Pens and Printers sales report

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Data Validation

Data Validation

Week	6 week sale was made, counted as weeks since product launch
Sales method	Contains 3 methods: Email, Call, Email + Call
Customer_id	Character, unique identifier for the customer
Nb_sold	Numeric, number of new products sold
Revenue	Numeric, revenue from the sales
Year as customer	Numeric, number of years customer has been buying from us
Nb site visit	Numeric, number of times the customer has visited our website in the last 6 months
State	Character, location of the customer

Handling missing values

Revenue column has 1074 missing values (Missing at randoms).

After regression imputation techniques, the evaluate results are RMSE: 69.5 and MAE: 52.89 (which are bad results)
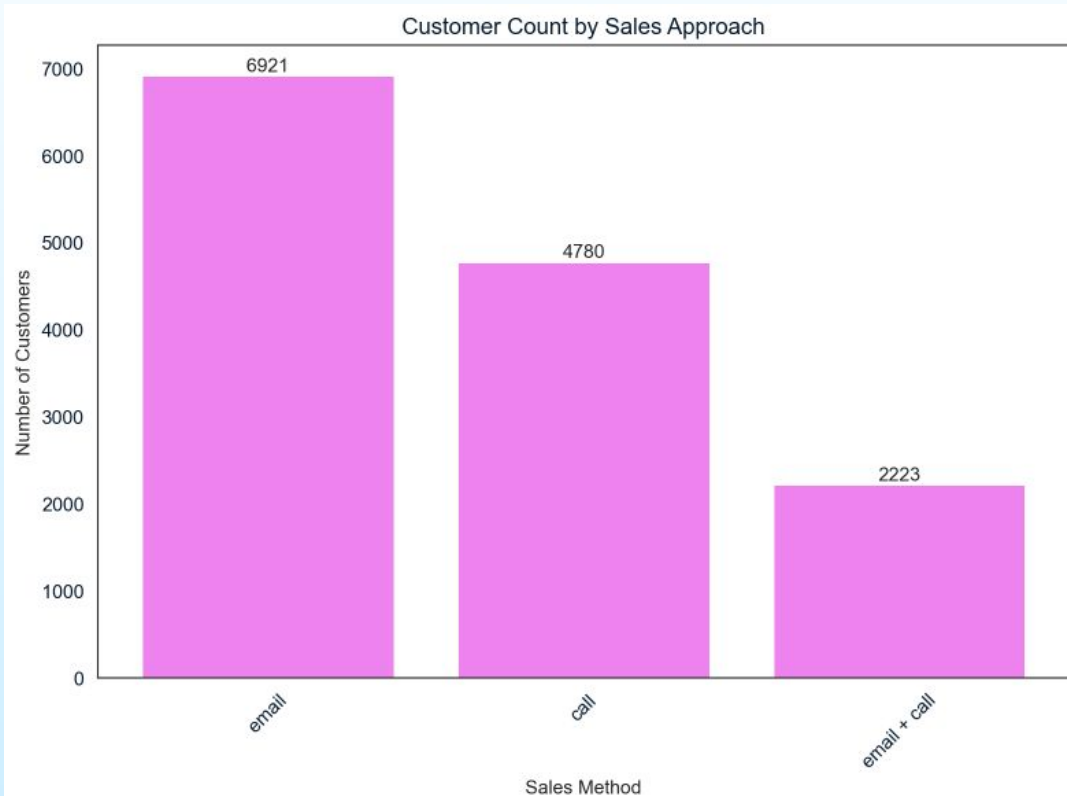
Solution: Delete rows with missing values.

02

Exploratory Analysis

How many customers were there for each approach?

★ The Email method engages the highest number of customers, totaling 6,921.
★ The Call method follows with 4,780 customers.
★ Meanwhile, the combined approach of Email + Call attracts the fewest customers, with 2,223.

Customer Count by Sales Approach

What does the spread of revenue look like overall?

★ **Top Sales Zones:** The spikes in sales around 50 and 90 units point to where demand is strongest.

★ **Sales High Points:** The sharp rises near 50 and 90 units highlight the most frequently purchased quantities.

★ **Low Sales Areas:** Sales dip noticeably around 70 units and beyond 120

★ **Other Insights** Transactions above $150 are infrequent but could represent premium or bulk purchases, potentially worth targeting with specialized campaigns.


Revenue Distribution per Transaction
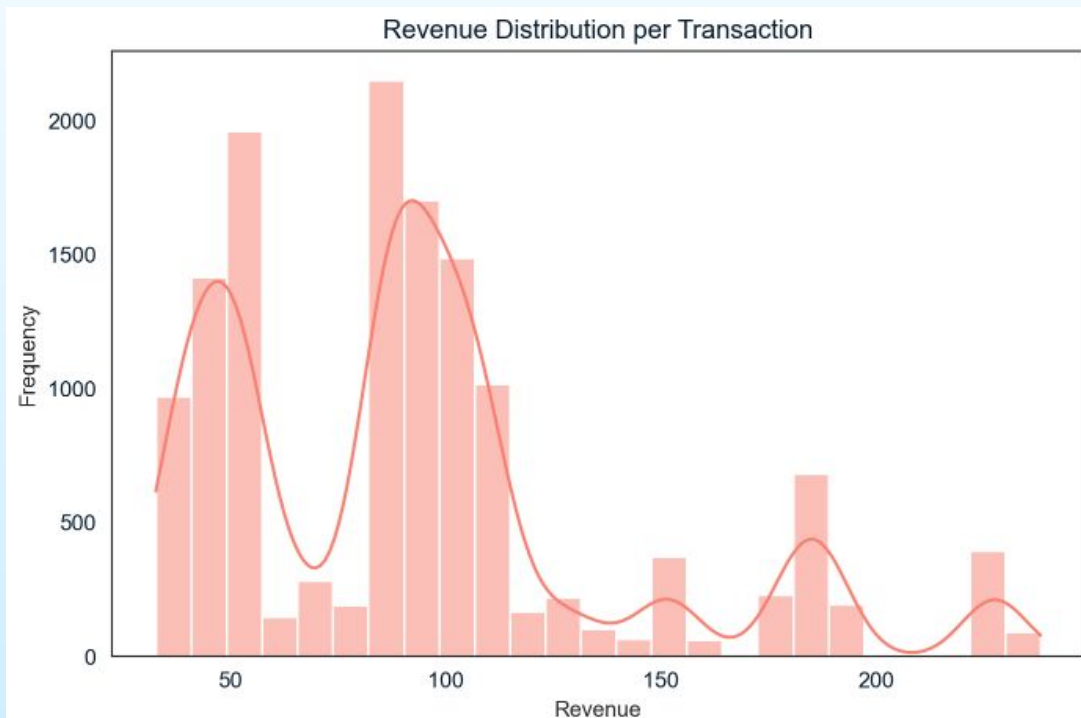
# What does the spread of revenue look like overall for each method?

★ **Email + Call:** This method exhibits a broad revenue range, between under 150 and over 200.

★ **Call:** The revenue for the 'Call' method mostly centers around 50, with some outliers above this mark.

★ **Email:** The 'Email' method shows a concentration of sales under 100 and just over 100, with outliers around 150.

Revenue by Sales Method
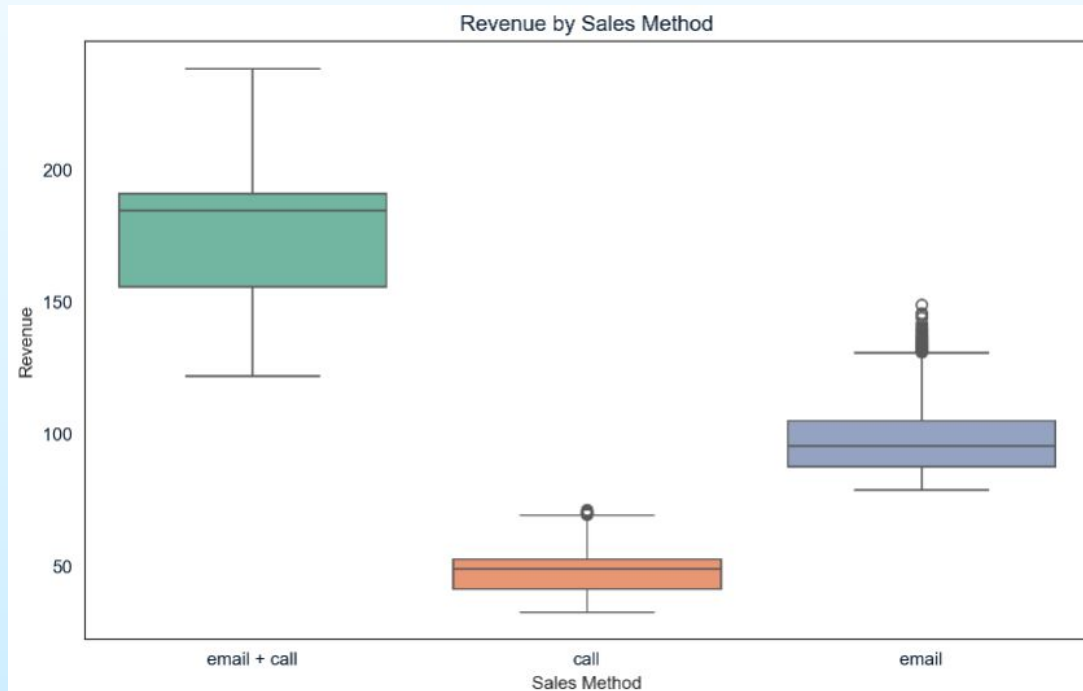
What does the spread of revenue look like overall for each method?

- Email + Call is the Most Effective Sales Method
- Call-Only Has the Lowest Performance
- Steady Growth in Revenue Efficiency
- Transaction count peaked in Week 1

Transaction Count and Average Revenue per Week by Sales Method
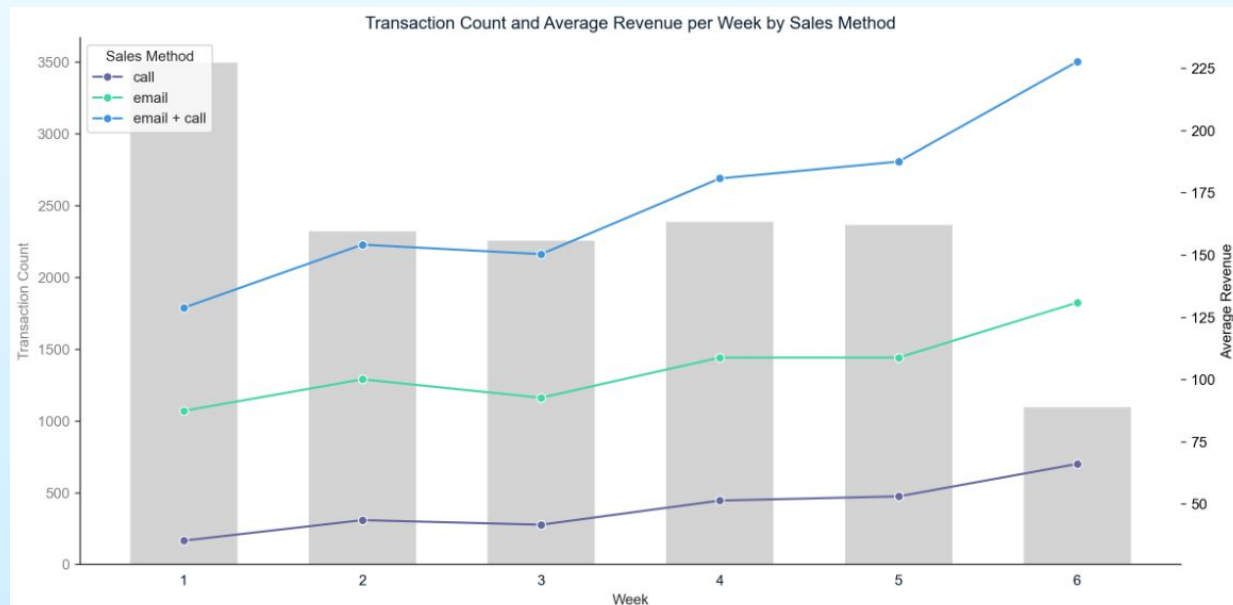
03

Recommendation

Sales method	Revenue	Transaction	SEI	ASEI
Email	672220.61	6921	672220.61	97.13
Call	227513.02	4780	113756.51	23.8
Email + Call	408256.69	2223	136085.56	61.22

SEI = Revenue / Effort Cost (Assump for Effort cost that Email = 1, Call = 2, Email + Call = 3)
ASEI = Average (SEI per Transaction)

Recommendation
- Prioritize Email method to maximize efficiency
- Maintain Email + Call method for targeted segments as a hybrid tool
- Reassess Call campaigns to reduce low-yield effort

→ Final Summary

- The analysis reveals that the "Email" method is the most efficient in terms of both SEI and ASEI, making it ideal for maximizing returns with minimal effort.
- While "Email + Call" generates higher total revenue, it demands significantly more resources and is best used strategically for high-value opportunities.
- The "Call" method underperforms in efficiency and should be reevaluated or enhanced.
- Weekly trends show growing effectiveness in combined methods, suggesting potential when used under the right conditions.
- Moving forward, regularly tracking SEI and ASEI and tailoring approaches to customer behavior will help optimize sales performance and support long-term business success.