Sales Performance & Profitability Analytics Platform

Comprehensive Project Documentation

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1. Executive Summary

This document provides detailed documentation for the Sales Performance & Profitability Analytics Platform developed using Power BI. The project delivers executive-ready insights across sales, profitability, product performance, and customer analytics. It is designed following enterprise BI best practices, including star-schema modeling, scalable DAX measures, and role-based dashboards.

2. Business Problem & Objectives

Organizations often struggle to consolidate sales data into a single, reliable analytics solution that supports both strategic and operational decision-making. This project addresses the following objectives:

- Provide leadership with a clear view of business health
- Enable sales managers to track team and executive performance
- Support product teams with profitability and growth analysis
- Help business users understand customer value and concentration
- Offer transaction-level drill-through for validation and auditing

3. Data Sources

The solution is built on structured sales transaction data sourced from internal sales systems. The dataset includes order-level information such as dates, customers, products, quantities, sales value, and cost.

4. Data Modeling Approach

A star schema model was implemented to ensure high performance, clarity, and scalability.

Fact Table:

- FactSalesData: Contains transactional sales data including order date, quantities, sales amount, cost, and profit.

Dimension Tables:
- Dim_Date: Centralized calendar table for time intelligence
- Dim_Customer: Customer attributes such as region and segment
- Dim_Product: Product and category information
- Dim_Team: Sales team hierarchy
- Dim_SalesExecutive: Individual sales representatives
- Dim_Segment: Business segmentation

All relationships are single-directional from dimensions to fact, with active relationships and a date-only column for time analysis.

5. Data Preparation & Transformation

Data preparation was performed in Power Query using a layered approach:
- Raw queries: Loaded source data without modification
- Staging queries: Applied data type corrections, trimming, deduplication, and standardization
- Dimension tables: Created clean dimension tables with surrogate keys
- Fact table enrichment: Mapped business names to IDs using lookup joins

This approach ensures traceability, maintainability, and data quality.

6. Measures & Calculations

A robust set of DAX measures was created to support business analysis:

Core Measures:
- Total Sales
- Total Profit
- Profit Margin %

Time Intelligence:
- Sales YTD, MTD
- Sales YoY %

Advanced Metrics:
- Orders
- Average Order Value (AOV)
- Average Selling Price (ASP)
- Active Customers

All calculations use safe division and context-aware filtering to ensure accuracy.

7. Dashboard Architecture

The report is structured into five purpose-driven dashboards:

1. Executive Overview – High-level business health and growth
2. Sales Performance – Regional, team, and executive execution
3. Product Performance – Product and category profitability
4. Customer Analysis – Customer value and concentration
5. Detail / Export – Transaction-level data for audit and validation

8. Drill-through & Navigation

Drill-through functionality enables users to navigate from aggregated views to transaction-level details. Users can drill through by Team, Sales Executive, Product, or Customer while preserving all filter context. A back button is provided to ensure smooth navigation.

9. Assumptions & Limitations

Assumptions:
- All records represent completed sales transactions
- Cost data is accurate and consistently maintained
- Each OrderID uniquely identifies a customer order

Limitations:
- Returns and refunds are not included
- Forecasting and predictive analytics are out of scope
- Customer lifetime value is not calculated

10. Business Value & Outcome

The solution delivers a unified, scalable analytics platform that supports informed decision-making across the organization. It improves visibility into performance drivers, enhances accountability, and provides a reliable foundation for future BI enhancements.