

ORACLE MANUFACTURING OPERATIONS CENTER

KEY FEATURES

- Industry rich operational metrics delivered on state of art business intelligence framework
- Self service plant manager dashboards
- Comprehensive drilldowns to pre-built reports
- 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
- Interface tables to collect shop floor data from PLCs, SCADA and DCS equipment
- 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™
- 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 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, companies have implemented many systems and processes to eliminate excess inventory and waste from your overall supply chain. The success of the lean strategies have resulted in a shift in focus: improving the responsiveness of the manufacturing process. By improving responsiveness, you strengthen your ability to adapt to the increasingly complex demand of the global marketplace which requires dramatically improved interaction and connectivity between manufacturing shop floor systems and the back office ERP. While challenging, it also provides you with the capability to deliver quality, flexibility, and efficiency by linking to a lean and demand-driven supply chain, giving you new opportunities to differentiate your company 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, manufacturing operations status, 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:

- An ISA-95 industry reference model based extensible attribute framework
- Pre-built extensible adapters for manufacturing execution systems (MES) and ERP systems
- A robust contextualization rules engine to capture manufacturing operations data in the proper context
- 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.

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). For example, you can:

- Leverage partner solutions such as KepserverEx™ from Kepware technologies to collect, aggregate and feed real-time sensor data into Oracle® Manufacturing Operations Center from OLE for Process Control (OPC) servers
- Feed equipment data directly into Oracle® Manufacturing Operations Center by leveraging published APIs and interface tables
- Use Oracle Fusion Middleware components like Enterprise Service Bus (ESB), Business Process Manager (BPEL) and Oracle® Warehouse Builder (OWB)
- Load data that was collected manually or maintained in spreadsheets
- Leverage adaptors available with Fusion Middleware and from Oracle partners to pull time series data from Historians and transactional data from MES systems.

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, 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.

KEY BENEFITS

KEY BENEFITS:

- Real-time shop floor intelligence for plant managers
- Analyze production loss and overall equipment efficiency (OEE)
- Increased 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)

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.

Integrate with non-Oracle systems

The adapter and the surrounding infrastructure have been designed to leverage the same processes to quickly 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.

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