**SALES ANALYSIS - Supporting Document**

**Project Overview**

**SALES ANALYSIS** is a data analysis project designed to offer insights into the performance of sales across multiple regions, sales teams, and products. This project involves data cleaning, transformation, and a series of calculated measures to create a robust dashboard. The dashboard provides a view of key performance indicators (KPIs) for monthly sales, shipments, and profitability to aid in strategic decision-making.

**Project Steps**

**1. Data Cleaning and Transformation**

The first step involved cleaning and transforming the raw data. This included:

* **Date Manipulation**: Extracted and created time-based columns to facilitate time-series analysis.
  + **Added Columns**: year, month, month name, day of week, day name, start of month
* **Cost Column**: Added a column for cost, enabling profit and cost-related calculations.

**2. Measure Creation**

To enhance the dashboard’s analytical capabilities, various measures were created. These measures allow for in-depth performance analysis over time and by various dimensions like region, salesperson, and product. The measures include:

* **Latest Date**: Identifies the latest available date in the dataset for reference.
* **Change Metrics**:
  + latest MoM sales %: Month-over-month change in sales.
  + LBS%: Latest month box shipment change %.
  + MoM box change %: Month-over-month change in box quantities.
  + MoM cost change %: Month-over-month change in cost.
  + MoM profit change %: Month-over-month change in profit.
  + MoM sales change %: Month-over-month change in sales.
  + MoM shipment change %: Month-over-month change in shipment numbers.
* **Profitability Targets**:
  + profit target: Set a target for desired profitability.
  + profit target indicator: Measure to show whether the target was met.
  + profit %: Calculates profit percentage.
* **Cumulative Totals**:
  + total boxes: Total number of boxes shipped.
  + total cost: Total cost.
  + total profit: Total profit.
  + total sales: Total sales.
  + total sales (prev): Total sales for the previous period.
  + total sales (latest month): Total sales for the most recent month.
  + total shipment: Total shipments.
* **Measure Selector**: A selector used to toggle between measures for flexible analysis.

**3. Initial Columns and Data Structure**

The initial dataset contained the following core columns:

* **Calendar Information**: calendar[date]
* **Location Data**: location[geo, region]
* **Sales Team Information**: people[picture, sale person, team]
* **Product Details**: product[category, cost per box, product]
* **Shipment Details**: shipment[boxes, date, geography, product, sales, sale person]

**Dashboard Overview**

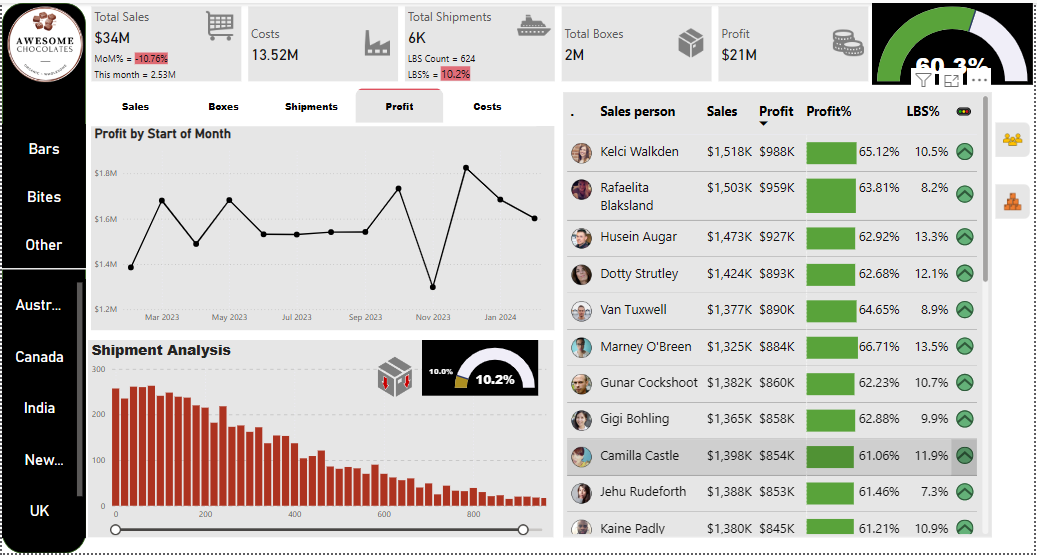
The **SALES ANALYSIS** dashboard includes multiple tabs and visualizations designed to make data insights accessible at a glance. Below are the main sections and visual components in the dashboard:

* **Sales Summary**:
  + Displays the **Total Sales**, **Total Costs**, **Total Shipments**, **Total Boxes**, and **Total Profit**.
  + Shows key month-over-month (MoM) change percentages and LBS%.
* **Profit Analysis**:
  + **Profit by Start of Month**: Line chart visualizing monthly profit trends over the last several months.
  + **Profit % and LBS%** by Salesperson: Ranked list of salespeople with indicators for profit % and LBS%.
  + **Profit by Geography Tooltip**: Added a tooltip feature that displays specific profit details by geographic region, allowing for deeper insights into regional profitability.
* **Shipment Analysis**:
  + **Shipment Analysis**: Bar chart showing shipment trends, with detailed insights into monthly shipment volume and changes.
* **Filters**:
  + Filters are available for regions, product categories, and teams, allowing users to view customized slices of data.

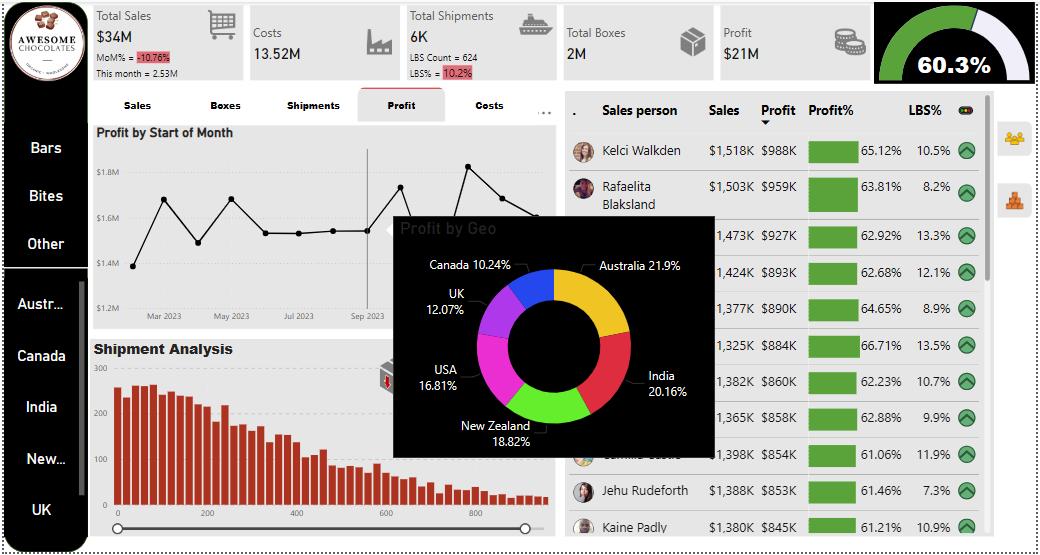
**Screenshots**

Here are some screenshots that illustrate the dashboard and its key components:

1. **Sales Summary**
2. **Profit Analysis**
3. **Shipment Analysis**



[Screenshot 2024-10-08 151652.png](https://1drv.ms/i/c/ef186088d4c19d26/EZ5cYEmaZRBJjldGimdwv2MBYd-OVOkLG7gx6XDp-9m7bQ?e=sPy8SU)



[Screenshot 2024-10-08 151743.png](https://1drv.ms/i/c/ef186088d4c19d26/ERXS6eQ4i45AndDrqbbwHxEBTvLcmlRbzobofXZvEAR7FQ?e=ixCDkX)

**Insights and Goals**

This analysis provides a foundation for identifying key drivers of profitability, areas for cost reduction, and opportunities for sales growth. The primary goals include:

* Tracking month-over-month changes and seasonal trends.
* Monitoring profitability targets and identifying high and low-performing products, regions, and salespeople.
* Enabling data-driven decision-making for resource allocation, pricing strategies, and operational adjustments.

**How to Use the Dashboard**

1. **Data Filters**: Select filters on the left sidebar to isolate specific regions, product categories, or sales teams.
2. **Dashboard Tabs**: Navigate between tabs to view sales, profit, shipment, and cost analysis.
3. **Visual Indicators**: Use the profit and LBS% indicators to assess salesperson performance and identify high-impact areas.

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