# DevFest 2021

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# Machine Learning Use Cases for Marketing and Retails

# Outline

**Business Cases | Marketing**

- √ Customer Churn

- √ Direct Marketing

- √ Customer Segmentation

- √ Product Bundling

- √ Measure Customers Feedback (Sentiment Analysis)

**Business Cases | Retail**

- √ Demand Forecasting

- √ Customer Segmentation

- √ Customer Targeting

- √ Product Bundling

- √ Order Recommendation

# Marketing

Customer Churn

# Customer Churn

## Step 1

**Business Problem**

How to predict **customer** that more likely to **churn** so we can prioritize our **retention** efforts?

## Step 2

**Define Data -** Unity Analysis

Customer

## Step 3

**Define Data -** Variables

Customer ID, Recency, Frequency and Monetary

## Step 4

**Define Data -** Label

Customer Churn

# Customer Churn

## Step 5

### Action

Retention team can **focus** their resources on the **customers** most at risk and offer them incentives to remain loyal

## Step 6

### Success Criteria

Minimize customer that defect to the competitor

## Step 7

### Threshold

Below certain customer churn value

# Marketing

Direct Marketing

# Customer Churn

## Step 1

**Business Problem**

How to choose the right prospects so the cost can be optimized to convert prospects into customers?

## Step 2

**Define Data -** Unity Analysis

Prospects

## Step 3

**Define Data -** Variables

Prospects ID, Prospect Profile (Age, Gender, Location, Job etc), External data (Income per capita, Weather)

## Step 4

**Define Data -** Label

Buy or not Buy

# Direct Marketing

## Action

To subset customer for better promotion targeting

## Success Criteria

Get interpretable customer archetype

## Threshold

Probability to purchase on certain percent

# Marketing

## Customer Segmentation

# Customer Churn

## Step 1
### Business Problem

What is the characteristics of our customer ?

## Step 2
### Define Data - Unity Analysis

Customer ID

## Step 3
### Define Data - Variables

Frequency, Recency, Monetary

## Step 4
### Define Data - Label

No-label (Unsupervised)

# Direct Marketing

**Step 5**

**Action**

Offering marketing material

**Step 6**

**Success Criteria**

Customer purchase rate improved

**Step 7**

**Expected Output**

# Marketing

Product Bundling

# Product Bundling

## Step 1

**Business Problem**

What kind of **product** that customer
might to **buy**?

## Step 2

**Define Data -** Unity Analysis

Ascendant-Descendant pair

## Step 3

**Define Data -** Variables

Product pair, Order ID, Frequency

## Step 4

**Define Data -** Label

No-label (Unsupervised)

# Direct Marketing

## Action

Offer Product Recommendation to Customer if lift score below certain number

## Success Criteria

Customer buy the offered product

## Threshold

Probability to purchase on certain percent



| Rule | Support | Confidence | Lift |
|------|---------|-----------|------|
| A | 3/4 | - | - |
| B | 2/4 | - | - |
| A→B | 1/4 | 1/3 | 2/3 |
| B→A | 1/4 | 1/2 | 2/3 |

# Marketing

Measure Customer Feedback
(Sentiment Analysis)

# Sentiment Analysis

## Step 1

**Business Problem**

How to measure customers feedback?

## Step 2

**Define Data -** Unity Analysis

Comments

## Step 3

**Define Data -** Variables

Restaurant, Customer Profile (ID, Sex, Age, Country) Customer Origin (Local, Abroad, Both), Date, Comment

## Step 4

**Define Data -** Label

Customer Feedback Score (Positive,Neutral, Negative)

# Sentiment Analysis

## Step 5

### Action

If restaurant rating or customer feedback score goes below certain number, send notification

## Step 6

### Success Criteria

Improve restaurant reputation and sales

## Step 7

### Threshold

Highest Sentiment Score

# Retail

Demand Forecasting

# Demand Forecasting

## Step 1

### Business Problem

How much demand on the several periods ahead, so we can restock properly ?

## Step 2

### Define Data - Unity Analysis

Time Unit (week/month/other)

## Step 3

### Define Data - Variables

Unit, Volume, Weight, Demand in previous period

## Step 4

### Define Data - Label

Demand over time in certain period

# Demand Forecasting

## Step 5

### Action

If the Stock won't sufficient for next certain periods demand, then we do restocking

## Step 6

### Success Criteria

Minimize the occurrence of understock and overstock phenomenon

## Step 7

### Threshold

Stock Amount less than next certain time unit demand

## Step *

### Assumption

Forecasting in time unit, it can be adjust to another time frame.

# Retail

Customer Targeting

# Customer Targeting

## Step 1

**Business Problem**

How to target promotion or offer to potential customer based on previous customer ?

## Step 2

**Define Data -** Unity Analysis

Customer ID

## Step 3

**Define Data -** Variables

Frequency, Recency, Monetary

## Step 4

**Define Data -** Label

Customer Loyalty Level
(Previous Customer)

# Customer Targeting

## Step 5

### Action

Offer Product Promotion to the Selected Customer

## Step 6

### Success Criteria

Maximize the Return On Investment

## Step 7

### Threshold

Top 10% Customer with highest response rate

# Retail

Order Recommendation

# Product Bundling

## Step 1

**Business Problem**

What kind of **product** that Customer
might to **buy**?

## Step 2

**Define Data -** Unity Analysis

Ascendant-Descendant pair

## Step 3

**Define Data -** Variables

Product pair, Order ID, Frequency

## Step 4

**Define Data -** Label

No-label (Unsupervised)

# Direct Marketing

**Action**

Offer Product Recommendation to Customer if lift score below certain number

**Success Criteria**

Customer buy the offered product

**Threshold**

Probability to purchase on certain percent

| Rule | Support | Confidence | Lift |
|------|---------|------------|------|
| A | 3/4 | - | - |
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| A→B | 1/4 | 1/3 | 2/3 |
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