

THE MILLION DOLLAR SECRET :

PREDICTING PREMIUM SUBSCRIBERS FOR XYZ

GROUP 16



AGENDA

01

CURRENT CHALLENGE

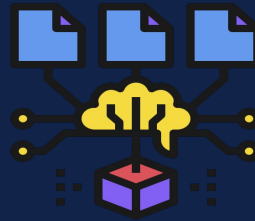
Challenge faced by
the marketing team.



02

SOLUTION : BUSINESS IMPACT

How our predictive
model solves this
challenge.



03

IMPACT CHECK

How is are model
giving such an
impact?



01.

CURRENT CHALLENGE





- In this era of audio and video streaming, XYZ music company operates on freemium model in this booming industry.
- XYZ conducted a marketing campaign targeting non-subscribers, so that the users will sign up for a premium subscription.
- However, it was not able to efficiently predict which non-subscribers are likely to respond to the marketing campaign & sign up for the premium service.



- Therefore, XYZ music company incurred high marketing costs due to inefficient targeting and broader outreach efforts.
- The lack of precision in identifying potential premium subscribers lead to resource wastage and a suboptimal return on marketing investment.





02. OUR SOLUTION

A model to better predict likely adopters of premium subscription.



BUSINESS IMPACT OF OUR PREDICTIVE MODEL

CUSTOMER CONVERSION RATE



MARKETING COST REDUCTION

Customer conversion rate increases by **116%** after implementing our model.



Total marketing costs reduces by **53%** after implementing our model.





WITHOUT MODEL IMPLEMENTATION

Customer Conversion Rate : **3.08%**

Total Marketing Cost : **\$124620**

(Assuming average marketing cost per customers as \$10)



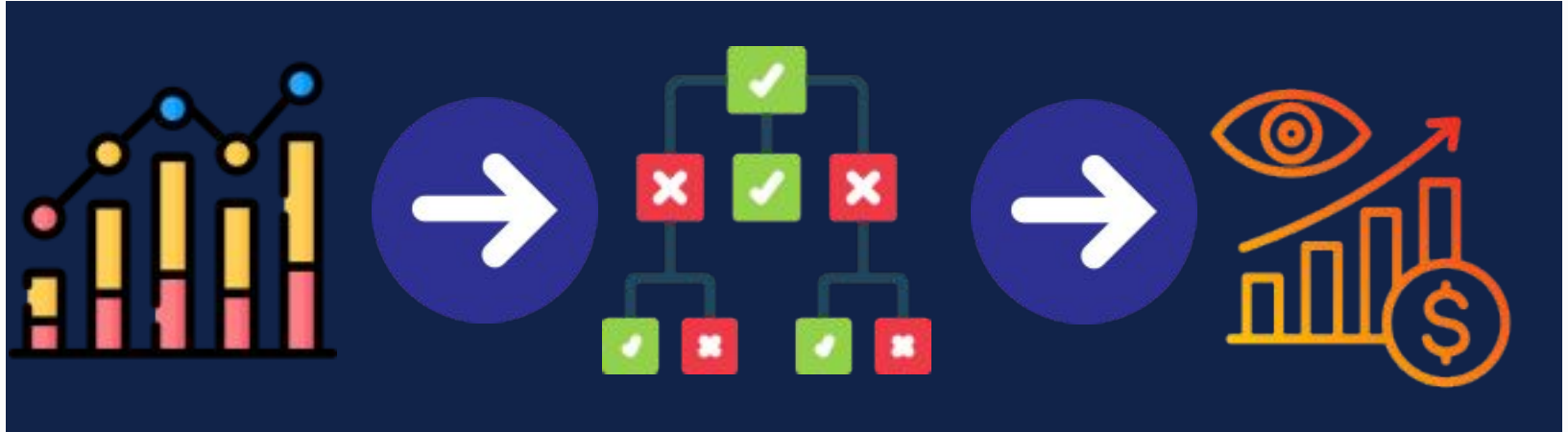
WITH MODEL IMPLEMENTATION

- Customer Conversion Rate: **6.68%**

- Total Marketing Cost : **\$57630**

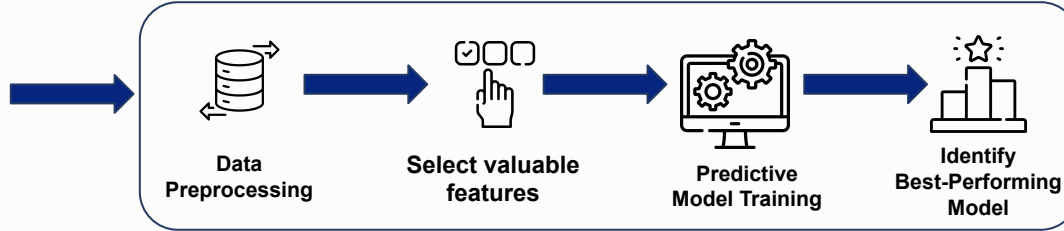
(Assuming average marketing cost per customers as \$10)

OVERVIEW OF OUR PREDICTIVE MODEL



- Our predictive model utilizes the powerful decision tree algorithm to identify the customers most likely to adopt XYZ's premium subscription.
- Our model's training and validation were conducted using data from the last marketing campaign.

SOLUTION MAP



EDA, Cleaning, and oversampling of data.

Explore different combination data features to maximise performance.

Experiment data set on different predictive models

Compare performance between models and feature combinations using AUC score.

Narrowing down from 25 features(recorded in last marketing campaign) to **5 most impactful features to business.**

03.

IMPACT CHECK





CONFUSION MATRIX

IN ORDER TO QUANTIFY THE IMPACT OF OUR MODEL, WE NEED THE CONFUSION MATRIX.

Prediction	Actual	
	ADP	NOADP
ADOPTER	385	5378
NON-ADOPTER	77	6622

(CONFUSION MATRIX OF OUR MODEL ON TEST DATA)



TRUE POSITIVES : CUSTOMERS ACCURATELY CLASSIFIED AS ADOPTERS OF PREMIUM SUBSCRIPTION



FALSE POSITIVES : CUSTOMERS INACCURATELY CLASSIFIED AS ADOPTERS OF PREMIUM



TRUE NEGATIVES : CUSTOMERS ACCURATELY CLASSIFIED AS NON ADOPTERS OF PREMIUM SUBSCRIPTION



FALSE NEGATIVES : CUSTOMERS INACCURATELY CLASSIFIED AS NON ADOPTERS OF PREMIUM SUBSCRIPTION

CUSTOMER CONVERSION RATE



WITHOUT MODEL IMPLEMENTATION

- FALSE POSITIVES: 12077
- TRUE POSITIVES: 385
- CUSTOMER CONVERSION RATE: 3.08%



WITH MODEL IMPLEMENTATION

- FALSE POSITIVES: 5378
- TRUE POSITIVES: 385
- CUSTOMER CONVERSION RATE: 6.68%



MARKETING COST REDUCTION



WITHOUT MODEL IMPLEMENTATION

- TOTAL TARGETED AUDIENCE: 12462
- ASSUMING AVERAGE MARKETING COST: \$10
- TOTAL AMOUNT SPENT: \$124620



WITH MODEL IMPLEMENTATION

- TOTAL TARGETED AUDIENCE: 5763
- ASSUMING AVERAGE MARKETING COST: \$10
- TOTAL AMOUNT SPENT: \$57630



SUMMARY



OBJECTIVE

TO PREDICT PREMIUM SUBSCRIBERS OUT OF OUR CUSTOMER BASE



APPROACH

CREATED PREDICTIVE MODEL USING DECISION TREE TO REACH OUR OBJECTIVE



IMPACT

WERE ABLE TO OPTIMISE MARKETING EXPENDITURE AND INCREASE CUSTOMER CONVERSION RATE



Thanks!

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Tiffany Chen
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