Western Countries Financial Data Analysis

By Using

Excel, SQL & Power BI

PRESENTED BY

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Introduction

- **Overview:**
  - **This project aims to analyze financial data from Western countries using Power BI, Excel, and SQL to generate actionable business insights.**
- **Objective:**
  - **To explore sales, profit, and discount trends across different regions, products, and segments.**
  - **To build an interactive Power BI Dashboard for real-time decision-making.**
- **Methodology**:
  - **Data Cleaning in Excel.**
  - **SQL Database Integration for structured data management.**
  - **Power BI Visualization to extract key insights.**
- **Outcome:**
  - **A dynamic dashboard that helps businesses optimize sales, track profitability, and make data-driven decisions.**

Dataset Overview

- Source: Western Countries Financial Data.

- Total Rows: 271
- Total Columns: 16.

- Key Fields: Country, Product, Sales, Profit, Date, Discount, Segment.

Data Cleaning in Excel

- **Steps Performed:**
  - **Removed duplicates.**
  - **Handled missing values in Discount Band.**
  - **Standardized date format.**
  - **Removed outliers in Sales & Profit.**

- **Outcome**:
  - **Cleaned dataset ready for SQL & Power BI**

Statistical & Graphical Analysis in Excel

Statistical Analysis	
Total Sales	118726350.3
Total Profit	16893702.26
Average Sales	169609.0718
Average Profit	24133.86037
Median Sales	35540.2
Standard Deviation (Sales)	236557.1962
Correlation (Sales vs Profit)	0.805462194
Maximum Sales	1159200
Minium Sales	1655.08

- **Key Metrics Calculated:**

1. **Total Sales: Summation of all sales transactions.**
2. **Average Profit: Used to understand profitability per sale.**
3. **Standard Deviation: Measured variation in sales and profit.**
4. **Correlation Analysis: Checked relationship between sales and profit.**

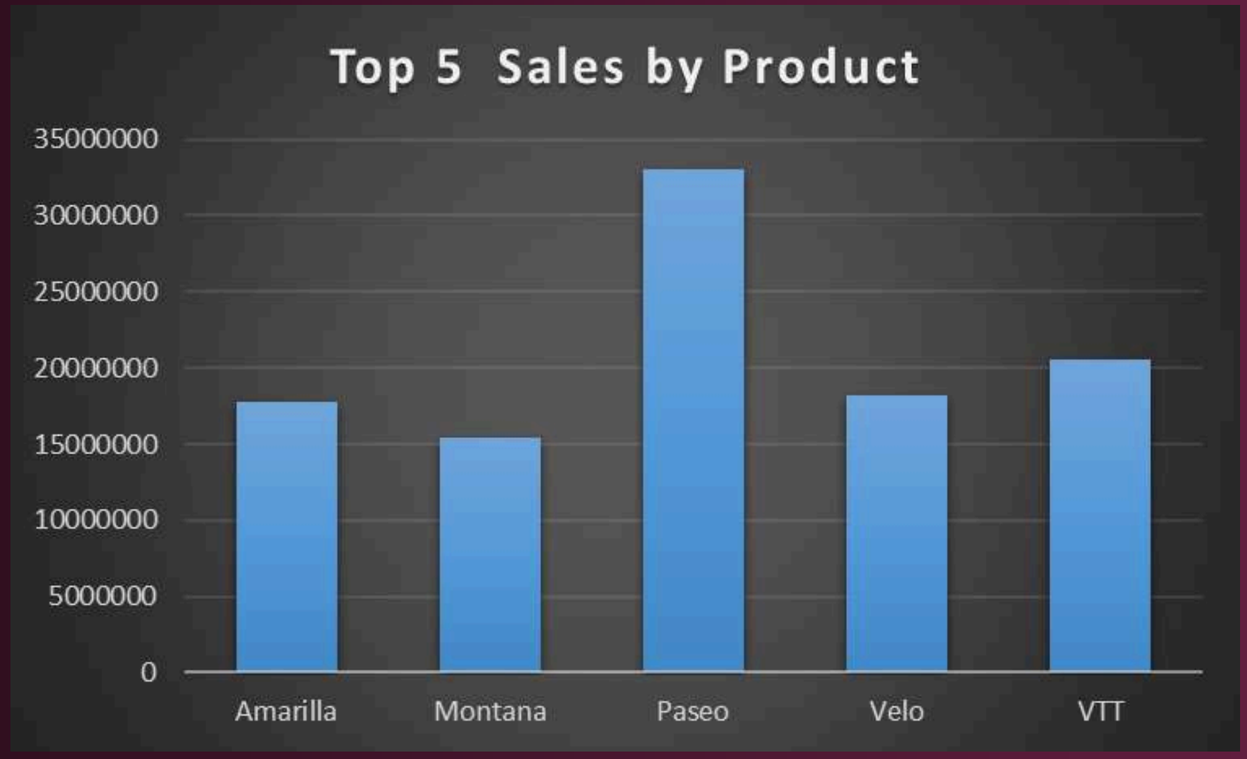
- **Graphs Created for Better Insights:**

1. **Yearly Sales Trend: Showed increase/decrease in sales over the years.**
2. **Product-wise Sales: Identified best-selling products.**
3. **Profit Distribution: Analyzed profit trends across different products and segments.**

Visualization in Excel

Monthly Discount

Top 5 Selling Products



Monthly Sales Trends

Relationship between sales & profit

SQL Database Setup

- Created SQL Database: FinancialData
- Created Table: SalesData with structured schema.
- Imported Cleaned Data into SQL.
- Ran SQL Queries to Verify Data Integrity.

```
-- Create a DataBase
create database FinancialData;


-- Use DataBase
use FinancialData;
```

Create a table for Load the all data

```sql
CREATE TABLE SalesData (
    ID INT AUTO_INCREMENT PRIMARY KEY,
    Segment VARCHAR(50),
    Country VARCHAR(50),
    Product VARCHAR(50),
    Discount_Band VARCHAR(50),
    Units_Sold DECIMAL(10,2),
    Manufacturing_Price INT(10),
    Sale_Price INT(10),
    Gross_Sales DECIMAL(15,2),
    Discounts DECIMAL(15,2),
    Sales DECIMAL(15,2),
    COGS DECIMAL(15,2),
    Profit DECIMAL(15,2),
    Sale_Date DATE,
    Month_Number INT,
    Month_Name VARCHAR(20),
    Year INT(10)
);
```

Import the data from csv file

```sql
32    # Import the data from csv file
33    select * from SalesData;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

ID	Segment	Country	Product	Discount_Band	Units_Sold	Manufacturing_Price	Sale_Price	Gross_Sales
1	Government	Canada	Carretera	None	1618.50	3	20	32370.00
2	Government	Germany	Carretera	None	1321.00	3	20	26420.00
3	Midmarket	France	Carretera	None	2178.00	3	15	32670.00
4	Midmarket	Germany	Carretera	None	888.00	3	15	13320.00
5	Midmarket	Mexico	Carretera	None	2470.00	3	15	37050.00

1) What is the total profit for each year?

```
53  SELECT Year, SUM(Profit) AS Total_Profit
54  FROM SalesData
55  GROUP BY Year
56  ORDER BY Year;
```

Result Grid | Filter Rows:

Year	Total_Profit
2013	3878464.51
2014	13015237.78

2) What are the top 5 countries with the highest total sales?

```
43  SELECT Country, SUM(Sales) AS Total_Sales
44  FROM SalesData
45  GROUP BY Country
46  ORDER BY Total_Sales DESC
47  LIMIT 5;
```

esult Grid | Filter Rows:

Country	Total_Sales
United States of America	25029830.18
Canada	24887654.89
France	24354172.29
Germany	23505340.82
Mexico	20949352.11

3) Show Total Units Sold Year-Wise?

```
78  SELECT Year, Product, SUM(Units_Sold) AS Total_Units_Sold
79  FROM SalesData
80  GROUP BY Year, Product
81  ORDER BY Year, Total_Units_Sold DESC
82  limit 5;
```

esult Grid | Filter Rows: | E

Year	Product	Total_Units_Sold
2013	Paseo	82247.00
2013	VTT	41584.00
2013	Velo	39471.00
2013	Montana	36280.00
2013	Amarilla	33688.00

4) Which product generated the highest revenue?

```
SELECT Product, SUM(Gross_Sales) AS Total_Revenue
FROM SalesData
GROUP BY Product
ORDER BY Total_Revenue DESC
LIMIT 1;
```

sult Grid | Filter Rows:

Product	Total_Revenue
Paseo	35611662.00

5) What is the average discount given for each segment?

```
70    SELECT Segment, AVG(Discounts) AS Avg_Discount
71    FROM SalesData
72    GROUP BY Segment
73    ORDER BY Avg_Discount DESC;
```

esult Grid | Filter Rows:

Segment	Avg_Discount
Small Business	35137.815000
Enterprise	14573.056300
Government	12996.019467
Midmarket	2007.869400
Channel Partners	1345.683600

Importing Data into Power BI

Steps:

1. Connected Power BI to SQL Database.

2. Verified Data Import.

3. Cleaned Data using Power Query Editor.

Power BI Dashboard Overview

Dashboard Components:

- KPIs (Total Sales, Profit, Profit Margin).
- Sales Trends (Line Chart).
- Country-wise Sales (Map Chart).
- Product & Segment-wise Analysis (Bar/Pie Charts).
- Quarterly Sales & Profit (Column Chart).
- Filters/Slicers for Interactivity.

Key Business Insights

Total Sales: $118.73M, Total Profit: $16.89M, Profit Margin: 14.23%.

Highest Revenue Countries: USA, Canada.

Lowest Sales Countries: Mexico, Spain.

Best-selling Products: Carretera, Montana.

Lowest-performing Products: Amarilla, Verde, VTT.

Yearly & Quarterly Trends

Q4 has the highest sales & profit.

Q2 shows weak performance.

Seasonal trend detected: Sales increase in Q4.

Country-wise Sales & Profit

Top 2 Countries:

USA & Canada.

Bottom 3 Countries:

Mexico, Spain, France.

Inference:

Expansion should focus on high-sales regions.

THE DATA ANALYSIS PROCESS

Best-Selling Products:

Carretera, Montana.

Least-Selling Products:

Amarilla, Verde.

Most Profitable Segment:

Midmarket.

Least Profitable Segment:

Government.

IMPACT OF DISCOUNTS

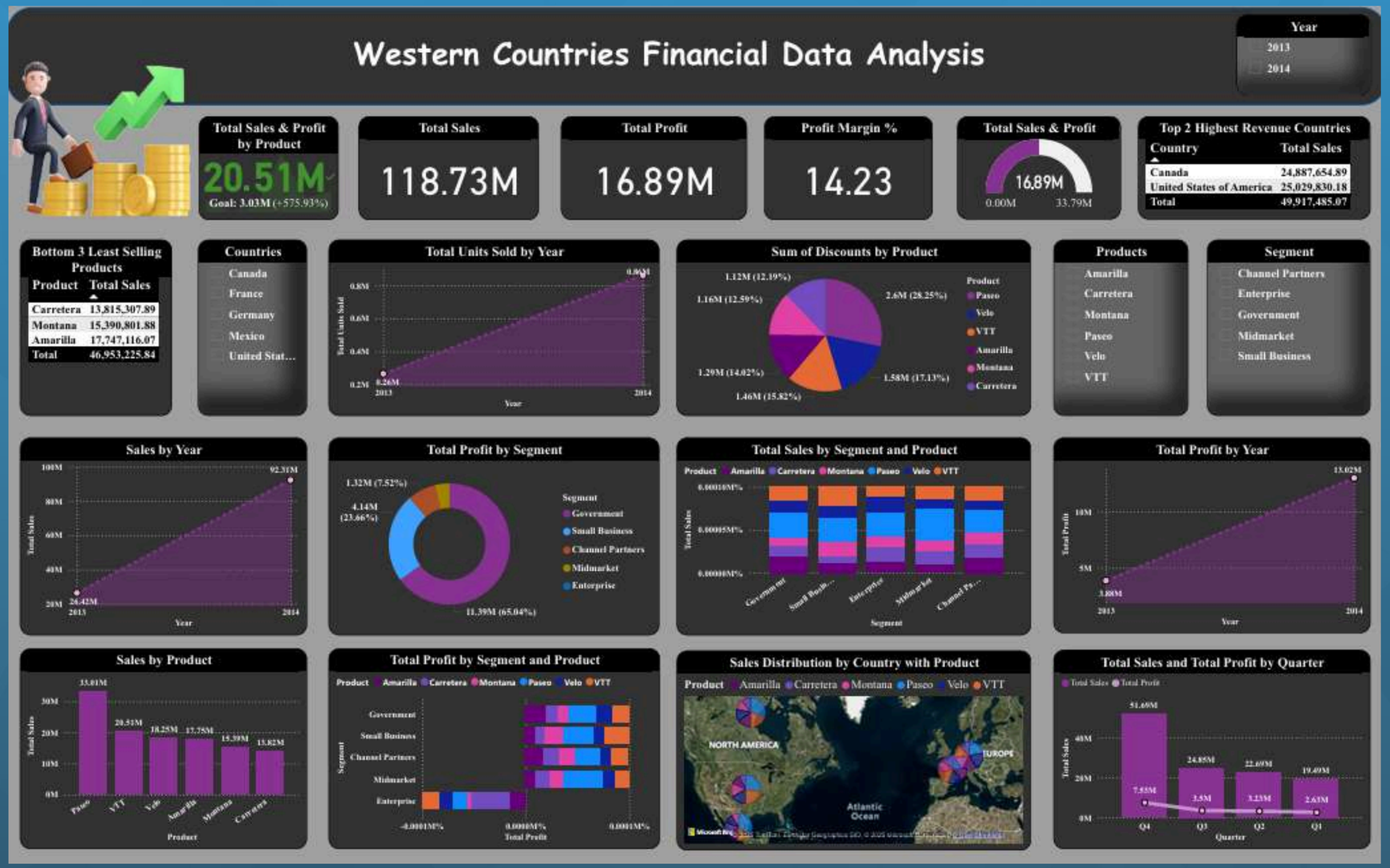
1) Products with Highest Discounts: Show lower profit margins.

2) Strategy: Reduce unnecessary discounts to maintain profitability.

Final Recommendations

- Optimize pricing & discount strategies.
- Focus on high-performing regions & segments.
- Improve weak quarter sales with marketing campaigns.
- Expand operations in high-revenue countries.

Final Dashboard Screenshot



Conclusion

- Power BI enabled data-driven decision-making.
- Interactive Dashboard helps track KPIs in real-time.
- Findings will help optimize business strategies.

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ANY QUESTIONS

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