Business Intelligence Documentation:

Alcohol Sales (Crown Royal and Tito’s Vodka) for Wal-Marts in Iowa for 2024

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# Stakeholder Requirements

## Objective

This portion of the document outlines the needs and expectations of key stakeholders, capturing what they want to see in the final BI dashboard, and why the data and insights are relevant to their decisions.

## Stakeholder Requirements

|  |  |  |  |
| --- | --- | --- | --- |
| **Stakeholder** | **Requirement(s)** | **Priority** | **Justification** |
| Sales Managers | * View total alcohol sales by location for Crown Royal and Tito’s Vodka in 2024. * View top 10 performing stores by total sales. | High | * Key decision-making for inventory and sales planning at Wal-Mart stores. * Helps direct efforts toward high-performing locations for better resource allocation. |
| Marketing Team | * Provide a percentage breakdown of Crown Royal vs. Tito’s Vodka sales to support marketing strategies. | Medium | |  | | --- | |  |  |  | | --- | | To tailor marketing campaigns based on alcohol type popularity in Wal-Mart stores. | |
| Business Analysts | Trend analysis of alcohol sales (daily/weekly/monthly) | High | Supports forecasting for upcoming months and helps with sales strategy adjustments. |
| Data Analysts | Aggregated sales data for each store with relevant filters like store name and product | High | Enables them to conduct deeper insights for internal reports and analysis. |

## Data Sources

* BigQuery Public Dataset: Iowa Liquor Sales
* Key Metrics:
  + total\_sales
  + total\_transactions
  + store\_name
  + item\_description

## Deliverables

* Dashboard displaying total sales by region, store, and product.
* Trend analysis of sales over time (daily/weekly/monthly).
* A visual showing the top-performing stores.
* Pie/Donut chart displaying the percentage breakdown of Crown Royal and Tito's Vodka sales.

# Project Requirements

## Objective

This portion of the document defines the scope of the BI project, including technical specifications, timelines, and expected deliverables for the team to follow.

## Document Structure

1. **Project Name:**

* 2024 Alcohol Sales Analysis for Wal-Mart in Iowa

1. **Overview:**

* This project aims to provide sales, marketing, and analytics teams with key insights to optimize inventory management, refine marketing strategies, and improve forecasting accuracy

1. **Business Objectives:**

* Provide insights into total sales by region, store, and product
* Understand sales trends over time (daily, weekly, monthly)
* Identify the top-performing stores and products
* Enable stakeholders (Sales, Marketing, Analysts) to make data-driven decisions

1. **Data Sources:**

* BigQuery: iowa\_liquor\_sales dataset (public dataset)
* Data extracted and cleaned by aggregating sales information based on store, product type, and sales transactions

## Functional Requirements

1. **Data Collection and Cleaning:**
   * Extract data from BigQuery for Crown Royal and Tito's Vodka sales in 2024
   * Clean and filter data by store name, product type, and sales date range
2. **Aggregation and Transformation:**
   * Aggregate total sales by store and product (e.g., Crown Royal, Tito’s Vodka)
   * Aggregate sales data at different time intervals (daily, weekly, monthly)
3. **Visualization:**
   * Build dashboards in Power BI, including:
     + **Total Sales by Region/Store/Product**
     + **Sales Trend over Time (Daily/Weekly/Monthly)**
     + **Product Breakdown by Percentage (Donut Chart)**
4. **Filters and Slicers:**
   * Implement store filters, product filters, and time filters for dynamic reporting

## Non-Functional Requirements

1. **Performance:**
   * Dashboard load time should not exceed 5 seconds with the current dataset size
   * Performance should be optimized for scalability as additional data sources are integrated
2. **Security:**
   * Limit access to sensitive data to authorized users.
   * Implement row-level security and access control based on user roles (e.g., Sales Managers can view only their region's data).

## Timeline

|  |  |  |
| --- | --- | --- |
| **Task** | **Start Date** | **End Date** |
| Data Extraction and Cleaning | 3/17/2025 | 3/21/2025 |
| Data Aggregation and Transformation | 3/24/2025 | 3/28/2025 |
| Power BI Dashboard Design | 3/31/2025 | 4/4/2025 |
| User Testing and Feedback | 4/7/2025 | 4/11/2025 |
| Final Delivery | 4/14/2025 |  |

## Deliverables

* Functional Power BI dashboard with the aforementioned visualizations
* Documentation on data cleaning and aggregation methods
* User manual for dashboard navigation and filtering

# Strategy

## Objective

This portion of the document outlines the strategic approach for using the BI dashboard to support business goals and decision-making.

## Strategic Vision

To provide key stakeholders (Sales, Marketing, Business Analysts) with actionable insights into alcohol sales performance in Wal-Mart stores across Iowa, focusing on Crown Royal and Tito's Vodka sales for 2024. The dashboard will drive data-driven decision-making and improve sales strategies, marketing efforts, and inventory management.

## Strategic Goals

* 1. **Empower Sales Managers**
     + Equip sales managers with the data needed to allocate resources efficiently and maximize revenue in top-performing locations
  2. **Enhance Marketing Effectiveness**
     + Help the marketing team identify which products are the most popular and tailor campaigns to drive sales for Crown Royal and Tito's Vodka
  3. **Data-Driven Insights for Analysts**
     + Enable analysts to monitor trends in alcohol sales, track product performance, and forecast future sales based on historical data

## Approach

* 1. **Data Access and Aggregation**
     + Use BigQuery to extract data for Crown Royal and Tito's Vodka sales in Wal-Mart stores across Iowa
     + Apply filters to clean and aggregate the data, focusing on sales in 2024
  2. **Dashboard Creation**
     + Develop a Power BI dashboard that enables stakeholders to view key metrics like total sales, sales trends, and product performance
     + Use dynamic filters to allow users to explore the data by store, time, and product
  3. **Visualization Strategy:**
     + Create intuitive, interactive visualizations that allow stakeholders to quickly identify trends, top-performing products, and key metrics

## KPIs and Metrics

* 1. **Sales by Store/Region/Product:**
     + Total sales by store, region, and product
  2. **Sales Trends:**
     + Daily, weekly, and monthly trends in sales for Crown Royal and Tito’s Vodka
  3. **Top Stores/Products:**
     + Top 10 stores by total sales for Crown Royal and Tito’s Vodka
     + Breakdown of sales by product type (Crown Royal vs. Tito’s Vodka)
  4. **Performance Tracking:**
     + Track overall performance against sales goals and identify opportunities for improvement

## Long-Term Strategy

* 1. **Scaling and Future Enhancements**
     + As the business grows, continue adding more products and stores to the analysis
     + Introduce more granular time periods (e.g., quarterly analysis) for deeper insights
  2. **Integration with Other BI Tools**
     + Consider integrating the dashboard with other analytics tools to provide even richer insights
  3. **Automation Opportunities**
     + Can future updates be automated through scheduled BigQuery extracts?
  4. **Integration Possibilities**
     + Could the dashboard be linked to inventory management systems for real-time updates?