templates.

**AS NEXT GENERATION HMIs**, InTouch 10.0 and System Platform 3.0 software can extend to fit any production or performance management need. These extensions help users optimize equipment operations and performance, improve manufacturing quality, enforce manufacturing and batch execution and integrate plant applications with the enterprise systems.

The powerful modular approach allows users to avoid the tremendous risk of “big-bang” implementations imposed by less flexible architectures. This modular approach also allows manufacturers to focus efforts on their most critical equipment and extend the system to get more out of the constraints found in any operation by:

- Improving equipment performance
- Increasing operational discipline
- Reducing process and material variances.

InTouch 10.0 HMI can connect to virtually any industrial automation control device using the hundreds of available I/O and OPC servers that are designed to work with Wonderware products. It can access plant data via the System Platform 3.0 software components, or even directly from data servers. To achieve U.S. Food and Drug Administration FDA 21 CFR Part 11 functionality, InTouch 10.0 HMI offers a selection of integrated security models and options including access-level password security, integrated Microsoft Windows authentication and data-level security using Wonderware System Platform 3.0 software.

Manufacturers should expect more from their modern HMI platforms. Wonderware InTouch 10.0 HMI with the System Platform 3.0 software addresses key requirements across user domains—engineering, operations and IT. With ArcestrA technology, ArcestrA graphics, integration with objects and centralized application management, these powerful new solutions provide significantly more than pretty pictures. ●

The powerful modular approach allows users to avoid the tremendous risk of “big-bang” implementations imposed by less flexible architectures.

# MODELING, OBJECTS & GRAPHICS

## Please Systems Integrators

Latest Wonderware InTouch and System Platform releases up the ante in HMI and manufacturing software platforms with expanded ArchestrA technology, vector graphics and more.

By **Gary Mintchell**, Editor in Chief, *Automation World*

### BILLED AS BEING AMONG THE MOST SIGNIFICANT ANNOUNCEMENTS

in its history, Wonderware's new InTouch 10.0 HMI and System Platform 3.0 software will have a way to go to live up to the billing. So *Automation World* interviewed three system integrators who have implemented systems using the new software. Is it significant? The results are pretty impressive.

To begin with, the system is built upon a technology foundation called ArchestrA—sort of an orchestrated architecture. Added to that is a powerful object programming Integrated Development Environment as part of a new Wonderware Development Studio, and vector graphics that have designers drooling. The integrators all point to advantages of cost and development-time savings for them and the ability to get systems running more quickly with easier usability and maintainability for their customers.

For those who have struggled to understand ArchestrA—the often-promoted new technology that forms the foundation of Wonderware's new offerings—the explanation is actually quite simple. According to Dario Rossi, Chief Engineer at ASECO, in Oakville, Ontario, Canada, "The new Wonderware System Platform is a highly configurable, powerful plant modeling tool. With the Wonderware



Development Studio, you can create models that represent systems in your plant without worrying about the specific details of the implementation of each system. Ten different valves, although all created by different manufacturers, can be modeled by identifying common attributes and using one object-oriented template to represent them all. Templates are then assigned attributes that connect the model with the real world. You use the templates to create objects; the objects are then turned 'on' (it's called Deployment in Wonderware terms), and the data model comes to life, collecting real-time data from the plant. With the ability to incorporate scripting, security and data logging as part of each template, System Platform takes the concept of a 'tag database' into the 21st century."

**ROSSI CONTINUES HIS EXPLANATION** by describing an object. "Take a valve, for instance. It has attributes such as open, closed, faulted. You create a template using these attributes in the Wonderware Development Studio. The attributes are the basis of the model, with which you can create QuickScript .Net scripts, activate security, log data and more. You can even add Visual Basic or Microsoft.Net libraries as required. With the new System Platform 3.0,

you can also incorporate graphics into object templates. It is now possible to create a whole-scale object model: attributes, security, data logging, scripting, and now graphics—everything required to represent a physical plant object in software. ArchestrA-enabled tools such as InTouch and SuiteVoyager then let a user interact with the ‘live’ System Platform model, both visually in the traditional ‘touch screen’ sense, or with robust reporting capabilities.”

Brad Wise, vice president of Business Development for Maverick Technologies, a systems integrator with headquarters in Columbia, Ill., says the company’s experiences using the beta versions of InTouch 10.0 HMI and System Platform 3.0 software



The shared Wonderware Development Studio between InTouch 10.0 HMI and System Platform 3.0 software provides a single consistent environment for developing applications and graphics.

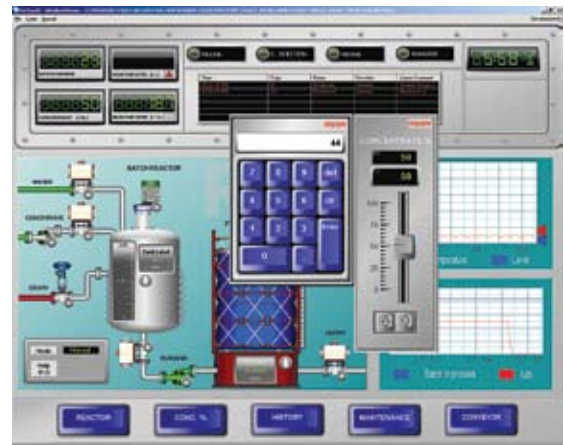
proved the new products to be beneficial to both the integrator and the customer. “The new software is very user friendly,” Wise says. “Migration from older versions is seamless, and the objects are very powerful when it comes to scripting. InTouch 10.0 HMI is very organized in its presentation with an easy-to-recognize iconography and a workspace that was designed to maximize efficiency. In comparison to other HMI (human-machine interface) programs, this one allows for faster runtime changes.”

Maverick will be able to deliver better-integrated applications to its customers faster—a benefit for both. “For example,” adds Wise, “having the graphics, which are mainly smart symbols, embedded as part of the object allows our engineers to port our standard object libraries to customers’ unique needs. This allows for a single object repository for graphics and objects, so we only have one system

to maintain internally. This means there’s only one system for us to maintain and only one system for our customers to maintain.”

**THE OBJECT LIBRARIES AND IMPROVED** Wonderware Development Studio will have great benefits for integrators and their customers. Wade Harsy, president of IPACT, a Valparaiso, Ind., system integrator, says, “Now we have the ability to use multiple concurrent developers in the same application by making graphics part of the ArchestrA application object. We can also warehouse all of the objects we develop, and the Wonderware Development Studio has tools to help in finding them for reuse in future projects.”

Object libraries are not the only good things about the new development environment. The shared Wonderware Development Studio between InTouch HMI and System Platform software provides a single



consistent environment for developing applications and graphics. The shared Wonderware Development Studio software, in combination with the ArchestrA graphics capabilities, provides a new look for the Wonderware System Platform, allowing it to be brought to the forefront of the solution set. Andrew Barker, technical lead at ASECO, says, “The new Wonderware Development Studio has all the features of the last version of the ArchestrA IDE, but has improved significantly from a performance and usability perspective. Activities such as deployment, which traditionally take a significant amount of time, are much faster now. The InTouch integration is seamless with graphics integrated directly into the Wonderware Development Studio. Now you can draw a valve as you see fit and then use it in any InTouch application.”

Adds Rossi, “The integration of graphics with custom properties linked to objects reduces development

“Migration from older versions is seamless, and the objects are very powerful when it comes to scripting.”

—Brad Wise, Maverick Technologies

and testing time. This reduces time to get the final project to the end customer. It also can reduce the overall project cost and execution time.”

Building these object libraries doesn't exactly come for free. All those objects must be built before they can be used. Barker says that users must look first at an investment that leads to a cost reduction and shows a return on the investment. “You won't see the cost reduction on the first project because you're building a library; after you build the templates and libraries, then you should see significant return on all your later projects.”

**THE SAME ADVANTAGES** that apply to the HMI also apply to manufacturing execution systems (MES). Mark Takaki, ASECO project manager and analyst, says, “MES users expect a data-centric type of user interface. With the new graphic tool editor, you can create grids and combo boxes for use and reuse on screens. The same thing for MES controls—the overall graphics capability makes it easier and more intuitive [for users] to read screens and relate what they see to their processes.”

The ArchedrA technology advantage for developers and users is expanded through the use of the concept of a distributed Galaxy. As IPACT's Harsy explains, “People have been used to silos of functionality. But with the move to object-oriented structure, the Wonderware Development Studio lets you organize objects within the Galaxy. The new version is more hierarchical, and users and developers can make better sense of objects that are carried out in InTouch HMI.”

Harsy continues, “The Galaxy is a namespace—a collection of all the information about an application you are developing. This includes the logical elements, computations and the database of all information from the user—the entire line, plant or even corporation. Across the Galaxy, you create a namespace, and objects make associations under the hood. When you're at the Galaxy level, if you want to find a temperature, it finds it no matter where in the Galaxy it resides, or [on what machine]. And if you move the data from PLC1 (programmable logic controller 1) to PLC2, you can still find that temperature. It's an abstract model of the plant.”

Further explaining the utility of the distributed Galaxy concept, ASECO's Barker says, “The classic architecture in the personal computer (PC) world is client-server. In that case, all the information is on one PC and the data is served to clients. With ArchedrA technology, you can have 10 PCs that all recognize they are part of the ArchedrA Galaxy. They are all part of the distributed system platform. So, PC-A is aware of objects running on PC-B and

vice versa. The model you construct and deploy is equally shared across all PCs in the galaxy; they can all read each other's information.”

Rossi adds, “This is great for scalability. If I have a 'Line 1' that has 20 valves, and I want to create a replica of that line somewhere else in the plant, it's easy. Take the template for 'Line 1' and create a new instance ('Line 2') in the Development Studio. All the valves, configuration, data logging, the entire footprint is replicated. 'Line 2' can then be deployed on a new PC, or to one of the existing PCs in the distributed Galaxy. The beauty is that as you deploy a new PC, it recognizes its membership in the Galaxy—shared data logging, access to other objects on other PCs, it's all configured at a template level. The intent is that you can model and run a whole facility with one common Galaxy, across multiple PCs.”

## “Now we have the ability to use multiple concurrent developers in the same application.”

Wade Harsy, IPACT

**ONE FINAL VALUE** to the new InTouch software lies in the vector graphics. Says Harsy, “The vector graphics are good. Say I want to push a window out to your new iPhone, I don't have to worry about re-creating the windows for it. The Vector graphics can reconfigure the window for the platform. I think we'll see an evolution to smart handheld devices—we're just cracking open that box—and this is how we can improve the platform to get that done.”

Adds Rossi, “Real estate on the screen is a big challenge for systems integration projects. Getting important information to operators without cluttering the screen is key. The new graphic capabilities, such as transparency and dynamic resize, allow us to develop screens that make more effective use of the screen space. This will make it easier for plant personnel to focus on the real issues affecting their process.”

Maverick's Wise says, “Although adding the new generation of Smart Symbols (known as ArchedrA graphics) to InTouch windows forces new instances, it helps that every application object created can be linked to an associated ArchedrA graphic. Previously, instantiating from application object templates and instantiating graphical Smart Symbols were two separate tasks. Now it is just one task, which allows a less error-prone application and reduces engineering hours in development and testing.” ●

“You can create models that represent systems in your plant without worrying about the specific details of the implementation.”

—Dario Rossi, ASECO

# Breakthrough



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