# Oracle Manufacturing Cloud – R13

**ORACLE**
**MANUFACTURING**

The Oracle Manufacturing Cloud solution helps firms compete in today's global market by providing new and better tools to run their shop floor. With margins for products eroding and customer demands increasing, manufacturers must adopt modern best practices to increase business agility, enable insightful decision-making, and achieve more, with fewer resources. Built on a modern cloud platform, this solution provides manufacturing and supply chain materials management with integrated quality, embedded analytics and '2-click' ease of use, enabling outstanding user productivity and excellent return on investment. Cloud, desktop, tablet, mobile, scanning and social technologies are combined to provide the state of the art solution for manufacturing companies - whether you do in-house manufacturing or contract manufacturing - it can transform your business.

**EFFICIENTLY MANAGE YOUR SHOP FLOOR IN THE CLOUD**

**KEY BUSNIESS BENEFITS**
- Increase margin/revenue
- Reduce cost of ownership
- Rapidly implement using quick set up
- Manage and execute your production process, both internal and contract manufacturing.
- Reduce inventory, drive down costs, improve on-time deliveries

## MANUFACTURING SOLUTION IN THE CLOUD

The Oracle Manufacturing Cloud is designed to achieve manufacturing excellence in the industrial manufacturing and high technology industries without expensive hardware and system management overhead costs.

### Visually Design Your Production Process

In the Oracle Manufacturing Cloud, engineers can quickly define the necessary data for their plant hierarchy and process standards, working calendars, work areas, work centers resources, calendars and standard operations. They can visually design the production process on an object called a work definition – which combines the item structure and routing into a single view. They create their operations, and then drag and drop resources and components to the process to complete the flow – determining shop floor controls on the way (such as which components must be manually issued, vs. automatically backflushed.) In addition, they can collaborate with colleagues through real-time conversations and stay connected with updates to work definitions using Oracle Social Network
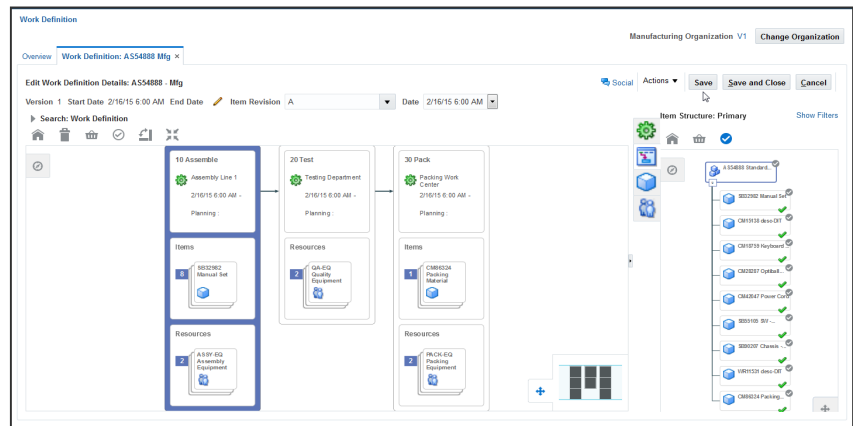
Figure 1. Work Definition - Visually design a work definition representing the discrete manufacturing operations, materials, and resources to make a standard or configure-to-order (CTO) product

## Efficiently Manage Your Shop Floor While On the Go

The Production Supervisor starts on a landing page that gives them a quick look at critical information about how their work area or work centers are running.  They can view and resolve exceptions with-one click access to drill into the details and take action, print travelers, generate parts list and view production and quality history.  Work orders are also socially enabled to collaborate on problems, and Oracle Transactional Business Intelligence gives you quick and easy reporting capabilities. All designed for use on a tablet and / or  smartphone, so the supervisor can take action on the go.
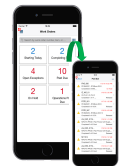
You can also prioritize work orders for release to execution based on a material availability check.  After you identify material shortages and view expected supplies to determine which work orders are ready to start, you can initiate a pick for all the components that are required in the next few hours, schedule the pick action to run automatically, or initiate a pick as you release a work order to the shop floor.  The picking list generation is similar to those for a shipment, or other warehouse movement and based on pre-determined rules.

To execute production, the operator is provided with a simple, intuitive, easy to use dispatch list with two clicks required to issue materials, charge resources,  complete a job, log a manufacturing exception, enforce serialized or lot transactions, report orderless completions, rejections and scrap, record elapsed cycle times, and print production documents and labels…again optimized for the tablet.

Figure 2. Review dispatch list, execute and complete work orders

When used with Oracle Quality Management, the system can require operators to perform a quality inspection at key points in the production process.  If a part fails inspection, the system automatically requires both immediate disposition on the shop floor and alerts a quality engineer to review for possible permanent corrective action.



Figure 3:  Inspection results are entered as part of the manufacturing process

## Real-Time Visibility Into Contract Manufacturing

Automate and orchestrate the end to end contract manufacturing process for both Make-to- Stock and Make-to-Order scenarios. Enable a touchless execution of your contract manufacturing process spanning your raw material supplier, contract manufacturer, customer and the enterprise.  Contract manufacturing provides real-time visibility into the production progress that occurs at the contract manufacturer site, and can also monitor components that an original equipment manufacturer (OEM) supplies to the contract manufacturer's site. A contract manufacturing work definition defines what product will be manufactured, and the operations that require production reporting from the contract manufacturer.  A contract manufacturing work order is created for

each purchase, to track production progress and capture costs that are occurring at the contract manufacturing site - improving supply chain inventory and costing visibility.

- Plan for the finished goods as well as OEM owned components at the contract manufacturer.

- Create purchase requisitions and orders that instruct your contract manufacturer to direct ship the goods to your customer or back to your ware house.

- Create a tracking work order in reference to the purchase order to track progress.

- Adjust to supply and demand changes, and give your supply chain manager the ability to re-source the supply.

## Seamlessly Integrate With Your Outside Processing Supplier

Automate the process of managing both your internal manufacturing operations and supplier operations of a work order. Streamline and effectively manage your extended supply chain to reduce cost, improve on-time delivery, and improve visibility.

- Plan, execute and monitor supplier operations.

- Create work orders with the supplier operation services included

- Create shipping documentation and receive the partially finished assembly.

- Create and manage purchasing documents for the service.

- Update demand and supply changes

## Streamline Configure-To-Order

In today's business environment, customers are demanding products that are tailored to their unique specifications. Successful companies must provide customized versions of products with shortened lead times. With Oracle's configure-to-order features, you can streamline configuration management and deploy an efficient build-or-purchase-to-customer-demand solution with the shortest possible fulfillment cycle times. Capture a configured customer order and automatically create and reserve a work order, purchase order or transfer order, or simply reserve to a matching, on-hand configuration. The system manages changes to supply and demand automatically, and alerts you to exceptions when they occur.

If the configuration will be made, the system creates a reserved work order to build the item based on the selected options. The configured item work definition is created on demand during planning collections and work order creation, using the base ATO Model work definition, selected options and transactional item attributes along with the applicability rules. This design reduces item proliferation and replication of data, improves item management and on-time order fulfillment.

## Effectively Plan and Track Manufacturing Costs

Oracle has a robust cost management solution, supporting the planning, costing and analysis of your manufacturing costs. Flexible work order costing supports all costing methods – standard, actual, FIFO – or even multiple simultaneous costs - one for your official external reporting, and one for your internal management reporting. There are flexible, user defined account defaulting rules and valuation policies using cost profiles. Manufacturing cost analysis is displayed through a hierarchical view of buy item standard parts and very intuitive, visual reporting of cost variances.

There is a unified view of all work order related costs. Costing calculates the cost of work orders based on material (including landed costs), resource transactions and overheads. Partial completion costs are calculated according to user defined method and entries adjusted to actual, when the work order is closed. Costing analyzes WIP balances, total cost incurred, scrap and variances for work orders.
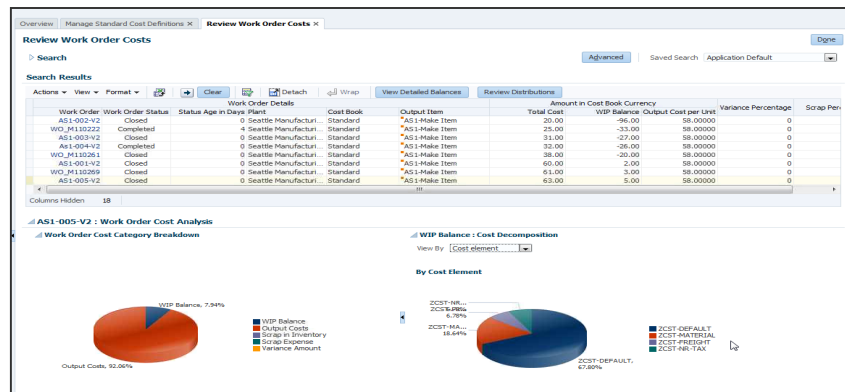


Figure 4. Review and Analyze Work Order Costs

## Graphically Track and Trace Items Throughout Their Lifecycle

In many industries, there is an ever-increasing need to provide inclusive lot and serial tracking from supplier through production and shipment in order to support quality containment and recall events. If you have a product failure, the Oracle Product Genealogy solution enables you trace the entire history of any serial or lot to determine possible sources of the failure, understand where the problem product is at the moment, where the other potentially impacted items are, and then investigate if the failure has been corrected or if it's ongoing. Quickly and easily retrieve genealogy and component information detailing manufacturing and inventory transactions and either display 2 levels of relationships or every transaction in the item lifecycle.

Figure 5. View Item Relationships in Product Genealogy

## Execute Closed-Loop Quality Management

In today's fast paced manufacturing environments, delays and errors in reporting quality results and detecting quality problems can lead to defective products, downstream failures, and delayed product shipments.  Oracle enables quality visibility, collaboration, and execution through quality control techniques and closed-loop quality management. Inspection – related capabilities assure inspections occur at critical points throughout supply chain execution. . You can also capture issues as they occur and then guide users through the corrective and preventative action process.

## Comply with Regulations for Electronic Signature and Electronic Reports

In 1997, the United States Food and Drug Administration (FDA) enacted a regulation, called 21 CFR Part 11, describing the requirements for regulated industries manage critical records electronically. It establishes a uniform, enforceable, baseline standard for electronic records equivalent to paper records and electronic signatures equivalent to handwritten records and signatures. Oracle has create a solution for the Oracle SCM Cloud for common Good Manufacturing Practices (cGMP) critical records, enabling regulated industries to electronically comply with the 21 CFR Part 11.



Figure 6. Mandatory Capture of Signer ID, Password, Reason for Signing

## Oracle Transactional Business Intelligence for Discrete Manufacturing

Companies today need the ability to analyze transactional data from their manufacturing facilities to improve supply chain visibility.  They need visibility into production, inventory, quality and cost information to reduce waste and increase profits.   Oracle Transactional Business Intelligence provides quick and easy access into the transactional system.  Sliced and analyze your data by transactions across business processes for your, discrete manufacturing, contract manufacturing, configure-to-order, back to back, drop ship and internal material transfers.



Figure 7. Oracle Transactional Business Intelligence - real time, self service reporting

Users can view and analyze four discrete manufacturing areas--work order performance, material usage, resource usage and actual production.  Reports and charts can be embedded into the Fusion applications.

## Seamlessly Integrate Between External Systems

You can integrate the Oracle Manufacturing Cloud application with other enterprise systems and extensions running on Oracle's Platform as a Service (PaaS) using REST services.  From any external application, you can use the Get / Update actions for work area, work center, work order header, work order details, material / resource/ operation transactions, quality inspections and dispatch list.. There are also inventory services such as reserve, replenish, internal transfer and receipt advice to support your supply chain flows.

## Oracle Cloud Applications

The Oracle Cloud offers self-service business applications delivered on an integrated development and deployment platform with tools to rapidly extend and create new services. The Oracle Cloud is ideal for customers seeking subscription-based access to leading Oracle applications, middleware and database services, all hosted and expertly managed by Oracle. The application services are designed for ease-of-use, enabling business users to manage the solution directly with no IT involvement.

**ORACLE**®

**Integrated Cloud** Applications & Platform Services

Oracle is committed to developing practices and products that help protect the environment