
RETAIL & WAREHOUSE SALES PERFORMANCE DASHBOARD

Data Analysis Project
Power BI | Power Query

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Project Overview

This report presents a Power BI dashboard designed to analyze the performance of retail and warehouse sales.

The main goal is to visualize sales distribution, identify key product trends, and compare retail versus warehouse performance to uncover actionable business insights.

The dashboard was built using Power BI and Power Query, based on data from the U.S. Warehouse and Retail Sales dataset available at data.gov

Key Business Questions Addressed

This dashboard was designed to move beyond simple KPIs and answer core strategic questions about the business:

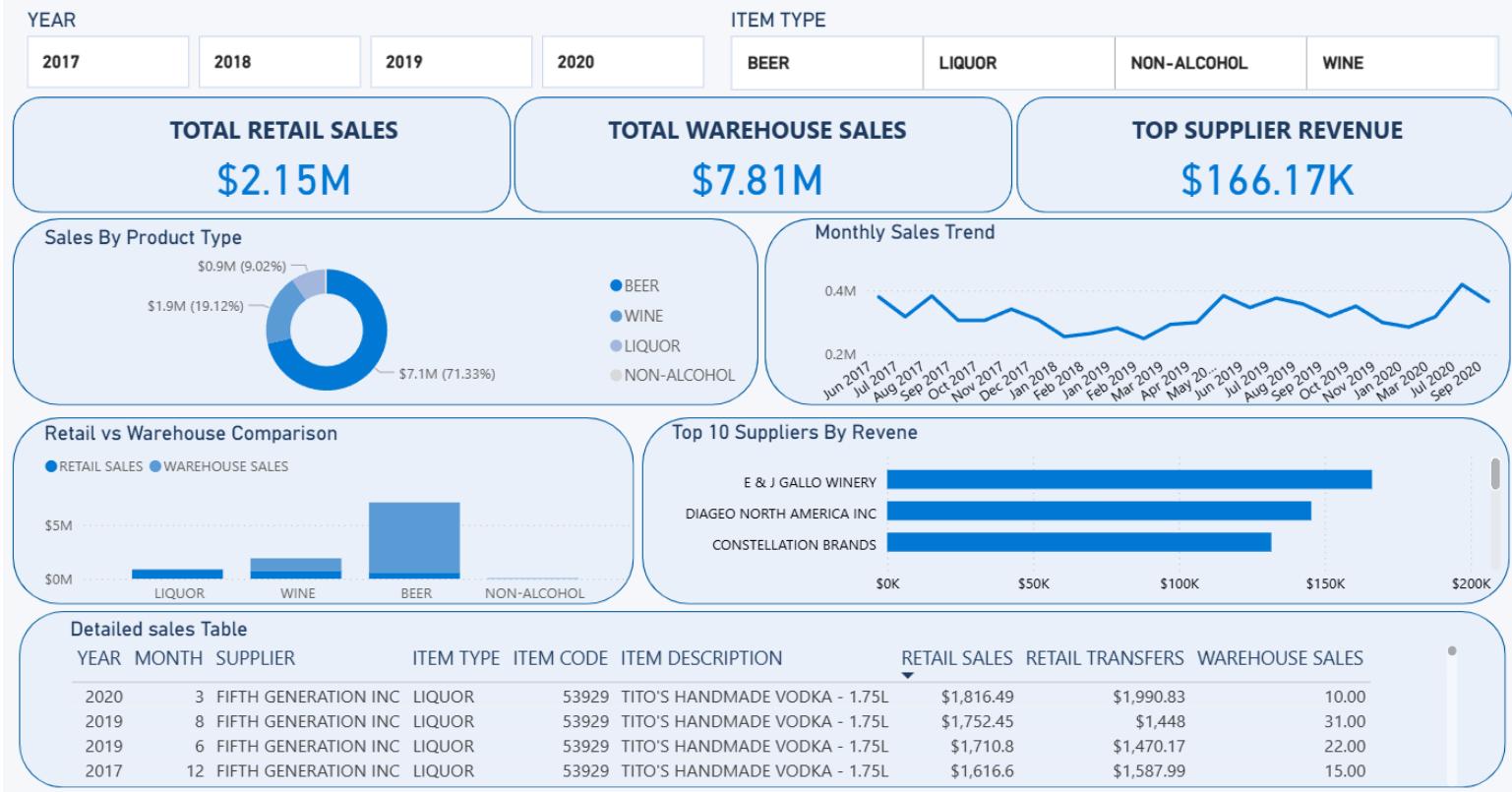
What drives our revenue? (*Analyzing the product mix to identify dominant categories and potential inefficiencies.*)

What are our sales patterns? (*Tracking performance over time to identify critical seasonality, cash flow cycles, and outlier events.*)

How do our channels really perform? (*Segmenting Retail vs. Warehouse performance by product to uncover hidden business models.*)

Where is our supplier risk concentrated? (*Identifying dependencies on key suppliers and analyzing the supplier base structure.*)

SMART RETAIL & LOGISTICS DASHBOARD



Key Insight: Category Concentration Risk & SKU Inefficiency

- Key Observation:** The business is dominated by a single category, with Beer accounting for 71.3% (\$7.1M) of all revenue. Conversely, Non-alcohol products contribute a negligible 0.54% (\$53.9K).
- Actionable Insight:** This data reveals two distinct strategic problems:
 - Revenue Concentration Risk:** The company's financial health is **critically over-reliant on the Beer category**. This creates significant vulnerability to any market shift in beer trends or adverse changes in terms from key beer suppliers.
 - Operational Inefficiency:** The Non-alcohol category is a "zombie" line. It consumes operational resources (inventory management, warehouse space, purchasing) for a 0.5% return, acting as a drag on efficiency and profitability.

Strategic Recommendation:

1. **Protect the Core (Beer):** Immediately secure the primary revenue engine by optimizing its supply chain and reinforcing key supplier partnerships.
2. **Cut the Drag (Non-alcohol):** Initiate an immediate SKU rationalization review to delist the non-alcohol products. This will free up capital and warehouse capacity.
3. **Diversify for Growth (Wine/Liquor):** Re-allocate the freed-up resources to build a targeted growth strategy for Wine (19.1%) and Liquor (9.0%), which are the only viable secondary revenue streams to **mitigate the long-term concentration risk.**

Key Insight: Seasonal Cash Flow & Anomaly Detection

- **Key Observation:** The sales trend data from 2017-2020 reveals a clear seasonal pattern: sales consistently peak mid-year (e.g., July 2020 at \$418.4K) and hit a trough in late winter (e.g., February 2019 at \$249.7K).
- **Actionable Insight:** This predictable 68% swing between peak and trough is not just a sales metric; it's a critical **working capital challenge**.
 1. **Seasonal Lull:** The Q1 (Jan-Mar) sales dip likely creates significant cash flow pressure, potentially impacting the ability to procure stock for the upcoming mid-year peak.
 2. **Potential Anomaly:** The July 2020 peak (\$418.4K) appears extreme. While part of the seasonal trend, its magnitude suggests it may have been driven by an external event (e.g., COVID-19 lockdown impact, pantry-loading) and should **not** be used as the sole baseline for future forecasts.

Strategic Recommendation:

1. **Financial Planning:** Implement a seasonal cash flow management strategy: secure flexible credit or hold cash reserves during Q4 to cover the Q1 inventory procurement costs.

2. **Forecasting:** Do not use a simple average for forecasting. Implement a seasonal model (e.g., SARIMA or decomposition) that accounts for the Q1 dip and Q2/Q3 peak.
3. **Further Analysis:** Flag the July 2020 data point as a potential **outlier** and investigate its specific drivers before incorporating it into future demand planning.

Key Insight: Discovery of Three Distinct Business Models

- **Key Observation:** A segment-level analysis reveals that the overall company trend (79% Warehouse) is dangerously misleading. Channel performance is entirely category-dependent:
 - **Beer:** Warehouse-dominated (\$6.53M vs \$574K)
 - **Liquor:** Retail-dominated (\$802K vs \$95K) — *directly contradicting the company average.*
 - **Wine:** A balanced, hybrid model (\$1.16M Warehouse vs \$746K Retail)
- **Actionable Insight:** The company is not one single "warehouse-first" business; it is **operating three different business models simultaneously.** A "one-size-fits-all" strategy (e.g., focusing only on warehouse logistics) is actively harming the potential of the \$800K Liquor category and failing to optimize the \$1.9M Wine category.

Strategic Recommendation:

1. **Beer (The B2B/Logistics Model):** Treat this as a **high-volume logistics operation.** Focus all efforts on warehouse efficiency, supply chain optimization, and bulk pricing contracts.
2. **Liquor (The B2C/Retail Model):** Treat this as a **high-margin retail play.** This category's strategy must be completely separate, focusing on in-store promotions, merchandising, and consumer-facing marketing.

3. **Wine (The Omnichannel Model):** Treat this as the **omnichannel growth driver**. Use it to pilot cross-channel promotions and analyze the customer journey (e.g., "Do retail customers also buy in bulk from the warehouse?").

Key Insight: Supplier Base Defines Operating Model

- **Key Observation:** The supplier data reveals a shocking structural insight: despite Beer accounting for 71% (\$7.1M) of all revenue, **no beer supplier appears in the Top 3 suppliers list**. The list is exclusively dominated by Wine (Gallo, Constellation) and Liquor (Diageo) partners.
- **Actionable Insight:** This single data point reveals the fundamental difference in the company's operating models:
 1. **Beer (Fragmented Model):** The \$7.1M Beer business is not driven by key partners but is sourced from a **highly fragmented, "long-tail" base** of numerous small suppliers. This creates immense operational complexity in purchasing, logistics, and accounts payable.
 2. **Wine/Liquor (Concentrated Model):** These categories are **partner-driven**. Their success hinges on strategic relationships with a few key suppliers (Gallo, Diageo), creating a high-risk, high-reward dependency.

Strategic Recommendation:

1. **Strategy for Beer (Consolidation):** The primary commercial goal for Beer should be **supplier base consolidation**. Focus on reducing the number of small suppliers to gain purchasing power, reduce administrative overhead, and simplify logistics.
2. **Strategy for Wine/Liquor (Partnership):** The primary goal here is **strategic relationship management**. Deepen collaboration with Gallo and Diageo, but also *actively identify secondary suppliers* to mitigate the significant risk of being dependent on a single partner.