Business Intelligence Project Report

Superstore Sales & Shipping Analytics – Microsoft

Power BI

Context & Audience

The project originated from a personal initiative to develop an analytics solution tailored to the needs of a retail company. The goal was to create a real business intelligence case study demonstrating how transactional data can be transformed into valuable insights through platform development. The project benefited multiple stakeholders within a typical retail organization by offering different analytical perspectives.

> The executive team needed to monitor business health through high-level KPIs, which included revenue growth, profit margins, and cost drivers.
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> The Regional Managers required detailed sales performance data on states and product categories to identify regional business opportunities and risks.
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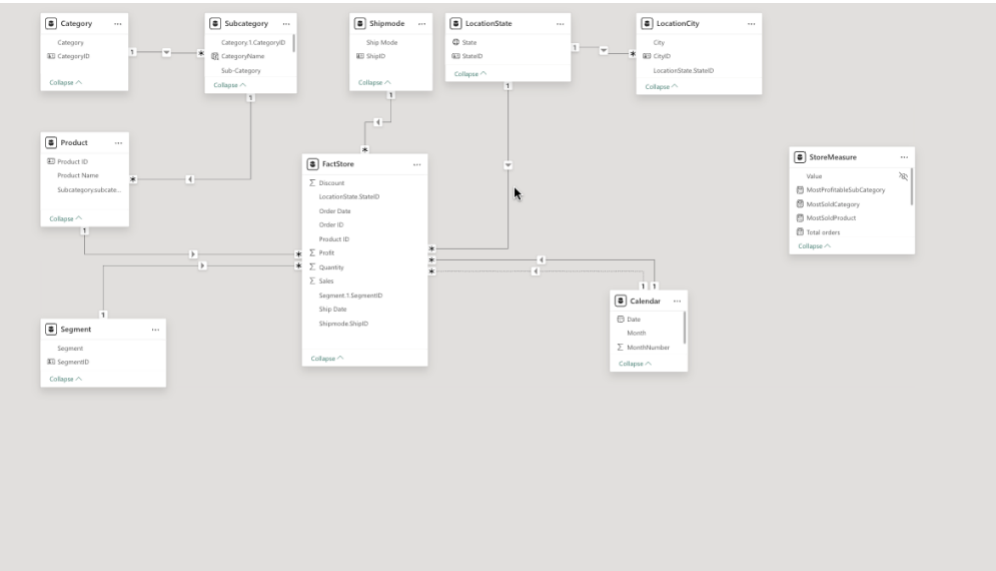
> The Supply Chain Teams focused on shipping modes, delivery efficiency, and cost trade-offs to optimize logistics operations.

Data Model



Objective & Added Value

The primary goal of this project was to design a complete end-to-end Business Intelligence solution using Power BI. The project involved both dashboard visual design and scalable data model development, along with business KPI calculation and insights presented to support decision-making. Additionally, the project provided added value through an interactive tool that allowed stakeholders to explore business performance data dynamically without needing technical expertise or SQL knowledge. The platform provided stakeholders with a single interface to track sales performance, profit margins, and shipping metrics.

The system allows users to identify underperforming regions and categories through interactive filter functions.

It offers cost versus delivery trade-off insights that help organizations make better supply chain decisions.

Additionally, the system provides dynamic self-service analytics capabilities, enabling managers and executives to conduct independent data investigations.

Process

The dashboard development process started with data preparation and ended with visualization and storytelling.

Data Preparation: Power Query was used to clean and transform the raw data. The process included handling missing values, removing duplicates, standardizing formats for dates and regions, and ensuring data consistency.

Data Modeling: A star schema was designed with a fact table (fact Store) and dimension tables (Products, Customers, Regions). The relationships were defined to allow smooth filtering across different attributes.

DAX Development: Custom measures were developed for KPI cards, such as Quantity Sold, Total Sales, and Total Profit. DAX was used to create dynamic calculations that respond to slicers and filters.

Dashboard Design: Focused on creating a layered dashboard experience:

Executive view: Top-level KPI cards for sales, profit, and cost, allowing executives to get a quick overview of performance.

Operational view: Drill-through pages focusing on shipping modes and product categories, designed for deeper investigation by supply chain teams.

Obstacles & Solutions

The development of this project required overcoming several obstacles that demanded precise problem-solving to reach an effective and insightful final solution.

The raw dataset with thousands of rows produced slow performance in initial reports.

The model was optimized by separating fact and dimension tables, reducing the number of columns, and implementing efficient relationships.

The initial designs were visually appealing, but they contained too much information. BI design best practices were applied by placing KPIs at the top, using consistent colors, and separating summary insights from detailed drilldowns.

The project lacked genuine stakeholder input because it was a personal initiative. The simulation of stakeholder requirements used real-world retail company case studies to create realistic functionality.

Evidence & Insights

The final dashboard offered several important business insights and showcased the effectiveness of interactive business intelligence tools.

The analysis showed that Second-Class shipping was significantly more costly without providing faster results, presenting an opportunity to improve shipping strategies.

Product category analysis revealed that although Technology generated high revenue, its profit margins were lower, indicating a need for pricing or discount adjustments.

Regional breakdowns revealed states with persistently low profitability, guiding resource reallocation and targeted interventions.

Screenshots were captured in full-screen mode with attention to readability, ensuring that visual evidence clearly supports the findings presented in the portfolio.

Conclusion

This project demonstrated how a structured approach to BI development can turn raw datasets into valuable business insights. By concentrating on data preparation, modeling, DAX calculations, and thoughtful dashboard design, the solution effectively simulated the kind of analytics tool that could provide real value in a retail organization. Beyond technical execution, the project emphasized the importance of clear storytelling and stakeholder-focused design in delivering actionable insights.