Wonka Candy Sales Performance Analysis

Condensed Report

A portfolio project analyzing mock divisional, regional, and product performance data to identify and demonstrate strategic growth opportunities using SQL & Tableau.

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Created September 2025

View the 70-page Full Report here.

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Executive Summary

Condensed Notice

Note: This 11-page report has been condensed for brevity, offering a high-level overview of the full *70-page analysis available here*. The complete report includes all SQL demonstrations and Tableau dashboards that present the full scope of findings. For a comprehensive view of the project, please refer to the full report.

Project Purpose

This project simulates key aspects of a real-world analyst's workflow to demonstrate practical, applied skills in SQL and Tableau. By building dashboards, analyzing data, and curating deliverables, it showcases the ability to move from raw data to strategic business insight.

Overarching Business Problem

The Wonka Company lacks a unified analytical framework, preventing leadership from connecting high-level divisional performance with granular insights into product sales, regional trends, and customer behavior. This fragmented view hinders the ability to diagnose the root causes of underperformance and take advantage of strategic growth opportunities, slowing down critical, data-driven decision-making.

Summary of Findings

Analysis of four years of sales data reveals a company whose overall success is dangerously dependent on a single division. The Chocolate division's strong, consistent growth masks critical failures elsewhere, particularly within the Sugar division, which is suffering from a severe lack of sales volume, not poor profitability. This performance imbalance is mirrored geographically, with sales heavily concentrated in high-population states like California, Texas, and New York, creating both an opportunity for focused growth and a significant risk due to a lack of market diversification. Furthermore, key products like "Lickable Wallpaper" function as high-revenue anomalies, driven by novelty rather than loyalty, while distinct seasonal sales peaks in Q3/Q4 and actionable customer segments like loyal "Champions" and high-volume "Bulk Buyers" which present clear, untapped opportunities for targeted marketing and operational planning.

Project Overview & Tools

Analytical Scope

The analysis covers a four-year period from 2021 through 2024, using a mock sales and performance dataset for the "Wonka Candy" company, sourced from Maven Analytics. The primary goal was to identify sales trends, diagnose performance issues at the divisional and product level, and segment customers to inform strategic recommendations.

Methodology

The project followed a structured analytical workflow. First, data was organized and imported into a PostgreSQL database via pgAdmin. Next, a series of focused SQL queries were developed to extract, aggregate, and transform the data to answer specific business questions. The resulting datasets were then connected to Tableau, where seven interactive dashboards were designed and built to visualize the findings. Finally, key insights were synthesized into this comprehensive report to provide findings and strategic next steps.

Technology Stack

Data Management & Querying:
- pgAdmin 4 (PostgreSQL)
- Microsoft Excel,
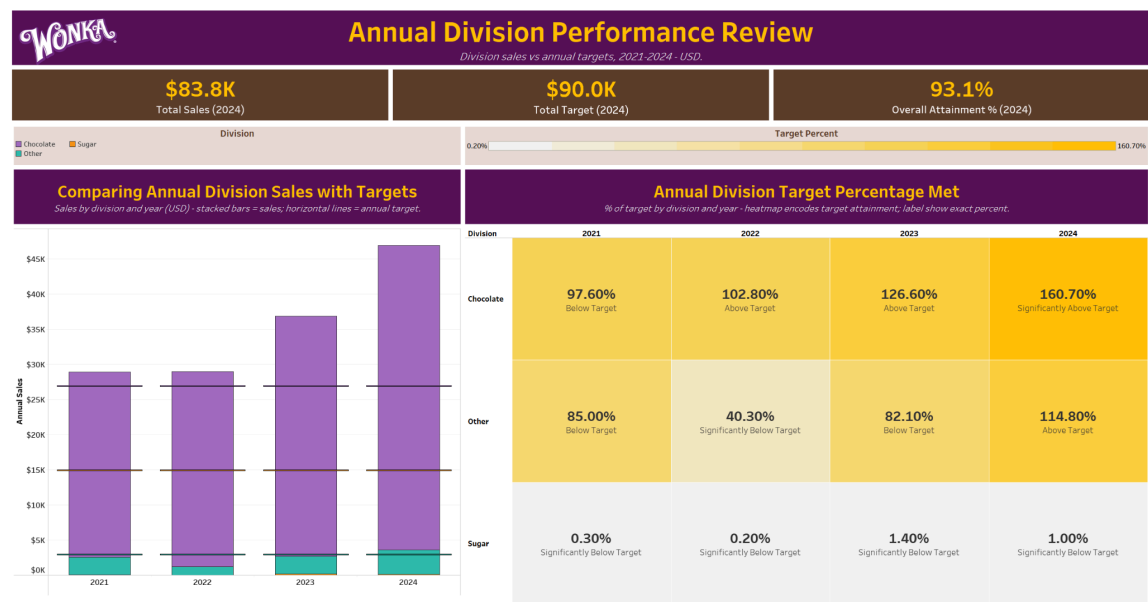- Google Sheets

Data Visualization & Presentation:
- Tableau Public
- OBS

Documentation & Reporting:
- GitHub
- Google Docs
- Wix

Finding #1 - The Division Performance Gap

The Sugar Division's Chronic Underperformance Masks Company-Wide Success

Annual Division Performance Review
Division sales vs annual targets, 2021-2024 - USD.

$83.8K	$90.0K	93.1%
Total Sales (2024)	Total Target (2024)	Overall Attainment % (2024)

Comparing Annual Division Sales with Targets
Sales by division and year (USD) - stacked bars = sales; horizontal lines = annual target.

Annual Division Target Percentage Met
% of target by division and year - heatmap encodes target attainment; label show exact percent.

| Division	2021	2022	2023	2024
Chocolate	97.60% Below Target	102.80% Above Target	126.60% Above Target	160.70% Significantly Above Target
Other	85.00% Below Target	40.30% Significantly Below Target	82.10% Below Target	114.80% Above Target
Sugar	0.30% Significantly Below Target	0.20% Significantly Below Target	1.40% Significantly Below Target	1.00% Significantly Below Target

Key Insights

While Wonka achieved a solid 93% of its overall 2024 sales target, this figure is deeply misleading. Our Annual Division Performance Review reveals that this success is almost entirely driven by the Chocolate division, which has consistently surpassed its targets for the last three years, culminating in an impressive 160.7% attainment in 2024. This impressive performance compensates for severe shortfalls elsewhere.

The Sugar division is in a state of crisis. It has failed to meet its targets for four consecutive years, never exceeding 1.4% of its annual goal. This sustained underperformance is the primary drag on the company's total revenue and requires immediate investigation and a strategic overhaul to address its deep-seated issues.

Finding #2 - State Concentration & Sales Drivers

Sales Success is Concentrated and Strongly Correlated with State Population

Population vs. Sales Rank
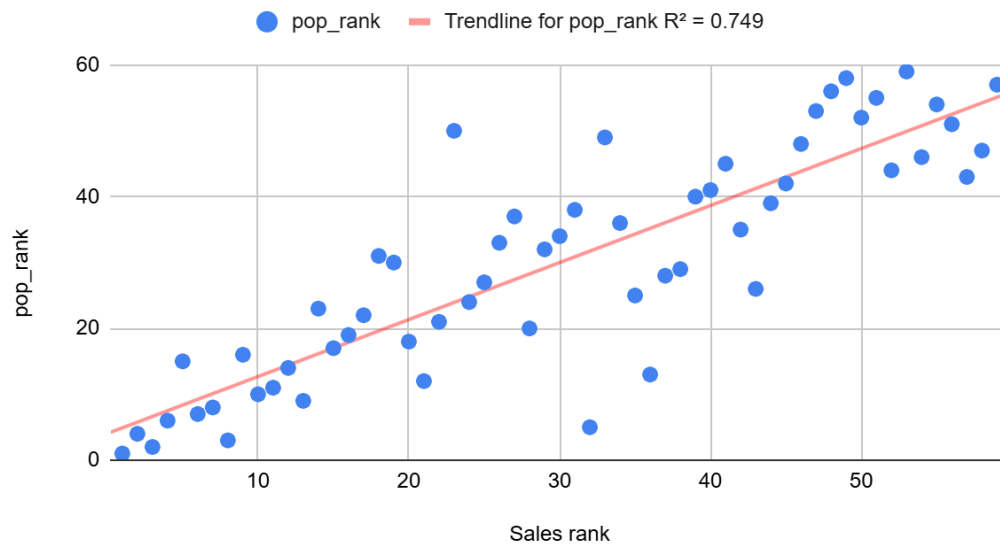
Key Insights

Geographic analysis of product sales reveals that Wonka's performance is highly concentrated in a few key states. California, Texas, and New York consistently stand out as the top markets, driving the vast majority of sales across the United States year after year.

A deeper investigation into this pattern highlights a strong statistical relationship: when ranking states by total Wonka sales and comparing them to 2023 population rankings, there is a clear positive correlation (R2=0.75). This finding suggests that large population centers are one of the most reliable predictors of Wonka's sales success. This reinforces the importance of focusing on highly populated states as primary markets but also underscores the risk of over-reliance on a small number of powerhouse states.

Finding #3 - Actionable Customer Segments

Identifying and Targeting Top Customer Segments for Focused Growth
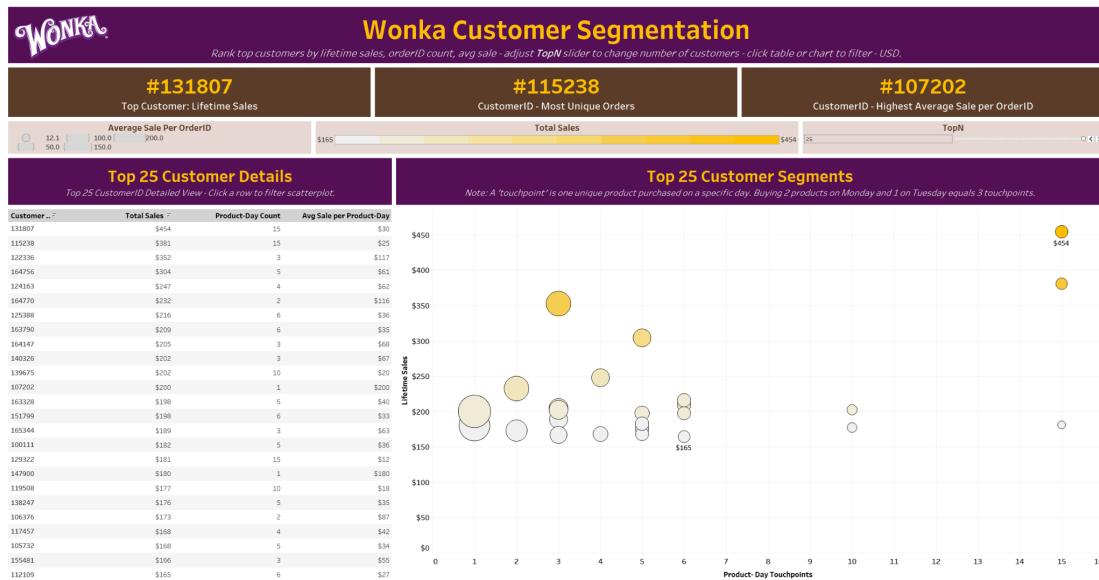
Key Insights

Analyzing customer spending and purchase frequency/variety put Wonka's top customers into four actionable segments, revealing value beyond revenue and enabling targeted marketing. Note: *A Product-Day Touchpoint represents one unique instance of a customer buying a specific product on a specific day, capturing both purchase frequency and variety.*

Champions (High Sales, High Touchpoints): Champions are Wonka's most valuable customers, combining high spending with frequent or varied purchases that signal loyalty.

Bulk Buyers (High Sales, Low Touchpoints): Bulk Buyers generate significant revenue from very few large, infrequent purchases, making them valuable but less predictable.

Samplers (Moderate Sales, High Touchpoints): Samplers buy often across many products but spend moderately, boosting engagement and product awareness more than revenue

Core Customers (Moderate Sales, Low/Moderate Touchpoints): Core Customers provide steady mid-level sales through occasional purchases, forming the reliable backbone of Wonka's base.

Strategic Recommendations

From Insights to Action: Key Strategic Priorities

Conduct a Full Strategic Review of the Sugar Division: This is the highest priority. A review must determine the root cause of its chronic low sales volume and whether it's flawed targets, distribution issues, or poor product-market fit. Based on the findings, a decisive action must be taken: overhaul the division with a new strategy, divest it entirely, or reallocate its resources to the high-performing Chocolate division.

Protect and Leverage the Core Business: Maintain sharp focus on the successful Chocolate division and top-performing geographic markets (California, Texas, New York). This includes monitoring costs to protect profitability, ensuring inventory is prepared for seasonal Q3/Q4 peaks, and defending market share in these critical, high-population states.

Implement Targeted, Segment-Based Marketing: Move away from a one-size-fits-all approach and launch specific campaigns for identified customer segments.

Champions: Nurture with VIP loyalty programs to reward and retain them.

Bulk Buyers: Encourage larger purchases with "stock-up and save" deals on the products they already buy in volume.

Samplers: Encourage greater product discovery by offering samples, bundles or incentives for reviewing to help convert top right *Champions.*

Core Customers: Gently push towards either *Champions* through incentives to try new product categories or towards *Bulk Buyers* through buy-3-get-1-free deals.

Lickable Wallpaper: Create a dedicated strategy that embraces its novelty status and analyzes its unique customer profile to find new markets.

Diversify Geographic Sales: To reduce the risk of over-reliance on a few states, initiate a growth plan for emerging secondary markets, particularly those showing growth in the Midwest and Northwest.

Technical Demonstration: SQL

SQL Query Example: Divisional Performance Analysis

The following query was used to extract and transform the data for the Annual Division Performance dashboard. This query demonstrates proficiency in joining tables (division_targets and wonka_sales), using aggregate functions (SUM, ROUND), and implementing conditional logic with a CASE statement. The CASE statement is particularly valuable as it creates meaningful business classifications ('Above Target', 'Below Target', etc.) directly in the database, streamlining the analysis in Tableau .

```sql
SELECT
        EXTRACT(YEAR FROM ws.order_date) AS "Year",
        dt.division,
        dt.target AS annual_division_sales_target,
        ROUND(SUM(ws.sales),0) AS annual_division_sales,
        ROUND(ROUND(SUM(ws.sales),0) / dt.target,3) AS target_percent,
        dt.target - ROUND(SUM(ws.sales),0) AS target_difference,
--buckets each division for each year by target percentage values (percentage of target made)
CASE
        WHEN ROUND(ROUND(SUM(ws.sales),0) / dt.target,3) > 1.5
                THEN 'Significantly Above Target'
        WHEN ROUND(ROUND(SUM(ws.sales),0) / dt.target,3) > 1
                THEN 'Above Target'
        WHEN ROUND(ROUND(SUM(ws.sales),0) / dt.target,3) = 1
                THEN 'Target Met'
        WHEN ROUND(ROUND(SUM(ws.sales),0) / dt.target,3) > 0.5
                THEN 'Below Target'
        WHEN ROUND(ROUND(SUM(ws.sales),0) / dt.target,3) > 0
                THEN 'Significantly Below Target'
        ELSE 'Error'
END AS target_outcome
-- joins division_targets table with wonka_sales table on division column
FROM
        division_targets dt JOIN wonka_sales ws
                ON dt.division = ws.division
GROUP BY "Year", dt.division, dt.target
ORDER BY "Year", target_percent DESC, dt.division
```

Technical Demonstration: Tableau

Tableau Visualization: Regional Product Performance Explorer
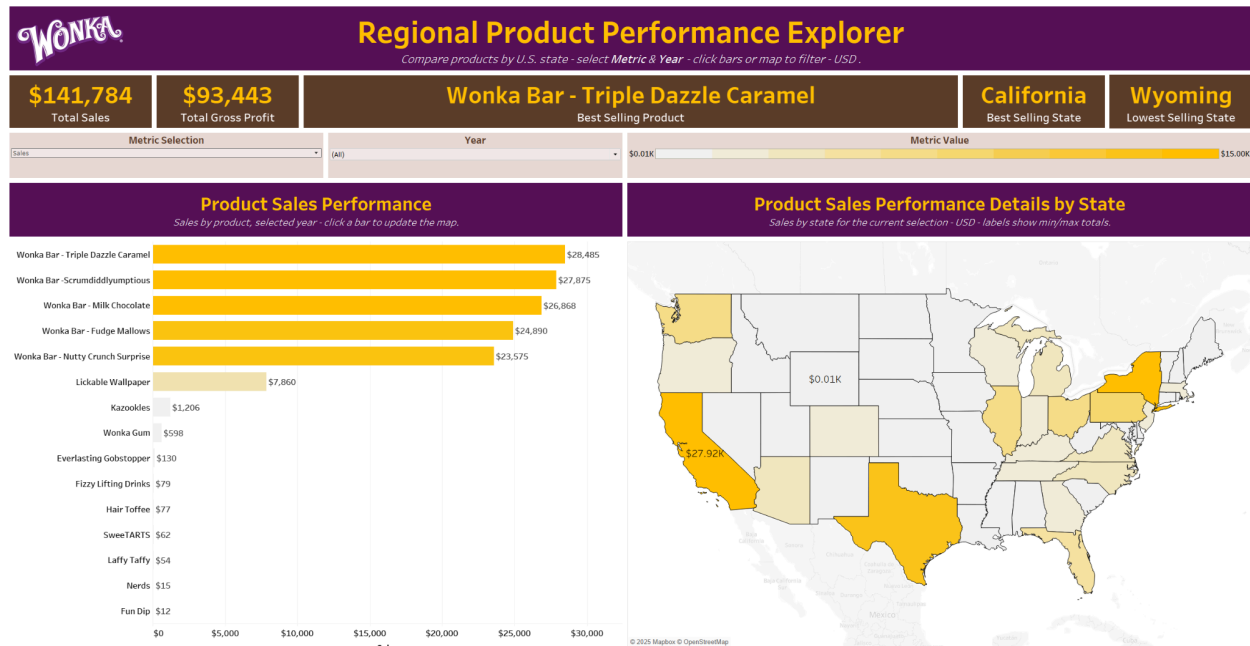
This dashboard was designed to be interactive and intuitive, allowing stakeholders to move from a high-level national overview to a granular, state-by-state analysis. The design was intended to allow users to explore the data for themselves and uncover their own insights. Key features include dynamic filtering by year and metric, informative tooltips that provide details on hover, and a balanced layout that presents high-level KPIs, ranked lists, and geographic context in a single, cohesive view. The map serves as both a visual summary and a filter, enabling an intuitive analytical experience.

About & Links

About This Project

This project was created to demonstrate foundational and intermediate proficiency with SQL and Tableau, two of the most in-demand tools for data analysts. It marks the first step in a progression toward more complex work involving larger datasets, advanced queries, and sophisticated visualization design. By establishing this foundation, I've created a platform from which future projects can highlight increasing rigor, deeper analytical insight, and stronger professional readiness.

Dataset Source:
- https://mavenanalytics.io/data-playground/us-candy-distributor

All Project Tableau Dashboards:
- https://public.tableau.com/app/profile/brendan.henderson3582/vizzes

Condensed Report:
- Google Drive PDF Link
- Github Link

GitHub Repository & SQL Code:
- Repository
- SQL Code

LinkedIn Profile:
- https://www.linkedin.com/in/brendan-henderson28/