

DEWHITE CANDIES: Sales and Profit Analysis Documentation

INTRODUCTION: THE PROFIT STORY

Every successful candy company dreams of striking gold with a product line that captures the market and drives massive profit. For **DEWHITE CANDIES**, that success is evident in its steady growth and robust margins.

This project explores the sales and profitability trends in the candy business across **products, factories, and shipping modes**. Using **Power BI**, raw transaction data was transformed into an interactive dashboard to evaluate cost, revenue, and profit drivers. The goal is to uncover key performance patterns, identify underperforming areas, and guide strategic decisions for **sustainable growth**.

EXECUTIVE SUMMARY

The analysis confirms that DEWHITE CANDIES is on a strong upward trajectory, with **profit having grown by 63% from 2021 to 2024**. Key performance indicators are highly favorable, but a closer look reveals critical dependencies on specific factories and shipping methods that require strategic attention to mitigate risk.

Key Performance Indicator (KPI)	Result	Strategic Insight
Total Profit (Overall)	\$93.44K	Excellent overall profitability driven by strong margins.
Overall Profit Margin	65.91%	Indicates a highly efficient operation with strong gross margins across the portfolio.
Profit Growth (2021 to 2024)	63% Increase	Confirms effective long-term growth strategies are in place.
Profit Dependency	87% from Two Factories	Profits are heavily concentrated, creating operational risk.

PROJECT FOUNDATION

BASICS - Dataset Overview

The comprehensive dataset, provided in an Excel file (Candy_Capstone.xlsx), is structured around 4 key interconnected tables.

Table Name	Key Fields	Description
Sales	Row ID, Order ID, Order Date, Ship Mode, Customer ID, Division, Region, Product ID, Sales, Units, Gross Profit, Cost	Contains all transaction details, including time, cost, revenue, and profitability for each order line.
Products	Product ID, Product Name, Division, Factory, Unit Price, Unit Cost	Defines the product catalog, its cost, selling price, and the manufacturing location.
Factories	Factory, Latitude, Longitude	Provides geospatial coordinates for each factory, used for mapping and logistical analysis.
US Zips	zip, city, state_id, state_name, population, density	Geographical lookup table used to enhance regional analysis, providing zip code, location data, and population metrics.

BUSINESS QUESTIONS CONSIDERED BEFORE THE ANALYSIS

The project was designed to answer the following business-critical questions:

1. Which **factories** generate the highest profit, and which underperform?
2. Which **ship mode** contributes the most to profitability?
3. How has **profit grown** year-over-year from 2021 to 2024?
4. Which **months** consistently deliver the highest and lowest profits (Seasonality)?

PROJECT STRATEGY

The analysis was executed entirely within Power BI, focusing on robust data preparation and modeling to ensure accurate insights.

Data Extraction and Transformation

Initial data review was conducted to understand the relationships and context. Data cleaning was performed in **Power Query**, which included:

- Converting text-based dates (Order Date, Ship Date) into a proper date format.
- **Creating Calculated Columns** for Revenue, Cost, and Profit.

Data Modeling

A **Star Schema** was built with the **Sales** table acting as the central **fact table**. Dimension tables (Products, Factories, US Zips, etc.) were linked to the Sales table via primary keys (e.g., Product ID from Sales table to Product table), ensuring a **one-to-many relationship** structure for accurate filtering and aggregation.

DAX Measures

The following **DAX measures** were created to calculate key financial metrics:

Measure	Formula	Purpose
Total Revenue	SUMX(Sales, Sales[Quantity] * RELATED(Products[Unit Price]))	Total sales value generated.
Total Cost	SUMX(Sales, Sales[Quantity] * RELATED(Products[Cost Price]))	Total cost of goods sold.
Total Profit	[Total Revenue] - [Total Cost]	The bottom-line gross profit.
Profit Margin %	DIVIDE([Total Profit], [Total Revenue], 0)	Efficiency ratio.
Sales LY	CALCULATE([Total Revenue], SAMEPERIODLASTYEAR(Date[Date]))	Metric for Year-over-Year comparison.

DETAILED FINDINGS AND INSIGHTS

A. Performance by Product Division

Division	% of Total Company Profit	Strategic Context
Chocolate	95.06%	The core driver of the business.
Other	4.69%	Lower margin (44.97%) suggests cost or pricing issues.
Sugar	0.25%	Highest margin (68.10%) but critically low revenue, indicating missed opportunity.

B. Factory Performance & Risk

Profitability is heavily concentrated in a small number of manufacturing sites:

- **Lot's O' Nuts** (\$53K) and **Wicked Choccy's** (\$36K) collectively account for approximately 87% of total profits.
- **Underperforming Factories:** factories, such as **Secret Factory**, other factory and **Sugar Shack**, contribute only marginally to the bottom line.

C. Logistics and Shipping Efficiency

The choice of shipping mode has a direct, significant impact on profitability:

- **Standard Class** leads with **\$56K** profit, proving it is the most cost-effective and dominant mode.
- **Same Day** shipping lags significantly with only **\$5K** in profit, suggesting high cost erosion.

D. Seasonality and Regional Impact

- **Seasonality: December** is consistently the most profitable month, while **february** is the weakest month, suggesting a post-holiday slump.

- **Regional Impact:** Profits vary widely by customer location, highlighting untapped market potential in underperforming regions.

RECOMMENDATIONS

Based on the analysis, DEWHITE CANDIES should focus its efforts on the following key areas to ensure balanced growth and maximize profitability:

Focus Area	Specific Action	Rationale
Logistics	Focus on Scaling Standard Class & Restructuring Same Day.	Standard Class is the profitable channel. Restructure the pricing/cost model for Same Day shipping to improve its low profit contribution.
Operations	Optimize or Reconsider Underperforming Factories.	The low profitability from Secret Factory and Sugar Shack warrants investigation into production of high-margin items or consolidation to the highly profitable sites.
Sales & Marketing	Develop Campaigns to Boost Sales in Low-Profit Months.	Use data on the December peak and January trough to develop specific campaigns (e.g., clearance, back-to-work focus) to boost sales in the weakest months.
Product Strategy	Investigate the Low-Margin 'Other' Division and the High-Margin 'Sugar' Division.	Correct the cost/pricing issues in the ' Other ' (44.97% margin) division and launch a dedicated sales initiative to capitalize on the highly efficient ' Sugar ' (68.10% margin) division.

CONCLUSION

The Candy Capstone analysis successfully demonstrates how effective data modeling and visualization in Power BI can uncover actionable insights. Profitability is steadily rising, but performance heavily depends on a few key operational areas. By implementing the strategic

recommendations, focusing on logistics, optimizing factory use, and smoothing out seasonal dips, DEWHITE CANDIES is positioned to achieve its next phase of robust, diversified, and sustainable growth.