

SAP Solution Brief
SAP Manufacturing



SAP® xApp™ MANUFACTURING INTEGRATION AND INTELLIGENCE

**Synchronizing Operations for Manufacturing
Excellence**

The SAP® xApp™ Manufacturing Integration and Intelligence (SAP xMII) composite application helps manufacturers like you become more adaptive by connecting the mySAP™ ERP solution to the plant floor in real time and delivering actionable intelligence to production personnel. Typically implemented within 4 to 10 weeks per plant, SAP xMII is a comprehensive solution that provides both manufacturing intelligence and integration – extending the functionality of the SAP NetWeaver® platform onto the real-time plant floor to significantly lower the total cost of ownership on manufacturing systems infrastructure.

Today's manufacturers face a compelling fact: customers have more power than ever before. To stay competitive, you need to meet increasingly rigorous customer expectations for high-quality, innovative products produced with short lead times and at low costs. And with customer demands constantly changing, you also need the power to exchange information between your factory and supply network for a quick and effective response.

If you're like most manufacturers, it's a tall order – especially when manual integration between enterprise resource planning (ERP) systems and floor-level manufacturing applications is the norm throughout the industry. Less than 1% of all manufacturers have automated integration between their ERP and real-time shop floor systems, according to the AMR Research and Managing Automation survey "From Production Operations to Supply Network Operations: A Challenge for SMB Manufacturing," October 2005. This makes it difficult to deliver the sort of timely information required to improve performance across the enterprise. The challenge is not solely collecting the appropriate plant-level data but also analyzing it to support real-time decision making – and delivering it in usable form to the appropriate point on the factory floor or across the enterprise. How can you be sure that data is interpreted in the appropriate context? How do you ensure data accuracy so that decisions can be based on the best possible information? And how do you align this data with business processes so that it can be delivered to the right people at the right time?

The answer is the SAP® xApp™ Manufacturing Integration and Intelligence (SAP xMII) composite application. Plugging into your existing IT landscape for rapid implementation and a low total cost of ownership (TCO), SAP xMII provides a direct connection between shop floor systems and business operations. All data affecting manufacturing is ensured to be visible in near real time – including information about orders, materials, equipment status, costs, and product quality. SAP xMII also enables you to become an adaptive manufacturer, profitably replenishing your supply network while dynamically responding to unpredictable change. And best of all, it does this by leveraging your existing IT infrastructure. The result is a rapidly implemented solution that gives you the visibility, responsiveness, and performance you need to succeed.

Enabling Adaptive Manufacturing Through Integration and Intelligence

Adaptive manufacturing is a factory's ability to profitably replenish a supply network while dynamically responding to unpredictable change. To be adaptive, you need a single, integrated, functionally complete ERP solution to manage core manufacturing processes such as planning, execution, lean Six Sigma, quality, maintenance, and environmental health and safety. Requirements include real-time data, functionality for exchanging information between manufacturing and the supply network, intra- and interenterprise manufacturing intelligence, and seamless connectivity between the ERP backbone and the applications used to manage operations on the plant floor. The goal is to integrate manufacturing more closely with the business – to link manufacturing with other business systems, processes, and supply chain partners so that manufacturing can stay in sync with supply and demand.

Through rapid, cost-effective manufacturing integration and powerful, real-time manufacturing intelligence, SAP xMII helps you achieve this goal.

Manufacturing Integration

Without factory and ERP systems integration, many companies find themselves intervening manually to enter production batch data. Not only is this costly and time-consuming in terms of staff hours, it also results in high levels of data redundancy and inaccuracies caused by human error. Traditionally, this problem could only be solved by costly integration projects connecting ERP to a myriad of legacy, homegrown, and real-time plant floor systems on a point-to-point basis. Today, however, SAP xMII solves this problem by enabling you to rapidly integrate the mySAP ERP solution with other manufacturing software, such as manufacturing execution systems (MES), shop floor automation applications, and legacy solutions, in multiplant environments. Powered by the SAP NetWeaver® platform, SAP xMII provides this integration directly out of the box with prepackaged connectors that speed implementation and ROI. The result is vastly improved interoperability of plant-to-enterprise business processes that enable synchronized manufacturing operations and deliver a single version of the truth across the enterprise, while extending ERP business processes to shop floor users. With minimal investment and time commitments, you can quickly respond to exceptions, make decisions with confidence, and meet your performance goals – all while minimizing firefighting and lowering operational expenses.

Manufacturing Intelligence

It's nearly impossible to improve performance without quality data – and that data needs to be delivered to the right person in the appropriate context in real-time. That's why SAP xMII includes manufacturing dashboards that leverage a powerful real-time analytics engine and rich analytics content to aggregate data and deliver actionable intelligence to the people that need it, when they need it. Through these dashboard views, you can get an at-a-glance visualization of plant floor systems, monitor production for Six Sigma violations and other exceptions, drill

down to uncover root causes, and take corrective action where necessary. Key performance indicators (KPIs) displayed in the dashboards can be configured according to specific organizational needs, and alerts can be used to improve performance and achieve manufacturing excellence. Your factories will produce on target, with cost reductions and quality improvements that are above the industry average from year to year.

Synchronizing Operations Across the Enterprise for Improved Manufacturing Excellence

By enabling rapid, cost-effective manufacturing integration and powerful, timely manufacturing intelligence, SAP xMII helps connect the real-time plant floor to the rest of the enterprise. The result is overall manufacturing performance improvements and significantly lower TCO of your manufacturing systems infrastructure. With SAP xMII, you can derive value in the following key areas.

Manufacturing Synchronization

SAP xMII provides a single layer of prebuilt connectivity to multiple manufacturing applications, synchronizing real-time manufacturing and enterprise business processes and lowering your TCO. By electronically linking your enterprise processes and master data with plant manufacturing processes, SAP xMII gives you the visibility and control you need to operate multiple geographically dispersed facilities based on a single version of the truth. The result is increased power to monitor your progress and follow through on the corporate-level strategic initiatives that result in long-term competitive advantage.

Manufacturing Excellence

SAP xMII supports performance management initiatives and continuous improvement programs – such as lean manufacturing, Six Sigma, and right-first-time – through rich analytics, alerts, and reports that are delivered via role-based dashboards. Unified, real-time analytics and decision support enable production personnel to monitor, measure, analyze, control, and improve KPIs for higher productivity and performance. The added ability to generate asset-to-asset and plant-to-plant comparisons in a geographically dispersed multiplant environment, enables adaptive manufacturers to benchmark best practices and rationalize poorly performing assets where needed. The result is higher return on assets and significantly improved overall business performance across people, plants, and processes.

Leveraging the Power of SAP NetWeaver

SAP xMII leverages the unique power of the SAP NetWeaver platform to enable real-time transactional integration between plant and enterprise systems. By extending the functionality of SAP NetWeaver to overcome the challenges posed by complex, heterogeneous, multiplant environments, SAP xMII allows you to quickly achieve manufacturing excellence while lowering your TCO. SAP NetWeaver and SAP xMII also support the ISA-95 standard. This standard provides uniform terminology, concepts, and models for integrating ERP systems with MES and process control systems – supporting connectivity within plants, between plants, and with suppliers, and enabling collaboration and business process management between trading partners.

Delivering the Goods: The Business Benefits of SAP xMII

The challenge to you as a manufacturer is clear: produce more of what customers want when they want it – and do it quickly and at low cost. Clear? Yes. Simple? Not necessarily – unless you have the power of SAP xMII behind you. With SAP xMII, you can expect the following tangible benefits:

Lower Total Cost of Ownership

Through prebuilt connectors, SAP xMII delivers a single layer of connectivity between the ERP backbone and the real-time plant floor. This helps you extract an even higher overall ROI from your plant floor IT infrastructure, without having to rip and replace them.

Higher Productivity and Lower Costs

SAP xMII aggregates information from multiple systems to deliver actionable intelligence to plant floor personnel through alerts, reports, and KPIs. It also enables real-time decision making by providing critical manufacturing intelligence through role-based, configurable dashboards in a way that vastly reduces the cost of information delivery. The result is higher manufacturing productivity.

Continuous Business Improvement

SAP xMII delivers real-time analytics that enhance manufacturing performance. Production personnel can monitor, measure, analyze, and control process-improvement initiatives, including Six Sigma, lean manufacturing, and right-first-time manufacturing.

Higher Asset Utilization

With SAP xMII, you can perform asset-to-asset and plant-to-plant comparisons that enable benchmarking, superior asset utilization, and rationalization of poorly performing assets.

Faster Time to Value

SAP xMII can typically be implemented within 4 to 10 weeks on a per-plant basis, delivering rapid ROI.

Find Out More

Want to learn more about how SAP xMII can help you improve your manufacturing performance? Contact your SAP representative today or visit us online at www.sap.com/solutions/xapps/xmii/index.epx.