



**Bridging the Plant-to-Enterprise Gap in Consumer Products Manufacturing: Wonderware Production Execution PCA Delivers “Demand Driven Manufacturing Operations” Capability to SAP Customers**

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## **Overview**

For the first time, cost-effective and sustainable technology brings true “Demand Driven Manufacturing Operations” to Consumer Products companies on the road to achieving operational excellence with reduced manufacturing costs and improved responsiveness to dynamic market demand.

Today, executives are focusing their attention on manufacturing as a strategic advantage in our new global economy. We can no longer consider manufacturing assets as a loose collection of manufacturing plants all trying to maximize their own performance with little thought to the overall benefits to the corporate enterprise and its customers.

## **The Challenge for Consumer Products Manufacturers**

Cost Pressure: There is pressure to continually reduce both unit costs as well as supply chain costs. This cost reduction pressure is accompanied by the requirement to reduce lead time on order fulfillment as well as improve the accuracy and reliability of delivery. At the same time, there is pressure to reduce inventory investment year over year.

Responsiveness: The movement of information between the corporate enterprise and the plants is far too slow – needs to be in Real Time. It takes weeks for the enterprise to sense and respond to changes in market demand and consumer wants and needs.

Compliance, Safety and Quality: The plants and the enterprise have difficulty complying with regulatory requirements in a timely and consistent manner. Plants are islands of information, processes and goals with little in common. Quality and product requirements vary greatly across geographic regions. Achieving uniform Brand Integrity is a universal challenge along with serving the unique needs of diverse markets.

Visibility of Performance: There is little uniformity of Key Performance Indicators (KPI's) across a heterogeneous ecosystem of manufacturing and distribution assets. Companies have no way of developing common performance measurement standards within their network of manufacturing plants. CP companies grow by acquisition. There is no uniformity as to equipment characteristics or automation control systems. Each plant is different!

## **The Solution**

The Wonderware Production Execution PCA along with the Wonderware System Platform, SAP xMII and SAP ERP solves challenges faced by CP manufacturing companies by providing a real time link between machines on the plant floor and the SAP ERP system. This real time link allows anyone in the organization to obtain a real time view of capacity, availability, quality and capability within a network of manufacturing plants. This view is used to obtain information about manufacturing within the context of a strategic plan, a forecast, a customer commitment, etc. This view can be of a single plant or of a global network of many plants. Conversely, each plant will have immediate access to real demand information and be able to align their local capabilities with demand signals instantaneously. This information is utilized to obtain visibility of plant floor events and constrains as well as to effectively manage the execution of demand fulfillment that originates in the SAP ERP system. This visibility is instrumental as a basis for collaboration throughout the supply chain.

The enterprise now has the ability to balance manufacturing activity for the purpose of optimizing the way it responds to complex demand signals, reducing reliance on demand forecasts and bringing the enterprise closer to a “lean” manufacturing model. Wonderware provides the capability of linking disparate equipment models and control systems into a cohesive data model that abstracts the differences in plants and machines. For the first time, Manufacturing executives can look across their plants landscape in proper context and manage those assets proactively.

The Invensys Wonderware Production Execution PCA communicates directly with the equipment that is performing the process steps and enables the collection of any number of real time parameters including quality, equipment performance, equipment condition and availability. The PCA then utilizes this information to manage the execution of production orders in a highly predictable way, taking into account the real conditions that exist within the local plant.

The Invensys Wonderware Production Execution PCA contains the following components of functionality:

**Production Schedule Synchronization**

To ensure that the schedule is executable with a closed loop feedback to HQ

**Production Performance Analysis**

Reporting of manufacturing key performance indicators

**Production Work Order Dispatching**

Deploying orders as consumable production orders at the plant or line level.

**Work Order/Production Batch Execution**

Managing the processes required to complete a production order.

**Equipment Operations Execution**

Downloading process, recipe and setup information to specific lines or equipment.

**Manufacturing Deviation Management**

Assessing variances between planned process events and actual process events at the line/equipment level

**Material Consumption Analysis**

Assessing variances between planned usage and actual usage at the process/line level.

The **Production Execution PCA** is intended to reside on the **Wonderware System Platform** and is developed specifically to utilize the functionality of **SAP's xMII**.

### **Additional Benefits Include:**

1. Improved quality and brand integrity through consistent execution of unit/line operations and raw material usage.
2. Improve time-to-volume and responsiveness through improved reliability and repeatability of equipment setup and operations.
3. Immediately detect deviations from specifications.
4. Reduced inventory investment due to shortened lead times and better supplier collaboration.
5. Reduce integration costs using standard structures for 'product definition' and 'production actuals' - using the ISA-95 standard for enterprise-to-control system integration.
6. Re-use encapsulated best practices for operational activities.
7. Comply with regulatory requirements using comprehensive 'as-made' records.
8. Rapidly respond to unforeseen events such as product recalls.

Key to Wonderware's Production Execution PCA and System Platform is the enhancement of manufacturing data into "richer" information, so that informed, educated decisions can be made. This is being achieved through an evolution of data storage software such as Wonderware's Production Database, as well as the Wonderware Manufacturing Performance Module, which will deliver a KPI and Analysis layer across the global manufacturing landscape.

The dashboards built in SAP xMII will provide access to the Manufacturing Performance Module information layer, delivering a new level of data/analysis capability with the introduction of the powerful Metrics Objects. These Wonderware ArchestrA Objects will enable manufacturing information to add new dimensions to the information already captured on the plant floor, which can then be aggregated and used with data in SAP's Business Warehouse for contextually rationalized decision tools.

At the heart of Wonderware's strategy is **real-time awareness** at the business level of what happens after the Master Production Schedule (MPS) and Materials Requirement Plan (MRP) have been generated. Wonderware believes that, once the production schedule is "issued" or "released" to the shop floor, real time updating of conditions and constraints must take place. It is critical that decisions be made based on **today's** reality!

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