AMAZON SALES ANALYSIS

Comprehensive Sales Data Analysis and Insights

PROJECT REPORT

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INTRODUCTION

In an era of increasing competition and evolving market dynamics, understanding sales performance is crucial for strategic decision-making.

This project focuses on Analyzing Amazon's Sales Data using Excel & Power BI to uncover key Trends, Metrics, and Relationships.

By Transforming Raw Data into Actionable Insights, this analysis aims to guide effective sales strategies, optimize distribution methods, and enhance overall profitability. The significance of this project lies in its potential to drive data-driven decisions, enabling Amazon to stay ahead in a competitive landscape and achieve sustainable growth.

OBJECTIVE

The primary objective of this project is to perform a comprehensive analysis of Amazon's sales data to derive actionable insights that can inform strategic decision-making. The specific goals are as follows:

1. **Analyze Sales Trends:** Examine Monthly and Yearly sales patterns to identify significant Trends and Seasonal Variations.

2. **Key Metrics Identification:** Highlight crucial performance indicators such as Total Revenue, Total Profit, Units Sold, Profit Margin, and Average Shipping Time.

3. **Relationship Exploration:** Investigate the relationships between various attributes, including region, product, sales channel, and order priority.

4. **Strategic Recommendations:** Provide actionable recommendations based on the insights to improve sales strategies, optimize distribution methods, and increase profitability.

5. **Interactive Dashboard Creation:** Develop an interactive Power BI dashboard to visualize key insights and facilitate dynamic data exploration by stakeholders.

DATA OVERVIEW

Dataset Description

The dataset contains Amazon's Sales data with columns for

Order ID, Order Date, Ship Date, Units Sold, Unit Price, Unit Cost, Total Revenue, Total Cost, Total Profit, Region, Product, Sales Channel, and Order Priority.

Source

The data was sourced from a provided link.

Time Period

The dataset covers sales from **2010 to 2017**, allowing for comprehensive **Trend Analysis** over these years.

DATA PREPARATION

1. Data Extraction

•Source: Dataset obtained from a provided link.

•Primary Key: Order ID used for sequential arrangement.

2. Data Cleaning

•Date Format Conversion: Standardized inconsistent date formats.

•Duplicate Removal: Identified and removed duplicate values.

•Data Saving: Cleaned data saved for further processing in Power BI.

3. Data Transformation

Converted relevant columns into normalized format.

Auto-detected and corrected data types.

Merged queries and sorted data.

Used first row as headers, removed unnecessary columns, and added index and conditional columns.

Created dimension tables with unique IDs.

4. Data Loading

Loaded the transformed data into Power BI for visualization and analysis.

DATA MODELING

Here's a breakdown of the data model:

Amazon Sales Data: This is the Central Fact Table containing detailed transaction records, including Order ID, Order Priority ID, Product ID, Sales Channel ID, Ship Date, Shipping Time, Total Cost, Total Profit, and Total Revenue.

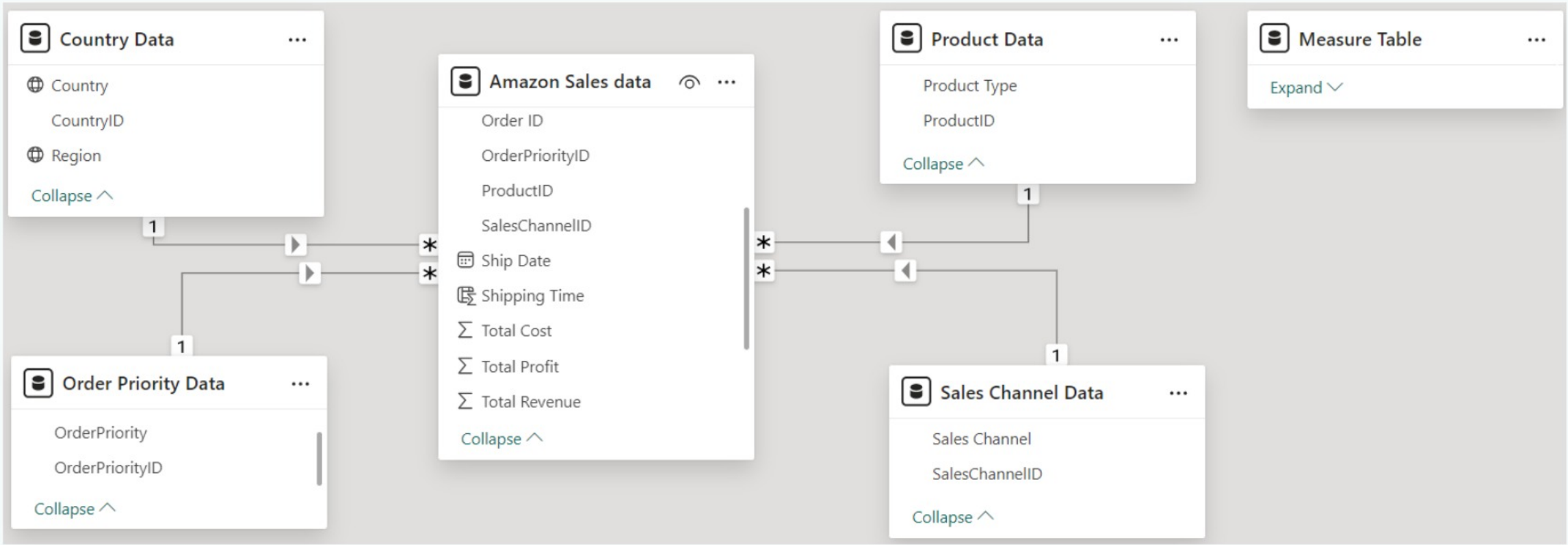
Country Data: Contains Country and Region details, linked to the Amazon Sales data to provide Geographical Insights into sales data.

Order Priority Data: Includes the Classification of Order Priorities, linked to the main sales data to allow analysis by Order Priority.

Product Data: Provides details about the product type, linked to the main sales table to enable Product-Based Analysis.

Sales Channel Data: Holds information about the sales channels, offering Insights into Sales Performance by Channel.

Measure Table: A Special Table used to Store Calculated Measures used in the Dashboard, enhancing the performance of the data model by Centralizing Complex Calculations.


Country Data
Country
CountryID
Region
Collapse
Amazon Sales data
Order ID
OrderPriorityID
ProductID
SalesChannelID
Ship Date
Shipping Time
Total Cost
Total Profit
Total Revenue
Collapse
Product Data
Product Type
ProductID
Collapse
Measure Table
Expand
Order Priority Data
OrderPriority
OrderPriorityID
Collapse
Sales Channel Data
Sales Channel
SalesChannelID
Collapse
1
*

DASHBOARD OVERVIEW

The Power BI dashboard provides a comprehensive view of Amazon's sales performance, leveraging a variety of components to facilitate in-depth analysis and data-driven decision-making.

KPIs (Key Performance Indicators)

•Purpose: Quickly present essential metrics such as Total Revenue, Total Profit, Units Sold, Profit Margin, and Average Shipping Time.

•Functionality: Enables Executives and Managers to monitor key performance indicators at a glance, facilitating swift and informed decision-making.

Slicers

•Purpose: Enhance interactivity and allow users to Filter Data Dynamically.

•Functionality: Users can slice data by Year, Month, Region, Sales Channel, and Order Priority to focus on specific Dimensions and gain Targeted Insights.

Charts

•Line Chart: Visualizes trends in Total Profit and Revenue by Year and Month, highlighting Seasonal Patterns and Growth.

•Funnel Chart: Illustrates Profit Distribution across Different Products, identifying Top Performers.

•Donut Chart: Shows the Top 5 Countries contributing the most to Profit, offering insights into geographic performance.

•Clustered Column Chart: Compares Total Profit and Revenue across Different Order Priorities, highlighting Priority Impacts.

•Stacked Column Chart: Displays Profit Distribution across various Regions, identifying regional Strengths.

•Stacked Bar Chart: Analyzes Profit Trends across Different Sales Channels over the Years, revealing channel-specific Insights.

These components work together to provide a holistic view of sales data, enabling stakeholders to identify trends, explore relationships, and derive Actionable Insights for Strategic Planning.

amazon
Analysis
Year
All
Month
All
Region
All
Sales Channel
All
Order Priority
All
Sales
513K
Units Sold
44.17M
Total Profit
137.35M
Total Revenue
32.16
Profit Margin
23
Average Shipping Days
by Year & Month
Total Profit
Total Revenue
8M
6M
4M
2M
0M
Jul Aug Sep Oct Nov Jan Feb Apr Jul Aug Oct Nov Mar May Jun Jul Oct Nov Dec Jan Feb Mar May
2014
2015
2016
2017
by Product
100%
Cosmetics 15M
Household 7M
Office Supplies 6M
Clothes 5M
Baby Food 4M
Cereal 2M
Vegetables 1M
Personal Care 1M
Beverages 1M
Snacks 1M
Meat 1M
Fruits 0M
0.8%
by Region
12.2M
11.1M
6.1M
5.8M
4.7M
2.8M
1.5M
Sub-S... Africa
Europe
Asia
Middle East and North Africa
Austr... and Oceania
Central America and the Carib...
North America
by Top 5 Countries
Honduras 1.61M
Djibouti 2.43M
Samoa 1.68M
Pakistan 1.72M
Myanmar 1.8M
by Order Priority
49M
37M
33M
19M
17M
11M
7M
Critical
High
Medium
Low
by Sales Channel
Offline
Online
2017 1.6M 2.4M
2016 2.0M 2.9M
2015 2.8M 1.2M
2014 4.4M 1.5M
2013 3.6M 3.1M
2012 5.1M 4.1M
2011 1.6M 1.1M
2010 3.8M 2.8M

KEY INSIGHTS

- A Total of **513,000 Units** were Sold, generating **$137.35 M** in Revenue.
- The Total Profit is **$44.17 M**, with a Profit Margin of **32.16%.**

- **Cosmetics** lead with **$15 M** in Sales, followed by **Office Supplies** ($8 Million) and **Household Products** ($7 Million).
- Other notable Categories include **Clothes** ($5 Million), **Baby Food** ($4 Million), and **Cereal** ($2 Million).

- **Sub-Saharan Africa** is the Top Region with **$12.2 M** in Sales, followed by **Europe** ($11.1 Million), **Asia** ($6.1 Million), and the **Middle East** and **North Africa** ($5.8 Million).
- Sales in **North America** are the Lowest at **$1.5 M**.

- The Top Countries are **Djibouti** ($2.43 Million), **Pakistan** ($1.72 Million), **Myanmar** ($1.8 Million), **Samoa** ($1.68 Million), and **Honduras** ($1.61 Million).

- The Majority of Sales are classified as **'High' Priority $49 M** , followed by **'Low'** ($37 Million), **'Medium'** ($33 Million), and **'Critical'** ($7 Million).

- A noticeable Split exists Between Offline and Online sales, with **Online Channels** generally **performing Better** in recent Years.
- There is a Significant **Rise in Online Sales** from **2012** to **2017.**

- The Average Shipping Time is **23 Days**.

RECOMMENDATIONS

- **Expand High-Demand Categories**: Increase the product range in Cosmetics, Office Supplies, and Household products to capitalize on their popularity.
- **Reassess Underperforming Categories**: Consider replacing low-demand items like Fruits and Meat with more popular products.

- **Target Low-Sales Regions**: Boost marketing efforts in North America and Central America to increase sales.
- **Strengthen High-Sales Regions**: Enhance product availability and promotions in Sub-Saharan Africa and Europe.

- **Invest in Online Platforms**: Continue to grow Online Sales by improving digital marketing and the user experience.
- **Maintain Offline Presence**: Balance strategies to cater to customers preferring physical stores, potentially through local partnerships.

- **Reduce Shipping Time**: Streamline logistics to lower the average shipping time from 23 Days.
- **Align Stock with Demand**: Optimize inventory to match order priorities and prevent Stockouts or Overstocking.

- **Prioritize High-Value Orders**: Offer loyalty programs for High-priority customers to drive repeat business.
- **Leverage Top Markets**: Focus on High-performing countries like Djibouti and Pakistan with localized strategies.
- **Monitor Trends**: Stay updated on market Trends and innovate based on customer feedback.

CONCLUSION

The analysis reveals both Strengths and Areas for Improvement in Amazon's Sales performance. Key findings include robust sales in categories such as Cosmetics and Office Supplies and strong regional performance in Sub-Saharan Africa and Europe. The trend towards Increased Online Sales underscores the need for a robust Digital Strategy.

Implications:

- **Product Strategy**: Focus on High-demand products and reassess underperforming categories.
- **Market Expansion**: Target regions with Lower sales for growth opportunities.
- **Channel Optimization**: Strengthen Online sales efforts while maintaining a solid Offline presence.
- **Supply Chain Efficiency**: Reduce shipping times and optimize inventory management.

Data-driven decision-making is essential for identifying trends and making informed choices. By continuously analyzing data, businesses can adapt strategies, optimize operations, and maintain competitiveness in the market.

THANK YOU!

Thank you for taking the time to explore our Amazon Sales Analysis Project. Your attention and engagement are Greatly Appreciated. We hope this Presentation has provided Valuable Insights into the power of data-driven Decision-Making.

If you have any Questions or would like further information, please feel free to ask. We're here to help!