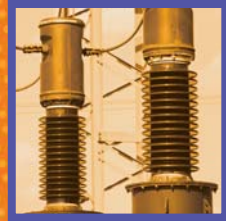**Visualize**

Analyze

Optimize™

PLANT INTELLIGENCE

Wonderware offers "plant intelligence" solutions, which help companies increase plant performance, enhance equipment utilization and improve plant efficiency in any industry.

invensys®

Wonderware®

Powering intelligent plant decisions in real time.

The demands on industry today are forever increasing and changing. Each year manufacturers are challenged with shrinking margins and greater pressures on increasing productivity. Markets now operate in a truly global economy, creating huge challenges for manufacturers to be more agile in their production systems and more flexible in their supply chains.
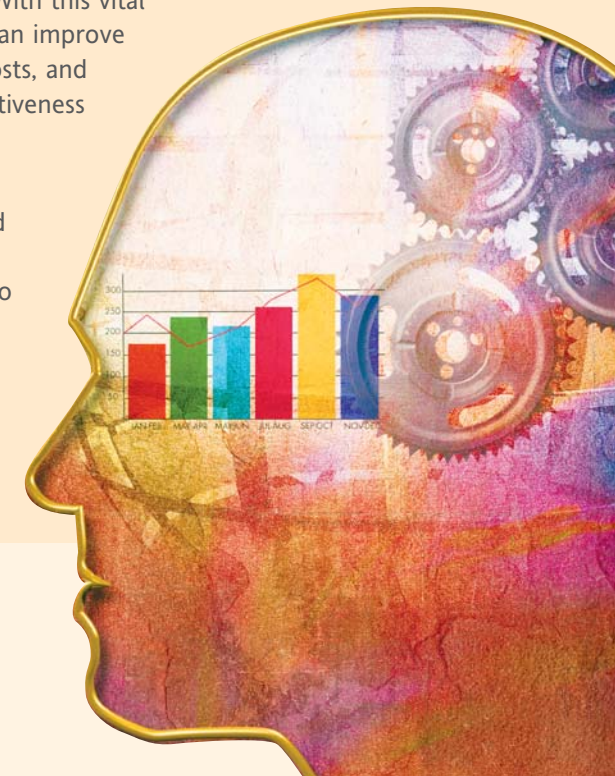
The key to success in today's global economy is to make better use of information gleaned from the production process in order to optimize overall plant and equipment effectiveness. Meeting this challenge isn't easy, but it's certainly possible to do with the right information. Every manufacturing company gathers and dutifully records millions of data items on its production processes. Usually this information is required for tracking product quality to meet regulatory requirements, to respond to product recalls or to better manage maintenance operations. But that's where it usually stops.

All too often, companies do not fully leverage this information to optimize their plants' production processes. That's why Wonderware developed "plant intelligence" solutions, to give companies the powerful knowledge necessary to get the most out of their plants.

Plant intelligence solutions provide real-time information that solve problems associated with plant and equipment inefficiencies. These solutions can be extremely valuable in detecting events and trends that can be analyzed to improve asset utilization and plant efficiency. Plant intelligence helps capture and identify seemingly small process inefficiencies that can aggregate into significant costs if left undetected.

Plant intelligence solutions have solved a variety of equipment and plant performance problems, leading to more efficient manufacturing operations. With this vital information, plant operators, process engineers and managers can improve production agility and product quality, reduce manufacturing costs, and get the most out of plant equipment, while increasing the effectiveness of plant personnel.
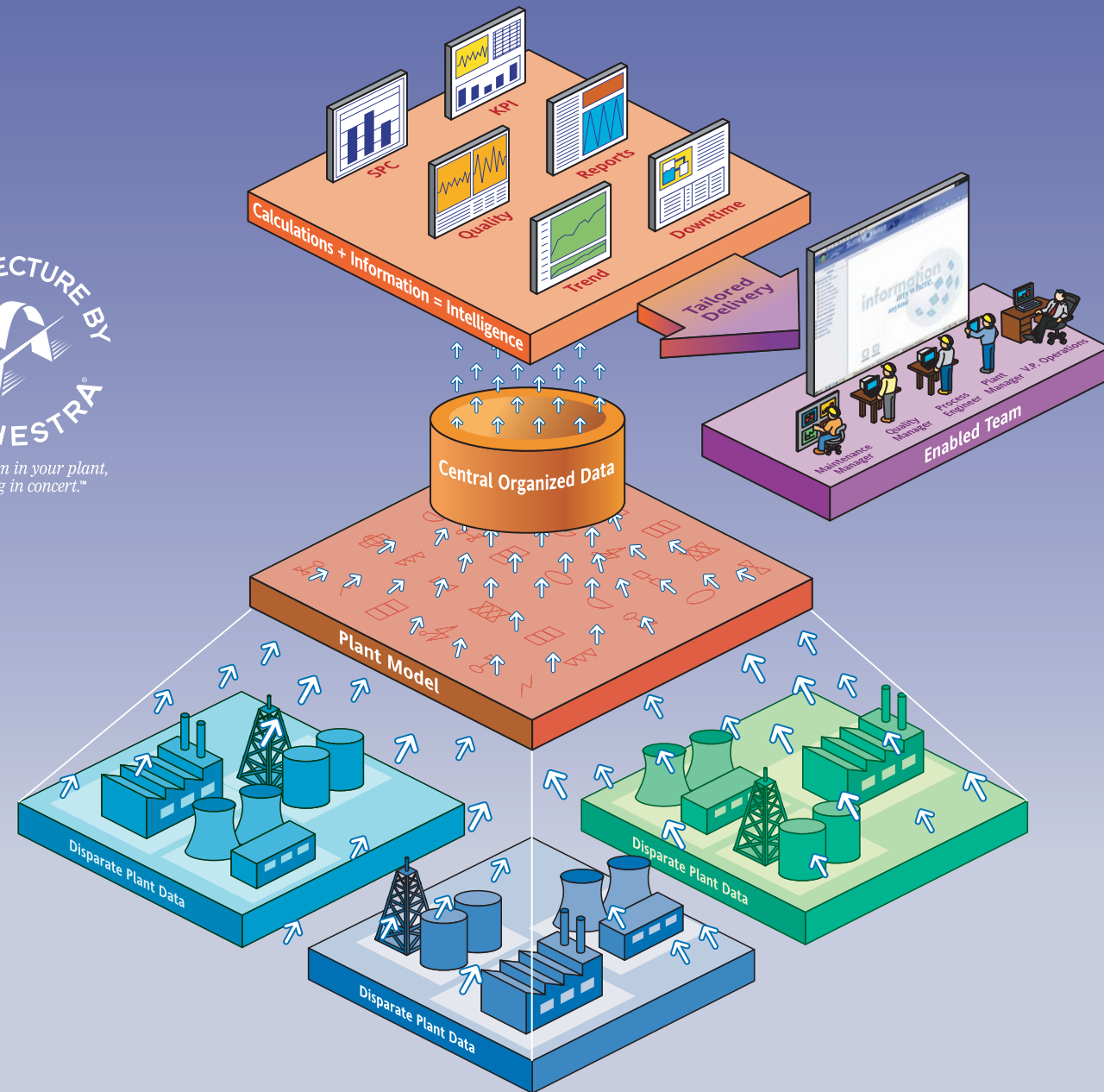
Invensys' Wonderware® software business unit offers a unique combination of analysis tools that allows process companies and discrete manufacturers to create and deliver plant intelligence. Data is gathered at the supervisory control layer and provided to plant decision-makers throughout the company.

Wonderware has developed these plant intelligence tools to be modular to meet each manufacturer's unique needs and requirements, and scalable to minimize cost of ownership—from installation to configuration to operation and maintenance.

A modular, sustainable architecture.

ARCHITECTURE BY ARCHESTRA®

Every system in your plant, working in concert.™

Calculations + Information = Intelligence

SPC · KPI · Quality · Reports · Trend · Downtime

Tailored Delivery

information

Maintenance Manager · Quality Manager · Process Engineer · Plant Manager · V.P. Operations

Enabled Team

Central Organized Data

Plant Model

Disparate Plant Data · Disparate Plant Data · Disparate Plant Data

Wonderware enables greater return on assets with Plant Intelligence.

Plant Intelligence:

Wonderware provides a suite of plant intelligence tools that manufacturers need to translate raw data into effective information. This information leads to continuous plant improvements by:

▸ Monitoring key performance indicators (KPIs)

▸ Analyzing statistical process control and statistical quality control data

▸ Producing tailored reports on any production activity

▸ Combining data from multiple databases for better quality analysis

▸ Monitoring & analyzing machine & system downtime

▸ Plotting & trending production data analyzing production history and product genealogy

Wonderware plant intelligence solutions are delivered through a modular and sustainable software architecture that allows plant personnel to incrementally deploy solutions to meet plant performance management.

Unified Plant Model:

The Wonderware Industrial Application Server adds structure to plant intelligence and can serve as a foundation for gathering data from different control systems through a common real-time framework. It uses an object-based structure that encourages re-use of pre-calculated real-time information and metrics for standard equipment and processes.

Centralized, Organized Real-time Data:

The unique IndustrialSQL Server real-time historian gathers data from anywhere in a plant—and from disparate equipment and systems—to provide a single centralized data resource for production, material and process history.

Intelligence:

The Wonderware analytical tools bring real-time information to life for plant and equipment analysis and reporting used for plant performance management.

Tailored Delivery:

Wonderware plant intelligence solutions allow decision-makers anywhere in an organization to access and display the specific production information they need to do their jobs with a standard Web browser.

Enabled Team:

Wonderware software can enable everyone at every level in an enterprise—from the plant manager to the plant-floor operator—to view exactly the information needed to improve effectiveness. The results are broad and varied.

The Vice President of Operations can:

▸ Monitor production efficiency

▸ Track and report on operations and KPIs

▸ Improve capital optimization and cost controls

The Plant Manager can:

▸ Ensure attainment of production goals

▸ Improve production efficiency

▸ Better manage plant facilities

The Process Engineer can:

▸ Configure new process strategies & models

▸ Troubleshoot process problems

▸ Improve process performance

The Quality Manager can:

▸ Track & record product genealogy data

▸ Monitor & report on product quality

▸ Integrate quality testing with real-time production

The Maintenance Manager can:

▸ Improve maintenance scheduling with less impact on production

▸ Identify & trend the causes of machine downtimes

▸ Improve machine or process performance

The Operator can:

▸ Get early information on equipment and process issues

▸ Acquire real-time information on equipment performance

▸ Improve equipment maintenance

▸ Achieve productivity and efficiency targets

A Suite of Tools for Plant Intelligence

Reaping these considerable plant intelligence benefits isn't as difficult one might think. In fact, obtaining plant intelligence is as simple as deploying any of Wonderware's feature-rich FactorySuite A2™ software components, including:

▸ The Wonderware **Industrial Application Server**
▸ The **IndustrialSQL Server** real-time plant historian
▸ **ActiveFactory**™ reporting and analysis clients
▸ **DT Analyst**™ asset-utilization monitoring and overall equipment effectiveness (OEE) software
▸ **QI Analyst**™ statistical process and quality control (SPC/SQC) software
▸ **SuiteVoyager** industrial portal software, which securely delivers of personalized production information

Industrial Application Server

Wonderware's Industrial Application Server is the core application development and supervisory control platform for the FactorySuite A² product line. It provides a unified environment for visualization, plant history, device communications and automation application integration. A key attribute of the Industrial Application Server is that its groundbreaking ArchestrA® software architecture facilitates the modeling and maintenance of plant metrics that match a plant's physical layout and create generic reusable KPI and equipment calculation templates, which can save plant personnel valuable maintenance and engineering time.
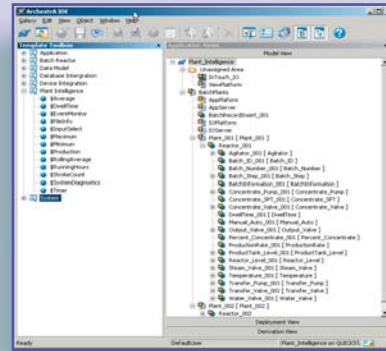
IndustrialSQL Server Historian

The IndustrialSQL Server historian is a critical piece of the plant intelligence equation because it's a high-performance repository for all production data. Data is accessible via industry-standard SQL queries and is fully compatible with most IT departments' database applications. Part of the power of the IndustrialSQL Server historian is that it not only stores data measurements. It also captures a wide variety of plant event information, which is critical for putting process data into the proper context for improved business decisions.
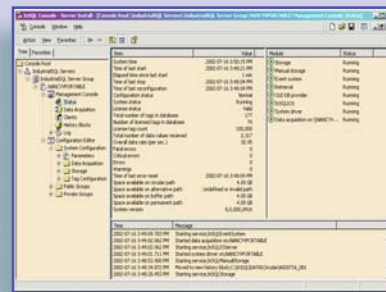
Production Reporting and Data Analysis

ActiveFactory reporting and analysis clients work hand-in-hand with the IndustrialSQL Server historian, allowing non-SQL specialist users to access process information from a standard Microsoft® Office package and analyze it based on a variety of factors of various combinations. The ActiveFactory software then reports on production metrics in ways that facilitate business analysis in real time.
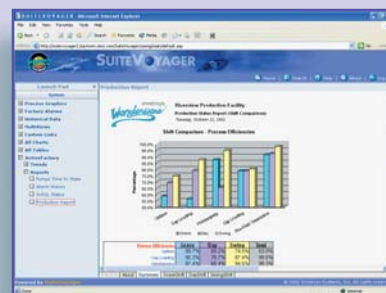
OEE and Downtime Reporting and Analysis

DT Analyst software provides downtime information online, in real-time, and measures the key metric for industrial organizations—Overall Equipment Effectiveness (OEE). It provides the granularity necessary to make business decisions on plant-floor operations based on real equipment efficiencies—contributing to continuous plant improvements. When examining OEE from a business perspective, managers can easily determine the root causes of downtime and measure their upstream or downstream ripple effects. Because the DT Analyst software provides this plant information in real time, plant personnel can make immediate adjustments that directly effect plant efficiency.

SPC/SQC Analysis

QI Analyst statistical process and quality control (SPC/SQC) software provides essential process analysis benefits because it operates in real time, rather than in offline, mode. This allows plant staff to detect process variations before they adversely affect product quality. Processes can be modified as needed to maintain quality levels and enhance productivity in an almost-closed loop fashion to ensure high quality and production levels. QI Analyst software enables operators to distinguish true process changes from "noise"— which means they only respond to actual problems, not false alarms.
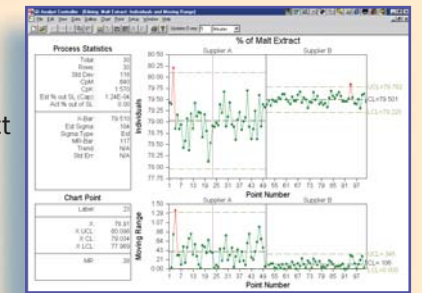
Industrial Portal

Having all of this production information is good, but the information alone cannot significantly benefit the company unless it's provided to the appropriate people, who know how to use it to optimum effect.

Wonderware's SuiteVoyager industrial-strength portal software serves as the delivery mechanism for plant intelligence information for the entire FactorySuite A² product suite. SuiteVoyager software securely publishes vital plant information on the intranet and provides each user or group the aggregate content and applications they need via individual "dashboards," so they can focus on the business decisions at hand. The SuiteVoyager software delivers this information with the same built-in ease of use as other Wonderware products, so users don't need an IT staff to configure it.

With the Wonderware suite of plant intelligence tools, manufacturers can integrate all levels of the company and optimize overall plant and equipment efficiency. The applications have been designed to be modular and scalable to fit each company's specific needs, now and into the future. These valuable plant intelligence tools are also designed to minimize cost of ownership, so that industrial organizations reap maximum returns on their investments.

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