Sales Analysis Report
Pens and Printers
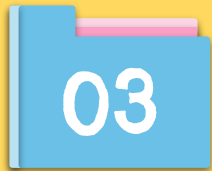
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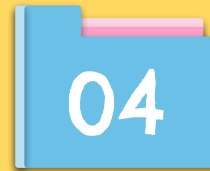
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Business Goals

Business Background:

- Pens and Printers, a company specializing in office supplies, recently launched a new line of office stationery products. This expansion aims to cater to the evolving demands and preferences in the market.

Project Goal:

- The primary objective is to analyze and optimize the sales strategies for the newly introduced office stationery product line. The focus is on assessing the effectiveness of different sales methods—Email, Call, and Email+Call—to identify the most efficient approach.

- The ultimate aim is to determine the best sales strategy that generates higher revenue, resonates with the target audience, and ensures a significant return on the investment in selling these new products. The analysis aims to improve sales tactics, aligning them more closely with customer preferences to drive successful product adoption and increased revenue.

- This project seeks to enhance sales strategies and maximize customer satisfaction while successfully introducing and selling the new office stationery product line.

Dataset Overview

Column Name	Details
week	Week sale was made, counted as weeks since product launch
sales_method	Character, which of the three sales methods were used for that customer
customer_id	Character, unique identifier for the customer
nb_sold	Numeric, number of new products sold
revenue	Numeric, revenue from the sales, rounded to 2 decimal places.
years_as_customer	Numeric, number of years customer has been buying from us (company founded in 1984)
nb_site_visits	Numeric, number of times the customer has visited our website in the last 6 months
state	Character, location of the customer i.e. where orders are shipped

Outcomes

Histogram of Years as a Customer:

- Majority of customers have been associated with the company for a significant period, showcasing customer loyalty.

- Highlights the distribution of customer loyalty and their duration of association with the company, providing an overview of the customer base's long-term relationship with the business.
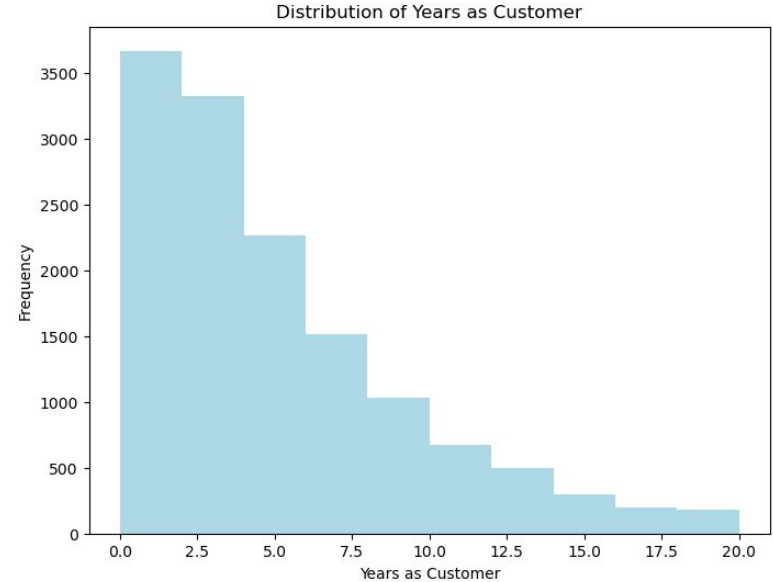

Fig 1. Histogram of Years as a Customer

Outcomes

Sales Methods vs. Total Revenue:

- 'Email' strategy generated the highest revenue followed by 'Email+Call' and 'Call'.

- Clearly illustrates the total revenue generated by each sales method, offering insights into the comparative performance of different strategies in revenue generation.
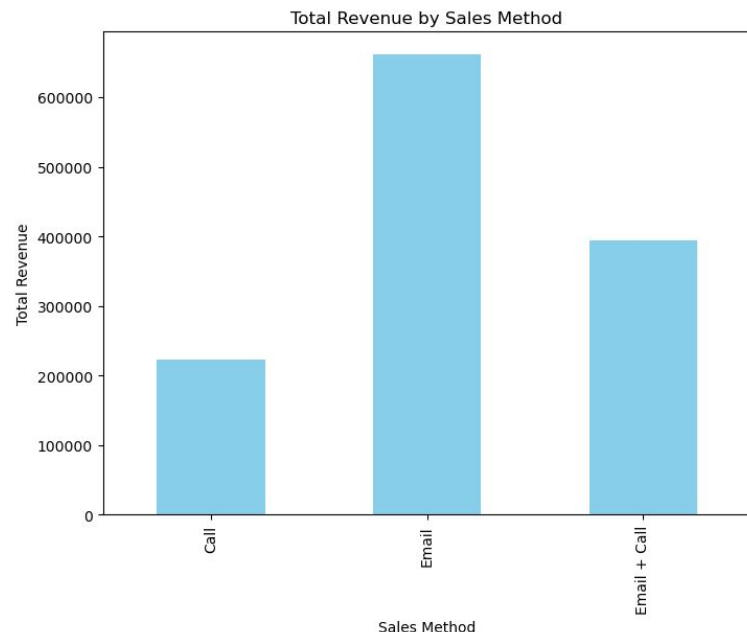

Fig 2. Sales Methods vs. Total Revenue

Outcomes

Percentage of New Products Sold by Method:

- On the basis of plotted pie-chart it can be visualised that maximum numbers i.e '48.8%'' of new products are sold by 'Email' as sales method and '32.5%' by 'Call' and rest of '19.1%' by both 'Email+Call'.

- Presents a clear visualization of the proportion of new product sales attributed to each sales method, aiding in understanding the distribution of sales effectiveness across methods.

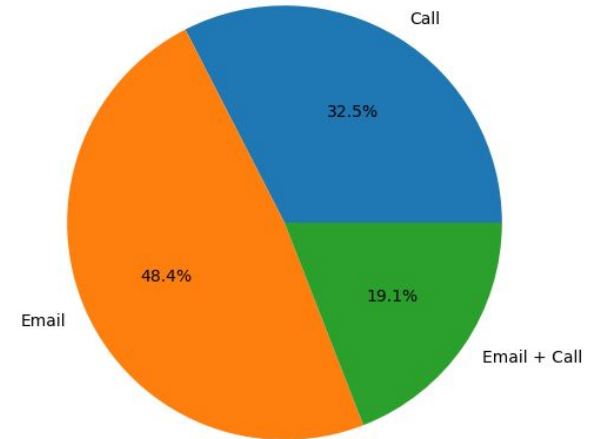Percentage of New Products Sold by Sales Method

Fig 3. Percentage of New Products Sold by Method

Outcomes

Correlation Heatmap:

- It can visualised from correlation heatmap that **'nb_sold'** and **'nb_site_visits'** having positive correlation indicating more site visits leads to more selling and same for positive correlation between **'nb_sold'** and **'revenue'** indicating more revenue from more selling which is quite understandable.

- Demonstrates the relationships between various factors like 'nb_sold', 'nb_site_visits', and 'revenue', providing insights into the interconnections between these variables and how they influence each other.
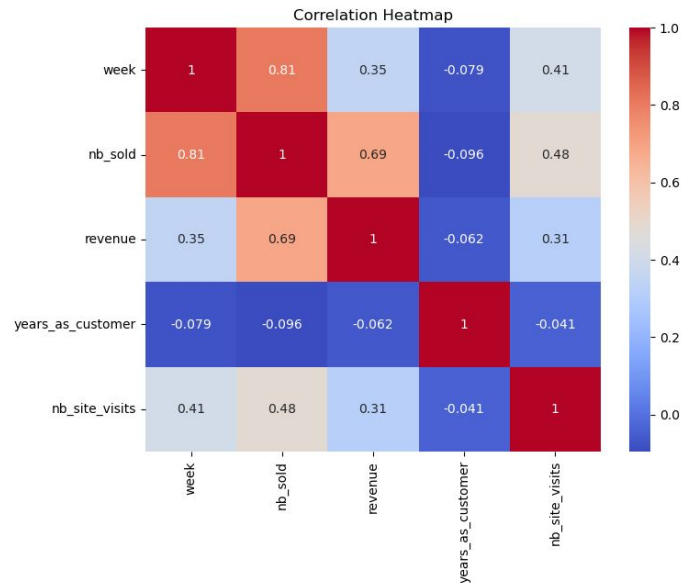

Fig 4. Correlation Heatmap (Correlation between different columns).

Outcomes

Revenue Spread by State:

- On the basis of boxplot plotted for revenue spread by state, it can be seen that maximum revenue spread is being generated from state 'Vermont'.

- Showcases the variation in revenue across different states, identifying the state 'Vermont' as a primary revenue generator, helping in focusing on specific geographical areas for strategic sales planning.
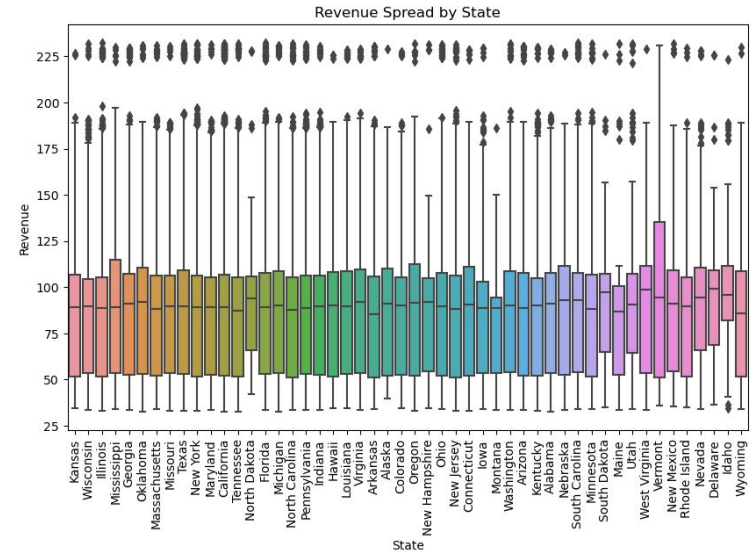

Fig 5. Box Plot (Revenue Spread by State)

Outcomes

Number of Site Visits vs. Revenue by Sales Method:

- Positive correlation observed between the number of site visits and revenue, leads to more revenue due to more number of site visits.

- Demonstrates the relationship between site visits and revenue across different sales methods, highlighting the positive correlation between site visits and revenue, which provides insight into the influence of online engagement on sales performance.
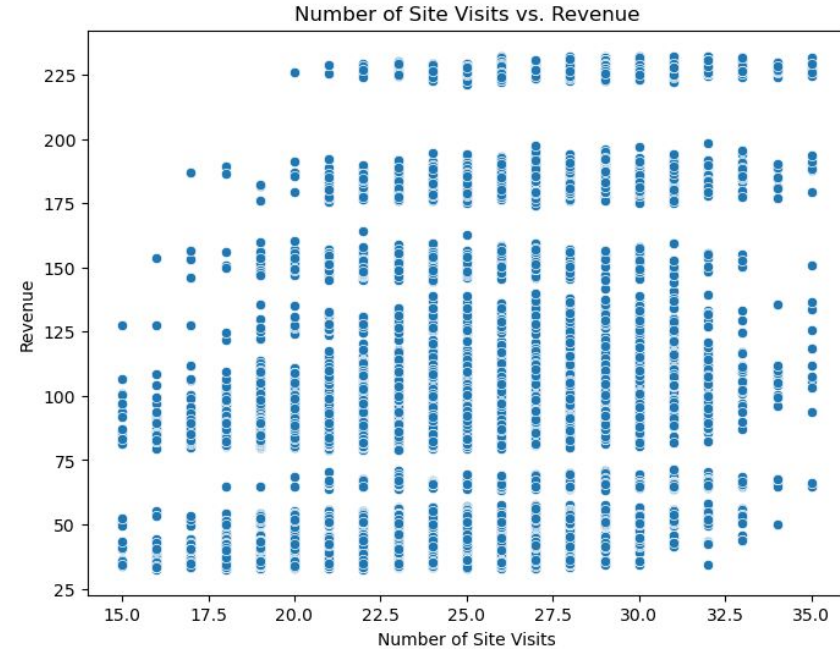

Fig 6. Number of Site Visits vs. Revenue

Outcomes

Revenue Trend over Weeks:

- On the basis of line plot it can be seen that, revenue generated through 'Email' decreases with time whereas revenue generated with 'Call' and 'Email+Call' increases with time.

- Illustrates the trend in revenue generation over weeks for each sales method, allowing a comparative analysis of revenue performance over time, identifying the changes and trends in revenue patterns across the launch period.
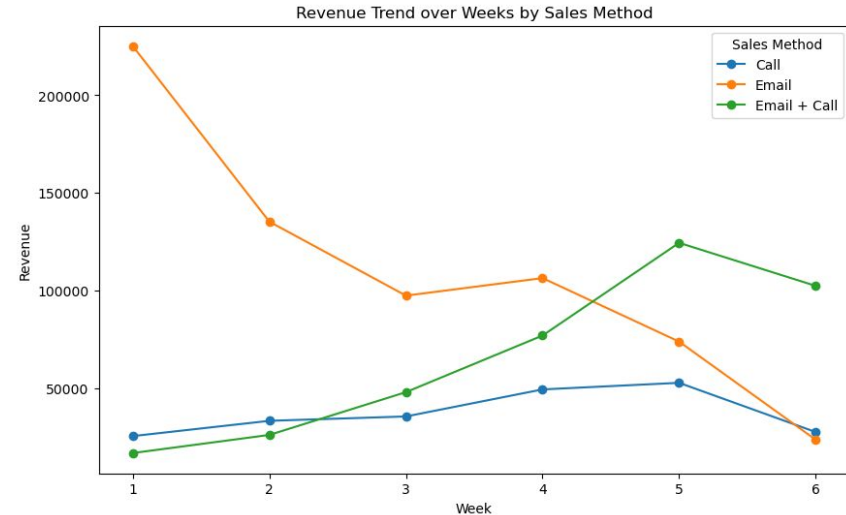

Fig 7. Revenue Trend over Weeks

Outcomes

Sales Method vs. Revenue Stacked by Week:

- It depicts the total revenue for each sales method across different weeks, showcasing revenue variations over time and across different sales methods indicates since product launch as weeks increases the revenue generated from 'Email' decreases whereas due to other two sales method revenue increases, as seen before from line chart, here we can also visualise the magnitude of revenue and sales method respectively.

- Provides a comprehensive view of total revenue generated for each sales method across different weeks, enabling a clear visualization of how the revenue varies over time for each method, aiding in identifying which method performs best or needs adjustments.
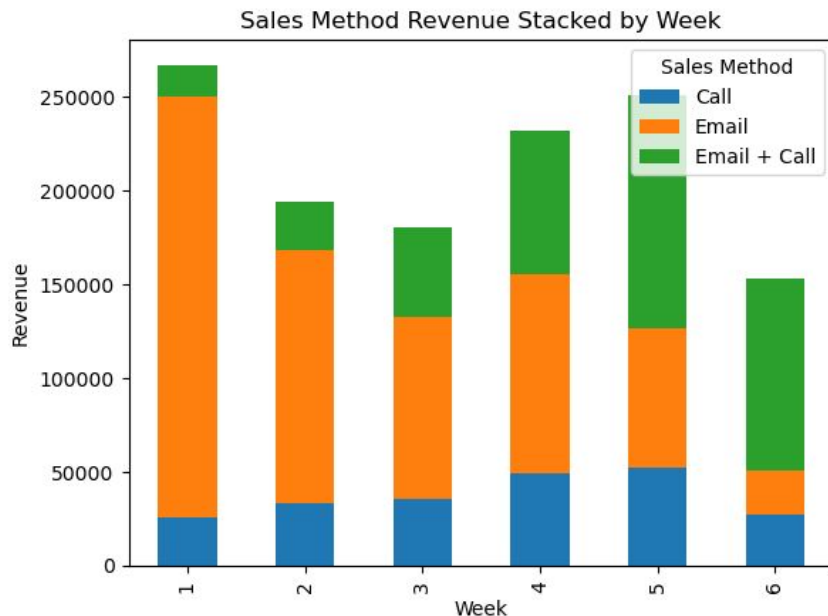

Fig 8. Sales Method vs. Revenue Stacked by Week

Years as Customer vs. Revenue by Sales Method:

- Displays the distribution of revenue for different sales methods in relation to the duration of customer association indicating 'Call' method having more frequent customers within same year, followed by 'Email' and 'Email+Call'.

- Displays the distribution of revenue for different sales methods concerning the duration of customer association, providing insights into customer preferences for various sales methods based on their longevity with the company.
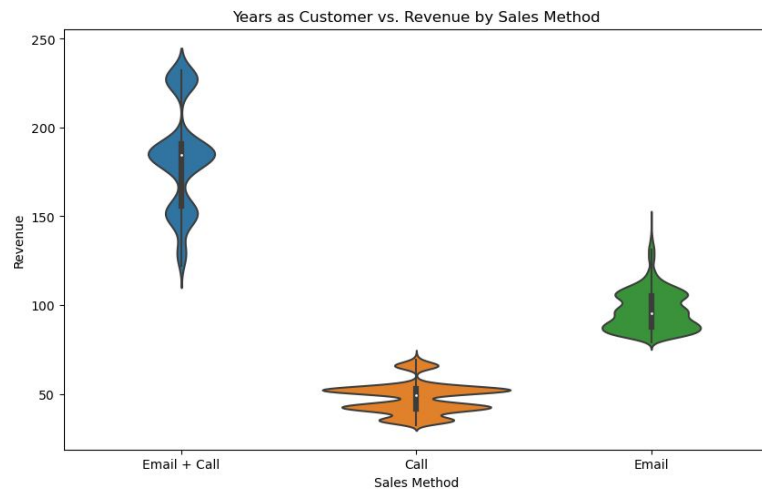

Fig 9. Year as Customer vs. Revenue by Sales Method

Recommendations

- **Optimize Email Strategy:** As it is the top revenue generator, refining the email sales strategy could further enhance revenue.

- **Strengthen Combined Approach:** The 'Email+Call' method, although generating less revenue than 'Email,' showcases potential. Strengthening this approach might result in increased revenue.

- **Focus on Customer Engagement:** Given the correlation between site visits and revenue, investing in strategies to increase online engagement could significantly impact sales.

- **State-Specific Strategies:** Concentrate more efforts on the state of Vermont, the highest revenue contributor, to maintain or increase revenue from this area.

- By implementing these recommendations, the business can optimize sales strategies and enhance revenue generation by focusing on customer engagement and refining sales approaches based on the observed correlations and revenue trends.

Thank You