

Oracle Manufacturing Cloud

The Oracle Manufacturing Cloud solution helps firms compete in today's global market by providing the latest tools to run their shop floor. With margins for products eroding and customer demands increasing, manufacturers must adopt **modern best practices** including **Internet of Things (IoT) and Adaptive Intelligence (AI)** to increase business agility and sustainability, enable insightful decision-making, and achieve more, with fewer resources. Built on a **modern cloud platform**, Manufacturing Cloud solution provides manufacturing and supply chain materials management with integrated and innovative cost management, embedded enterprise quality, and 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 execute **in-house manufacturing or contract manufacturing** - it can transform your business to **Manufacturing 4.0**.

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VISUALLY DESIGN YOUR PRODUCTION PROCESS

Does your company struggle to allocate the bill of material (BOM) components across multiple operations? Can you easily collaborate within your organization on manufacturing process changes that are required? Are quality checkpoints defined as part of your manufacturing process?

In the Oracle Manufacturing Cloud, your engineers can quickly define the necessary data to setup the plant. 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 back-flushed.) In addition, they can collaborate with colleagues through real-time conversations and stay connected with updates to work definitions using Oracle Social Network.

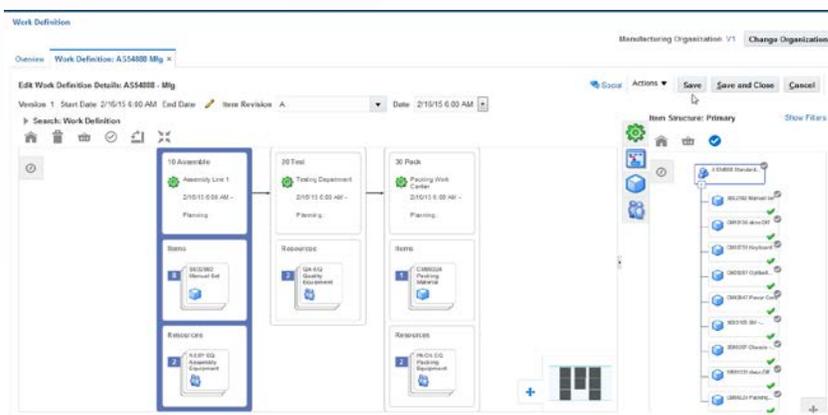


Figure 1. Visually design a work definition representing your manufacturing operations, materials, and resources to make a standard or configure-to-order (CTO) product

EFFICIENTLY MANAGE YOUR SHOP FLOOR WHILE ON THE GO

Do your Production Supervisors have the information they need at their fingertips? Can they easily review all potential problems that are occurring in their plants? Are your operators prompted to perform quality tests as part of your work order execution process?

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 work orders and resolve exceptions with-one click access to drill into the details and act, 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 act 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



Manufacturing 4.0 in the Cloud

Key Features:

- Optimized end-to-end supply chain business flows
- Discrete manufacturing on the cloud, including contract manufacturing, configure to order, and drop shipment
- Ease of use with 2-click work order execution
- Flexible work order costing
- Embedded analytics driven navigation and real-time views into work orders with serialized enabled manufacturing
- Advanced graphical editing tool- visually design the work definition
- Embedded Social Collaboration

Key Business Benefits

- Maximize Productivity & Efficiency and minimize risk in your mixed – mode production process, for both internal and contract manufacturing.
- Reduce cost of ownership
- Rapidly implement using quick set up
- Reduce inventory, drive down costs, improve on-time deliveries
- Increase margin/revenue

floor. The picking list generation is like 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 work order, 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.

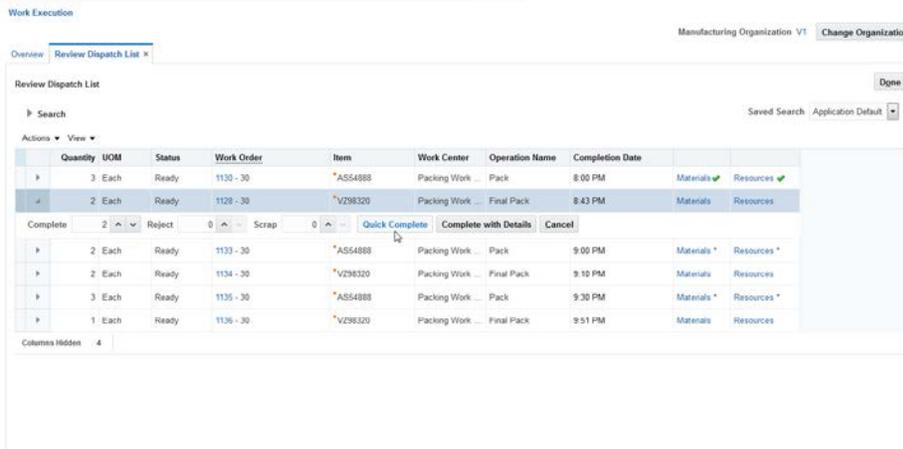


Figure 2. Review dispatch list, execute, and complete work orders

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 quality checks 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.

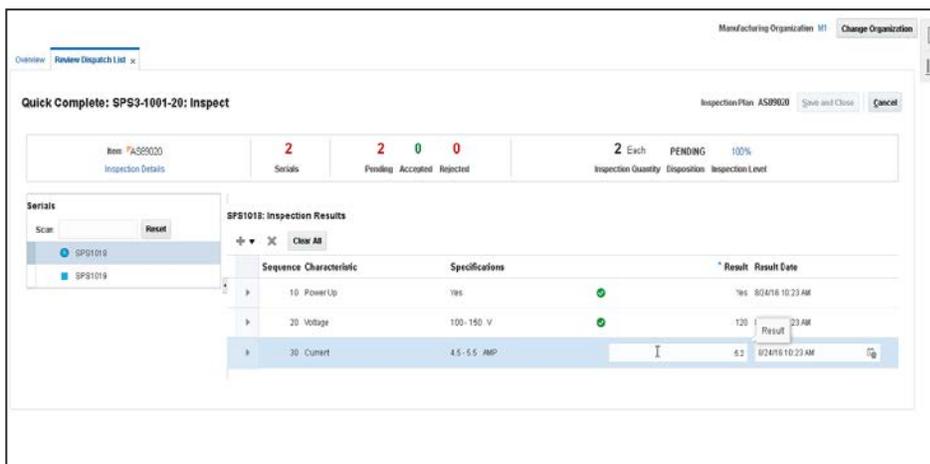


Figure 3: Enter inspection results as part of the manufacturing process.

Related Products

The following services support Oracle Manufacturing Cloud:

Oracle Supply Planning Cloud minimizes inventory risk and cost through review of supply and demand changes and simulated actions.

Oracle Inventory & Cost Management Cloud manages the inbound, outbound and internal flow of goods. **Cost Management** manages planning, tracking, accounting and reporting of production costs

Oracle Quality Management enables you to define, test and analyze the quality of your items.

IoT Production Monitoring Cloud enables the streaming and analysis of data from the production floor,

Adaptive Intelligent Apps for Manufacturing enables you to contextualize data coming from sensor-enabled machines with transactional data for pattern analysis with predictive models.

REAL-TIME VISIBILITY INTO CONTRACT MANUFACTURING

Does your company struggle to keep track of what is happening at contract manufacturers? Can you easily access the costs of the work that they are performing?

With the Oracle Contract Manufacturing solution, you can automate and orchestrate the end to end contract manufacturing process for both Make-to-Stock and Make-to-Order scenarios. You can enable 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 associated 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

Are you able to confidently identify the costs for your manufactured items? Do they include landed costs? Can you use alternate cost methods to view your 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, average and actual – 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, resource and overhead charges and a very intuitive, visual reporting of cost variances. Cost management allows tracking of costs at a flexible level of detail such as at organization, sub-inventory, grade, lot or serial. .

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.

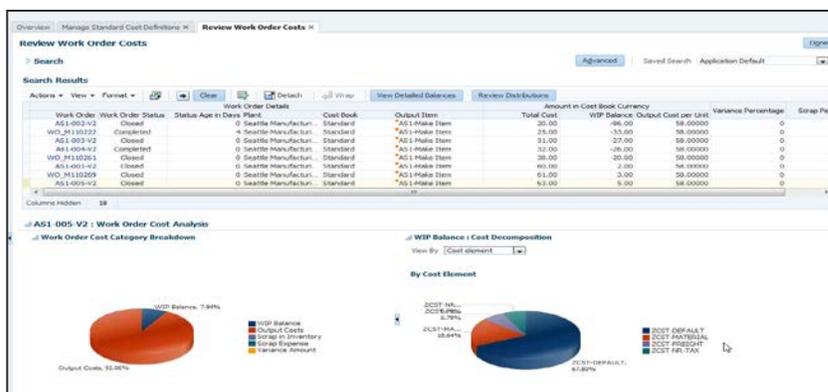


Figure 4. Review and Analyze Work Order Costs

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 to support quality containment and recall events. If you have a product failure, the Oracle Product Genealogy solution enables you to trace the entire history of any serial or lot to determine possible sources of the failure, understand where the problem product is now, 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.

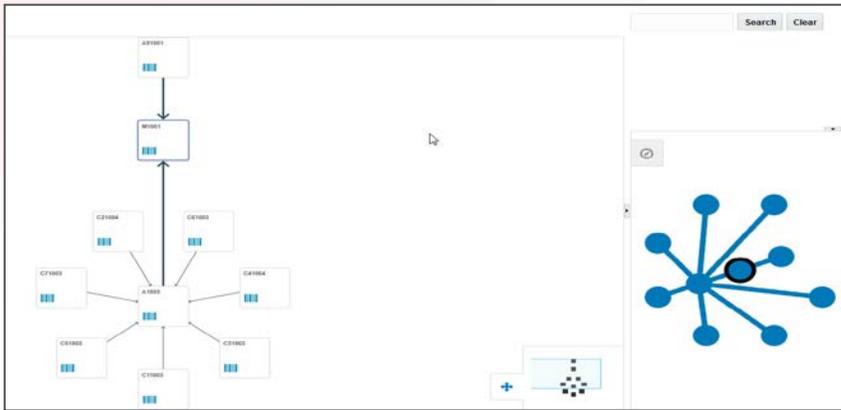


Figure 5. View Item Relationships in Product Genealogy

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 an integrated solution for the Oracle SCM Cloud for common Good Manufacturing Practices (cGMP) critical records, enabling discrete manufacturing regulated industries to electronically comply with the 21 CFR Part 11.

E-Signature: Operation Transaction for Work Order MI... Refresh Back

Source Identifier: 50907 Status: Awaiting approval

Initiator Approval

Signer: MFG_GA User Name:

Signature Meaning: Authorship * Password:

Comments:

I have read the electronic record

Approve Reject

Electronic Record

ORACLE Time Zone (UTC +09:00) Coordinated Universal Time

Electronic Record for Work Order Operation Transaction

Report Date: 8/6/18 8:39 AM

Page: 1 of 2

Work Order: MFG_DISC1

Operation Sequence: 10

Item: MFG_PRODUCT

UOM: Each

Work Order Information			
Organization Name	MFGERES-OT		
Work Method	Discrete Manufacturing		
Work Order Description	Work Order Type	Work Order Priority	Work Order Subtype
Work Order Quantity	Work Definition Name	Work Definition Version	Production Priority
Work Definition Date			

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

information and business functions in Oracle Manufacturing Cloud. For example, contract manufacturers can enter work order and quality information directly to reduce the burden on the OEM organization.

- **Service Oriented Architecture:** Oracle Manufacturing Cloud fully supports a Service-Oriented Architecture (SOA) for maximum business process flexibility. Companies can support their specific business process requirements by leveraging the solution's web services.
- **Scalability:** Oracle Manufacturing Cloud's flexible architecture enables companies to start small and expand as necessary to support growth in users, transaction volume and business processes while maintaining high performance service levels.

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.

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