PENS & PRINTERS

DataCamp Case Study

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OVERVIEW

Six weeks ago, Pens and Printers launched a new line of office stationary

They were also testing 3 different types of sales strategies

- Email
- Email + Call
- Call

And so after extraction of the dataset from the sales system I was tasked with cleaning, exploring the dataset and providing recommendations to help improve their sales strategy.

PROJECT SUMMARY

Data Validation

Cleaned the dataset and validated according to the information provided

Exploratory Data Analysis

Delved deep into the data, exploring and gaining meaningful insights

Recommendations

Giving data-driven recommendations to improve Pens & Printers' sales strategies

DATA VALIDATION

Replacing null values

First step was checking for any null values in the dataset and then replacing the null values that were found in column revenue with the mean revenue

```
#replace null values in revenue column with the mean revenue
mean_revenue = round(sales["revenue"].mean(),2)

sales["revenue"] = sales["revenue"].fillna(mean_revenue)
null_values = sales[sales["revenue"].isnull()]

#validate there is no nulls
sales.isna().sum()
```

Removing similar wording in sales method

there should have been 3 sales methods only in the dataset however due to similar wordings and typos there were more so i had to remove the extra by replacing them into the original 3

```
# replacing typos to have only 3 methods
sales["sales_method"].replace({'em + call':'Email + Call','email':'Email'},inplace = True)
sales["sales_method"].value_counts()
```

Years as customers column cleaned

Removed customers that had irregularities in their amount of years being a customer as the company was founded in 1984

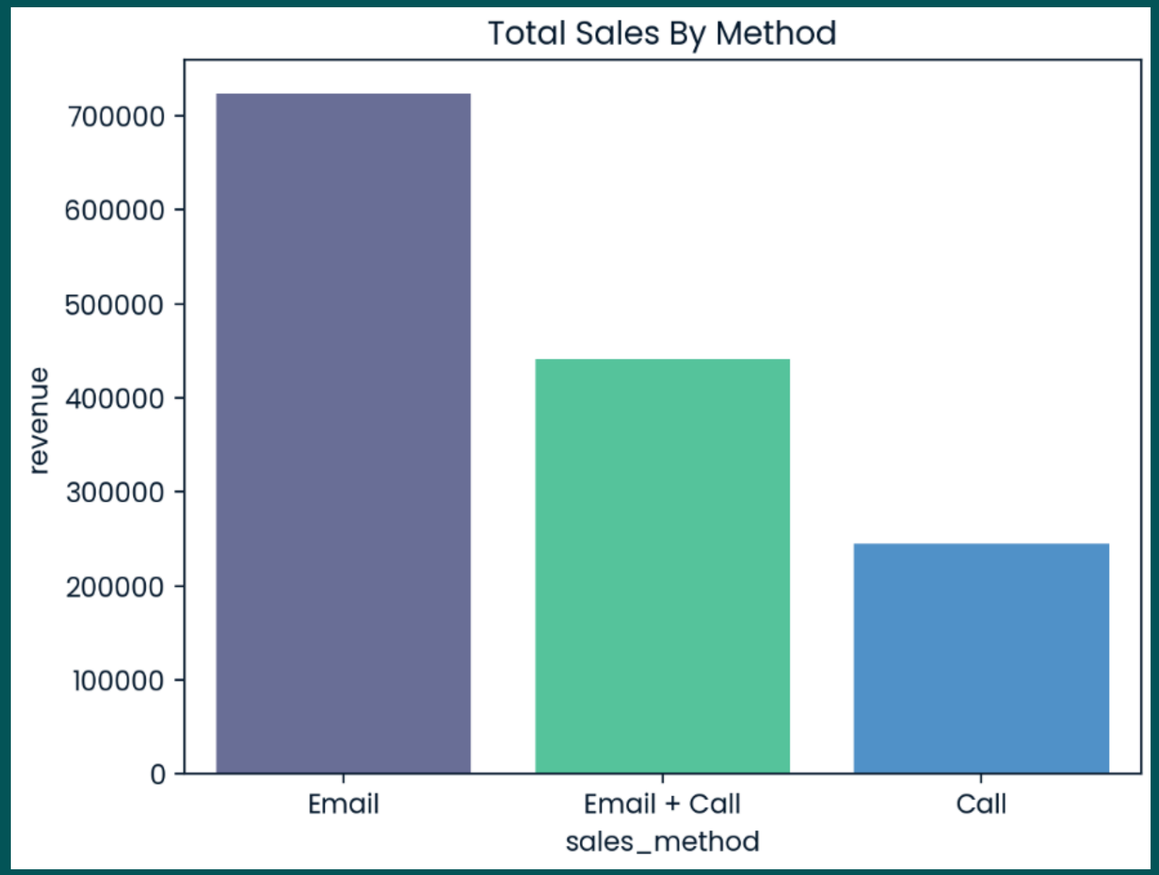
```
# company was founded 40 years ago so impossible to be customer more than 40 years
sales = sales[sales["years_as_customer"]<=40]
```

EXPLORATORY DATA ANALYSIS

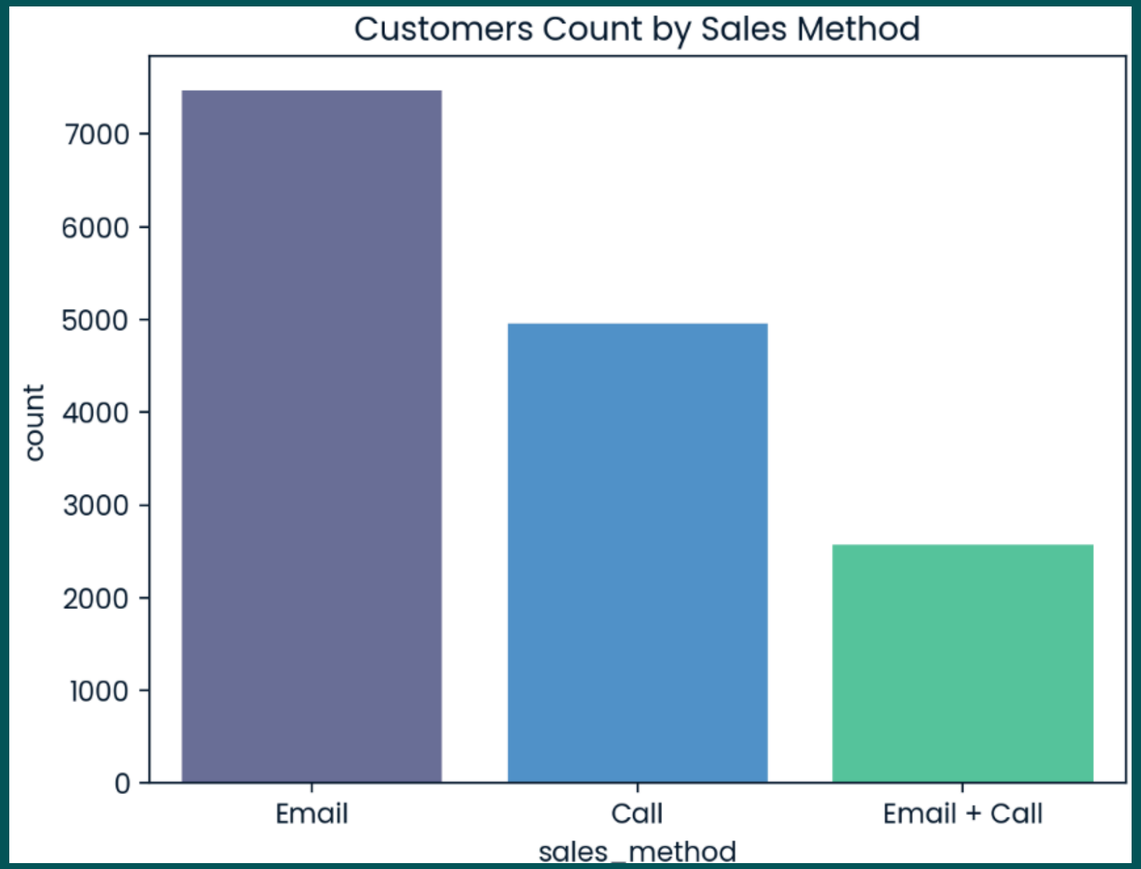
Exploration

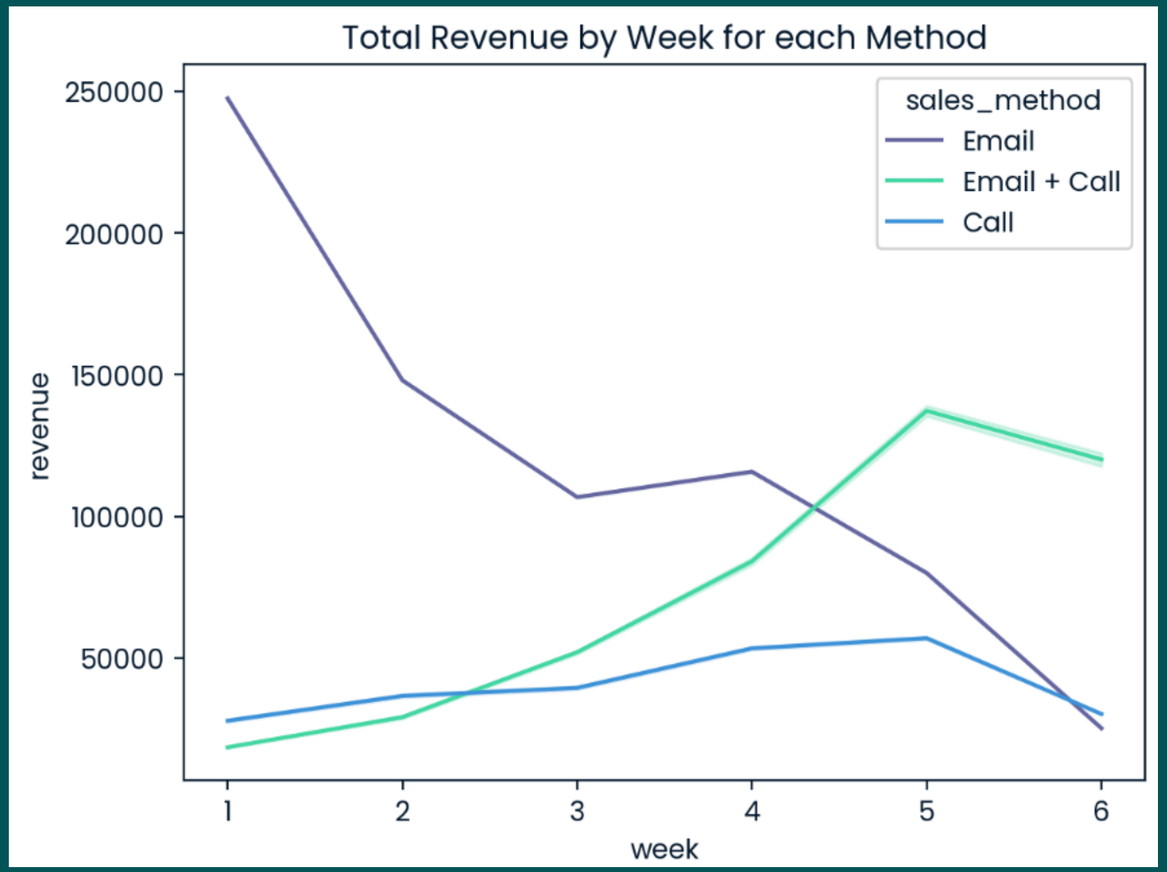
I created multiple visuals that tackled the following requirements while also making a few of my own that i found interesting

- How many customers were there for each approach?
- What does the spread of the revenue look like overall? And for each method?
- Was there any difference in revenue over time for each of the methods?



EXPLORATORY DATA ANALYSIS

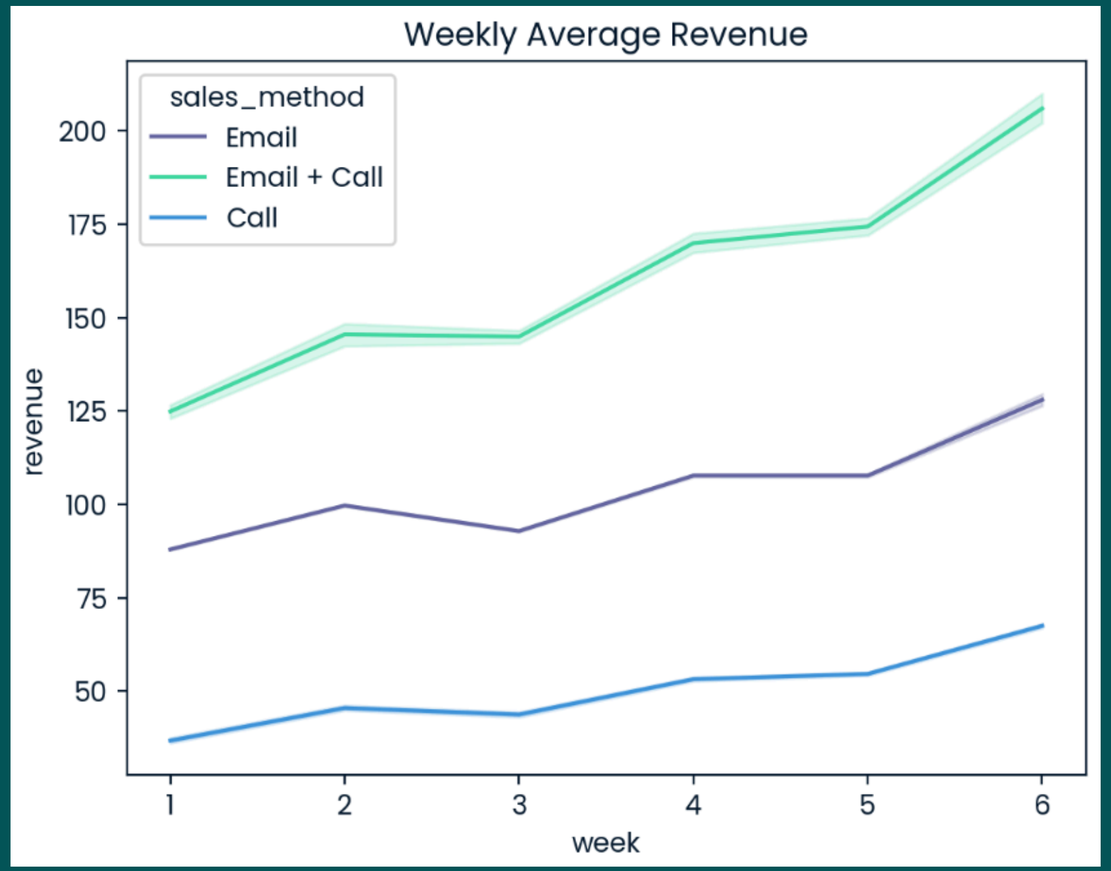




KEY FINDINGS

Metrics

Average Revenue per Week — This metric provides a fair comparison between sales methods as they are not biased to how many customers each method was used on



Current Estimation:

- The Email + Call method generated the highest average revenue per week.
- The Email method came in second place with a steady increase
- The Calls only method was the least effective, showing poor performance across all metrics.

RECOMMENDATIONS

According to my analysis these are the following recommendations that i would have for Pens and Printers:

- Use Average revenue by week as the main metric to compare between sale strategies
- Discontinue calls only sales strategy as it underperformed consistently
- Allocate more resources into Call + Email method as it had the highest average revenue by week
- Increase frequency of reminders sent to customers to further test whether it would result in an increase in revenue

THANK YOU!