

**GOOD  
LEADS  
THE  
WAY**



# SKYHACK

**BY-**

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# Theme

"Optimizing Customer Service Efficiency in Call Centers" with a specific focus on improving key metrics such as Average Handle Time (AHT) and Average Speed to Answer (AST). The overarching goal is to enhance customer satisfaction and operational efficiency through data analysis, process improvement, and leveraging self-service technologies (IVR systems).

# Project vision and mission

The problem aim to solve is optimizing United Airlines' call center by reducing Average Handle Time (AHT) and Average Speed to Answer (AST), both critical for improving customer satisfaction and operational efficiency. By analyzing factors like agent performance, call types, and customer sentiment, I will identify drivers of long call durations. Additionally, I'll propose enhancements to the IVR system to automate frequent, self-solvable issues, reducing the burden on human agents. The goal is to leverage data-driven insights to streamline processes, leading to faster resolutions, improved customer experience, and reduced operational costs.

01.

Long Average Handle Time (AHT) impacts efficiency and customer satisfaction. I'll analyze factors like agent performance, call types, and sentiment to find the main causes of long AHT and Average Speed to Answer (AST), especially during peak periods. I'll also quantify the AHT difference between the most and least frequent call reasons to pinpoint improvement areas.

02.

Self-solvable issues often escalate to agents, increasing their workload. I will analyze transcripts and call reasons to identify recurring problems that can be handled through the IVR system. Based on this, I'll propose specific improvements to the IVR to reduce agent intervention, backed by solid reasoning to support these recommendations.

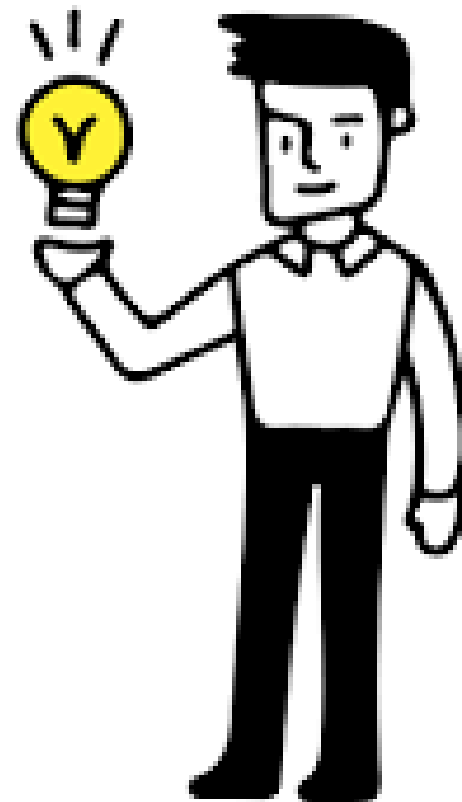
03.

Understanding call reasons is essential for enhancing efficiency and customer service. I will analyze the dataset to identify patterns in call reasons using data analysis techniques and feature identification methods. This will streamline processes and reduce manual efforts. Optionally, I'll use the test.csv file for predictions.

# Findings

Queries such as Traveller updates, Seating, Electronic Ticket Certificate take up a huge chunk of call volume and have long AST + AHT leading to anger from the side of customers and frustration in agents.

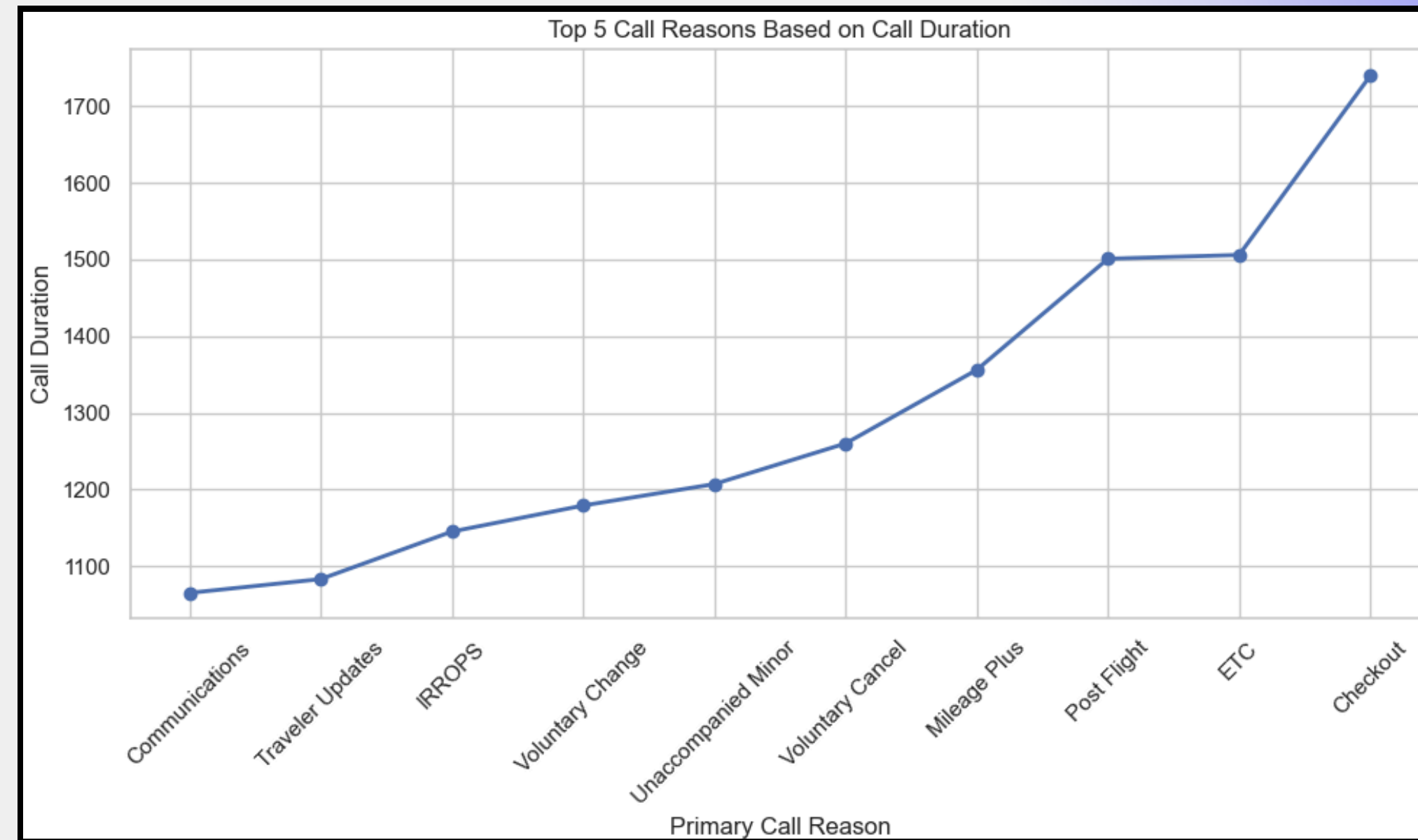
These activities can easily be automated using IVR and should reduce workload and Increase efficiency and customer satisfaction



# 01

Top 5 primary call reasons contributing to extended call duration are

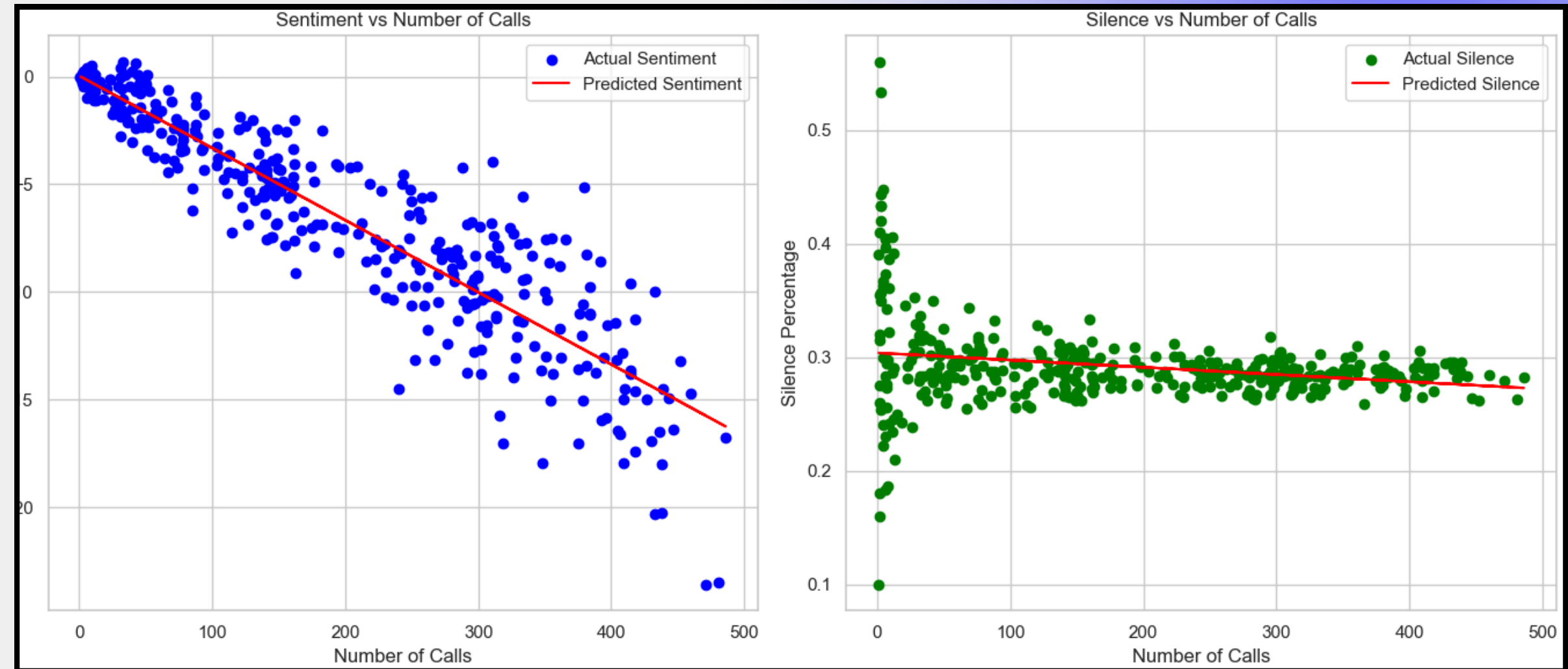
- Checkout
- ETC(Electronic Travel Certificate)
- Post- Flight
- Milage Plus
- Voluantry cancel



# Deliverable 1

## 02

The agents who were assigned maximum number of calls showed negative sentiments. While the customer were **angry** the agents seems to be **frustrated**,

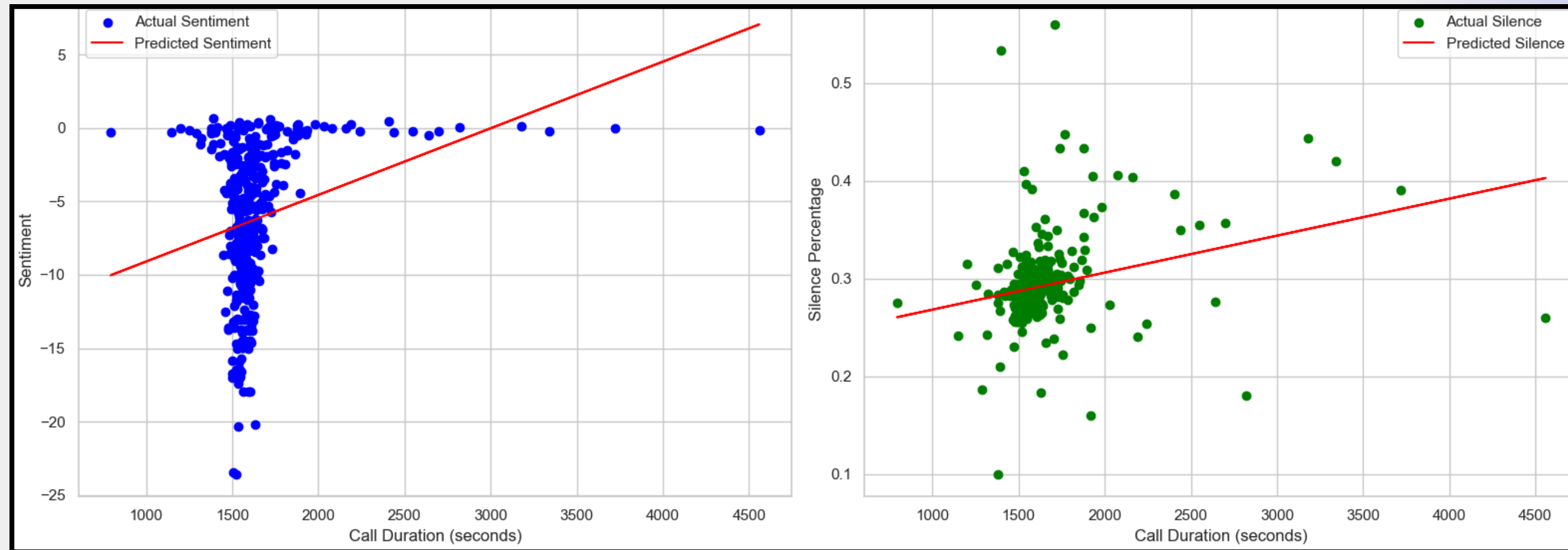


# Deliverable 1



# 03

Levels of Silence were maintained across different call durations, suggesting that silence may not play an important role.



# Deliverable 1

04

The distinct elongating factors for **AST** were unaccompanied minor, Traveller Updates and Seating And for **AHT** was Communications

	primary_call_reason	NumberOfCalls	total_time	AHT
	Checkout	1888	1919820	1016
	Mileage Plus	5851	5825100	995
	ETC	952	916680	962
	Post Flight	4330	4039440	932
	Communications	3840	3174600	826
	IRROPS	13311	10450680	785
	Products & Services	3332	2487540	746

	primary_call_reason	NumberOfCalls	total_time	AST
1	Checkout	1888	1368240	724
2	Traveler Updates	937	646560	690
3	Unaccompanied Minor	104	71580	688
4	Seating	6365	3633300	570
5	Post Flight	4330	2465640	569
6	ETC	952	518160	544
7	Baggage	2832	1535220	542



## 05

By the above insights the most frequent reason was **IRROPS** and its **AHT** is '785 sec' and the least frequent was **unaccompanied minor** and its **AHT** is '519 sec'

$$\frac{|V_1 - V_2|}{\left[\frac{(V_1 + V_2)}{2}\right]} \times 100 = ?$$

*Difference between  $V_1$  and  $V_2$*

$V_1 =$

$V_2 =$

Clear

Calculate

Answer:

= 40.7975% difference

# Deliverable 1



# 01

Operations like seating, mileage plus, and products and services, which contribute significantly towards the call volume, are some of the operations that can be automated using IVR.



	primary_call_reason	Reason_Frequency
1	IRROPS	13311
2	Voluntary Change	10848
3	Seating	6365
4	Mileage Plus	5851
5	Post Flight	4330
6	Communications	3840
7	Products & Services	3332
8	Baggage	2832

## Deliverable 2

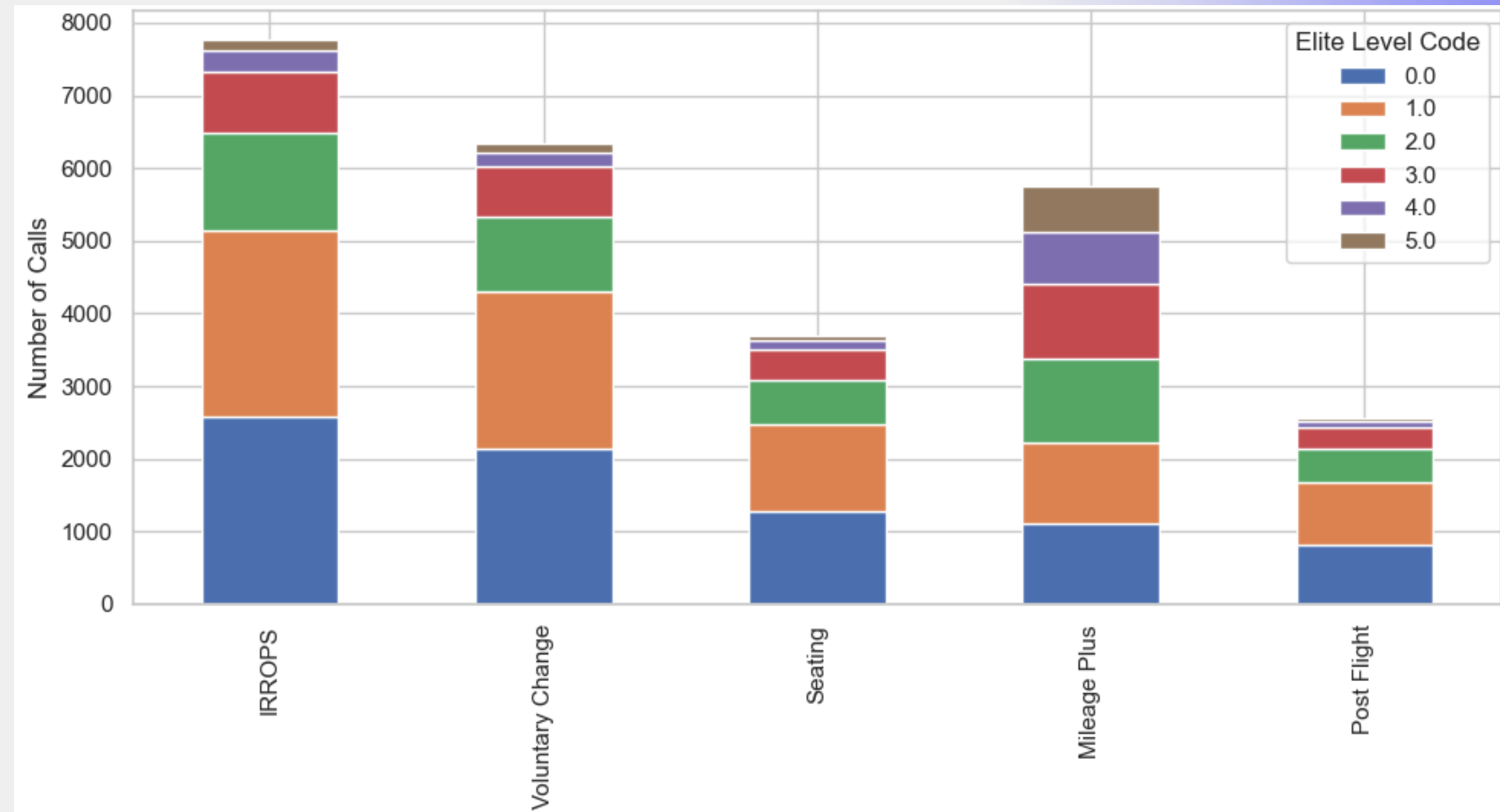
## 02

Most of our elite users do not face difficulties in ordinary areas of aviation. Their queries mostly only cover Mileage Plus membership and Electronic Travel Certificate queries.



	primary_call_reason	Reason_Frequency	Average_Elite_Value
1	Mileage Plus	5851	2
2	ETC	952	2
3	Baggage	1708	1
4	Communications	2330	1
5	Voluntary Change	6551	1
6	Upgrade	1636	1
7	Booking	1572	1
8	Disability	242	1
9	Voluntary Cancel	972	1
10	Checkout	1119	1
11	Traveler Updates	572	1
12	Products & Services	2000	1

## Deliverable 2



# Deliverable 2

# 01

- Reasons such as Voluntary Change, Seating, Traveler Updates, and Disability were handled very positively from both customer and agent sides
- While the reasons such as IRROPS, Checkout, Post Flight, ETC (Electronic Ticket Certificate) left both agents and customers in frustration

primary_call_reason	Sentiment	Silence
IRROPS	-0.0740648509903435	0.3094035009
Checkout	-0.068535808927382	0.2923093220
Post Flight	-0.0639143518055789	0.2978036949
ETC	-0.049327024200894	0.2875630250
Check-In	-0.0424894737648336	0.2627363441
Digital Support	-0.0421311473336498	0.2852979588
Communications	-0.0363922896332831	0.3035781247

12	Baggage	-0.0189861750744
13	Upgrade	-0.0160073126330
14	Unaccompanied ...	-0.0138461542888
15	Booking	-0.0133688617589
16	Other Topics	-0.0038480393282
17	Voluntary Change	-0.0037336164053
18	Seating	-0.0027697388895
19	Traveler Updates	0.0007074070000



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# Thank You