



Business Cases

Machine Learning on Retail

Part I

1. Demand Forecasting
2. Customer Segmentation
3. Customer Targeting
4. Product Bundling
5. Order Recommendation



Demand Forecasting

Business Case #1

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.

Step 1

Business Problem Statement

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

Step 2

Define Data - *Unit Analysis*

Time Unit (week/month/other)

Step 3

Define Data - *Variable*

Unit, Volume, Weight, Demand in previous period

Step 4

Define Data - *Label*

Demand over time in certain period



Customer Segmentation

Business Case #2

Step 1

Business Problem Statement

What is the **characteristics** of our **customer** ?

Step 2

Define Data - *Unit Analysis*

Customer ID

Step 3

Define Data - *Variable*

Frequency, Recency, Monetary

Step 4

Define Data - *Label*

No-label (Unsupervised)

Step 5

Action

To subset customer for better promotion targeting

Step 6

Success Criteria

Get interpretable customer archetype

Expected Output

:





Customer Targeting

Business Case #3

Step 1

Business Problem Statement

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

Step 2

Define Data - *Unit Analysis*

Customer ID

Step 3

Define Data - *Variable*

Frequency, Recency, Monetary

Step 4

Define Data - *Label*

Customer Loyalty Level
(Previous Customer)

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





Product Bundling

Business Case #4

Step 1

Business Problem Statement

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

Step 2

Define Data - *Unit Analysis*

Ascendant-Descendant pair

Step 3

Define Data - *Variable*

Product pair, Order ID, Frequency

Step 4

Define Data - *Label*

No-label (Unsupervised)

Step 5

Action

Offer Product Recommendation
to Customer if lift score below
certain number

Step 6

Success Criteria

Customer buy the offered product

Step 7

Threshold

Lift score below certain number



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



Order Recommendation

Business Case #5

Step 1

Business Problem Statement

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

Step 2

Define Data - *Unit Analysis*

Ascendant-Descendant pair

Step 3

Define Data - *Variable*

Product pair, Order ID, Frequency

Step 4

Define Data - *Label*

No-label (Unsupervised)

Step 5

Action

Offer Product Recommendation
to Customer if lift score below
certain number

Step 6

Success Criteria

Customer buy the offered product

Step 7

Threshold

Lift score below certain number



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