



# Speaking the Same Language

*Manufacturing execution systems can bring better information flow throughout the company*

A convergence of interests among leading manufacturers and premier technology providers means it is now possible to reap full benefit from manufacturing execution systems (MES) in a global enterprise. This is based on widely agreed upon industry standards and a commitment to Totally Integrated Automation.

A MES is both a means of communication between a business enterprise and the plant floor, as well as a set of software functions for optimizing plant activities. The ISA 95 international standard defines terminology and models needed to integrate business and plant-floor systems. Use of this standard reduces costs and complexity associated with integration projects. Automation vendors, in partnership with software vendors, are therefore able to further reduce the risks, costs, and complexity of MES implementation through out-of-the-box integration for food manufacturers. The result is a synchronization of real-time information flow between plant floor operations and the business enterprise.

Synchronization is the necessary starting point for converting overly decentralized, multi-plant supply chains into demand-driven supply networks capable of executing the “perfect order.” In fact, manufacturers today face contradictory imperatives – reducing order lead times through better customer service, while reducing inventories to a bare minimum. A demand-driven supply network allows manufacturers to reconcile these disparate goals.

Think of it this way, to achieve a demand-driven environment, customer orders must be pegged to shop floor work-in-process. To do that, you must have shop floor visibility from the enterprise level. Once that visibility is achieved, enterprise resources planning can deliver a production plan based on real-time supply chain events and knowledge of shop floor resources.

Execution systems, as a means for making plant operations transparent, have been around for more than a decade. However, the complexity of integrating disparate systems has tended to restrict widespread MES use to only a few industries. Now, standards-based integration, backed by global manufacturers and leading technology vendors, is rapidly changing the landscape. Companies as diverse as Tyson Foods, Leche Pascual and Unilever are moving closer to this ideal of the “perfect order.” “Tyson Foods is absolutely in pursuit of the perfect order,” says Chad Couch, vice-president of Tyson’s Manufacturing Systems. “We’re committed to pro-

viding the lowest cost and highest quality.” Leche Pascual, Spain’s largest food and beverage manufacturer, benefits from weekly planning and prioritizing daily shift planning through totally automated integration and MES. As a result, waste has been reduced 125 per cent. “The most important benefit was in the yearly planning of product costing,” says Alberto Sanz, director of Production. “All materials-related data is in SAP. We automatically notify the business system as to what goods we produce on our machines. With real activities, you have real product costing. If you want to improve your business, you must have the right information at the right time.”

Unilever’s globally integrated R&D specification management system supports its daily operations through MES functionality and ease of integration. “Specification management is at the heart of our business,” says Huw Evans, R&D program leader based at Unilever’s Port Sunlight laboratory in the U.K. “We wanted best-of-breed functionality and tight integration between...our enterprise systems to create interdependence, global transparency and transferability of specifications no matter where you are.”

When choosing an integrated automation solution, look for a platform that includes a full range of manufacturing automation requirements. In partnership with software vendors, it should also extend total integration to the enterprise business level. This comprehensive approach leads to faster implementations and supplies a wide range of pre-configured objects, ready to be used without additional engineering effort, therefore increasing productivity. Some systems are also a modeling environment in which solution components are assembled by means of graphical rules. As a result, it’s possible to achieve integration with third-party solutions and legacy applications, and to specify required workflows.

The right MES system for your company should define common functionality for specific vertical industries, enable reuse of previously defined logic, and allow solution extensions through user- or partner-defined library development. This ability to define industry-specific and company-specific solutions means finding a proprietary open-source development model that ensures continued system viability and growth. At the same time it should offer a stable, standard product combined with the capabilities of a tailored solution.

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