Master planning in Dynamics AX

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Agenda

▪ Morning
  – Short Intro
  – Master planning basics
  – Master plan settings
  – Time fences
  – Coverage groups
  – Misc.
  – Forecasting

▪ Afternoon
  – Questions?
Introduction

- Who am I?
- Which version are you on?
  - Pre- AX 4.0?
  - AX 4.0
  - AX 2009
  - AX 2012
    * R2
    * R3
- Who uses master planning in Dynamics AX
- Who trusts master planning results
- Who knows how to troubleshoot master planning behavior

What is Master Planning?

- A grouping of business processes that includes the following activities: demand management, which includes the forecasting of sales, the planning of distribution, and the servicing of customer orders; sales and operations planning, which includes sales planning, production planning, inventory planning, backlog planning, and resource planning; master scheduling, which includes the preparation of the master production schedule and the rough-cut capacity plan.
  - APICS Dictionary
Master planning basics

Supply - Demand = Net requirements

Purchase orders
Production orders
Sales order returns
Inventory adjustments
On-hand inventory
Transfer order receipts

Sales orders
Sales forecast
Safety stock
Transfer order shipments
Production line

Planned purchase orders
Planned transfer orders
Planned production orders

Net requirements

Results of master planning / scheduling requirements

Show amount supply, demand, and planned supply

Form shows relationship between demand and supply (pegging)
One plan vs Two plans

**One plan**
- Same plan between static and dynamic
- Ad-hoc updating of net requirements or explosions affect the main plan
- Static plan changes throughout the day as users update net requirements

**Two plans**
- Different plans for static and dynamic
- Ad-hoc updating of net requirements or explosions affect only the dynamic plan
- Static plan remains static until nightly regeneration of plan creates new orders

Master plan setup

**General**
- Inclusion of specific inventory transactions
- Consider shelf life
- Planned production scheduling parameters
- Sales forecast settings

**Time fences**
- Same time fences as coverage groups
- Used to override coverage groups

**Futures messages**
- Used to specify if requirement date should automatically update to calculated futures date

**Action messages**
- Used to specify if requirement date on planned order should be automatically updated to action date

**Safety margin**
- Receipt margin
- Issue margin
- Reorder margin
Master planning parameters

**General**
- Dynamic and static plan
- Default coverage group
- Dynamic negative days
- Calendar

**Planned orders**
- Find trade agreements
- Planned receipt time

**Standard update**
- Defaults for firming
- Find purchase agreements

Time fences

- Firming
- Freeze
- Futures
- Action
- Capacity
- Explosion
- Coverage

Time
Time fences, cont.

- Based on requested ship date
- Capacity and explosion time fences have most significant impact on performance
- Past capacity time fence, inventory lead times are used to calculate order date
- Recommendation for coverage time fence on purchased items: no longer than twice the longest lead time

Coverage groups

- Used to plan similar items similar ways
- Determine time fences and planned order behavior
- Negative days and positive days
Coverage codes

Each uncovered demand drives a planned supply. Can use order multiples to optimize.

Coverage period of 6 days. Demand is satisfied on the first requirement date and looks out entire coverage period.

Min of 250, max of 1000. Once accumulated value falls below min, an order big enough to bring accumulated up to the max is generated.

Net requirements are not calculated for these items.

Positive and negative days

Positive days: Positive days = 15

Negative days: Negative days = 15
Dynamic negative days

Available in versions 2009 and after

Reduce need for coverage groups for different lead times

Dyn. neg. days = Lead time + neg. days

Approved planned orders

Used to indicated orders have been reviewed and should be acted on

Are not deleted by “Delete plan” or “Regenerate”

Intermediate step between planned order and firmed order
Fulfill minimum

Changes requirement date of safety stock

Can negatively impact sales order explosions and futures dates

By default, set to “Today’s date”

For a detailed example, check out this blog post: http://dynamicconsulting.com/frontpage/i-have-on-hand-inventory-let-me-use-it

Forecasting

Intermediate forecast
- Forecasts can be reduced at intermediate levels
- Use “All transactions” reduction key on coverage group

Dynamic reduction principle
- “Transactions – dynamic period”
- Creates dynamic periods based on forecast date
- Controlled on master plan parameters

Item allocation keys
- Used to forecast at a “product family” level
- Important with new R3 forecasting functionality
- Interesting for reporting / viewing stats on “Supply schedule” form
Questions?

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Questions

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<tr>
<th>Lead times</th>
<th>Calendars</th>
<th>Safety stock journal</th>
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| • Where should lead times go? Trade agreements, item coverage, default order settings?  
• What’s the “disregard lead time” check box for?  
• Which calendars control how master planning works?  
• What about closed days or working days?  
• What are safety stock journals for?  
• How are calculations performed? |
Links

Dynamic negative days – Roxana Diaconu (Program manager – Microsoft)
http://blogs.msdn.com/b/axmfg/archive/2015/02/19/more-about-dynamic-negative-days.aspx

Using multiple plans / recommended time fences – Conrad Volkmann (Program manager – Microsoft)

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