Strategic Network Optimization, Demantra & Production Scheduling

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Agenda

- Big Picture
- Strategic Network Optimizer
- Demantra
- Production Scheduler
Oracle Advanced Planning

Complete e-business planning solution
Agenda

• Big Picture
• Strategic Network Optimizer
• Demantra
• Production Scheduler
Answer the tough questions:

- What impact do changing costs have on my sourcing strategy?
- What is the real total cost of outsourcing including the impact on working capital and cash flow?
- Where should my point of postponement be?
- Where should I hold how much inventory, when?
- How could I react to a disruption in supply due to unforeseen events? Should I multi-source?
- What are my most profitable channels or products to invest in?
- What is the impact of mergers and acquisitions on my supply network and capital asset budget?
Strategic Network Optimization

Description

- Optimize your supply chain network
  - Use demand scenarios as input
  - Compare time-phased network configurations

- Model all supply chain elements
  - Distribution centers, processing facilities, ship methods, stores, suppliers, and customers
  - Costs: transportation, operating, sourcing, facility ramp-up and shut-down, labor, and storage

- Optimize sourcing
  - Output best sourcing strategy for downstream supply chain and inventory planning

- Rationalize your asset strategy
  - Determine where to locate distribution facilities
  - Position critical assets

- Simulate changing business conditions
  - New businesses and new markets
  - Outsourcing decisions
  - Demand scenarios
Account For Variability

Make profitability decisions based on total net delivered cost

- Local supplier: more dependable, shorter lead time → Less hedge inventory
- Offshore supplier: increased lead time and variability → More hedge inventory
- Increased inventory carrying cost may offset savings in total landed cost
Fault Tolerant Supply Networks

Simulate planned and unplanned events

Simulate unplanned events

- **Failures**: suppliers, plants, warehouses, lines, transport
- **Costs**: increases and decreases in costs of labor or resources
- **Prices**: increases and decreases in price due to competitive activity, market conditions, or currency fluctuations
- **Natural disasters**: Hurricanes, port closures, earthquakes

Determine risk mitigation strategies

- Easily specify potential unplanned events and evaluate their impact on their supply chain
- Understand the cost and disruption caused by these events
- Determine the best way to mitigate the impact at lowest cost
- Incorporate contingency plans into the standard planning process to ensure quick response
SNO Integration

Description – logical information flow

Items
BOMs
Routings
Resources
Sales Orders
On Hand
Forecast

SNO

Sourcing Rules

Sourcing Rules

DP Forecast

Safety Stock

DP

ERP

ASCP

IO
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Oracle Advanced Planning

Complete e-business planning solution

- Collaborative Planning (CP)
- Sales and Operations Planning (SOP)
- Supply Chain Planning (ASCP)
- Distribution Planning (ASCP)
- Global Order Promising (GOP)
- Inventory Optimization (IO)
- Demand Planning (Demantra)
- Supply Chain Intelligence (SCI)
- Network Design (SNO)
- Production Scheduling (PS)
- SC Exception Management (CP)

From short-term to long-term

From detail to summary

- Plan
- Order
- Sell
- Market
- Develop
- Projects
- HR
- Finance
- All Product, Customer, & Supplier Information
- Maintain
- Fulfill
- Make
- Procure
- Develop
- Market
- Sell
- Order
- Plan
Improve Forecast Accuracy
Leverage Advanced Forecasting and Demand Modeling option

- Mixed models used in same time series adjust for multiple causal factors including seasonality, market trends, and promotions

- Each model contributes different forecast characteristic to the overall model

- Automatic model selection provides improved accuracy of “best fit” approaches
  - One forecast based on multiple models instead of only using best-fit model
  - Self-tuning engine

- Forecast trees automatically find level with statistically relevant data
  - Forecasts stored at lowest level
  - Proportion rules applied when necessary

- Can incorporate external information such as weather, market drivers, forward indicators, and competitive data
The Difference is in the Details
Granular causal factors and coefficients

- Demand history and causal factors maintained at lowest level
- Coefficients calculated and maintained at the lowest level for which there is demand history
- Forecasts and promotion predictions reflect local, regional, product group customer, time period, sensitivity, and so on
- Demantra approach yields most granular analysis of demand for more accurate forecasts
S & OP Traditional Approach – Disconnected

High latency, limited collaboration, no consensus forecasting

Your Company

<table>
<thead>
<tr>
<th>Financial Planning</th>
<th>Production Planning</th>
<th>New Product Planning</th>
<th>Sales Quotas</th>
<th>Marketing Forecasting</th>
<th>Measurement and Reporting</th>
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- Manual processes
- Multiple data sources
- Multiple, non-integrated systems

No connection between plans, plans not tied to execution
Misalignment between metrics and objectives
Unreliable forecasts and production plans
Automate Consensus Planning
Inclusive consensus process improves plan quality and acceptance

- Create consensus plan through continuous collaboration across sales, marketing, finance, supply chain and customers
- Each participant gets tailored view
  - Configurable worksheets
- Consensus based on inputs and weightings from groups
- Combine top down business planning with precise bottom up forecasts
- Automate process with workflow
  - Send reminders
  - Task notifications in dashboard
Oracle Demantra Solution

Evolve at your own pace to a best-in-class solution

Start anywhere

Eliminate spreadsheets
- Manage rolling forecasts
- Collaborate with all constituents on one number
- Use basic statistics, alerts, and seeded worksheets
- Tailor worksheets for individual users

Leverage POS and channel data
- Forecast new product introductions
- Collaborate with customers
- Use advanced statistics and causal factors
- Complex alerts and custom worksheets
- Manage rolling forecasts
- Collaborate with all constituents on one number
- Use basic statistics, alerts, and seeded worksheets
- Tailor worksheets for individual users

Forecast based on attributes and product characteristics
- Leverage POS and channel data
- Forecast new product introductions
- Collaborate with customers
- Use advanced statistics and causal factors
- Complex alerts and custom worksheets
- Manage rolling forecasts
- Collaborate with all constituents on one number
- Use basic statistics, alerts, and seeded worksheets
- Tailor worksheets for individual users

Assumption based forecasting
- Leverage POS and channel data
- Forecast new product introductions
- Collaborate with customers
- Use advanced statistics and causal factors
- Complex alerts and custom worksheets
- Manage rolling forecasts
- Collaborate with all constituents on one number
- Use basic statistics, alerts, and seeded worksheets
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From less complex to best in class
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Supply Chain Intelligence (SCI)
Network Design (SNO)
Sales and Operations Planning (SAP)
Demandra - Demand Planning (Demantra)
Inventory Optimization (IO)
Supply Chain Planning (ASCP)
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Distribution Planning (ASCP)
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SC Exception Management (CP)
Collaborative Planning (CP)

Plan: Develop, Market, Sell, Order, Plan, Procure, Make, Fulfill, Maintain, Service, Finance, HR, Projects

Network Design

Inventory Optimization

Demandra - Demand Planning

Global Order Promising

Distribution Planning

Production Scheduling

SC Exception Management

Collaborative Planning

Oracle
Production Scheduling Integration

Description

Scope of ASCP – Planning the entire Supply Chain
Scope of PS – Scheduling a single Plant
Production Scheduling

Description

- Maximize production throughput
  - Optimize your shop floor; detect floating bottlenecks
  - Reduce WIP inventory by rapidly synchronizing multi-stage production schedules
  - Account for complex setup and change-over scenarios, machine breakdown, supply and resource shortages, co- and by-products, alternate resources, routings, and operations

- Model all elements of your shop floor
  - Work centers, resources and resource groups, shift capacity, operating costs
  - Lead times: setup, change-over, and run
  - Sequence dependent setups, contiguous operations, production campaigns, batching

- Implement most optimal schedule – seamless integration with Oracle EBS
  - Output best schedule for process (OPM), discrete MFG), and semi-conductor (OSFM) manufacturing
Production Scheduling Integration

Description

- Major Features:
  - Provides the ability to create a Production Schedule for a **single** EBS “Organization”
  - Uses EBS Items, Bills of Materials, Routings, Resources etc to construct a PS model
  - Schedules work orders/jobs/batches from ERP and also planned orders from ASCP
  - Release of the production schedule from PS is sent back to EBS
  - Supports EBS Discrete (WIP), process (OPM), OSFM and ASCP manufacturing environments
# Production Scheduling Integration

## Description

**Advanced Supply Chain Planning**
- Plan for multiple facilities
- Which plant makes what products and when
- Pre-builds based on capacity shortages
- Alternate facilities, suppliers and processes

**Production Scheduling**
- Schedule a single facility
- Sequence Production to meet demands on this facility
- Account for detailed production constraints and come up with an executable schedule

Detailed Sequence of activities near term to constrain the medium / long term plan

Constrained dependent demands, Independent Demands, Planned Orders
QUESTIONS
ANSWERS