Adidas US Profitability & Cost Optimization

Business Analytics Case Study Report

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Tools Used: Excel, Power BI (DAX)

1. Executive Summary

This project analyzes Adidas US sales performance with a focus on profitability rather than revenue. Using an Excel-based profitability model and a Power BI dashboard with advanced DAX measures, the analysis identifies high-performing products, underperforming retailers, cost drivers impacting margin, and region-level opportunities. The outcome is a scalable analytics framework that supports pricing optimization, cost allocation, and strategic investment decisions.

Key Outcomes:

- Profitability varies significantly across retailers, product categories, and regions.
- Revenue alone is misleading; some high-revenue segments generate weak profit due to cost structure.
- Pareto concentration exists: a small portion of products drives the majority of total profit.
- Scenario simulations demonstrate measurable margin improvement opportunities.

2. Business Problem

Adidas achieves strong sales volume across the US, but overall profitability is inconsistent. This is driven by complex cost structures (logistics, marketing, operations, and channel-specific fees) and limited visibility into true margin drivers. Leadership requires a structured profitability and cost optimization model to identify where to invest, where to cut costs, and how to optimize pricing.

3. Project Objectives

- Build a clean, analysis-ready dataset from raw Adidas US sales data.
- Develop a profitability model (Operating Profit, Net Profit, Margin %) in Excel.
- Identify top and bottom retailers, products, and regions based on profitability KPIs.
- Run Pareto analysis to find the profit-driving product set (80/20 analysis).
- Build pricing what-if simulation to evaluate profit sensitivity to price changes.
- Allocate cost drivers and compare scenarios to evaluate profitability impact.
- Create a Power BI dashboard to deliver insights in a consulting-style format.

4. Dataset Overview

The dataset contains Adidas US sales transactions across retailers, states, sales channels, and product categories. Key fields include retailer, region/state, product category, units sold, total sales, operating profit, and pricing variables. Additional calculated fields were created for profit margin, revenue contribution, and scenario simulation.

Category	Examples of Fields Used
Geography	State, Region
Retailer	Retailer Name
Product	Product Category, Product Type
Sales	Units Sold, Total Sales, Price per Unit
Profitability	Operating Profit, Profit Margin %
Time	Invoice Date, Year, Month

5. Methodology & Workflow

- Data Cleaning & Standardization (Excel): removed nulls, standardized fields, fixed datatypes.
- Feature Engineering (Excel): created profit margin %, price bands, region segmentation, retailer tiers.
- KPI Modeling (Excel): created structured KPI sheet with revenue, profit, margin, units, growth.
- Power BI Data Model: star schema setup with Fact_Sales and supporting dimensions.
- DAX Measures: created core profitability measures and scenario simulation measures.
- Dashboard Development: built 7+ report pages for profitability deep dive.
- Validation: cross-checked Power BI outputs with Excel calculations.

6. KPI Framework

The dashboard focuses on profitability KPIs rather than sales-only metrics. The most important KPIs tracked include Total Revenue, Units Sold, Operating Profit, Net Profit After Allocation, Gross Margin %, Profit per Unit, and Retailer/Product contribution analysis.

KPI	Definition / Purpose
Total Revenue	Total sales generated across all transactions
Operating Profit	Profit before cost allocation adjustments
Net Profit After Allocation	Profit after applying logistics, marketing, ops, and channel fees
Profit Margin %	Profitability ratio used for comparing segments
Profit per Unit	Efficiency metric to compare product performance
Pareto Contribution	Used to identify the 20% products driving 80% profit

7. Key Insights (Summary)

- Several retailers generate strong revenue but weak profit due to higher cost-to-serve.
- A small number of product categories drive the majority of operating profit (Pareto concentration).

- Profitability differs significantly across states, supporting region-based investment prioritization.
- Scenario simulations indicate that small pricing adjustments can materially improve profit in inelastic segments.
- Cost allocation reveals that logistics and marketing costs are major profit erosion contributors.

8. Strategic Recommendations

- Pricing Optimization: apply controlled price increases to inelastic products; avoid aggressive pricing for elastic segments.
- Retailer Rationalization: renegotiate margins with underperforming retailers or reduce reliance on low-margin partners.
- SKU Portfolio Optimization: reduce long-tail SKUs with consistently weak profitability and high operational complexity.
- Cost Controls: improve logistics efficiency and marketing spend effectiveness through targeted budgeting.
- Regional Strategy: allocate more inventory and marketing spend to high-margin regions and reduce cost exposure in low-margin states.

9. Business Impact

This project provides Adidas with a profitability-first decision framework. The combined Excel model and Power BI dashboard improves transparency and enables leadership to identify profit drivers quickly. The methodology is reusable and scalable for future quarterly performance tracking.

- Clear visibility into profit vs revenue performance gaps
- Data-backed recommendations for pricing, retailer strategy, and cost allocation
- Reusable analytics dashboard framework for ongoing monitoring
- Improved ability to prioritize investments across regions and product categories

10. Deliverables

- Excel Profitability Model Workbook (.xlsx)
- Power BI Interactive Dashboard (.pbix)
- Consulting Presentation Deck (.pptx)
- Case Study Report (this PDF)
- GitHub Repository Documentation (README, DAX, Data Dictionary)

Appendix: Notes on Reproducibility

All calculations were validated across Excel and Power BI. Measures were built using standard DAX patterns. This case study is structured to allow replication using any similar retail dataset.