Manufacturing Planning Overview

Presenter’s Name
Presenter’s Title
The following is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, and timing of any features or functionality described for Oracle’s products remains at the sole discretion of Oracle.
Agenda

- Mixed-Mode Manufacturing
- Requirements Planning
- Forecasting
- Advanced Planning Integrations (Value Chain Planning)
JD Edwards EnterpriseOne
Mixed Mode Manufacturing

Discrete
- Forecast-Driven
- Work Orders
- Individual, Separate Unit
- Low Volume/High Complexity
- Mass Production
- Minimal Product Variation
- High Volume, Low Complexity

Flow/Lean
- Demand-Driven
- Work Order-less
- Mixed Model
- Customized Products
- Recipe/Formula Based
- Life Sciences
- Food/Beverage
- Chemicals
- Natural Resources

Repetitive

Configure to Order
Engineer to Order
Manufacture to Stock
Manufacture to Order
Assembly to Order

Process
JD Edwards EnterpriseOne
Manufacturing Planning Footprint

Requirements Planning

- DRP / MPS / MRP
  - Supply Plan (WO, PO, TO)
  - Bucket-less
  - Telescope Horizon
  - Mixed Mode
  - Planning Bills
  - Lot Management
  - Automated PO Line Consolidation

Capacity Planning

- Resource Profile
- Resource Requirements Planning
- Rough Cut Capacity Planning
  - Planned Load
  - Released Load
  - Critical Work Centers
  - Master Plan Feasibility
- Capacity Requirements
  - Across Work Centers
- Period Summary
- Capacity Load
- Message Revisions

Forecasting

- Detail Forecasts
- Summary Forecasts
- Twelve Methods
- Forecast Consumption
- Demand Spreading
- Planning Bill Forecasts
- Forecast Pricing
- Price Rollup
- Simulation
JD Edwards EnterpriseOne
Footprint – Supply Chain Planning

Priority Management Techniques
- Sales and Operations Planning (SOP)
- Master Production Schedule (MPS)
- Material Requirements Planning (MRP)
- Production Activity Control (PAC)

Capacity Management Techniques
- Resource Planning (RP)
- Rough-Cut Capacity Planning (RCCP)
- Capacity Requirements Planning (CRP)
- Input/Output Control
- Operation Sequencing

Source: APICS – The Association for Operations Management
JD Edwards EnterpriseOne
Footprint – Supply Chain Planning

Demand Management and Forecasting
Sales and Operations Planning, Customer Relationship Management
Master Planning and Requirements Planning
EnterpriseOne Manufacturing Management, SFC, Rep Mfg.

Priority Management Techniques

Sales and Operations Planning (SOP)
Master Production Schedule (MPS)
Material Requirements Planning (MRP)
Production Activity Control (PAC)

Capacity Management Techniques

Resource Planning (RP)
Rough-Cut Capacity Planning (RCCP)
Capacity Requirements Planning (CRP)
Input/Output Control
Operation Sequencing

Strategic Network Optimization
Oracle Advanced Supply Chain Planning
Oracle Production Scheduling
EnterpriseOne Demand Flow® Manufacturing

Source: APICS – The Association for Operations Management
Oracle’s JD Edwards EnterpriseOne Requirements Planning simplifies your planning process by making it easy for you to incorporate all enterprise locations and mixed-mode production processes under one requirements planning umbrella.
An ordering and scheduling process that breaks down the requirements of all MPS parent items to the component levels.

You can also use forecasts as input for lower-level MRP components that are service parts with independent demand.

You can use forecasts as input for DRP to more accurately plan the demand that you supply through distribution.

A management system that plans and controls the distribution of finished goods.

Forecasts are one MPS input that help determine demand before you complete the production plans.
Requirements Planning Overview

With Requirements Planning you can:

- Generate demand projections that you use as input for the planning and scheduling systems.
- Use capacity planning to ensure that sufficient capacity is available to accomplish the planned production schedule.
- Generate a distribution or production plan for one facility.
- Produce a single-facility Material Requirements Planning (MRP) schedule for a single item or all items.
- Compare prospective resource requirements to the capacity that is available in critical work centers.
- Set up and generate multilevel master schedules.
- Process work orders with a batch quantity that corresponds to a batch bill of material and use these orders for MRP processing.
With Requirements Planning you can:

- Forecast consumption across multiple time periods.
- Set up and use process planning by defining stocking types for the process, defining co-products and by-products, and generate Master Production Scheduling (MPS) for the process.
- Use repetitive manufacturing for highly repetitive production that relies on a production rate.
- Set up and maintain multi-facility plans to define facility relationships at any level of detail for an entire facility, a product group, master planning family, or an individual item number.
- Set up information for each of the suppliers and for the items that you are planning to purchase to generate ad hoc schedules interactively or generate them by running the Supplier Schedule Generation program.
Planning Messages

You can manually review and process messages using the MRP/MPS Detail Message Revisions program or automatically process the messages using the MRP/MPS Detail Message Processing program.

After reviewing messages you can:
- Place the message on hold
- Clear the message
- Delete the message
- Process the message
The time series represents the proposed master schedule. Review the time series to decide whether to accept or override the planning that the system suggests. Requirements Planning provides three time series calculations:

- Ending available
- Available to promise
- Cumulative available to promise
Supply & Demand

- Use the Supply and Demand Inquiry program to review the current demand for a selected item. Supply and Demand Inquiry enables you to:
  - Display the current inventory position, including all scheduled supply and demand.
  - Review item quantity supply, demand, and order availability in date order.
With JD Edwards EnterpriseOne Requirements Planning, you can:

- Generate demand projections that you use as input for the planning and scheduling systems.
- Use capacity planning to ensure that sufficient capacity is available to accomplish the planned production schedule.
- Generate a distribution or production plan for one facility.
- Produce a single-facility Material Requirements Planning (MRP) schedule for a single item or all items.
- Compare prospective resource requirements to the capacity that is available in critical work centers.
- Forecast consumption across multiple time periods.
- Set up and generate multi-level master schedules.
- Set up and maintain multi-facility plans to define facility relationships at any level of detail for an entire facility, a product group, master planning family, or an individual item number.
- Set up information for each of the suppliers and for the items that you are planning to purchase to generate ad hoc supplier schedules.
Forecasting is the process of reviewing past demand to predict future demand.

Use Forecasts to make planning decisions about:

- Customer Orders
- Material Requirements
- Labor Requirements
- Machine Requirements
- Capacity Requirements
- Development of New Products
- Warehouse Space
- Budgets
Forecasting Solution:

Generates demand projections that are used as input for the JD Edwards EnterpriseOne Planning and Scheduling Systems.
Forecasting

- Detail and Summary Forecast
- Supports zero or negative forecasts
- Forecast weekly, monthly

Summary
- Branch
- Region
- Territory
Forecasting

- **Twelve Forecast algorithms**
  - Percentage over last year
  - Calculated Percentage over next year
  - Last Year to This Year
  - Moving Average
  - Linear Approximation
  - Least Square Regression
  - Second Degree Approximation
  - Flexible Method (Percent Over n Months Prior)
  - Weighted Moving Average
  - Linear Smoothing
  - Exponential Smoothing
  - Exponential Smoothing with Trend and Seasonality

- **Best Fit; forecast closest to sales trend**
Demand Spreading

- Demand Spreading is the process of taking a demand forecast quantity for a given date (or date range), and spreading that quantity across a specified time period.
- The process will take the planning dates and quantities received from the customer and transform them into forecasting buckets as required by Forecasting and Planning.
- Demand Spreading is triggered by Create Schedules.
Demand Spreading

- Daily, Weekly, Monthly Schedules
- Template Spreading
- Even Spreading
- Customer Calendar Definitions
Types of Demand Spreading

Forecasting will support two methods of spreading the demand over the specified date range.

- **Template Spreading:**
  - A Demand Spreading Template is created to identify, by percentage, how demand quantities are to be distributed across a week.

- **Even Spreading:**
  - The demand quantities will be evenly distributed across the date range.
  - This is the default technique that will be used if a Demand Spreading Template is not defined.
Forecast Management Take-Aways

- Generate and maintain forecasts that are based on any or all of 12 different formulas that address a variety of forecast situations that you might encounter.
- Calculate which of the 12 formulas provides the best fit forecast.
- Enter forecasts manually.
- Create unique forecasts by large customer.
- Summarize sales order history data in weekly or monthly time periods.
- Define the hierarchy that the system uses to summarize sales order histories and detail forecasts.
- Create multiple hierarchies of address book category codes and item category codes, which you can use to sort and view records in the detail forecast tables.
- Review and adjust both forecasts and sales order actuals at any level of the hierarchy.
- Integrate the detail forecast records into Master Production Schedule (MPS), Material Requirements Planning (MRP), and Distribution Requirements Planning (DRP) generations.
Oracle Value Chain Planning solution

Complete ● Open ● Integrated ● Modular

- Single source of truth
- SOA enabled
Oracle Value Chain Planning applications integrated to JDE E1 ERP:

- Oracle Demantra Demand Management (DM)
- Oracle Demantra Advanced Forecasting and Demand Modeling (AFDM)
- Oracle Demantra Predictive Trade Planning (PTP)
- Oracle Demantra Trade Promotion Optimization (TPO)
- Oracle Demantra Deductions and Settlement Management (DSM)
- Oracle Demantra Real Time Sales and Operations Planning (RTS&OP)
- Oracle Advanced Planning Command Center (APCC)
- Oracle Advanced Supply Chain Planning (ASCP)
- Oracle Inventory Optimization (IO)
- Oracle Production Scheduling (PS)
- Oracle Strategic Network Optimization (SNO)

The following applications could be deployed **standalone** without using the PIP

- Oracle Demand Signal Repository
- Oracle Collaborative Planning - VMI
- Oracle Service Parts Planning
VCP to JDE E1 ERP Integration Overview

JD Edwards EnterpriseOne ERP Systems

Oracle Value Chain Planning

Master Data and Transaction Data

Planning order recommendations

Promotions and settlement payments
The VCP to JDE E1 PIP enables integration between JDE E1 and a broad set of applications in the Value Chain Planning (VCP) product suite.

By adopting this integration, JDE E1 customers can leverage solutions that enable best-in-class Demand Planning and Supply Planning processes.

This integration uses xml and flat-file based extracts from JDE E1 and transforms and loads these files into the VCP applications.

The resulting information from VCP applications (forecasts, planned order recommendations) is extracted out of VCP and transformed into input files that can be imported back into JDE E1.
Achieve benefits incrementally
Crawl, walk, run approach – Focus on the most important problem first

- Leverage common model as central starting point – Plug-in new components incrementally
- Reconfigure without reimplementation
Value Chain Planning – Integrated Solution

**Demantra DSM**
- Demand Signal Repository (DSR)

**Demantra PTP/O**
- Demand and Demand Variability

**Demantra DM, AFDM**
- Promotions

**Demantra RTS&OP**
- Balance supply and demand
- Analyze impact of sales promotion strategies
- Integrate with Hyperion Financial Planning
- Simulate S&OP scenarios

**IO**
- Inventory postponement
- Risk pooling and variability modeling
- Service level, budget, and cost analysis
- Calculated time-phased safety stock

**ASCP**
- Unconstrained and constrained tactical supply planning
- Distribution planning
- Exceptions analysis
- Release of order recommendations

**PS**
- Plant scheduling for throughput optimization
- Floating bottleneck analysis
- Exception analysis
- Simultaneously schedule planned and production orders

**SNO**
- Simulate planned and unplanned events to analyze supply chain risk
- Rationalize capital assets
- Optimize supply and distribution network

**APCC**
- Scenario and task management
- Scenario and plan analysis and comparison, using pre-built dashboards for supply chain, risk, and S&OP analysis
- Aggregate and custom reporting, drill down to ‘source’ applications