Q4 Board Meeting

Strategies for Middle Eastern Video Demand

https://github.com/Blackwatch0612/NYU-DABC-Marketing-Analytics-Homework/tree/main/MA_Final%20Individual%20Assignment

Zhijian Zhuang
zz4170

TABLE OF CONTENTS

Executive Summary

Current Situation

- Mevod operates a subscription business; customers pay a monthly fee for access to the service.
- Customers can watch content through a variety of platforms: on mobile or tablet devices.
- The strategy and marketing teams have been piloting 6 pricing schemes.
- All customers have been committed to 4-month contracts: at the beginning of each 4-month billing cycle

Objective

- Pick out best pricing scheme to increase conversion rate.
- More effectively allocate budget on multiple ads channels.
- increase the lifetime value of customers and improve our revenue, by reducing the number of churners through discount offers.

Analysis

- Use AB testing to select optimal pricing schemes
- Calculate average CAC to evaluate which ads channels are cost-effective
- Built two models to predict if a user will churn.

Results

- **Low monthly price without trial scheme** is the most effective one to increase conversion rate.
- Invest in **Facebook and affiliate** are most cost-effective strategy.
- **A revenue lift by 89%,** measured as the difference between revenue of no offer and revenue from offering predicted churners a 30% off discount.

Overview

Increase customer retention

Churn Model

Produce content on a variety platforms

AB Testing

Choose best pricing scheme

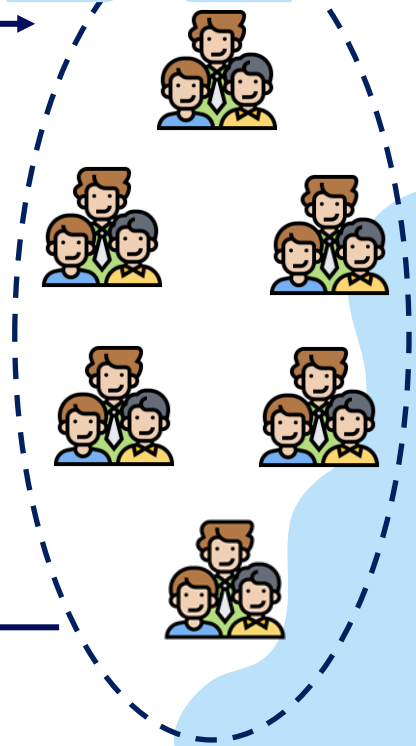
Pay subscription fee

Mevod

Allocation Evaluation

Optimize channel allocation

Run ads on multiple channels to attract customers



03 AB Testing

AB Testing

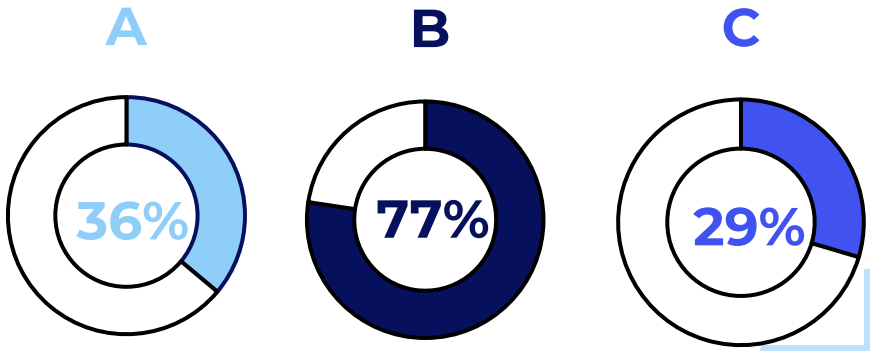
Key Assumption: conversion defined as customer who made past trial, didn't cancel after trial, and had revenue > 1

- A: Base_14_day_trial (Control)
- B: Low_no_trial (Treatment)
- C: High_14_day_trial (Treatment)

	A	B	C
True	71119	130	100
False	125925	38	238
Total	197044	168	338

*Pick a same period with no chance of data still in trial period corrupting calculation, so from 2019-07 to 2020-02

Conversion Rate



Conducting tests assuming 1 sample

Hypothesis Test 1:
α = 0.05

H0: convert_low = covert_base
H1: convert_low > covert_base

Z-score = 11.14 > 1.64

Reject the null hypothesis

Hypothesis Test 2:
α = 0.05

H0: convert_high = covert_base
H1: convert_high > covert_base

Z-score = -2.49 < 1.64

Fail to reject the null hypothesis

Conclusion: **low monthly price without trial** scheme was effective and increased conversion rate

04 Attribution & Allocation

Definition & Assumption in CAC Evaluation

Definition of customer acquisition:

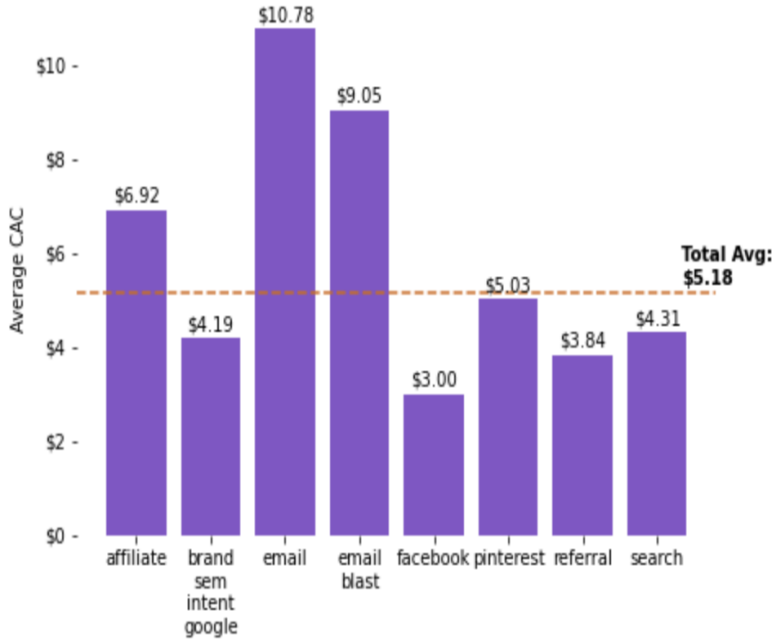
- Customers have past trial
- Did not request refund
- Have actual payment on subscription

Key assumptions:

- Acquisition channel of subscriber base is representative of all customers
- **21%** of people who make past trial request a refund for subscriber base. Assume this holds true for all customers.

Attribution technical	Spending	Total customer acquisition	CAC
Affiliate	139500	20170.03	6.92
Brand sem intent Google	216100	51544.45	4.19
Email	760600	70554.11	10.78
Email_blast	226400	25006.33	9.05
Facebook	552700	184118.43	3.00
Pinterest	63300	12579.72	5.03
Referral	73400	19127.20	3.84
Search	232500	53931.43	4.31

Average CAC Analysis



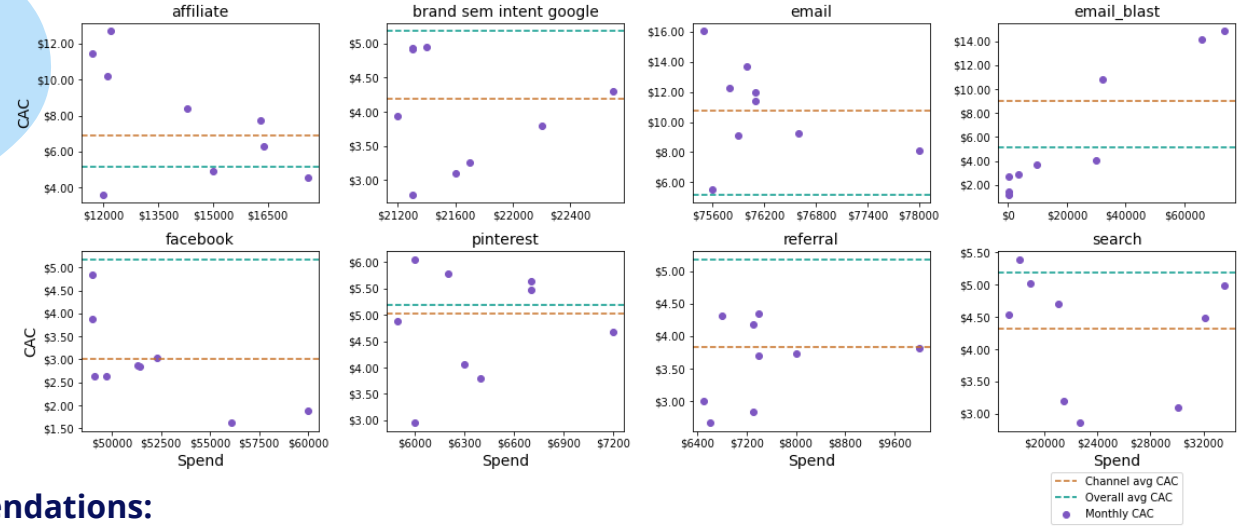
Observations:

- In the past 9 months, we spend **$2,264,500** in total, reached more than **437,032** customers
- Average CAC is around **$5.18/customer**
- Among all channels, brand sem intent google, facebook, pinterest, referral and search channels are lower than toal average CAC.
- **Facebook** is the most effective, email is the least effective.

Takeaway of Average CAC Analysis

Conclusion:

- Low investment in Facebook at the moment. Too much investment in email. Current strategy has too much money in email, but more should be invested into **Facebook and affiliate.**



Recommendations:

- Affiliate - Better have high investment, 17600 is good
- Brand SEM intent google - Low spend around 21300 is good because it has a clear diminishing returns
- Email - Always performs lower than average. Recommend pulling investment from it.
- Email blast - Performs well at low spend, better less than 29800
- Facebook - Performing well at high spend, even at the current highest spend of 60000. Can try spending more.
- Pinterest - Performs well at low amount of spending, around 6300
- Referral - Medium amount of investment

05 Churn Model Analysis

Churn Model Analysis

1. Key Assumptions

- The acceptance probability of each subscriber is independent from offer attractiveness.
- Offer acceptance rate by churners = 30%
- Threshold for receiving offer = 50%
- Discount rate = 30% off
- If non-churner are offered discount, acceptance rate = 100%

2. Churn Prediction

- Input total 35 features. including age, operating system, gender, duration of service use and so on.
- Applied linear and logistic regressions models to predict users' churn probability.
- If the probability > threshold, we predict them as "churn".

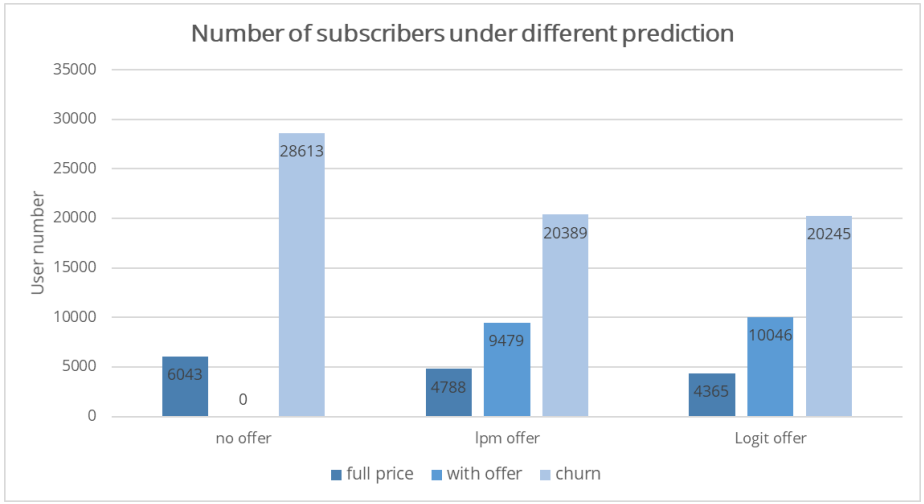
2. Strategy Implementation

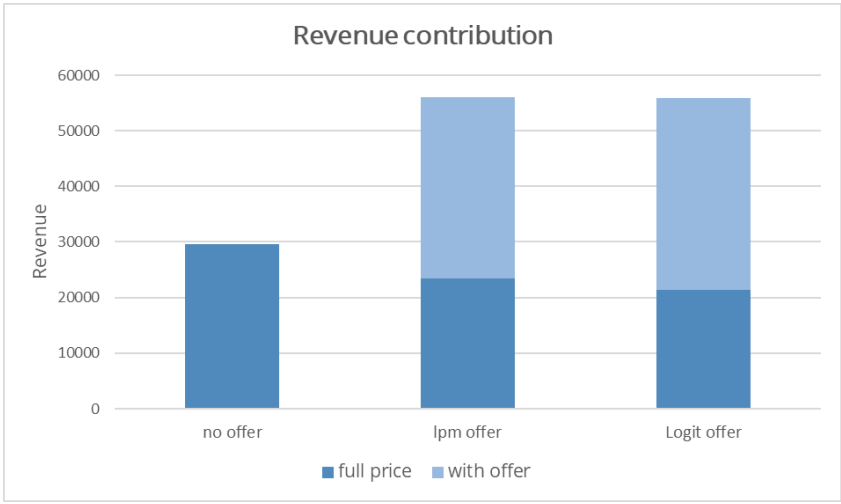
- Provided discount to predicted churners and stimulate the retention offer scenario.
- Calculated the expected revenue lift and churn rate drop

Predicted Results Of Revenue

About 8300
Less churner comparing to no offer

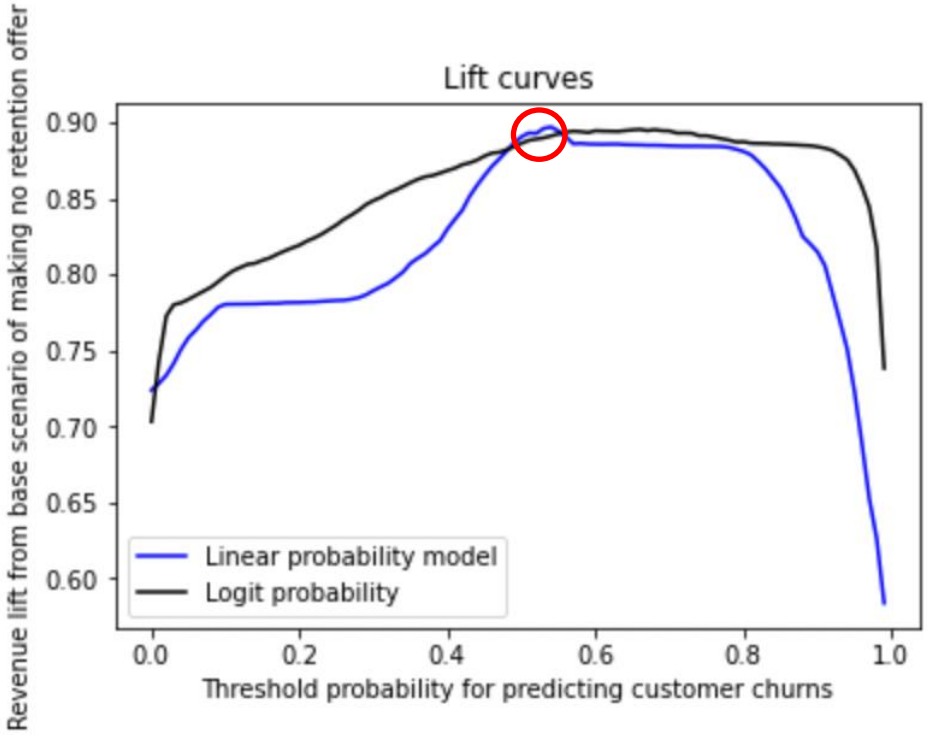
$26,300
Expected increase in revenue





Threshold Level Consideration

- **Current threshold: 50%** (Mostly used cutoff in predictive models)
- **Goal:** find the cutoff to maximize revenue lift



Sensitivity Analysis

- Threshold is the cutoff probability to distinguish between predicted churners (prob > threshold) and non-churners.
- High threshold captures actual churners more precisely, but can also miss churners.

Observation

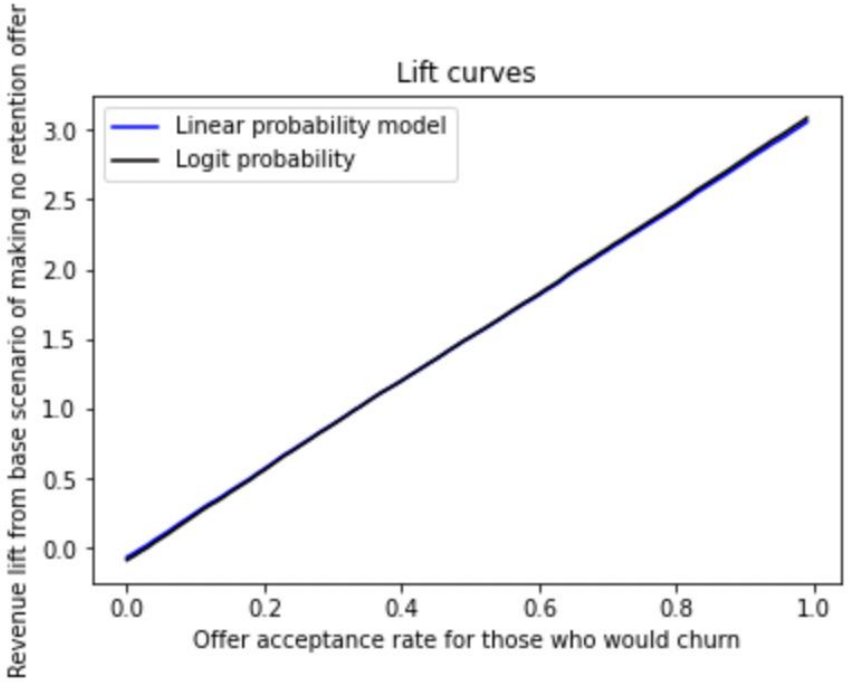
- Under our strategy, rev. lift is maximized when threshold is at **50%~57%,** at which revenue can increase by **89%**.

Further actions

- Our goal is to always find optimal threshold that maximize revenue lift as values in our assumption change.

Offer Acceptance Rate

- **Currently assumed acceptance rate by churners: 30%**



Sensitivity Analysis

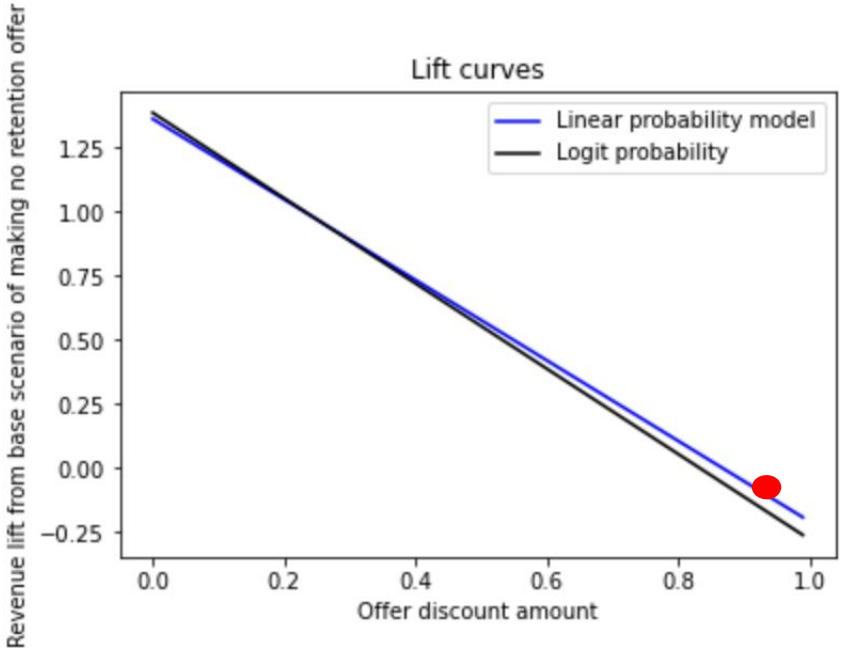
- Churner's offer acceptance rate is **positively related** to revenue lift.

Further actions

- Our goal is to always find optimal threshold that maximize revenue lift as values in our assumption change.

Discount Offer Consideration

- **Current discount: 30% off**



Sensitivity Analysis

- Higher discount rate may lead to decrease in revenue lift.
- Our current assumption doesn't reflect that relationship between discount rate and acceptance rate.

Observation

- With current assumptions held, the maximum discount rate to offer is **90%.**
- If the discount rate > 90%, the revenue will be lower than the base scenario.

Further actions

- **Offer attractiveness can impact customer decision!** Their relationship requires further exploration.

Future Directions for Improvement

01

Assumptions Consideration

- Adjust key assumptions base on our business scenario and the optimal outcomes, as we mentioned.

02

Current models

- In AB Testing, we may need to be more preciseness and calculate the optimal sample size.
- In Attribution & Allocation evaluation, it is better to calculate marginal CAC to observe whether the diminishing return existing in each channel if we have precise ads spending plan in each month.
- In churn model analysis, our prediction only relied on linear and logistic regression models.
- We can train more models, such as decision tree, to predict results and observe the differences.

03

Potential models

- We could apply customer segmentation to help the marketing team design acquisition strategies supporting the Executive team’s growth objective.