# Targeted Mailing Campaign Analysis

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# Overview - Key Questions and Answers

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|---|---|
| **Can we increase profit with targeted mailings?** | • Yes. Our model also computes the number of customers to be targeted to maximize profit. |
| **What is the cost of not doing a mailing this year?** | • The opportunity cost of not proceeding with the mailing is estimated at $5.85 per customer. |
| **How do we decide which customers to target?** | • Our model identifies specific attributes of customers most likely to respond a mailing. |
| **Is a campaign budget of $45,000 adequate?** | • An increased budget would allow us to target certain customers to achieve the same profit margin as if we had mailed all our customers. |

# Assumptions

## Customer Data

We assume response and purchasing patterns of our customers this year will be similar to those of our customers last year, as our model is built based on last year's campaign data.

## Profit & Cost Data

We assume that data used to estimate profits and costs associated with a customer's response or non-response, as provided to us by our Business Analysts, is accurate.

## Cost of Mailing

We assume the average cost of sending a mailing is *$3 per customer,* regardless of the number of customers targeted.

# Model selection


After exploring several possible models, we found one based on **Logistic Regression** that performs reasonably well.

This model links whether a customer responded to our mailing last year to features associated with that customer. By identifying customers with those features, we can predict who will respond to our campaign this year.

**Potential identifying features** include:

- low lifetime average, but high number of days between visits (“entice them back”)
- high number of purchase visits
- high response rate from last year
- long-time customer on our files
- online shoppers over “CC” & “PS” franchise shoppers
- jewelry buyers over jacket buyers

# How many of our 100,000 customers should we target?

## At a budget of $45,000:

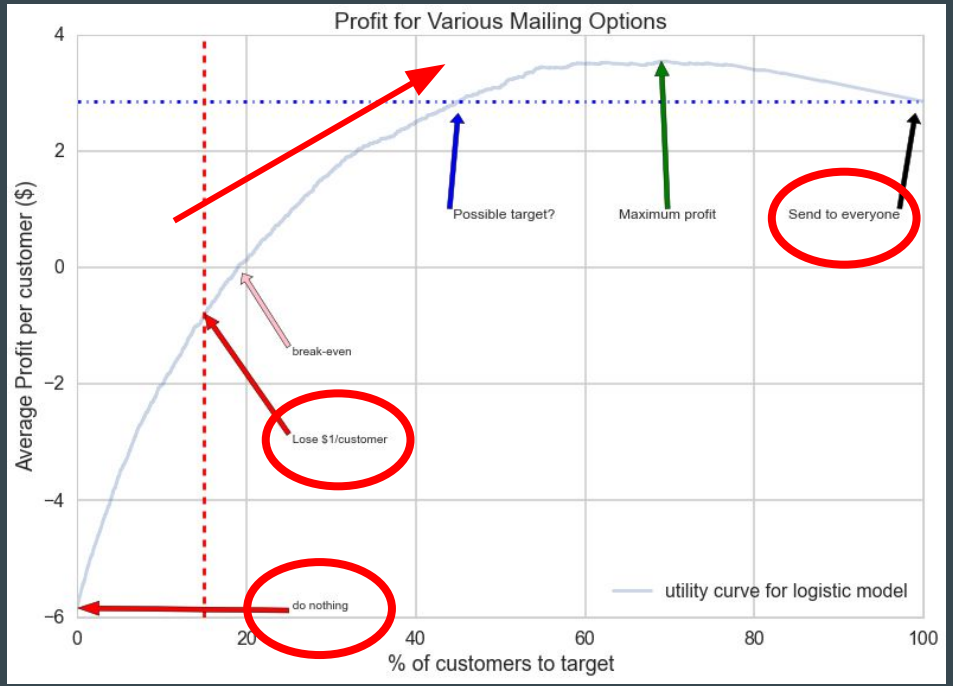
We target 15% of our customer base. We expect a ***loss*** (opportunity cost) of about *$1 per customer* to be incurred.

Comparing to two **baselines**, this is better than doing nothing ($5.85 loss), but worse than mailing everyone ($2.85 profit).

## With an increase in budget:

Profit can increase - past breakeven - to a maximum of **$3.54 profit/customer** by mailing 69% of customers: **~$210K budget**

Alternatively, with about $135K budget, we can achieve same effect as mailing all customers.



# Recommendations

## Target at least 45% of customers

Increasing the budget to $135,000 may allow us to achieve the same profit level as if we had mailed our entire customer base:

*forecasted profit: $2.85/customer*

However, increasing the budget to $215,000 would allow us to target about 70% of our customers, resulting in maximum profits:

*maximum profit: $3.54/customer*

## Verify assumptions

We assume a mailing cost of $3 per person. If we can negotiate a better (e.g. bulk) rate, we can further increase profit.

Data for our profit matrix may be incorrect. If there is double-counting, maximum profit might be attained with a $165,000 budget ($50K savings).