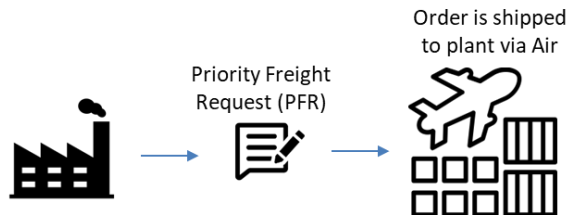


Freight Shipment Cost Optimization for a Leading North American Manufacturer

\$4.5 M Savings from Freight Shipment Cost Optimization for a Leading North American Manufacturer

PFR Process



The company is consistently spending \$27-30 million on Air Freight in the last 3 years to transport finished goods and components globally.



How can Analytics help?

Determine the root causes and their magnitude of impact on air freight spend through:

- PFR spend rationalization
- Purchase order clean up
- Lead time optimization
- Air freight spend optimization

Problem Statement

Client engaged Tiger Analytics to reduce air freight spend and bring visibility into PFR (priority freight requests) by:

- Identifying potential reasons for air freight spend
- Providing and implementing solutions to reduce the spend

Challenges

- Validation of PFR tickets with shipment carrier data requires manual effort in mapping cities to plants between carrier data and PFR data
- No lead time data for 167 plants
- Quantifying business logics where there were no service level cuts

Hypothesis laid out to understand the root cause of PFR tickets

Hypothesis



Demand Issues

Demand Under Forecast: Lead Time forecast is under the actual demand



Supply Issues

Invalid Purchase Orders: Purchase Orders that are open for more than 6 months create unreal supply in the system leading to supply issues

Incorrect Lead Time: Incorrect lead time in the system makes planner assume incorrect estimation of inbound deliveries lead to supply issues

Other Supply Issues: Shortage of components, shortage of labor, capacity issues etc. on the supplier side



Other Issues

Sales request, Engineering request

Replenishment of inventory, maintenance of safety stocks etc.

Preventive request for Air Freight

Solution Approach

Input



Shipment Data
(Product Related)



Requested vs
Delivered Dates (past
shipments)



Shipment Order Type
& From-To details



Carrier, Route,
Shipment
Configuration Data

Analysis Approach

Define cut level to determine PFR reason: Difference between Net Order and Filled Units in each month. Significant cut is where the difference is $>10\%$



Identify when the months when the cut started happening

Diagnose the root cause that led to the cut in the identified month. Example:

- **Invalid PO Issue:** Invalid PO Quantity in that month $> 25\%$ of the Net Orders
- **Incorrect Lead Time (LT) Assumption:** POs from the suppliers that have incorrect LT in the system $> 10\%$ of the Ordered Quantity
- **Preventive Air Freight:** If no trigger month is found
- **Supply Issue:** If shipments/LT forecast < 0.9
- **Demand Issue:** (LT Forecast (from client's forecasting team) + Buffer) $< 75\%$ of the Demand



Develop methodologies to calculate as per business logics

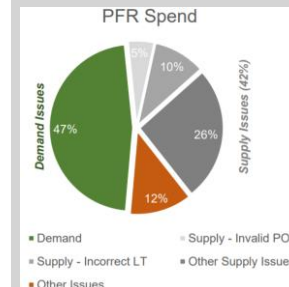
Undertake calculations and analyse deviations



Associate potential causes with the PFR tickets and assign dollar values

Output

Root Cause Analysis



Business Outcome

- ✓ Solution resulted in quick wins with a total impact of \$4.5 Million on PFR Spend
- ✓ Long term savings can be achieved using the recommender system that can provide triggers to avoid the PFR request in future and also suggest timely request of PFR

Sample Outputs (Illustrative)

PFR Spend Rationalization*

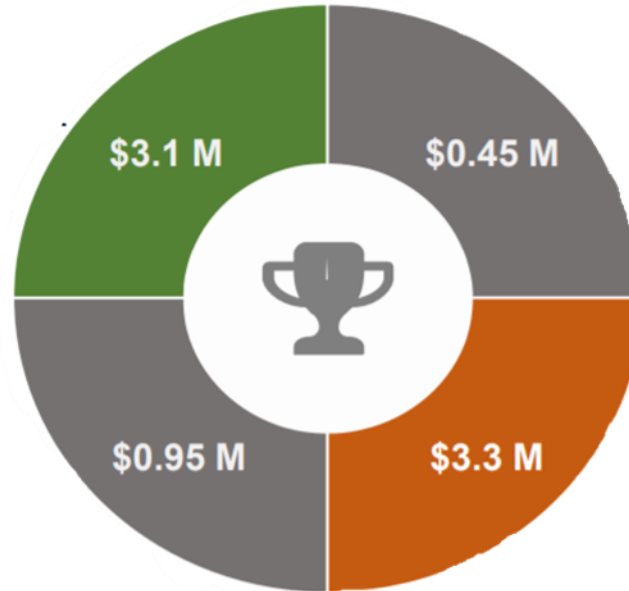
Rationalizing PFR spend by removing duplicates and correcting the overstatement of carrier charges

*Achieved Overall

Lead Time Optimization*

Continue to review and update the lead time of plants and SKUs in the JDA system

*For Finished Goods



Purchase order clean up in the system*

Continue the clearance of purchase orders that are open and past due for long period

*For Finished Goods

Air Freight spend optimization

Savings in customer penalties by raising PFRs on time avoiding the breach in service levels

*Additional Savings (not part of PFR Spend)

Thank You

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