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## Leverage LIMS intelligence to improve OpX

Global turmoil, uncertainty in the economy and low business confidence are reducing consumer demand for products—resulting in excess capacity across virtually every industrial sector. Despite this, manufacturers are continuing their search for solutions that can improve operational excellence (OpX). Manufacturers are responding by implementing practical integrated solutions offered by new commercial laboratory information management systems (LIMS). There are several reasons for this changing attitude.

**Lab data needed beyond the laboratory.** Laboratory information management systems (LIMS) that keep track of lab samples of incoming raw material and intermediate products are gaining the attention of plant managers. Manufacturers are discovering that quick access to lab data is just as valuable to operations and achieving OpX as it is to achieving regulatory compliance.

Traditionally, laboratories have operated autonomously from the rest of the organization and are among the last domains to be fully integrated into the overall organization. LIMS applications are typically focused on organizing laboratory data and tracking samples from a laboratory located in the plant or elsewhere from a third-party service provider. A dedicated lab-centric view of LIMS has been around for decades and has grown from simple spreadsheet enterprise-wide integrated systems.

Increasingly sophisticated manufacturing processes in industries such as chemical, petrochemical, food and beverage, and pharmaceutical are dramatically increasing the number of laboratory analyses required. Additional demands as a result of increasing regulations, such as the European Commission's draft proposal of future policies that will mandate testing of thousands of chemicals, further provides evidence of the importance LIMS solutions to the entire enterprise.

The continuing search for productivity and efficiency is expanding need for lab data beyond the traditional laboratory environment to operations in virtually every corner of the plant. Increasing product quality and regulatory compliance demands means that lab data must be readily accessible to a growing number of people and systems in the enterprise. Integrated applications will optimize processes by supplying decision makers with enriched actionable information. An integrated collaborative LIMS solution portfolio enables seamless and meaningful flow of analytical data to plant systems required by real-time data intensive initiatives such as real-time performance management (RPM). With the help of direct-connected analytical measurements to LIMS, the resulting transparency of analytical data enables manufacturers to deploy solutions that will achieve reliable production, improve product quality and reduce time to market.

**The need for an integrated LIMS solution.** LIMS provides vital information at the front-end of the manufacturing cycle. Identifying off-spec raw materials on inspection can provide the needed heads-up to tune the production process to yield acceptable products. Ad-hoc integration of laboratory quality data with pro-

cess and enterprise systems, however, can increase maintenance costs and reduce productivity. On the other hand, an integrated solution can alert purchasing to procure additional raw material if a lot fails incoming inspection. On final QA quality and contamination checks, it can quickly release shipments.

For example, if a noncompliant lot were inadvertently shipped, fast, efficient flow of information would ensure that a recall could be quickly implemented. Without traceability records from LIMS and ERP systems, it would be nearly impossible to accomplish product recalls in a timely manner. Additionally, implementing a LIMS informed logistics and scheduling system at various production stages can better manage product delivery by taking appropriate action to accommodate unplanned production issues.

**ERP integration.** Users can decrease implementation time and project cost by looking to a new breed of integration-certified LIMS/ERP suppliers. These suppliers can offer faster and more cost-effective implementation by taking responsibility for developing and testing an integrated LIMS solution.

A number of LIMS suppliers have been actively working with SAP to provide out-of-the-box integration and have been certified compliant with the SAP Quality Management Inspection Data Interface (QM-IDI). By linking SAP's R/3 QM complementary quality inspection system with third-party LIMS, users can expect more efficient quality planning, inspection and control.

Other LIMS suppliers have created custom interfaces that work effectively with SAP and other ERP systems such as JD Edwards. Regardless of the LIMS solution, domain expertise in the vertical industry and practical implementation experience are key attributes necessary for a successful project.

**Successful applications.** Novozymes, a leading enzyme manufacturer, wanted to integrate the StarLIMS solution from L.I.M.S. (US) into its ERP system from SAP so that either system could be utilized, depending on where it was in the testing process. Novozymes registers samples in SAP and performs operations such as sample receipt, results entry and validation in StarLIMS. Batch values are then posted to SAP. Integrating the two systems enables Novozymes to inspect over 1,000 lots and perform 8,000 tests per month, with an

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The author leads the field device consulting team at ARC covering process measurement technologies. He is responsible for pressure, flow, level, temperature and related markets. Wil also covers field device communication protocols, plant asset management (PAM) and laboratory information management systems (LIMS). He has nearly 30 years' experience in the areas of sales management, product marketing and engineering in industrial field instruments that utilize a vast array of technologies including magnetic, coriolis, radar, capacitance, vortex, vibration, DP and ultrasonic. Before joining ARC, Wil spent 10 years at Krohne Inc. of Peabody, Massachusetts, where he held the position of vice president of sales. Prior to that, Wil spent 10 years at The Foxboro Company where he held positions of senior product specialist and development engineer. Wil also held engineering positions at BIF, a Unit of General Signal and Stone & Webster Engineering.

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## HPI INTEGRATION STRATEGIES

uptime of 99.8%.

BASF Agricultural Products DE PR successfully implemented an integrated StarLIMS/SAP solution for materials management. To meet its needs, the company selected a solution that went beyond classic functions of SAP's quality management solution. However, it needed an integrated solution with fast, efficient and easily maintainable code for interfacing to SAP. StarLIMS with a certified SAP interface met its requirements. BASF is working to quickly expand LIMS outside the laboratory into the rest of the enterprise. **HP**