



Fill rate analysis

Nutritional health products manufacturer

- Consolidated various data sources – JD Edwards, SharePoint into a data model using ADF pipelines and analyzed Orders and Fulfilment data
- Developed a Power BI dashboard to support the Supply Chain team in analyzing the performance of warehouses in fulfilling the orders, by focusing on key Fill rate metrics

Fill rate analysis for nutritional health products manufacturer

FILL RATE ANALYSIS

Situation

- Client lacked visibility to analyze the performance of warehouses in fulfilling the orders on an ongoing basis due to absence of standard reporting and lack of agreed definitions for calculating different fill rate metrics
- Partnered with the client to evaluate the key drivers that impact fill rate, finalize the definitions of various fill rate metrics, and build Power BI dashboard that is refreshed daily to track these metrics

Accordion Value Add

- Defined the logic for calculating fill rate at order, line, unit, value(\$) level using 'First Shipment Date' (minimum shipment date at which units were shipped among all the lines for an order)
- Built the required pipelines on Azure Data factory & structured data models on Visual Studio
- Developed a self serve robust Power BI dashboard focusing on weekly, quarterly and monthly comparison of different fill rate metrics at Brand, Channel and Business Unit levels to identify any concerning trends where action might be needed
- Performed YoY comparison of shipment and fill rate data to provide insights into the trends and variances
- Analyzed customer and supplier level data for different fill rates to identify the top customers that were getting impacted because of nonperformance

Impact

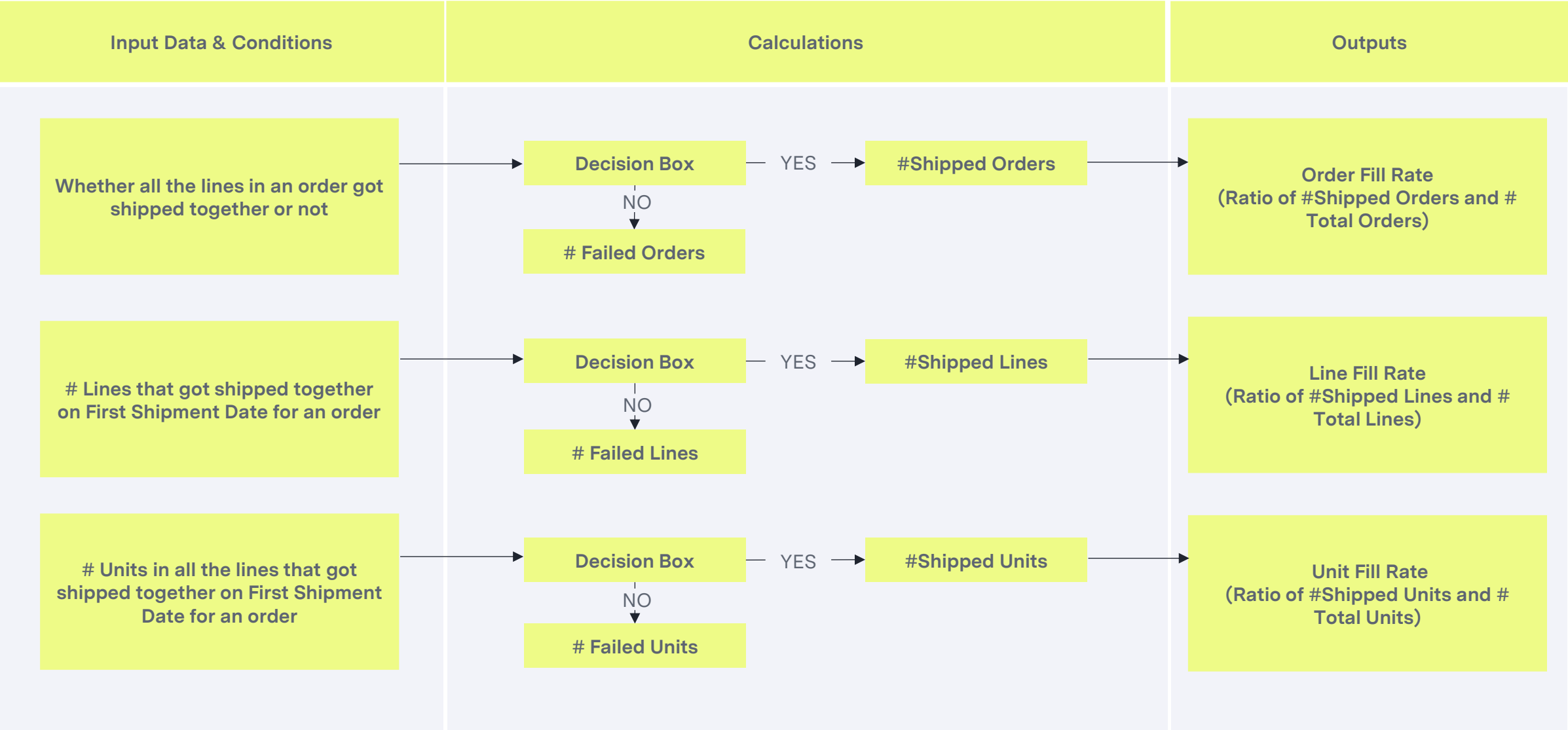
- The Customer & Item level drill-throughs provided across the report enabled client to easily filter down to individual customer level details to take specific actions based on the fill rate performance for the selected time period
- The automated dashboard was leveraged as the final source of reporting for the fill rate metric ensuring that the entire Supply Chain team is looking at same data and metrics
- The report helped the warehousing team in managing their third-party logistics as they can easily pull the shipments by Warehouse

Approach & Methodology



Note: Total Lines (or Units) contains the lines (or units) that got shipped after the first shipment date for an order in addition to the lines/units that got shipped on first shipment date

Fill rate methodology



Executive summary of fill rate metrics

Line/Unit/Value/Order

Line

Unit

\$ Value

Order

Line of Business

All

Channel

All

Supplier

All

Brand

All

Line of Business / Brand	# Shipped Units	# Total Units Ordered	Unit Fill Rate %	# Failed Units
Line of Business 1	4,422,623	4,896,725	90.3%	474,102
Brand 1	3,171,930	3,450,661	91.9%	278,731
Brand 2	971,007	1,123,841	86.4%	152,834
Brand 3	278,870	321,124	86.8%	42,254
Brand 4	816	1,099	74.2%	283
Line of Business 2	2,554,184	2,681,364	95.3%	127,180
Brand 1	412,153	429,090	96.1%	16,937
Brand 2	213,185	233,550	91.3%	20,365
Brand 3	1,921,973	2,011,819	95.5%	89,846
Total	6,995,665	7,596,975	92.1%	601,310

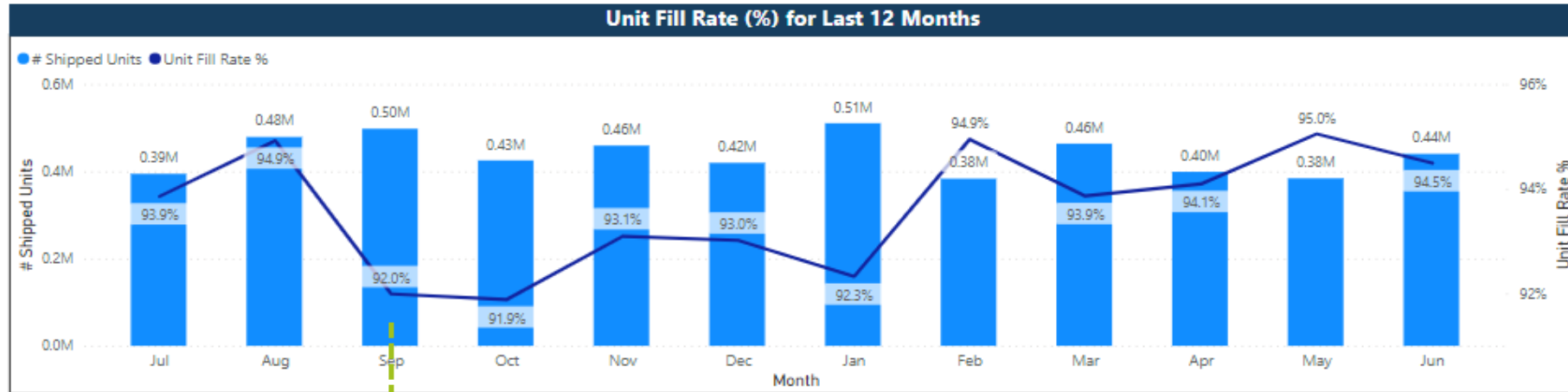
Supplier	# Shipped Units	# Total Units Ordered	Unit Fill Rate %	# Failed Units
Supplier 1	3,101,054	3,363,772	92.2%	262,718
Supplier 10	87,240	89,472	97.5%	2,232
Supplier 11	82,752	89,395	92.6%	6,643
Supplier 12	61,142	68,158	89.7%	7,016
Supplier 13	61,183	65,870	92.9%	4,687
Supplier 14	36,024	43,182	83.4%	7,158
Supplier 15	29,351	33,053	88.8%	3,702
Supplier 16	29,354	31,239	94.0%	1,885
Supplier 17	25,268	28,535	88.6%	3,267
Total	6,995,665	7,596,975	92.1%	601,310

User can select the **view** (Line/Unit/ \$Value/Order), **Channel**, **Brand**, **Supplier**, **Line of Business** to analyze the fill rate for the selected period

Unit Fill Rate details for different **Line of Businesses** and **Brands**

Unit Fill Rate details for different **Suppliers**

Monthly analysis of unit fill rate metric



Last 12-month analysis of the **Unit Fill Rate** for Performance Tracking & Reporting

Drill-through of customer and item details for September

Top Customers by # Total Shipped Units				
Customer_Name	# Shipped Units	# Total Units Ordered	Unit Fill Rate %	# Failed Units
Total	497,909	541,266	92.0%	43,357
Customer 12420	9,543	9,632	99.1%	89
Customer 5041	9,328	11,617	80.3%	2,289
Customer 12680	6,612	6,612	100.0%	0
Customer 16188	3,526	3,526	100.0%	0
Customer 11515	3,475	3,475	100.0%	0
Customer 16003	2,647	3,142	84.2%	495
Customer 8114	2,569	3,004	85.5%	435
Customer 15859	2,541	3,017	84.2%	476
Customer 4159	2,191	2,411	90.9%	220
Customer 12866	1,944	1,954	99.5%	10
Customer 5956	1,804	1,804	100.0%	0

Top Items by # Total Shipped Units					
Item Number	Item Description	# Shipped Units	# Total Units Ordered	Unit Fill Rate %	# Failed Units
Total		497,909	541,266	92.0%	43,357
252247	Item 26	10,244	10,397	98.5%	153
830062	Item 2548	8,756	8,834	99.1%	78
360686	Item 2394	7,357	7,570	97.2%	213
685573	Item 399	5,415	5,418	99.9%	3
498399	Item 2192	5,282	5,316	99.4%	34
74422	Item 2196	4,319	4,348	99.3%	29
272598	Item 2245	4,211	4,919	85.6%	708
384116	Item 445	4,187	4,280	97.8%	93
503169	Item 2274	3,835	4,053	94.6%	218
610161	Item 380	3,799	3,805	99.8%	6
36058	Item 379	3,786	3,846	98.4%	60

Detailed analysis of Unit Fill Rate metric at **customer** level for **shipped** and **failed** units for the month of **September**

YOY Comparison

