

CASE STUDY: Strategic Profitability & Sales Intelligence

Transforming Transactional Data into Executive Insights

1. Executive Summary

Project Overview: An end-to-end Business Intelligence solution leveraging 8,300+ retail transactions to provide a "Single Source of Truth" for the Famochi leadership team.

Key Value Add: Shifted organizational decision-making from intuition-based to data-driven by identifying high-margin product drivers and quantifying customer lifetime value.

2. Strategic Context & Challenge

Business Landscape: Monitoring multi-category retail performance (Office Supplies, Furniture, Technology, Consumables) across a diverse U.S. market since January 2021.

The Problem: Senior leadership faced "Information Silos." Without consolidated visibility into profitability and customer growth, tactical decisions regarding pricing, inventory, and marketing lacked empirical backing.

Stakeholders:

- Executive Management: Strategic annual planning.
- Sales & Operations: Monthly tactical performance monitoring.
- Finance: Margin analysis and profit optimization.

3. KPI & Measurement Framework

To ensure technical output met business needs, I architected a framework around four critical pillars:

Pillar	Key Performance Indicators (KPIs)	Business Objective
Growth	Total Sales & Customer Count (YoY)	Measure market expansion & revenue velocity.

Efficiency	Total Profit & Profit Margin		Identify margin leakage and high-yield categories.
Seasonality	Sales/Profit Month/Year	Trends by	Inform inventory cycles and peak-season hiring.
Segmentation	Top 5 Customers & Sales by State		Optimize account management and regional logistics.

4. Technical Methodology (The Solution)

Phase I: Data Engineering & Governance

- **Audit:** Profiled 8,315 records to ensure 100% data integrity.
- **ETL (Power Query):** Executed advanced cleaning—handling null values, resolving negative profit anomalies, and normalizing product sub-categories.
- **Reliability:** Standardized date formats to ensure accurate YoY and MoM time-series analysis.

Phase II: Analytics & Visualization

- **Exploratory Data Analysis (EDA):** Discovered hidden correlations between specific sub-categories and high-profit margins.
- **Interface Design:** Developed a high-density, interactive dashboard in Power BI featuring:
 - **Geospatial Mapping:** To visualize regional sales density.
 - **Trend Analysis:** Line charts for identifying cyclical performance dips.
 - **Comparison Bars:** For rapid category-level performance benchmarking.

5. Business Impact & ROI

- Operational Excellence: Reduced manual reporting time by providing an automated, refreshable reporting asset.
- Strategic Clarity: Enabled Finance to isolate the Top 5 Customers contributing to the majority of net profit, shifting the focus toward high-value retention.
- Informed Planning: Provided a historical baseline for 2026 quarterly forecasting and inventory allocation.

6. Expert Takeaways

- KPI-First Philosophy: BI value is derived from the questions it answers, not the tools used to build it.
- Data Integrity: Rigorous validation at the cleaning stage is the only way to prevent "Garbage In, Garbage Out."
- Decision-Ready Design: Visual storytelling is successful only when it translates complex numbers into immediate executive action.

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Tools: Power BI | Power Query | Excel | DAX

Focus: Sales Intelligence | Business Analytics | Profit Optimization