Using Capacity Planning for Optimal Utilization of Private Fleet in Retail Distribution

2014 OTM Conference
Agenda

• About Office Depot, Inc.
• Office Depot, Inc. Distribution Network
• Overview of OTM Configuration at Office Depot, Inc.
• Capacity Planning – Current and Private Fleet
• Functional Solution
• Technical Solution
• Solution in Action
• Lessons Learned
• Future Plans
• Q&A
Who We Are

- Fortune 500 leader and global provider of products, services and solutions for every workplace to help customers work better – whether at office, home, school or car
- Approx. $17 billion in pro forma sales
- More than 2,000 retail stores worldwide
- More than 200,000 business-to-business customers
- Award-winning e-commerce sites
- Approximately 60,000 employees
- Serving customers and businesses in 58 countries across North America, Europe, Asia and Latin America
- The #3 online retailer in North America¹

¹Source: Internet Retailer estimates
Office Depot and OfficeMax merged to form Office Depot, Inc.

Together, we’re a stronger, more efficient global provider of office products, services, and solutions for the workplace.

We are now your single source for all the things you need to make your workplace more productive, including:

• An exceptional in-store and online shopping experience
• Thousands of choices, innovative services & great values
• Superior customer service you can count on no matter what
• An award-winning green selection – from supplies and cleaning to furniture and more
• A portfolio of leading brands including Office Depot, OfficeMax, OfficeMax Grand & Toy, Viking, Ativa, TUL, Foray, and DiVOGA
Office Depot Distribution Network

• North America
Office Depot Carrier Network

- Office Depot uses Major National Carriers, Parcel Carriers and LTL

- With the merger of Office Depot and OfficeMax, Office Depot acquired the Private Fleet of OfficeMax

- Optimal Utilization and Capacity Planning of Private Fleet is important

- It is especially important to not exceed the Capacity Constraints like max truck capacity by Weight/Cube/Stop limits
OTM Configuration at Office Depot

• **Thousands of** Customer Delivery Orders a day, need to be executed for Carrier and Route Selection
• Production Hours: 7:00AM EST to 6:00PM PST
• Once a Carrier and Route (Lane) is assigned in OTM it will be sent to WMS for Pick/Pack and label the Carton. The Route can not be changed on the Order once this is done
• One Order = One Shipment scenario
• Bulk Planning not used due to the High Volume and near real time Shipment Execution
• OTM is also used LTL Shipments/Financials/Tracking, Dock Scheduling for about 20 Buildings
• Will be expanded to Direct Carrier Delivery Tracking, Retail Routing, Vendor Consolidation etc.
Capacity Planning - Current

• Mostly Manual

• Monitored by Routers using the Mainframe COS system *Green Screens*

• Once it is identified that a Route (Lane) reached its Capacity, it is Deactivated for that day in OTM or the Rate is raised to make it less attractive

• It is tedious and Reactive in nature
Capacity Planning – Current (Cont'd…)

- Route Summary Inquiry – Mainframe COS system

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<th>TOTAL CUBE</th>
<th>TOTAL WEIGHT</th>
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Routing details successfully retrieved

Enter=VALIDATE  F3=EXIT  F5=VIEW ORDER  F6=PRINT  F7=PGUP  F8=PGDN

10:00 AM
Capacity Planning – Current (Cont'd…)

• Route Summary Inquiry (Mid-Day) – Mainframe COS system
Capacity Planning – Current (Cont'd…)

• Route Summary Inquiry (End of Day)– Mainframe COS system
Capacity Planning - Future

• Use OTM Capacity Management Feature

• Automatically limit the Lane capacity by Day of Week.
• Possible to fine tune the lane even during middle of plan day

• Especially important for Private Fleet after the merger with OfficeMax since the Capacity is finite and Equipment is Shared

• Use Private Fleet Lanes as pilot to test the feature
Functional Solution

- Setup Capacity Group

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Top
Functional Solution (Cont’d…)

• Setup Capacity Limit
Functional Solution (Cont'd…)

- Enable Capacity Usage on Rate Offering
Technical Solution

• Database Trigger TG_SEQUIPMENT_CAPACITY ON Table shipment_s_equipment_join

• When the Shipment is created, the Capacity Constraint Name associated with the Lane is populated in the SHIPMENT. CHECK_CAPACITY_CONSTRAINT column

• Capacity Usage associated with the Capacity Constraint is incremented by 1
Technical Solution (Cont’d…)

• When the Capacity Limit is reached, the Trigger does:
  o raise_application_error(-20001, 'Capacity of '||v_capacity_gid ||' was reached its max value '|| ' of '|| v_limit)

• The Planning Process starts again and excludes the above Lane (some how in the Cache) and selects the Lane associated with the next best Optimal/Feasible Rate Record. If this Lane also exceeds Capacity, the cycle repeats. And-so-on-and-so-forth.

• To understand this, enable logging and trace thru entries.

• Its Beautiful!!
Capacity Management in Action

- Capacity Usage screen tracks the current Capacity Usage

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<th>Capacity Group ID</th>
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<th>End Date</th>
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Capacity Management in Action

• Capacity Usage screen tracks the current Capacity Usage
• Most days, the actual number of shipments planned are below Capacity Limit. However, One Fine Day, it reached Capacity and Capacity Management automatically restricted additional shipments planned to that Lane
Lessons Learned

• If there are 2 Lanes, one servicing 5-Digit Postal Code and another Servicing 9-Digit Postal Code extending the 9-Digit Postal Code, If there is a Order with Customer Location Address with 9-Digit Zip Code, Capacity Management is updating the 5-Digit Lane for Capacity Usage, even if shipment is planned with the 9-Digit Lane!!

• We have currently restricted the Capacity Management to Lanes with 5-Digit Postal Codes only.

• The Database Trigger may be possibly modified to suit the business needs.

• Beta testing is within a small confine; we understand results may not be similar within broader application
Q&A

• Where can I buy Office Supplies, Office Equipment, Ink/Toner, Furniture, Printing Services, Back-to-School supplies etc.? 😊
  – Office Depot and OfficeMax are the go-to place for these and many more.
  – 4 Easy Ways to Shop
    ❖ Shop Online 24 Hours a day: www.officedepot.com or www.officemax.com
    ❖ Call 24 Hours a day: 1-800-GO-DEPOT or 1-877-OFFICEMAX (Includes Speech-Activated Quick Order)
    ❖ Locate a Store: 1-800-GO-DEPOT or 1-877-OFFICEMAX
    ❖ Download Office Depot and OfficeMax App in mobile devices

• Questions?
Thank you

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