

ORACLE MANUFACTURING OPERATIONS CENTER

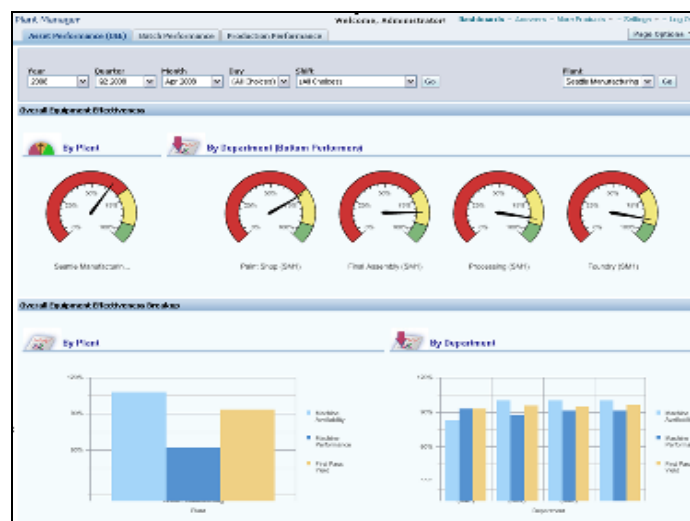
KEY FEATURES

- Industry rich operational metrics delivered on state of art business intelligence framework
- Role based dashboards for Plant Manager
- Comprehensive drilldowns to pre-built reports
- Comprehensive dashboard on Overall Equipment Effectiveness (OEE) and related metrics
- Persistent data model based on ISA-95 reference model
- Contextualization rules engine to capture shop floor data in the proper context
- Extensible attribute framework to capture custom defined process parameters
- Single and multi-plant support (local versus centralized deployment)
- Flexible hierarchies for calendar, equipment and product
- Integration with PLCs, SCADA and DCS equipment to collect real-time shop floor data
- Bi-directional integration with Excel spreadsheets
- Leverages Oracle's powerful ETL tools to integrate with any existing ERP and shop floor management system
- Out-of-the-box integration with Oracle E-Business Suite™ Discrete, Flow and Process Manufacturing
- Error data management to capture and re-process error data

Do you have insight into the real-time performance of your shop floor? Can you analyze problems with shop floor equipment and determine which production orders are impacted? Do you need to analyze plant throughput and overall equipment effectiveness trends? Based on the ISA-95 reference model, Oracle® Manufacturing Operations Center delivers adapters to collect shop floor equipment data, contextualization of this data with that from your ERP, and pre-built plant performance dashboards and reports – all working together to provide real-time business insight to plant managers.

Introduction

Over the last two decades, you have implemented many systems and processes to eliminate excess inventory and waste from your overall supply chain. Those lean strategies have been successful, and so the focus has shifted to improving the responsiveness of the manufacturing process itself, which is now the weak link in your ability to adapt to the increasingly complex demands of the global marketplace. This requires dramatically improved interaction and connectivity between manufacturing shop floor systems and the back office ERP. While this is a challenge, it also provides you with a unique opportunity to deliver quality, flexibility and efficiency, linked to a lean and demand-driven supply chain, and through that, new opportunities to differentiate from the competition.



Oracle® Manufacturing Operations Center – Real-time shop floor intelligence

Several challenges you typically need to solve are:

- Increased customer and regulatory compliance requirements create additional needs for data capture, analysis and reporting
- The drive for higher returns on invested capital means that more must be done with less equipment, yet there is no tolerance for unplanned downtime
- Manufacturing may now be global, yet manufacturing systems are often locally developed, supported and maintained, and not standardized across the enterprise
- Manufacturing equipment is increasingly instrumented, yet the data that it produces is difficult to link back to the business applications, often requiring expensive and one-off integrations.

Oracle's Solution – Oracle® Manufacturing Operations Center

Oracle® Manufacturing Operations Center addresses your need for accurate and timely information about product and process quality, insight into manufacturing operations, and performance of manufacturing assets. It solves the complex problem of connecting fragmented disconnected shop floor data to the business context of your back office systems. This combination delivers real-time monitoring and analysis of shop floor operations – a foundation for running Continuous Improvement (CI) programs such as Lean and Six Sigma.

Oracle® Manufacturing Operations Center is a pre-built, flexible and extensible solution that provides:

- A data model based on ISA-95 industry standard and extensible attribute framework
- Pre-built extensible adapters for manufacturing execution systems (MES) and ERP systems
- A robust contextualization rules engine to convert raw shop floor data into meaningful business information
- Pre-built key performance indicators and analytics, delivered in Oracle's industry leading, easy to configure and extend Business Intelligence (BI) technology.

These unique and differentiating capabilities enable you to implement and operate a shop floor intelligence solution at the lowest possible cost, providing a fast return on investment.

Contextualize Plant Floor Data and Synchronize with ERP

Oracle® Manufacturing Operations Center provides an abstraction layer between ERP and the shop floor. The system continuously collects high-resolution data from the shop floor and adds meaningful business context from the ERP, such as the work order, routing operation, shift, work day, customer order, dates, and so on. In addition, it enables the contextualized transactional data to be synchronized with ERP thereby eliminating manual data entry and reducing inaccuracies and adding value to the information.

Single Repository for Manufacturing Operations Data – Single Source of Truth

At the core of the Oracle® Manufacturing Operations Center is a generic Manufacturing Operations data model. The data model leverages business object definitions and other constructs from the ISA-95 reference model. You can model many different types of production environments and leverage the Extensible Attribute Framework to define user defined attributes that vary from one environment to another. By collecting, cleansing and processing different pieces of data from disparate sources and storing it in a transactional data model, Oracle® Manufacturing Operations Center provides consistent information to all users of manufacturing related information across the enterprise.

Integration with Manufacturing Equipment and Distributed Plant Systems

Oracle® Manufacturing Operations Center provides a wide range of options to

collect shop floor data directly from Programmable Logic Controllers (PLCs), Supervisory Control and Data Acquisition systems (SCADA) and Distributed Control Systems (DCS). You can leverage partner solutions from companies such as Mitsubishi Electric, Kepware Technologies, ILS Technologies and Matrikon Inc. to collect, aggregate and feed real-time sensor data into Oracle® Manufacturing Operations Center.

- Mitsubishi Electric offers the MESInterface IT, a hardened factory data appliance that provides secure and reliable connectivity with Oracle Databases and Manufacturing Operations Center. It eliminates integration challenges across Mitsubishi and a range of other brands of factory control systems. MESInterface IT improves system simplicity and maintainability, providing essential functionality such as store and forward data buffering to avoid data loss and a role-based security infrastructure that facilitates effective collaboration.
- Kepware Technologies have developed Oracle Connectivity Suite for communication to shop floor equipment and devices. The foundation for the connectivity suite is KEPServerEX, delivering access to over 130 manufacturing protocols (Drivers). The list of drivers includes PLC and device drivers, and U-CON, a User-Configurable driver for serial and Ethernet data acquisition delivering connectivity to a myriad of devices, from barcode scanners to scales and RFID.
- ILS Technology's award winning deviceWISE™ provides secure, direct and easy to configure connectivity from plant floor devices to the Oracle MOC. For device connectivity, deviceWISE can communicate with either native device communication or OPC device communication. Other key features include device aggregation, edge processing, role-based security and scalability from embedded devices such as PLCs and RFID to UNIX, Linux or Windows servers.
- Shop Floor Connector (SFC) from MatrikonOPC is built with industry-leading MatrikonOPC components, and is fully scalable and includes complete functionality such as secure OPC connectivity, data processing (analytics), store and-forward (guaranteed data delivery), and event triggered Transaction writes.

Real-Time Intelligence for Plant Managers

Oracle® Manufacturing Operations Center enables Plant Managers and Production Supervisors to monitor production performance in real-time through pre-built analytical dashboards and reports. It provides aggregate level analysis on key performance indicators such as production throughput, equipment availability, overall equipment effectiveness (OEE), and production cycle times.

You can quickly drill down to detailed equipment and production order data to perform root cause analysis, enabling you to answer questions such as:

- What types of production losses contributed to overall equipment effectiveness?
- Which departments, resources, and equipment are underperforming?
- Are the production resources being utilized effectively and on target for the shift, day, week, or month?
- Are the products of acceptable quality standards?
- What is the cycle time trend for standard batches?
- Is customer fulfillment at the desired level of customer service?

Extensible Role-based Dashboards and Key Performance Indicators (KPIs)

Oracle® Manufacturing Operations Center provides pre-built analytical dashboards with key plant performance indicators and many drill downs to seeded reports. Built with Oracle's proven Business Intelligence Enterprise Edition (OBIEE) platform,

KEY BENEFITS

KEY BENEFITS:

- Real-time shop floor intelligence for plant managers
- Analyze production loss and overall equipment efficiency (OEE)
- Increase production throughput
- Improved manufacturing service levels
- Single source of truth for all shop floor data – eliminate discrepancy between manual and machine data
- Contextualization rules engine
- Open and extensible adapters for integration with ERP and plant management systems
- Achieve improved visibility for lean and six-sigma programs

RELATED PRODUCTS:

- Oracle® Discrete Manufacturing
- Oracle® Process Manufacturing
- Oracle® Warehouse Builder (OWB)
- Oracle® Business Intelligence Enterprise Edition (OBIEE)
- Oracle® Business Activity Monitoring (BAM)

you can quickly personalize and extend the dashboards and reports.

Analyze Production Loss and Overall Equipment Efficiency (OEE)

While sensors and underlying control technology often change quickly, equipment often remains in place for many years. To make better use of your existing assets, you need real-time insight into production performance and Overall Equipment Effectiveness (OEE measures asset performance by combining availability, speed and first time correct output into a single key performance measure).

Increase Production Throughput

Oracle® Manufacturing Operations Center helps you monitor production volumes and throughput from anywhere in the enterprise. You can keep track of targets for the shift, day, week or month and monitor production backlog for each piece of equipment to expose bottleneck resources. It provides you with the right information to take action and increase production throughput.

Improve Manufacturing Service Levels

Oracle® Manufacturing Operations Center collects production execution data and relates it to plans and schedules in your ERP and back office systems. Depending on how you determine service levels in your environment, you can track on-time completions or production against customer order shipment dates. By providing consistent information to both manufacturing operations and customer facing organizations such as Sales and Marketing, you can improve overall service levels.

Monitor Production Processes and Equipment Performance

Different departments are interested in different aspects of equipment performance. For example, production supervisors care about production output and quality of output whereas maintenance supervisors care about equipment downtime and mean time between failures. Using Oracle® Manufacturing Operations Center, you can analyze all aspects of equipment performance from availability to status, output and leading process parameters, all in a single plant management dashboard.

Fully Integrated with Oracle E-Business Suite™

If you are currently operating Oracle's Manufacturing solution, you can immediately benefit from the Oracle® Manufacturing Operations Center through its pre-packaged Oracle E-Business Suite™ adapter. The adapter is designed to periodically collect key master and reference data for objects such as Shift, Items, Item Hierarchies, Resources, Resource Hierarchies, Production Schedule, linked sales order lines and cost, . The adapter supports Discrete, Flow and Process Manufacturing.

Integrate with non-Oracle systems

The adapter and the surrounding infrastructure have been designed so that the same processes can be leveraged to integrate with other ERP or legacy systems.

Contact Us

For more information about the Oracle® Manufacturing Operations Center, please visit www.oracle.com or call +1.800.ORACLE1 to speak to an Oracle representative.

Copyright ©2008, Oracle. All Rights Reserved.

This document is provided for information purposes only, and the contents hereof are subject to change without notice. This document is not warranted to be error-free, nor is it subject to any other warranties or conditions, whether expressed orally or implied in law, including implied warranties and conditions of merchantability or fitness for a particular purpose. We specifically disclaim any liability with respect to this document, and no contractual obligations are formed either directly or indirectly by this document. This document may not be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose, without our prior written permission.

Oracle, JD Edwards, PeopleSoft, and Siebel are registered trademarks of Oracle Corporation and/or its affiliates. Other names may be trademarks of their respective owners