**E-COMMERCE SALES ANALYSIS**

**Objective:**

An ecommerce company aims to generate a comprehensive sales report spanning the years 2011 to 2014. The primary objective is to analyze sales patterns during this period and identify actionable insights to enhance sales strategies moving forward.

**Problem Statements:**

1. Compare the relationship between sales and profit over the years.
2. Analyze the highest and lowest profits and sales across different years.
3. Investigate the relationship between product categories and profits over the years
4. Determine the sales share across different categories
5. Identify the top 5 states by sales volume.
6. Identify the top 5 subcategories by sales volume.
7. Evaluate year-over-year growth rates for profit, sales, quantity, orders, and profit margin.
8. Calculate key performance indicators for profit, sales, quantity, orders, and profit margin.

**Insights:**

1. Over the years 2011 to 2014, the ecommerce company experienced consistent growth in both sales and profit, with sales nearly doubling from $470,532.51 to $935,507.51 and profit increasing from $61,618.60 to $119,463.52, indicating a generally positive correlation between sales volume and profitability despite varying profit margins.
2. Across the years 2011 to 2014, the ecommerce company experienced varying profitability with notable peaks in November for each year, showcasing high sales and profit figures. Conversely, July 2011 and January 2012 were the lowest points, with July 2011 even recording a loss. ***Profitability:***

Nov’11: Sales $78.63k, Profit $9.29k

Nov’12: Sales $75.97k, Profit $12.47k

Nov’13: Sales $82.19k, Profit $4.38k

Nov’14: Sales $112.33k, Profit $9.68k

***The lowest points were:***

Jul’11: Sales $33.95k, Profit -$0.84k (loss)

Jan’12: Sales $18.17k, Profit -$3.28k (loss)

1. Over the span of 2011 to 2014, the ecommerce company's profitability was prominently driven by the Technology and Office Supplies categories, which consistently demonstrated robust growth in profits each year. In contrast, while Furniture also saw an increase in profits over the period, its contribution to overall profitability was comparatively modest.
2. Across 2011 to 2014, Technology consistently held the highest sales share among Furniture, Office Supplies, and itself, ranging from 34.60% to 37.15%. Office Supplies also maintained a substantial share, fluctuating between 29.17% and 33.59%, while Furniture showed slight declines over the years, ranging from 29.35% to 36.24%.
3. From 2011 to 2014, California consistently led in sales volume, followed by New York, Texas, Washington, and Pennsylvania, which also appeared frequently in the top 5 states by sales.
4. Over the span of 2011 to 2014, Phones consistently topped in sales volume, demonstrating strong consumer demand throughout. Chairs and Storage also maintained significant positions among the top subcategories.
5. From the data, the ecommerce company experienced significant growth in orders (28.64%), sales (20.62%), and quantity sold (27.45%). However, the profit margin slightly decreased by 5.15%, despite an increase in total profit by 14.41%. This indicates strong sales and order growth but highlights the need to address factors affecting profit margins.
6. The ecommerce company achieved impressive sales of $2,297,200.86 and a profit of $286,397.02, with 37,873 units sold through 9,994 orders. The 12.47% profit margin indicates efficient cost management, contributing to overall profitability. These metrics highlight strong operational performance and market competitiveness, underscoring effective sales management and customer engagement strategies.

**Measures:**

1. Develop targeted promotions and inventory management strategies to capitalize on peak seasons and mitigate losses during slower periods.
2. Invest in expanding the Technology and Office Supplies categories through product innovation and market penetration strategies.
3. Implement tailored marketing campaigns and logistics optimizations for key states like California and New York to maintain leadership in sales.
4. Enhance product offerings and marketing initiatives for top-performing subcategories like Phones, Chairs, and Storage to maximize sales potential.
5. Evaluate cost structures, pricing strategies, and operational efficiencies to improve profit margins while sustaining sales growth.