

Team Project :

Customer Segmentation

for a leading airline

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Problem Context

Context



XYZ airlines, a unique player in the airline carrier industry have withstood multiple threats from industry and wants to take a data driven approach for targeting their customers

Approach



Use the existing database of customer from Ufly Rewards program to perform customer profiling to uncover behavioral insights and patterns

Solution



Developing customer segments to help design targeted marketing campaigns



Value Addition

Identified four customer personas

by profiling customers that are **meaningfully similar** to drive business decisions



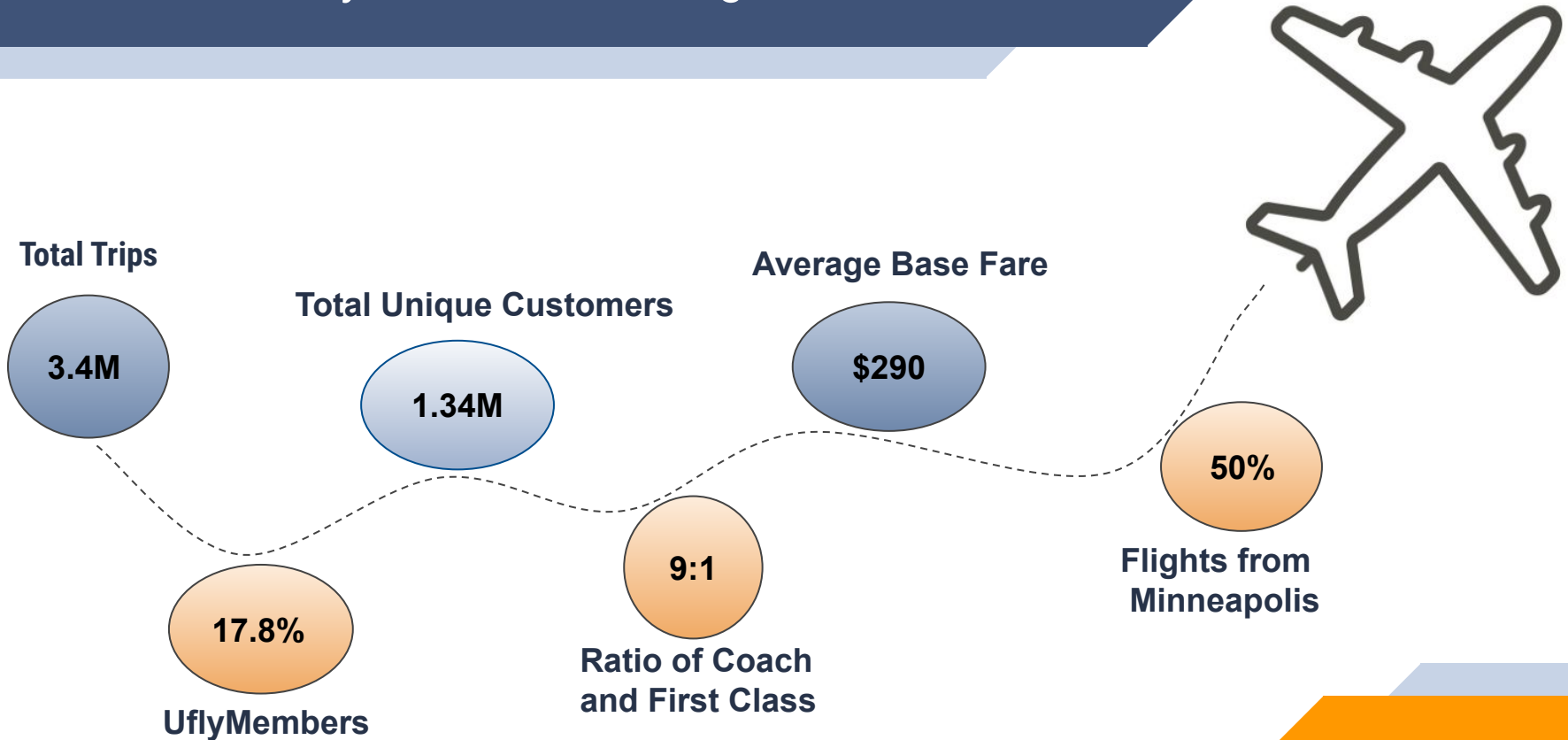
Recommend marketing strategies

for each group to better meet customer needs and maximize customer experience as well as increase revenue

Delivered Insights

to increase enrollment in Ufly Rewards loyalty program

Preliminary Data Understanding





Feature Engineering (Data Transformation)

Transformed Features



Passenger Id: used passenger name and birth date id



Average Miles Traveled: Average miles covered in a trip



Booked Travel Days: Number of days between travel date and booking date



Unique Route Count: Number of distinct routes a passenger travelled



Avg Supplementary Fare: Difference between Total Doc amount and Base Fare

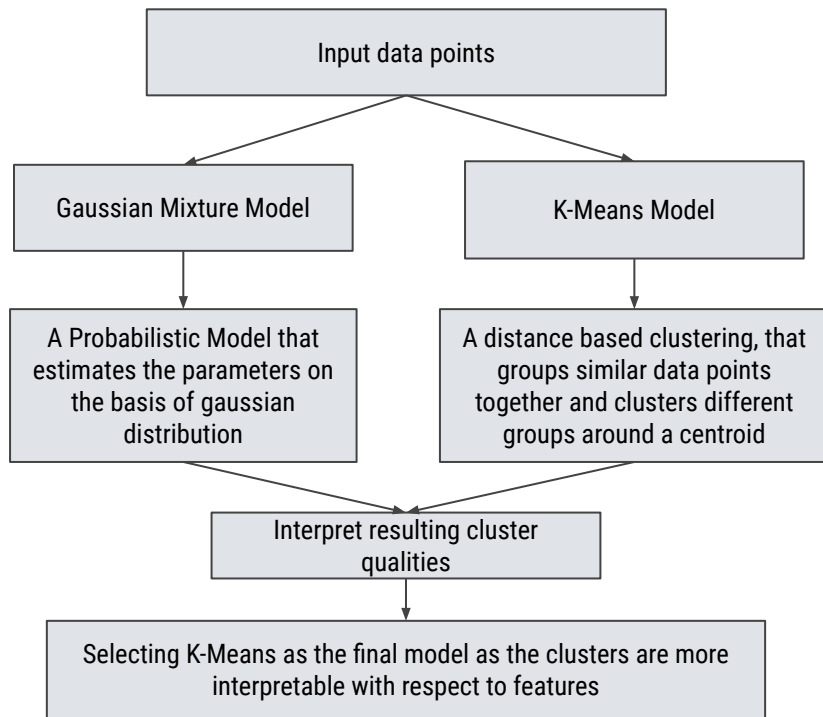


Return Trip: Passengers booking a return ticket to the destination same as their origin

- Transformed the flight booking transactional data into unique passenger profiles



Modelling Approach



K-Means Clustering Intuition



1.34 M
Unique
passengers

16
Features

4
Customer
Segments



Customer Segmentation

Cost Sensitive Frequent Flyers (15%)



- Spends **\$295** on average per flight
- Travels **3 times** a year on average
- Contributes **16%** to overall revenue
- Average Age of **42**
- Travels **1308** miles per flight
- **35%** in this segment has Standard Membership
- Returns to origin via SCA **14%** of the time

Premium Frequent Flyers (1%)



- Spends **\$327** on average per flight
- Travels **nearly 7 times** a year on average
- Contributes **2%** to overall revenue
- Average Age of **50**
- Travels **1306** miles per flight
- **60%** of Total Elite Members in this segment
- Returns to origin via SCA **22%** of the time
- Travels in First Class **50%** of the time

Need Based (55%)



- Spends **\$200** on average per flight
- Travels **once** a year on average
- Plans trip **37** days prior to travel on average
- Contributes **38%** to overall revenue
- Mostly people of **20-30** years of age
- Travels **1247** miles per flight
- Only **7%** has Standard Membership
- Returns to origin via SCA **35%** of the time

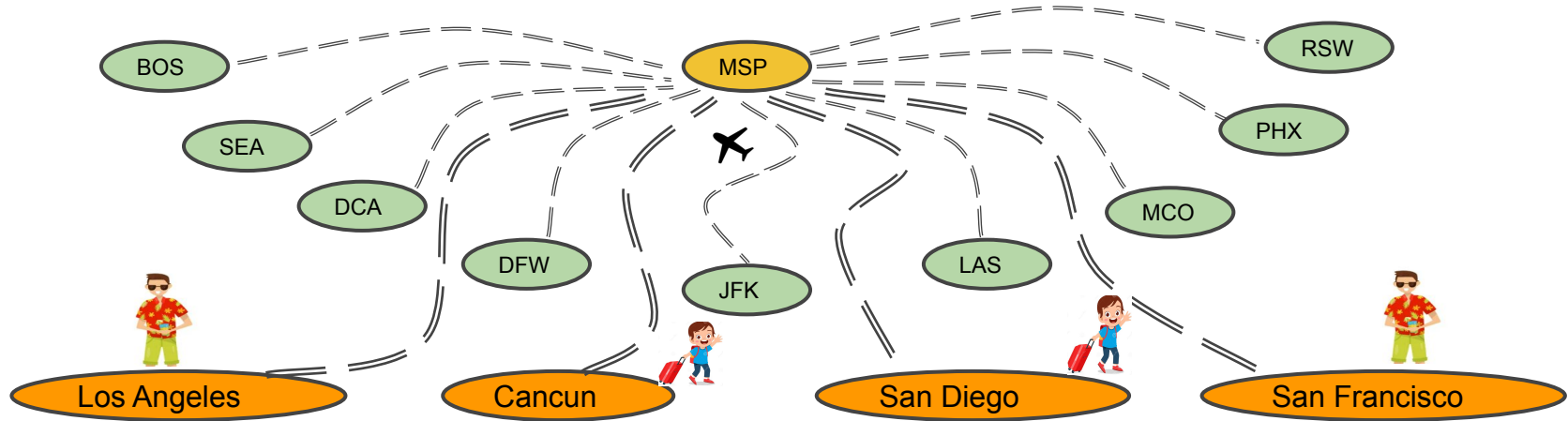
Leisure Long Distance (29%)



- Spends **\$409** on average per flight
- Travels **once** a year on average
- Plans trip **102** days in advance
- Contributes **44%** to overall revenue
- People of all age group including kids
- Travels **1450** miles per flight
- **24%** in this segment has Standard Membership
- Returns to origin via SCA **8%** of the time



Route Based Analysis



It is found that **80% of the customer base** travel **to-and-fro from Minneapolis to 13 different cities** (Boston, Cancun, Washington DC, New York City, Dallas, Las Vegas, Orlando, Los Angeles, Phoenix, Lee County, San Diego, San Francisco and Seattle).

Out of these 13 cities, **4 cities (Cancun, Los Angeles, San Diego and San Francisco)** have **distance from Minneapolis greater than 1400 miles** to which the **Leisure Long Distance travellers** are visiting at large.

WHAT'S THE WAY FORWARD?



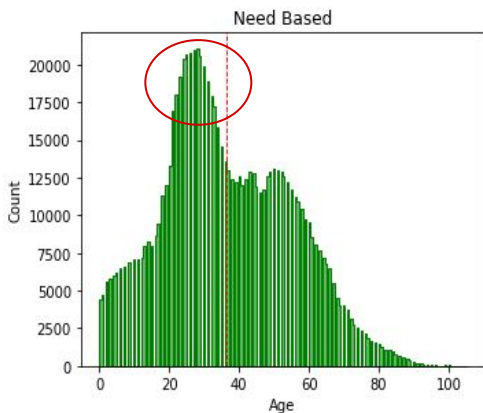


Recommendation - Need Based Travellers

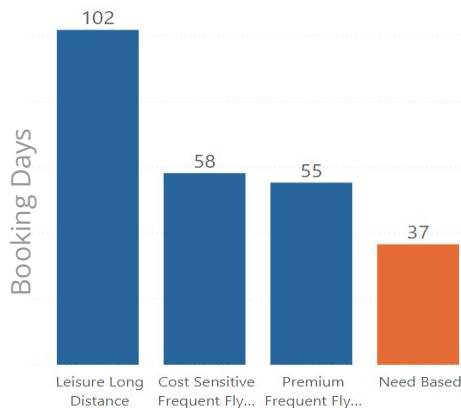


WHAT DO WE KNOW?

With majority of consumers falling into the age bracket of **20-30 years** and also returning to origin airport **35%** of the time, these customers can be considered as Students.



Customers in this segment are relatively late planners, booking tickets **37 days** prior to travel on average.



WHAT CAN BE DONE?

- Additional baggage allowance for students on first flight after sign up to UFly Membership
- Free cancellation for first booking after UFly Membership sign up as late planning may lead to rescheduling/cancellation
- Introduce a referral system offering additional points both to the referee and referrer as an incentive to join the Ufly membership program as referral programs are successful amongst younger population.

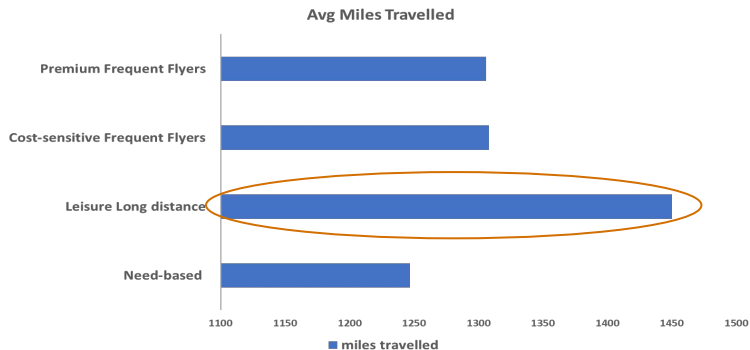


Recommendation - Leisure Long Distance



WHAT DO WE KNOW?

- Customers in this segment travel to Long Distances -**1450 miles avg.**
- All age groups are present, showing families are present.
- From the top travel destinations, locations with miles close to 1450 are **Cancun, Los Angeles, San Francisco, and San Diego.**
- Customers in these routes mostly travel during Q1 and Q4, so we can say **these customers travel for vacations in warmer regions**



WHAT CAN BE DONE?

- Offer Ancillary Services after Ufly sign up, services like:
 - Free Wifi
 - Premium Flight entertainment
 - Kids' entertainment
 - Flight upgrade options
 - Priority check-in
- Only 8.2% of customers are booking round trip so, offer cheaper round trips with in-house vacation packages



Recommendation - Cost Sensitive Frequent Flyers



WHAT DO WE KNOW?

- Segment contributes **15%** of the total customer base
- **35%** of the members in this segment have Ufly Standard Membership.
- Frequent flyers with a total of **5** flights over 2 years already having a brand loyalty with SCA and would like benefits as they are sensitive to cost

WHAT CAN BE DONE?

- The remaining 65% customers who have not yet signed up for the Standard Membership within this segment can be prioritized in Marketing campaigns as they already have some brand engagement
- They can be given provision to claim past travel points based on PNR and Ticket Number.
- For such customers, the web app can generate notifications that indicate the reward points the user can claim for redeeming services in their upcoming travel if they sign up.



THANK YOU





Long Term Recommendation

BkdClassOfService	% of Total Tickets	% of Total Revenue
Coach	97.30%	94.34%
First Class	2.70%	5.66%
Total	100.00%	100.00%

First-Class tickets are only 2.70% of the total booked tickets contributing to only 5.66% of the revenue.

A cost-benefit analysis can be conducted with respect to replacing the First Class seats with more Economy or Premium Economy seats to analyze per sq inch return with respect to overall profits. Based on a simulated cost-benefit study, an appropriate operational design change can be undertaken.