What's New in R12 for Discrete Manufacturing, and What Does it Mean for You?

By Bill Pick, Fujitsu Consulting
Agenda

• Overall Themes for Discrete Manufacturing

• Key Enhancements to “Core” Functionality
  ▪ Order Management
  ▪ Planning
  ▪ Procurement
  ▪ Manufacturing
  ▪ Logistics

• What Does it Mean for You?
Overall Themes – Discrete Mfg R12

• Overall, EBS R12 has:
  – 18 New Products
  – 2443 Enhancements

• Strategy: “One stop shop” (ERP, Quality, Scheduling, Maintenance, and MES)

• Leverage Fusion to integrate with other plant floor systems

• Leverage Siebel Business Analytics as BI platform
Overall Themes – Discrete Mfg R12

• New Products:
  – Manufacturing Execution System (MES)
  – Transportation Management (G-LOG)
  – Demand Management (Demantra)
  – Strategic Network Optimization (Numetrix)
“Core Functionality” - Process Flow

Order Management

BOM

Planning

Purchasing

WIP

Inventory

Shipping

Cost
Overall - New Look and Feel

- More HTML-based forms
- Fewer pop-up windows, duplicate forms
- New Sun J2SE native plug-in replaces JInitiator
Order Management

• Multi-org access control
  – Can access, process, and report against data for multiple operating units from one responsibility
  – Data Security still maintained via security profiles

• Customer Acceptance
  – Use Order Information Portal, or API can record acceptance
  – Pre-billing and post-billing acceptance; can do “implicit acceptance” after x days
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Order Management

• Mass Scheduling
  – Schedule all orders not yet scheduled at once
  – Can also unschedule and reschedule in mass (by request date, creation date, etc.)

• Header Attribute Cascading
  – Ability to propagate info, changes to lines
  – Controlled via quick codes – can enable, disable by attribute
Order Management

- Header Attribute Cascading Setup

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Order Management

- Credit Card Security Code
  - Can capture credit card verification values
  - Supported in User Interface, Order Import, and process order public API

- Credit Holds honored across Operating Units
  - All OU’s that have customer site defined and order placed with that customer
Advanced Supply Chain Planning

• 3 main themes in Advanced Planning
  – Distribution Planning Enhancements
  – Process Manufacturing Enhancements
  – Factory Planning Enhancements

• Distribution Planning (DRP)
  – “Fair Share” allocation planning
  – Multiple inventory policies (create “bands” of inventory)
Advanced Supply Chain Planning

• Distribution Planning (DRP) (cont.)
  – Global Forecasting with local allocation of supply
  – Ship method selection with load consolidation (between orgs)

• Item Attribute Simulation Sets
  – Allows you to simulate changes to item attributes in ASCP plans
ASCP – DRP Plan Options

Plan Options (TST.01)

- Plan: DISTEST1
- Distribution Test Plan #1

**Main Tab Options:**
- Planned Items: All planned items
- End Item Substitution Set
- Demand Priority Rule Set
- Assignment Set
- Item Simulation Set: All
- Overwrite

**Fair Share Allocation Method:**
- Default: None
- Supplier: None
- Customer: None
- Schedule By: Schedule Stop Date

**Additional Options:**
- Use Organization Priority Overrides
- Demand Time Fence Control
- Planning Time Fence Control
- Calculate Key Performance Indicators
- Enable Sales Order Split
- Append Planned Orders
- Enforce Supplier Capacity Constraints
- Enforce Purchasing Lead time Constraints

**Forecast Allocation and Consumption:**
- Do Not Spread Forecast
- Spread Forecast Evenly
- Consume by Forecast Bucket
- Explode Forecast
- Backward Days
- Forward Days
- Minimum Trip Utilization %
- Maximum Trip Utilization %
Item Attribute Simulation Sets
Advanced Supply Chain Planning

• Order Queries
  – Can do “personal” queries for supply and demand (i.e. purchase recommendations for supplier XYZ needing to be released within 10 days)
Advanced Supply Chain Planning

• Factory Planning Improvements
  – Discrete Manufacturing Integration Enhancements
    • Actual Work Order Start Dates
    • Lot-Based Component Usage
  – Gantt Chart Enhancements
    • Enhanced “Resource View”
  – Sequence-dependent Setups
    • Minimizes changeover time
Advanced Supply Chain Planning

• More Integration with OPM
  – ASCP unconstrained plans replace OPM MRP

• Chargeable Subcontracting
  – Part of Asia Pac business support theme throughout R12
  – Material sold “one for one” and “in bulk” to contract manufacturers to be part of assemblies
  – Planning support for “sync” and “non-sync” material sold to contract manufacturer
Demand Planning: ODP vs. Demantra

- Oracle Demand Planning (ODP)
  - Part of EBS R12
  - Captures & Processes Demand from multiple sources
  - Multiple Statistical Forecasting techniques, info accessible to multiple parties

- Demantra
  - “Point Solution” (not part of EBS)
  - More Advanced Demand Management capability
  - Trade Promotion Management
  - “Real Time” Sales and Operations Planning
Where Does Demantra Fit?

Demantra

Demand Management

Advanced Forecasting & Demand Modeling

Real-Time Sales and Operations Planning

Supply Chain Planning

Strategic Network Optimization (1)

Inventory Optimization

Adv. Supply Chain Planning

Global Order Promising

Collaborative Planning

Production Scheduling (1)

Oracle EBS

Supply Chain Management and Financials

JDE E1

Supply Chain Management and Financials

Siebel CRM

Trade Management Execution

(1) Numetrix

Demand Management

Trade Promotion Management

Predictive Trade Planning

Deduction and Settlement Management

Promotion Optimization

Trade Promotion Management
Oracle Demand Planning

• Statistical Forecasting Enhancements
  – Forecast at Day Level (where demands vary based on day of the week)
  – Forecast Seasonal data at Week Level (Holt-Winters)
  – Croston’s Method supported (intermittent demands)

• Selective Forecasting
  – Different forecast methods for different products

• Shared Objects
  – Managers and Planners can share reports, graphs, worksheets, etc. with users
Oracle Demand Planning

• Planner Productivity Enhancements
  – Input Negative Numbers in Worksheet
  – Formula-generated stored measures
• Demand History from Internal Sales Orders
  – Lines of business serving internal organizations can forecast internal demands
• Archiving Process for Oracle Demand Plans
Demantra Demand Management

• New Product for Oracle
• Provides functionality in three main areas:
  – Demand Management
  – Trade Promotion Management
  – Real Time Sales and Operations Planning
• Not Just for E-Business Suite (works with PeopleSoft, JDE, Siebel CRM, legacy ERP, etc.)
Demantra Demand Management

- Demantra better than ODP for:
  - “Distribution-intensive” companies
  - High-volume, fast moving products
  - Large numbers of SKU’s
  - Volatile Demand and Heavy Promotion
  - Integrating with “Non-E-business Suite”
Demantra Demand Management

- Key elements for Demand Management:
  - More Sophisticated Forecasting & Modeling
    - Bayesian-Markov Mixed Model Programming
    - Forecasting based on Attributes & Characteristics
    - Consensus and High-volume forecasting
  - Workflow & Alerts to Support Demand Response
  - Shape Modeling for New Product Introduction (phase-in, phase-out, etc.)
Demantra Demand Management

- Key elements for Trade Promotion Management
  - Promotion Planning, Model to estimate volume “lifts”
  - Scenario analysis to evaluate promotional impact (e.g. cannibalization, halo effects)
  - Capability to determine optimal promotional spend
  - Exception Management

- Key elements for Sales and Operations Planning
  - Alerts, workflows, and KPI-based automation
  - Revenue and Margin Analysis
  - Demand and Supply Matching
Bills of Material

- Material Control Attribute Updates for Common BOM’s
  - Can be edited, and can be different than source BOM

- Inverse Usage Field on BOM Components
  - Inverse value of component quantity

- Fixed Component Usage on BOM
  - Field indicates whether fixed quantity for a job or varies with job quantity
Bills of Material

- Batch Import Capability for BOM Open Interface
- Sequencing Window on Dept-Resource Entity
- Expanding OSFM into MES
  - “Shop Floor Transaction” and “Stocking Point” tabs added for Std Operations.
  - Applies for Shop Floor-enabled Organizations
Manufacturing Execution System (MES)

• New with R12
• Big Picture: “One Stop Shop” for Manufacturing Operations Management (i.e. integrate with WIP, Quality, etc.)
• Easier transaction execution for operators than WIP
Manufacturing Execution System (MES)

- On-Line Dispatch List (Discrete Execution Workstation)
  - Allows mass transaction execution (multiple jobs, completions and scraps, etc.) with one click
  - Highly configurable
  - Can record work start and stop times
  - Can View on-line work instructions, requirements, and report exceptions
Manufacturing Execution System (MES)

- Current detailed shop floor visibility for supervisors
  - On-line job expediting (real-time)
  - Re-order dispatch lists
  - Exception summary and resolutions capability
  - Anticipated capacity or resource shortages, performance metrics via DBI
MES Discrete Workstation

In the Workstation, the operator reviews the Dispatch List containing the details of the Job Operations that need to be worked upon in a particular shift. As a first step in this process flow, the Operator reports work on the first ready Job operation by "Clocking In".
Work in Process

- Component Usage Enhancements
  - Fixed Component Usage on discrete jobs (BOM)
  - Also available with Workorderless completions and Flow Manufacturing

- Scheduling Workbench Enhancements
  - Printed Gantt Charts, “Edit Schedule” in Resource Workbench, etc.
Work in Process

- Other
  - Mobile Return of Assembly reserved to Sales Order
  - Reservation of Discrete Job as source of Supply through Inventory Reservation Form
  - Reservation of Completed Serialized Assemblies through Inventory Reservation Form
  - Combined Lot and Serial Genealogy Views
  - Enhanced Lot/Serial Entry during Backflush
Purchasing
• Professional Buyer’s Work Center

- HTML-based Workbench
- View and act on Requisitions
- Create and manage orders/agreements
- Manage Supplier Information
Purchasing

- Enhanced Requisition Management
  - Can consolidate requisitions from different orgs into one PO
  - Several pre-configured views & search criteria, advanced search capability
## Purchasing-Buyer’s Work Center

### Oracle Purchasing

**Demand Workbench**

*Indicates required field*

### Views

- **View**: Unassigned Requisitions

### Select Requests

- **Add**, **Return**, **Reassign**, **Cancel Split**, **Save Split**

### Select All / Select None

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<th>Qty Unit</th>
<th>Price</th>
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### Document Builder

- **Type**: New Order
- **OU**: Vision Operations
- **Number of Lines**: 0
Purchasing

• PO, Purchasing Agreements Creation & Maintenance
  – New HTML User Interface – View Deliveries & Distributions for a line on one page!

• New Supplier Setup Screen
  – General and site-level attributes available on one page
  – Reduced number of tabs
  – Quick Update Page

• Document Styles – Tailor Forms to Document Type
  – For Example, PO form for Temporary labor can hide fields that are not applicable
  – Can also “re-name” document type for that style (i.e. “Temporary Labor Order”)

QAUG
oracle applications users group

COLLABORATE07
Technology and Applications Forum for the Oracle Community
Purchasing

• Multi-Org Access Control
  – Can access, process and report against any/all OU’s from one responsibility (with Shared Services operating model)
  – Can manage requisitions, enter into agreements, and create PO’s for multiple OU’s

• Document Publishing Enhancements
  – RTF and PDF layout templates for document creation and communication
  – Communicate Document Attachments to Suppliers via e-mail (Word, Excel, PDF in addition to short/long text attachments)
Purchasing

• Streamlined Sourcing Rules/ASL Maintenance for Agreements
  – Blankets can be enabled for automatic sourcing rules, assignments, and ASL entries for specific inventory orgs

• Compliance to Packaging Constraints
  – Can automatically apply supplier-specific order modifiers for Inventory Replenishment (i.e. Min/Max)

• Auto-Approval Tolerance for Change Orders
Purchasing

• Advanced Requisition Approval Support
  – Parallel Approvers
  – FYI Notifications

• Chargeable Subcontracting Support
  – OEM ships to manufacturing partner as “provisional sale”; assemblies completed, shipped, and invoiced at gross assembly price
Cost

- Matching Cost of Goods Sold to Revenue
  - Matches COGS of sales order line with billed revenue for period
  - Synchronizes the recognition of revenue and COGS in accordance with GAAP
  - Applies to RMA’s, Drop Shipments, ATO/PTO, etc.

- Accrual Reconciliation and Write-off Enhancements
  - Enhanced Load Program
  - 3 New Accrual Reconciliation Reports
  - Utilizes new BI Publisher technology
Cost

- Period End Accruals Enhancements
- Periodic Costing Enhancements
  - Accounting for Inter-org transfers
  - Enhanced Periodic Costing Algorithm
- Value Reports Enhancements
  - “As Of” Date Parameter
  - Display values by Subinventory or Cost Group
- Better Period Close Diagnostics
- Cost Roll-up Enhancements
- Discrete/OPM Inventory convergence
Inventory

- Item Master
  - Approximately 40 new Item Attributes
  - Many due to OPM/Discrete “merger”
  - Also due to E-Business Tax, EAM functionality
- OPM Convergence
  - Dual Unit of Measure
  - Advanced Lot Control
  - Picking Rule Enhancements
  - Enhanced Manual Material Allocations
Inventory

- Material Workbench Enhancements
  - Visibility to Inbound Intransit, Receiving, and On-Hand quantities
  - Can now see PO’s, ASN’s, and Internal Orders
  - Allows drilldowns within each “bucket”
  - Can save and re-use common inquiries
- Genealogy Enhancements
  - Consolidated lot and serial inquiries
  - Can tie component lot/serial info to parent assembly lot at WIP Issue – no longer tied by WIP job
  - Only lots issued to Work Order can be returned from Work Order
Material Workbench Queries
Inventory

- Material Status Control
  - Functionality previously only in WMS now in Inventory
  - Can restrict access to items not passing inspection, warehouse locations with erroneous on-hand balances, etc.

- New Material Aging Workflow
  - Allows proactive material handling procedures for date sensitive material
Inventory

- Indivisible Lots
- New Inventory Org Parameters
  - Labor Reporting, Locator Aliases, RFID tagging, Chargeable Subcontracting, Best Fit Quantity Allocation
- Pick Release Parallelization
- Enhanced Reservations – supports reserving against expected supplies, specific serial numbers, etc.
- Inventory Packing Slip
- Copy Organization Enhancements
Shipping

• Flexible Shipping Documents using BI Publisher
  – User-defined templates for key documents
  – Includes Bill of Lading, Pick Slip, Pack Slip, Mailing Label, and Commercial Invoice

• Parallel Pick Release

• Pick Release enhancements for WMS (Cross-docking)
Shipping

• Can Ship without an order (Miscellaneous Ship Transactions)
  – Create delivery for shipment via XML, print shipping docs, issue out of inventory, etc.
• Workflow-enabled Shipping Transactions
  – Can receive notifications of delivery backorders, issues during shipping process
• Customer Acceptance/Deferred Revenue support
• Shipping Purge
Transportation

- Transportation costs escalating rapidly
- Most companies looking at better tools to manage (both direct & “indirect”)
- Need more than freight cost reduction – Need right material in right place at right time
  - On-time delivery
  - Shorter lead times
  - Lower inventory
  - Fewer physical assets (i.e. trucks)
Transportation Management

• “Companies who implement a TMS can expect freight budget reductions between 5% and 25% in the first year.”
  - Greg Aimi, AMR: Dec 05
• G-Log Acquired by Oracle in November 2005
• OTM 5.5 is G-Log’s “Best of Breed” product; not in EBS
Transportation Management

Oracle G-Log Transportation Management
Open and Scalable

- Continuous Planning
  - Consolidate Loads / Moves
  - Select Modes & Carriers
  - Book / Tender
  - Track & Trace
  - Audit / Settle

- Event Management
  - On-Time Performance
  - Customer Satisfaction
  - Carrier Analysis

- Financials
- Warehouse & Inv Mgmt
- Planned Shipment
- Confirmed Shipment
- Payment Vouchers
- Invoice Check and Match

- Orders
- Product Location
- Item Master

- Service Providers
- Trading Partners

- Tender Offer
- Tender Response
- Ship Status
- Invoice

- Planned Shipment
- Order Status
- ASN
- Order / Release Information

100% Web-Based
Highly Configurable
Global Business Support

*Currently re-implementing analytic capabilities using Oracle technology*
Transportation Management

- Shipment Planning & Optimization
  - Carrier rate optimization
  - Cooperative Routing
  - Load Configuration
  - Dock scheduling
  - Consolidating multi-stop shipments
  - Multi-leg, Multi-mode shipments (i.e. overseas)

- Transportation execution (wireless, internet, EDI, etc.)

- Automated payments and settlements
Transportation Management

- Business Process Automation w/workflow exceptions
- Centralized repository for all rates & charges
  - “Continuous move” planning optimizes asset utilization
- Integration with EBS and other ERP systems
What Does All This Mean For You?

• R12 Offers Streamlined, More Productive User Interface
• Oracle’s acquisitions make it easier to “integrate” Demand Management and Transportation Management into EBS
• Much easier to access, process, and report across organizations and OU’s
  – Easier to Centralize Operations (e.g. Order Management and Purchasing)
What Does All This Mean For You?

• Doing business in Asia-Pacific region?
  – R12 now supports Chargeable Subcontracting

• Doing both Process & Discrete Manufacturing?
  – R12 now “converges” OPM and Discrete in Inventory
What Does All This Mean For You?

• Better Order Management Productivity
  – R12 Productivity improvements (Mass Scheduling, Header Attribute Cascading, Credit Card Security Code, etc.)

• Better Distribution Planning
  – Distribution-oriented companies can now create DRP Plans that better allocate supply across a distribution network
What Does All This Mean For You?

- Have Volatile Demand? Heavy Promotion? Distribution-intensive?
  - Even if don’t have EBS, Demantra could be good option to manage demand, do S&OP planning, and/or manage trade promotions.
What Does All This Mean For You?

- Need better tracking, productivity on shop floor?
  - MES enables mass transaction execution
  - MES allows on-line visibility to holds, shortages, rejects, prioritizing/expediting, etc.
  - MES can provide on-line visibility to work instructions, requirements, etc.
What Does All This Mean For You?

- Much Better Purchasing Productivity
  - Buyer’s Work Center streamlines process
  - Visibility to line, deliveries, distributions on one page
  - New Supplier Setup/Update screens
  - More personalizations on screens
  - Multi-org Access Control
  - Document Publishing Enhancements
  - Auto-Approval Tolerance for Change Orders
What Does All This Mean For You?

• Better Cost Productivity
  – Synchronized recognition of revenue and COGS
  – less Journal Entries!

• Better Inventory Management
  – Visibility to Intransit, Receiving, On-hand quantities
  – Proactive process for material aging
  – Pick Release Parallelization – faster picking
  – Inventory Packing Slip – automating and controlling internal inventory movement
What Does All This Mean For You?

• More Shipping Flexibility
  – Configurable workflow can drive notifications of backorders, issues, etc.
  – BI Publisher-based Pick/Pack Slips, Bill of Lading, Mailing Label, Comm. Invoice
  – Customer Acceptance/Deferred Revenue support
  – Miscellaneous Shipments - Can now ship without an order!
What Does All This Mean For You?

- Potential Freight Cost Reductions
  - Carrier Bidding & rate optimization by lane
  - Centralized repository for all rates & charges
  - “Continuous move” planning optimizes asset utilization
  - Audit & settle freight bills, claims
THE POSSIBILITIES ARE INFINITE

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