Problem Statement:

GDS Mart is a growing FMCG manufacturer headquartered in Gujarat, India. It is currently operational in three cities Surat, Ahmedabad and Vadodara. They want to expand to other metro/tier1 cities in the next 2 years.

GDS Mart is currently facing a problem where a few key customers have not extended the annual contract due to service issues. It is speculated that some of the essential products were either not delivered on time or not delivered in full over a continued period, which could have resulted in bad customer service. Management wants to fix this issue before expanding to other cities and requested their supply chain analytics team to track the 'On time' and 'In Full' delivery service level for all the customers on a daily basis so that they can respond swiftly to these issues.

The Supply Chain team decided to use a standard approach to measure the service level in which they will measure 'on-time delivery (OT) %', 'In-full delivery (IF) %' and OnTime in full (OTIF) % of the customer orders on a daily basis against the target service level set for each customer.

Task:

Mr. Analyst is the data analyst in the supply chain team who joined GDS Mart recently. He has been briefed about the task in the stakeholder business review meeting. Now Imagine yourself as Mr. Analyst and play the role of the new data analyst who is excited to build this dashboard and perform the following task:

- Create the metrics according to the metrics list(Below)
- Create a dashboard according to the requirements provided by stakeholders in the business review meeting. You will be provided with the transcript of this business review meeting in the form of a comic.
- Create relevant insights that are not provided in the metric list/stakeholder meeting.

Metrics List:

Sno	Measures	Abbreviation	Description	Table
1	Total Order Lines		Count of all order lines in fact_orders table	fact_order_lines
2	Line Fill Rate	LIFR %	Number of order lines shipped In Full Quantity / Total Order Lines	fact_order_lines
3	Volume Fill Rate	VOFR %	Total Quantity shipped / Total Quantity Ordered	fact_order_lines
4	Total Orders			fact_orders_aggregate
5	On Time Delivery %	OT %	Number of orders delivered On Time / Total Number of Orders	fact_orders_aggregate
6	In Full Delivery %	IF %	Number of orders delivered in Full quantity / Total Number of Orders	fact_orders_aggregate
7	On Time In Full %	OTIF %	Number of orders delivered both IN Full & On Time / Total Number of Orders	fact_orders_aggregate
8	On Time Target		Average of On-Time Target	dim_targets_orders
9	In Full Target		Average of In-Full Target	dim_targets_orders
10	On Time In Full Target		Average of OTIF Target	dim_targets_orders

SQL Queries to find Metrics as per requirement

```
--- Metric 1 (Total_Order_Lines)
select
count(order_id) as Total_Order_Lines
from [dbo].[fact_order_lines];

--- Metric 2 (Line Fill Rate%)
select
round((sum([In_Full])/count([order_id])*100),2)
```

GDS MART
Supply Chain Data Analysis

Month Name
All

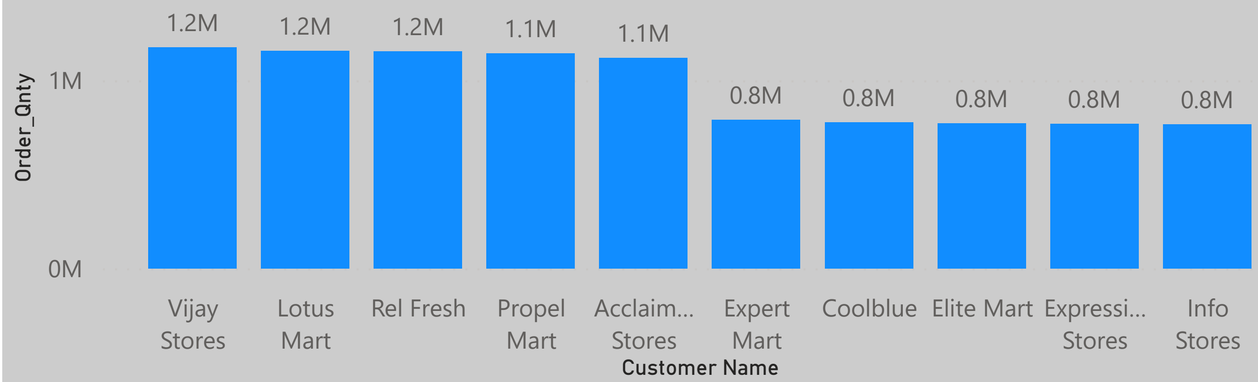
Week of Month
1 6

Week Days
All

Metrics

Total Order Lines	Line Fill Rate
57K	65.96
Volume Fill Rate	Total Orders
96.59	32K
OT %	IF %
59.03	52.78
OTIF %	Avg OT Target
29.02	86.09
Avg IF Target	Avg OTIF Target
76.51	65.91

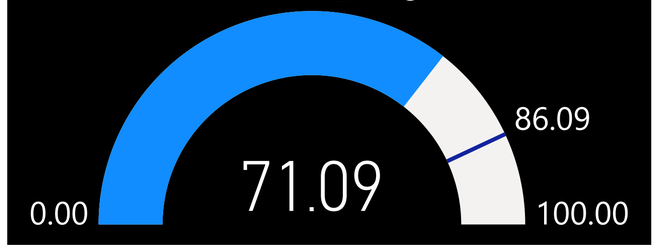
Top 10 Customers by Order Qnty



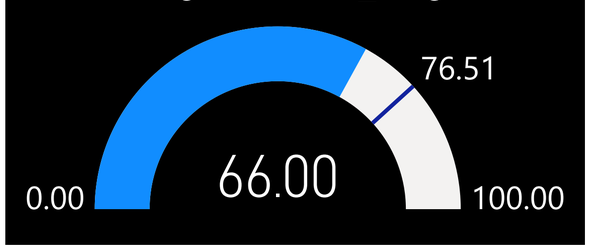
Top 10 Customers by Delay_in_days

customer_name	Delay_in_Days
Lotus Mart	6252
Acclaimed Stores	6007
Coolblue	4242
Vijay Stores	827
Rel Fresh	823
Propel Mart	708
Total	**21276**

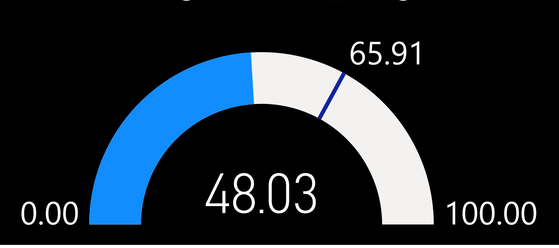
Average of Actual_OT% and Average of ontime_target%



Average of Actual_IF% and Average of infull_target%



Average of Actual_OTIF% and Average of otif_target%



Customer Name by Order Quantity and Delivery Quanity

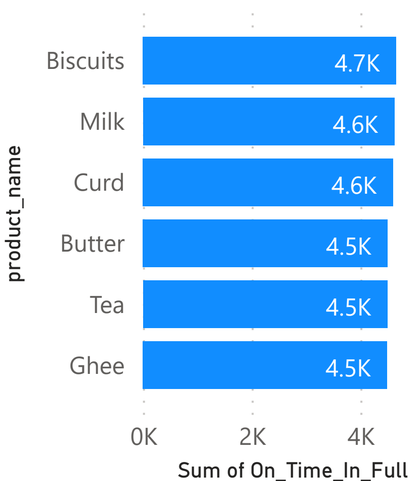
GDS MART
Supply Chain Data Analysis

Month Name
All

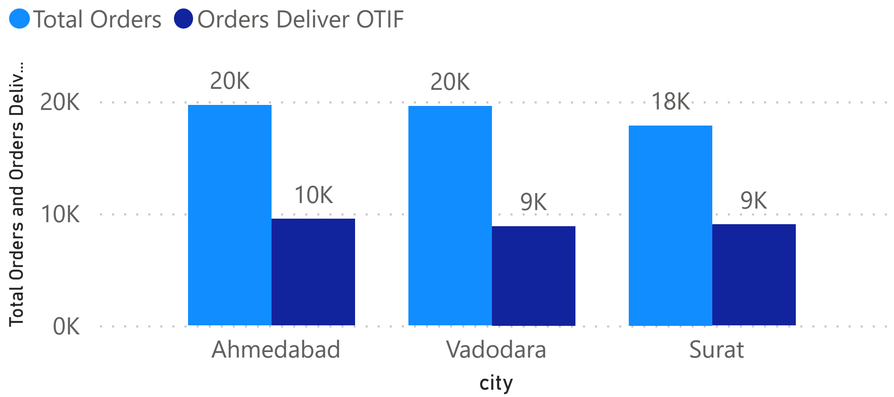
Week of Month
1 6

Week Days
All

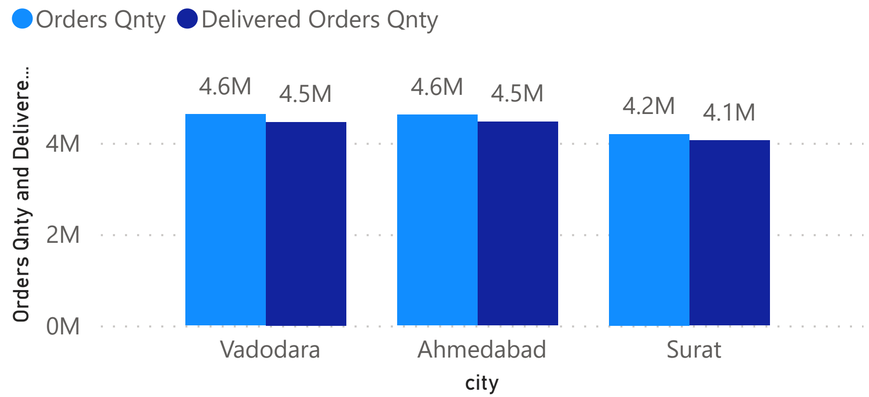
Orders Delivered On_Time_In_Full by product_name



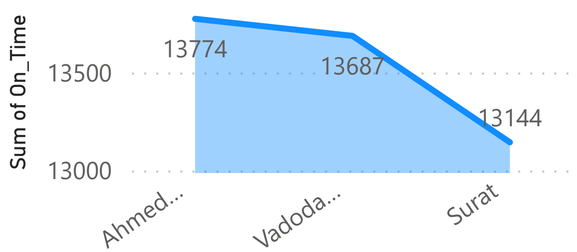
Total Orders vs Orders Deliver on time in full by City



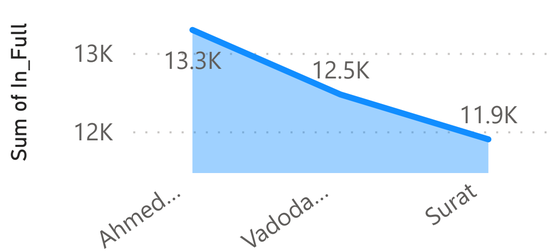
Orders qnty vs Delivered Orders qnty by City



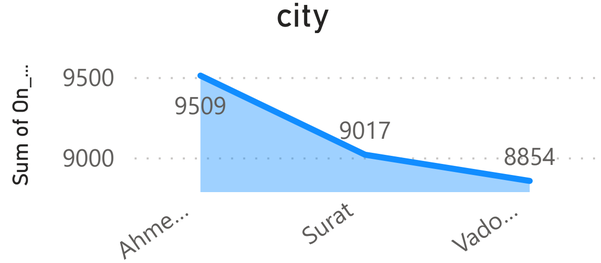
Orders Delivered On_Time by city



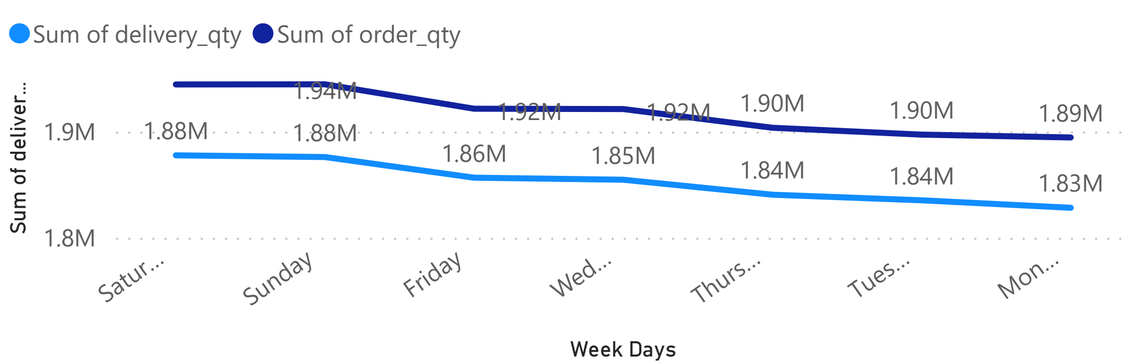
Orders Delivered In_Full by city



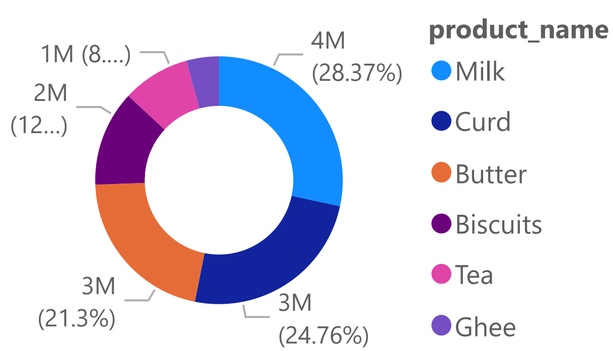
Orders Delivered On_Time_In_Full by city



Total Ordered Qnty and Total Delivered Qnty by Week days



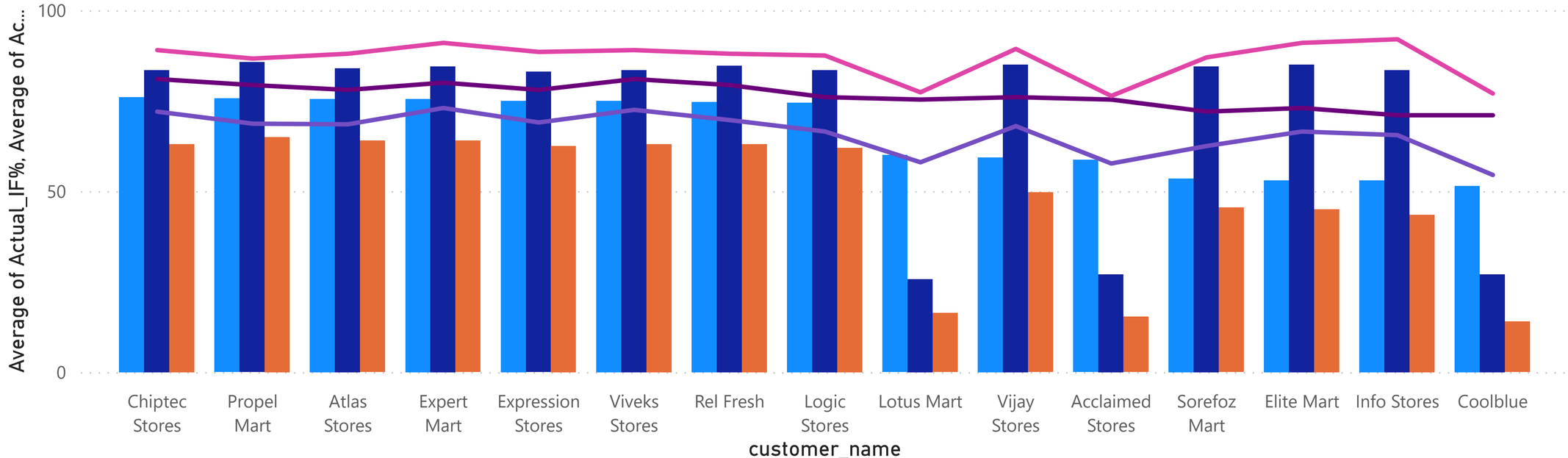
Total order_qty by product_name



Customer wise Target vs Actual Table

customer_name	Average of infull_target%	Average of Actual_IF%	Average of ontime_target%	Average of Actual_OT%	Average of otif_target%	Average of Actual_OTIF%
Acclaimed Stores	75.33	58.67	76.33	27.00	57.67	15.33
Atlas Stores	78.00	75.50	88.00	84.00	68.50	64.00
Chiptec Stores	81.00	76.00	89.00	83.50	72.00	63.00
Coolblue	71.00	51.50	77.00	27.00	54.50	14.00
Elite Mart	73.00	53.00	91.00	85.00	66.50	45.00
Total	**76.51**	**66.00**	**86.09**	**71.09**	**65.91**	**48.03**

Average of Actual_IF%, Average of Actual_OT%, Average of Actual_OTIF%, Average of infull_target%, Average of ontime_target% and Average of otif_target% by customer_name



Insights

1. The company has a significant gap between its target and actual performance in terms of On-Time Delivery, In-Full Delivery, and OTIF.
2. A relatively low percentage of orders are delivered both On-Time and In-Full (29.02%).
3. Line Fill Rate is 65.96%, indicating that there is room for improvement in shipping orders in full quantity.
4. The company's Volume Fill Rate is at a satisfactory 96.59%, meaning they are fulfilling almost all the ordered quantities.
5. Average On-Time delivery target is 86.09%, but actual performance is only 59.03%.
6. Average In-Full delivery target is 76.51%, but actual performance is 52.78%.
7. Average On-Time In-Full (OTIF) target is 65.91%, and actual performance is at 29.02%.
8. Customer analysis is essential to identify those experiencing delivery issues, including customers who did not renew contracts.
9. A city-wise analysis is required to determine if issues are concentrated in specific regions.
10. Historical order date analysis can provide insights into delivery trends.
11. Product category analysis is needed to understand if specific product types are experiencing more service issues.
12. Root cause analysis is essential to identify the reasons behind delivery delays and partial deliveries.

Suggestions

1. Focus on bridging the performance gaps between target and actual delivery metrics.
2. Analyze customer data to address issues for those customers who did not renew contracts.
3. Implement a feedback mechanism to understand and improve customer experiences.
4. Set up continuous monitoring and reporting for delivery performance.
5. Provide training and process improvements for the supply chain team.
6. Ensure service issues are resolved before considering further expansion.
7. Regularly communicate progress with management and stakeholders.
8. Evaluate the cost-benefit of improving delivery performance.
9. Consider process automation to reduce errors.
10. Conduct customer satisfaction surveys to gather feedback.
11. Review relationships with suppliers to ensure a steady supply of products.
12. Develop a responsive system for managing customer complaints and issues promptly.

Delivery Qty by Product Name