SAP xMII for the Manufacturing Industries

Frequently Asked Questions

The Frequently Asked Questions (FAQ) contains a collection of questions with answers to topics around SAP MII for the Manufacturing Industries.

General Questions

- What are the Manufacturing Challenges today?
- What are the customer requirements for connecting the Plant to the Enterprise?
- What are the arguments for SAP as the right software-vendor to realize the issue of adaptive manufacturing?
- What is SAP xMII?
- What are the key functionalities from SAP xMII?
- What are the benefits from SAP xMII?
- What is the Unique Selling Proposition of SAP xMII?
- Why is SAP xMII the solution regarding the pain-points and customer challenges?

Answers General Questions

What are the Manufacturing Challenges today?

- Competitive pressures and commoditization is forcing the need to lower manufacturing costs.
- Manufacturing is becoming the de facto response buffer for supply chains continuing to become lean.
- Velocity is critical, time-to-market, time-to-customer are the keys to success.
- Visibility into the supply chain needs to be achieved to avoid additional costs and yet fulfill customer needs and increase order fulfillment.
- Stringent regulations are driving the need for product quality, reliability, batch tracking and compliance capabilities.
- Production personnel lack mission critical decision support needed to respond to exceptions, or meet their targets. Decrease manual paperwork for Manufacturers to overcome these challenges and to deliver on their customer expectations.
- Connecting the Plant to the Enterprise and further to the Supply Chain is critical.

What are the customer requirements for connecting the Plant to the Enterprise?

- Minimization of the number of data interfaces and system layers
- Standardization of interfaces
- Collated visualization, analyses and reporting of manufacturing relevant data from all business process levels
- Logging and documentation of batch and resource data
- User-friendliness and end-to-end usability
- Integration and synchronization of master and transactional data
- No redundant data maintenance
- Easy and intuitive to use, configured to meet the requirements of the production working

What are the arguments for SAP as the right software-vendor to realize the issue of adaptive manufacturing?

SAP is the most viable business application vendor in the world. Its traditional strengths of a vast customer base, global presence, deep and broad functionality, and its ability to invest more than any of its competitors in application R&D give it strong market appeal and an enormous competitive advantage.

In addition, SAP's strong vertical-industry focus and its positioning as a solution for business problems (as opposed to a provider of leading-edge technology) puts the vendor more in tune than most of its competitors with a market focused on achieving business objectives.

Only SAP Manufacturing delivers:

- an integrated ERP Manufacturing Solution comprising planning, execution, quality, maintenance and EH&S management that enhances manufacturing performance thru higher visibility and responsiveness
- a robust, open standards, scalable integration platform for connecting Manufacturing with current Enterprise Business Processes (NetWeaver for Manufacturing), leveraging current investments and capabilities, to provide visibility into both intra and inter plants Manufacturing operations.
- role-specific views for production personnel with relevant manufacturing/business content, and decision support to drive responsiveness and performance.
- lower total cost of ownership (TCO) - by extending standardized applications and technologies across manufacturing operations.
What is SAP MII?

SAP MII is the abbreviation for SAP Manufacturing Integration and Intelligence. SAP MII enables the handling of manufacturing processes and their close ties to the enterprise and supply chain. It does so via two main components: manufacturing integration and manufacturing intelligence.

SAP MII manufacturing integration functionality forms the backbone of SAP MII architecture by providing universal data connectivity to a variety of plant floor, enterprise, and other systems. Examples include plant floor systems from Invensys, Siemens, GE Fanuc, Visiprise, and Honeywell; enterprise systems from SAP, Oracle, and IFS; manufacturing execution systems (MES); laboratory information management systems (LIMS); and other legacy applications. SAP MII manufacturing integration functionality also supports manufacturing industry standards, such as ISA-S95, to integrate plant floor and enterprise systems.

SAP MII manufacturing intelligence functionality allows organizations to gather data from a variety of different systems - in shop floors, enterprises, and the supply chain - and model a composite application providing unified visibility into and handling of any manufacturing process. A classic example is the gathering, aggregation, and analysis of shop floor data; its display in the form of easily understood and easily used gadgets, graphics, and key performance indicators (KPIs); and the handling of associated events and alerts to support decision making by production personnel through role-based dashboards.

Since manufacturing processes are highly specific, the strength of SAP MII manufacturing intelligence functionality lies in the simplicity it introduces to build an application adapted to these individual needs. For the most common processes of shop floor analytics, visualization, and integration to enterprise and legacy systems, manufacturing intelligence comes with a set of out-of-the-box template applications, which can be adapted to individual scenarios.

SAP MII synchronizes manufacturing operations with the enterprise to deliver "a single version of the truth" to drive manufacturing excellence.

What are the key functionalities from SAP MII?

The key functionalities include the following topics:

- Performance management
- Manufacturing analytics
- Synchronization

One key application area for SAP MII is performance management. The ability to manage performance metrics and feed back real-time achievements is a significant driver for improvement.

Providing actionable intelligence around performance management allows all employees to drive continuous improvement initiatives. Latent feedback, such as reports that are a week or a month old, is not effective in driving behavioral change. Key performance indicators are generally created to allow workers to focus on areas they can affect. Dashboards that present these in real time, with drill downs to underlying data, assist in root-cause analysis of issues preventing performance. Performance management applications with SAP MII can be extended to many continuous improvement activities including Six Sigma and balanced scorecard. SAP MII dashboards are ideal for delivering performance metrics for these initiatives.

Another key functionality is the Manufacturing Analytics. SAP MII provides a powerful environment for delivering manufacturing analytics to management, supply chain, quality, and plant floor operations personnel. Data can be delivered in the context of each individual's role. Contextual presentation of data enables multiple organizations to collaborate more effectively. Trending and statistical process control (SPC) functionality extends the value of manufacturing analytics assisting in root cause analysis of performance deviations. SAP MII includes extensive SPC calculations and a wide range of variable and attribute chart types. It also includes the full Western Electric Rules set, which can trigger alerts based on rule violations. Companies can also easily generate custom rules. This improves quality by heading off control issues before the generation of substandard product. Charts can incorporate attributes from multiple systems, simplifying root-cause analysis. A single view can relate customer orders to production lots and lab results. Further drill down of data by plant, production line, shift, operator, and machine allows for dramatic improvement in operational troubleshooting and customer quality.

The main key functionality is the possibility to synchronize the Top Floor with the Shop Floor. Execution of plant work processes is another key functionality of SAP MII. The data services and business logic services available in SAP MII eliminate the task of manually inputting data into ERP software. Streamlined, real-time data gathering and delivery reduce workload, improve accuracy, and accelerate the supply chain. Results include reduced inventories, improved customer deliveries, and reduced cycle times. SAP MII also plays a key role in linking enterprise activities to plant floor workers. Companies can quickly deploy simplified user interfaces to allow plant floor workers to consume enterprise data (such as production orders, bills of materials, and material details) in the context of their local work processes. Equally important, interfaces enable shop floor workers to give appropriate feedback on production events and values associated with their work processes. Production confirmations, material transfers, quality characteristics, maintenance notifications, and other transactions can be simplified for the plant environment. Linking plant floor activities to the enterprise presents dramatic shifts in performance and increased value in a customer's ERP investment. Extending visibility to the plant and automating work processes provide superior decision support, increase accuracy, and drive business thinking to plant operations.

What are the benefits from SAP MII?

- Faster time-to-value integrating SAP ERP to the Plant Floor Infrastructure
Higher Asset Utilization through shared continuous improvement practices
Production personnel monitor, measure and control their Key Performance Indicators (KPIs) to deliver superior manufacturing performance
Lower TCO 3 - 5X with productized integration of plant systems into SAP
Take advantage of MII as a platform for creating a lean composite application.
Have one solution for real time integration and transactional logic.
Use out of the box connectivity to shopfloor and into SAP with consistency of data assured.
Assure realtime communication.
Assure interoperability between parts outside and inside ERP.
Production personnel need real-time decision support capabilities to respond to exceptions, or meet targets
Higher asset utilization through shared continuous improvement practices
Production personnel monitor, measure and control their Key Performance Indicators to deliver superior manufacturing performance

*SAP MII leverages existing investments in SAP ERP, BW and third-party manufacturing applications, to increase ROI and lower TCO.
*SAP MII realize Adaptive Manufacturing which enables companies to synchronize operations and "Run Manufacturing at the Speed of Business."
*SAP MII has Manufacturing Intelligence Dashboards which provide a snapshot of the Plant or Shift with relevant KPIs and alerts needed, on a single, intuitive UI

What is the Unique Selling Proposition of SAP MII?
SAP MII delivers a unique combination of core functionalities to enable vertical and horizontal integration in the manufacturing area. The combination of these core functionalities like the integration of the Shopfloor and the ERP layer, analytics, visualization and business logic on a decentral plant level is great. These combined with the SAP standards gives SAP MII a unique position in the manufacturing area.

Why is SAP MII the solution regarding the pain-points and customer challenges?
SAP MII delivers a greater revenue because of
- Increase in customer satisfaction (Improved order fill rates and on-time shipments)
- Reduction in manufacturing cycle times (Real-time visibility to orders and exceptions)
- Incremental revenue opportunities (Real-time visibility to on-hand inventory)
- Improvement of Return-On-Assets (Real-time analytics to measure product profitability)

and lower operating cost because of
- Increase in capacity utilization (Advanced scheduling to optimize sequence and minimize overall setup times)
- Elimination of redundant data entry costs (ISA-95 compliant bi-directional flow of data across ERP and plant floor systems)
- Reduction in expedition costs (Faster, automated resolution of exceptions)
- Reduction in re-work and low quality grades (Six Sigma compliance)
- Increase in overall equipment effectiveness (Real-time performance measurement, predictive maintenance)
- Reduction in production cost variances (Real-time analytics to measure actual vs. budgeted production costs)

Finally SAP MII delivers a lower working capital requirement because of the opportunity to optimization of inventory levels (Accurate inventory visibility and exception based management).