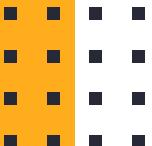


# Project\_2

## Platform Data Analysis

# Outline

- Ali Business Model
- Data Analysis – Regression
- Evaluation and Recommendation
  - Advertisement
  - Sellers
  - Buyers

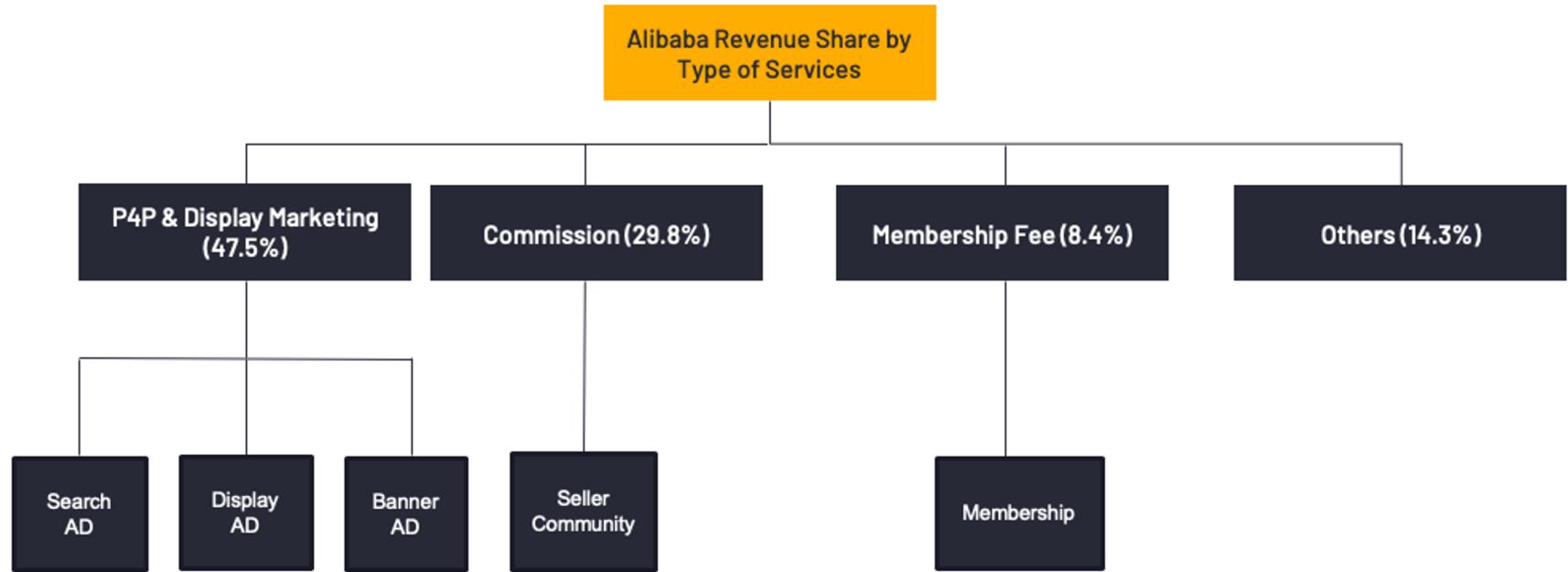




# 1. Business Model



# Business Model of Alibaba



- ▪ ▪ ▪ •Online marketing services.
- ▪ ▪ ▪ •Commission on transactions.
- ▪ ▪ ▪ •Membership fees and value-added services.



## 2. Data Analysis



# Data Analysis - Regression

## **Scenario 1**

Dependent Variables (Y): **Search AD**

Independent Variables (X): **Direct\_Volume + Referral\_Volume + Search\_Volume + Is\_weekend**

## **Scenario 2**

Dependent Variables (Y): **Display AD**

Independent Variables (X): **Direct\_Volume + Referral\_Volume + Search\_Volume + Is\_weekend**

## **Scenario 3**

Dependent Variables (Y): **Membership Fee**

Independent Variables (X): **Direct\_Volume + Referral\_Volume + Search\_Volume + Is\_weekend**

# Data Analysis - Regression - Scenario 1

```

Call:
lm(formula = `Search AD` ~ `Referral Volumn` + `Search Volumn` +
    `Direct Volumn` + is_weekend, data = my_data)

Residuals:
    Min      1Q  Median      3Q     Max 
-492337 -87071   29486   92868  449998 

Coefficients:
                Estimate Std. Error t value Pr(>|t|)    
(Intercept) 7.872e+05  3.762e+04 20.926 < 2e-16 ***
`Referral Volumn` 1.053e-01  1.471e-02  7.160 4.72e-12 ***
`Search Volumn`  4.395e-02  2.749e-02  1.598  0.111  
`Direct Volumn`  4.930e-02  3.242e-02  1.521  0.129  
is_weekend     -3.546e+05  2.434e+04 -14.570 < 2e-16 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

```

Residual standard error: 153700 on 353 degrees of freedom  
Multiple R-squared: 0.6372, Adjusted R-squared: 0.6331  
F-statistic: 155 on 4 and 353 DF, p-value: < 2.2e-16

# Data Analysis - Regression - Scenario 2

```
Call:  
lm(formula = `Display AD` ~ `Referral Volumn` + `Search Volumn` +  
  `Direct Volumn` + is_weekend, data = my_data)  
  
Residuals:  
    Min      1Q  Median      3Q     Max  
-759291 -352967 -145165  248645 1818569  
  
Coefficients:  
              Estimate Std. Error t value Pr(>|t|)  
(Intercept) 3.065e+05 1.224e+05  2.504  0.01272 *  
`Referral Volumn` 6.842e-02 4.785e-02  1.430  0.15358  
`Search Volumn` 2.497e-01 8.944e-02  2.792  0.00553 **  
`Direct Volumn` -3.103e-02 1.055e-01 -0.294  0.76872  
is_weekend     7.229e+04 7.917e+04   0.913  0.36184  
---  
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1
```

Residual standard error: 499900 on 353 degrees of freedom  
Multiple R-squared: 0.03465, Adjusted R-squared: 0.02371  
F-statistic: 3.167 on 4 and 353 DF, p-value: 0.0141

- ■ ■ ■ ■
- ■ ■ ■ ■
- ■ ■ ■ ■
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- ■ ■ ■ ■
- ■ ■ ■ ■
- ■ ■ ■ ■

# Data Analysis - Regression - Scenario 3

Call:

```
lm(formula = Membership_Fee ~ `Referral Volumn` + `Search Volumn` +  
  `Direct Volumn` + is_weekend, data = my_data)
```

Residuals:

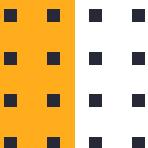
Min	1Q	Median	3Q	Max
-32183222	-3136057	1835118	5023656	19977871

Coefficients:

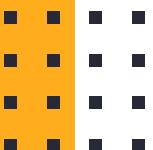
	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	3.007e+07	2.212e+06	13.595	< 2e-16 ***
`Referral Volumn`	7.566e+00	8.649e-01	8.748	< 2e-16 ***
`Search Volumn`	7.410e+00	1.617e+00	4.583	6.36e-06 ***
`Direct Volumn`	-1.040e+01	1.906e+00	-5.455	9.25e-08 ***
is_weekend	-9.187e+06	1.431e+06	-6.419	4.42e-10 ***

---

Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1



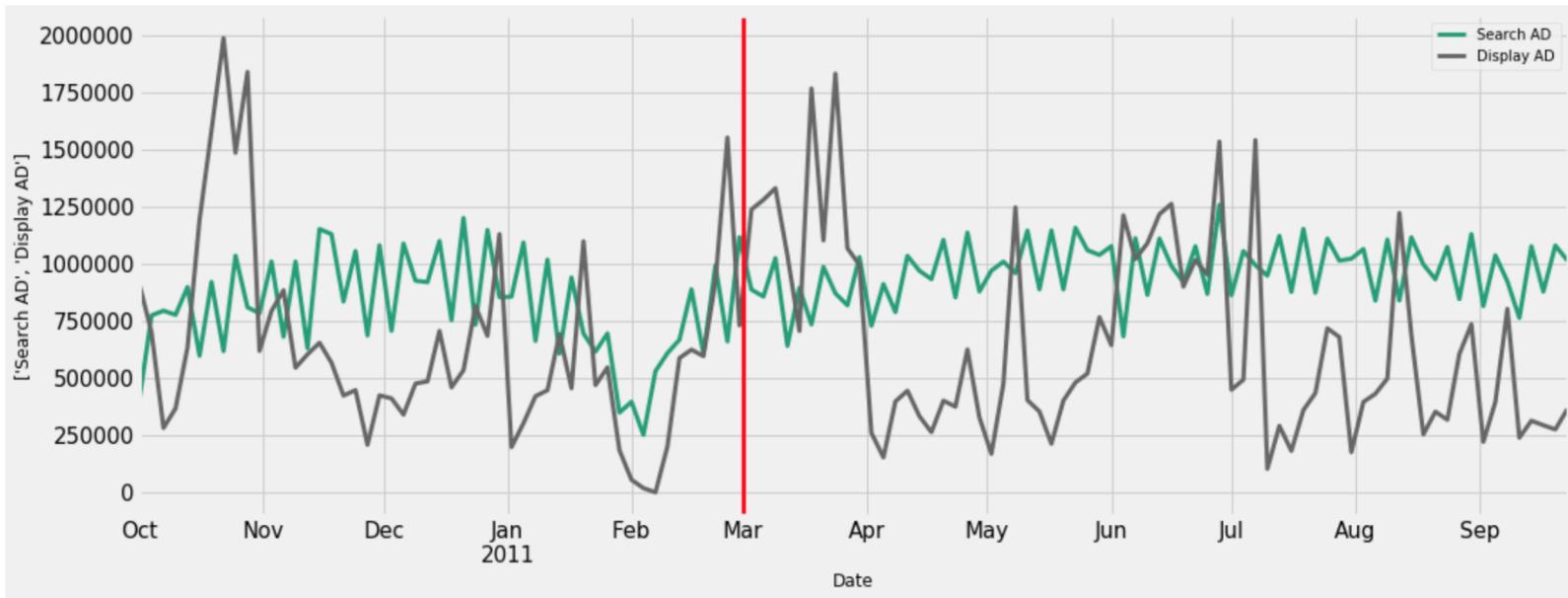
# Insight From the Regression Analysis



## **3-1 . Evaluation & Recommendation - *Advertisement***



# Healthy or not? - Advertisement



Search Ad Ratio > Display Ad Ratio

Trend of Search Ad

# Recommendation

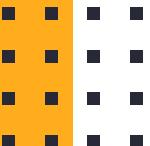
## CPC

(Cost Per Click; Cost Per \$ Thousand Click-Through): Cost per click. Charged with every click.

**CPC Revenue= keyword search ad loading rate \* user click-through rate \*CPC unit price**

CPC unit price= next bid \*(next quality score/own quality score) +0.01

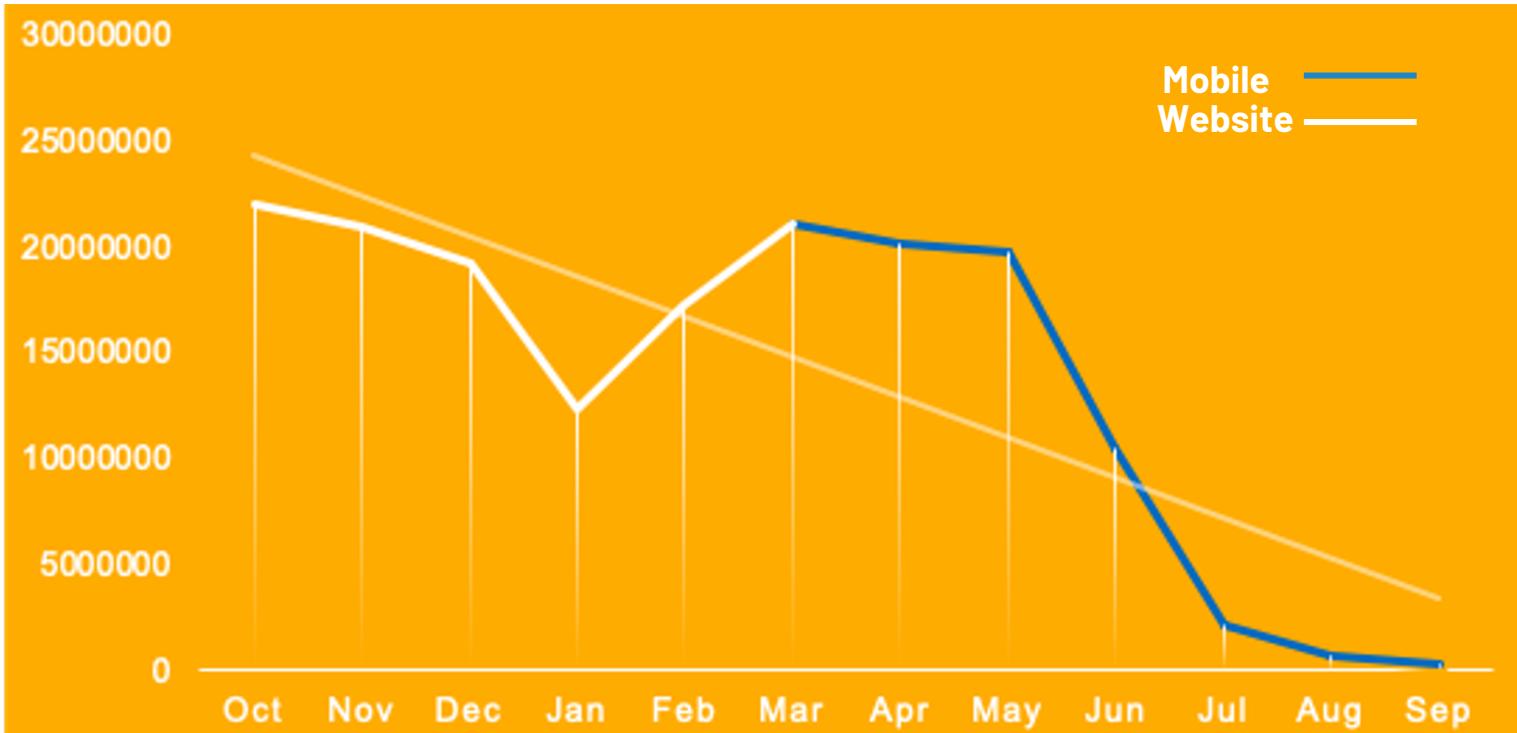
1. **Higher emotional value**
2. **Rich description**
3. **Urgency**
4. **Constantly test and summarize**



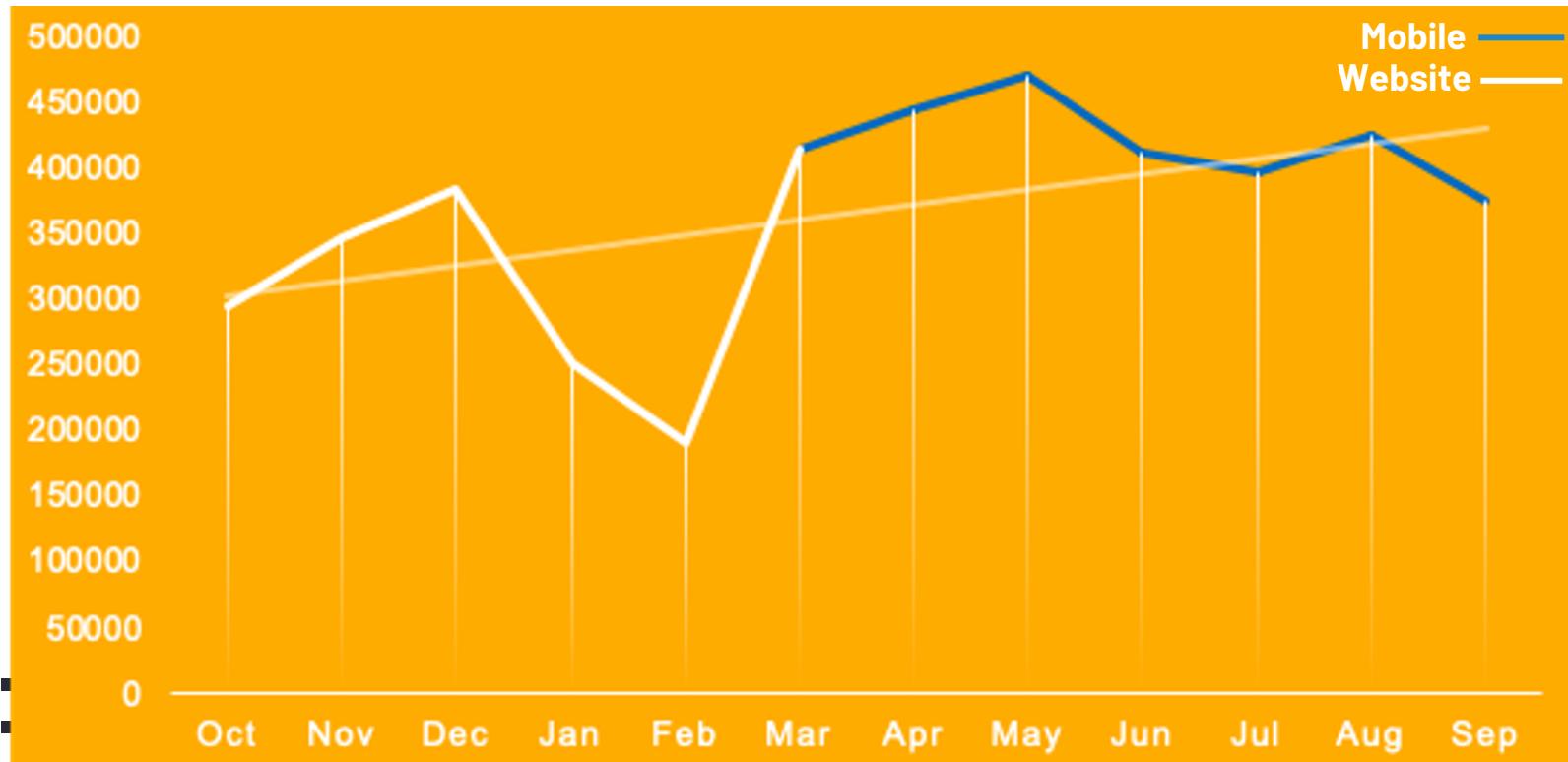
## 3-2. Evaluation & Recommendation - *Sellers*



# Healthy or not? - Seller Community



# Healthy or not? - Membership



# How to engage more sellers?

01

02

03

04

## Price

- Discount for new
- Mobile Channel

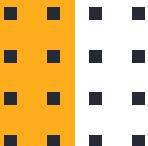
## Place

## Promotion

- Referral incentive
- KOL-tell stories

## Product

- Advertising
- Analytics Tools
- Business support

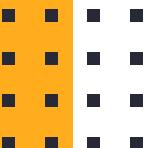


## 3-3. Evaluation & Recommendation - *Buyers*



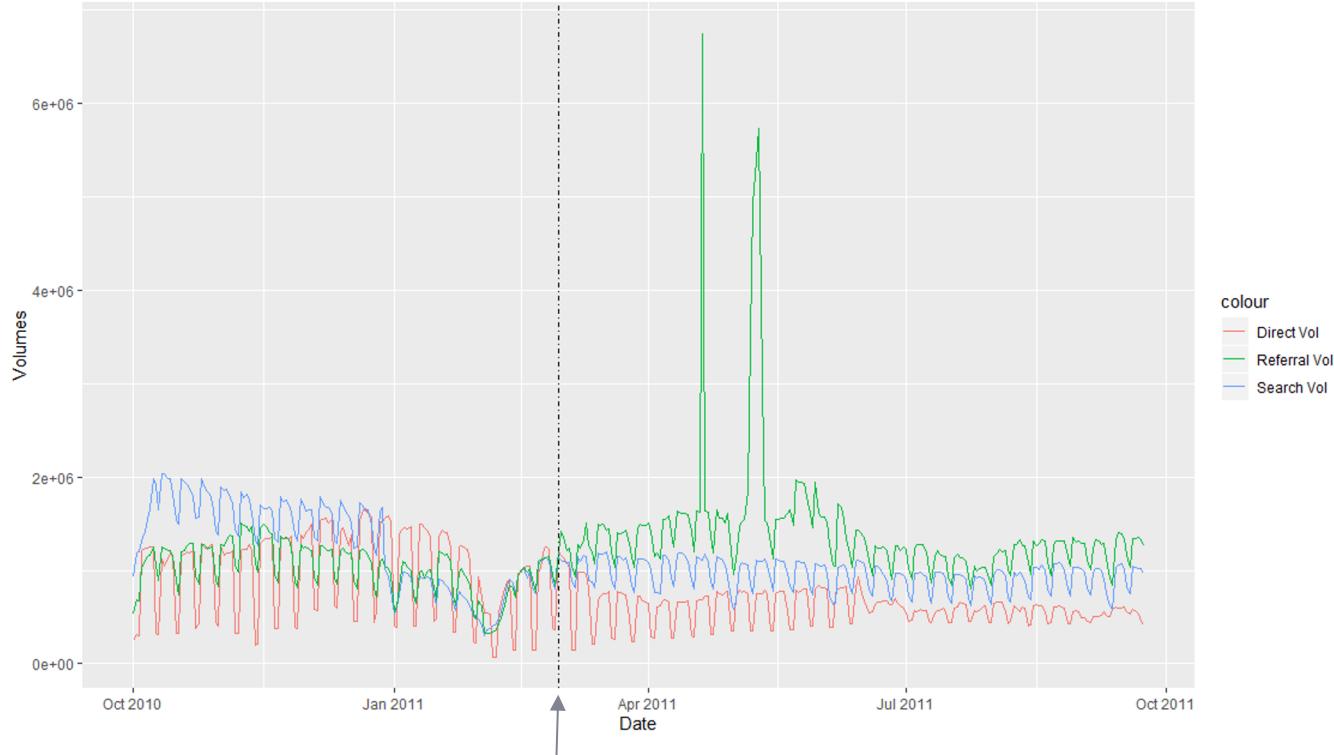
# Buyer Volumes

- Direct Volume:
  - Users enter the website directly
- Search Volume:
  - Users enter through search engines
- Referral Volume:
  - Users enter from third-party links



# Buyer Volumes, Healthy or Not ?

- Descriptive Data Analysis - Time Series



# Not Healthy! Recommendations

Web only:

Search > Direct ≈ Referral

Ideal: Direct > Search > Referral

Recommendations:

- Increase App engagement and user retention.
- Rely less on referral volume.

With App:

Referral > Search > Direct





Thanks!