

# ABC CALL VOLUME TREND ANALYSIS

Presented by – Ankita Yadav

# TABLE OF CONTENTS

01

Project Description

02

Tech-Stack Used

03

Approach

04

Data Understanding

05

Insights

06

Results

01

# PROJECT DESCRIPTION



A call center named ABC has a Customer Experience(CX) team that consists of professionals who analyzes customer feedback and data and then share the insights with the rest of the organization. Some of the most powerful AI based tools used by CX team are Interactive Voice Response(IVR), Robotic Process Aotumation(RPA), Predictive Analytics, Intelligent Rounting.

CX team incluudes Vrious roles such as Email support, Outbound support, Inbound support, Social Media Support.

Inbound Customer Support is responsible for handing inbound calls of customers. They attracts, engage, and deliht customers to turn them into bussiness loyal advocates and results in the growth of business.

Here I was provided with the dataset of CX inbound calling team for 23 days to analyze and help the company draw some helpful insights.



02

# TECH - STACK USED

Microsoft Excel

Microsoft Powerpoint

Loom.com

03

# APPROACH



# Approach for the project

1. To solve this project we first need to understand the dataset provided by the inbound customer support team.
2. After studying the dataset we need to check the data for any kind of inconsistency.
3. Use necessary functions and formulas to draw the required insights.
4. Use various Visualizations for better understanding of the insights.
5. Propose the Manpower plan to reduce the abandon call rate by 20%.
6. Create the report for all the findings and insights drawn.

The background features a dark blue gradient with a subtle radial blur effect. Overlaid on this are several thin, light-colored wavy lines that curve across the frame. Interspersed among these wavy lines are numerous small, vertical cyan-colored lines with small circular markers at their ends, resembling a scatter plot or a series of data points.

04

# Data-Set Understanding

# Understanding the dataset

1. Total number of Rows – 117989
2. Total number of Columns – 13
3. No duplicates were found in the dataset .
4. Agent\_Name and Agent\_ID column consist of some Null values (#N/A).
5. Wrapped\_By column has some empty cells.
6. Wrapped\_By, Ringing and IVR\_duration column will not be used in analysis.
7. Time\_Bucket column is provided for the easiness in analysis.



# Assumptions made for analysis

Total working hour	9 hrs
Lunch and snacking	1.5 hrs
Actual working hour	7.5 hrs
Total working days in a week	6 days
Unplanned leave in a month	4 days
Days agent works for(out of 28)	24 days
Work day permonth	20 days
Actual working hour	60%
Work days in a week	5 days
Total time spent on call	4.5 hrs

05

# Insights

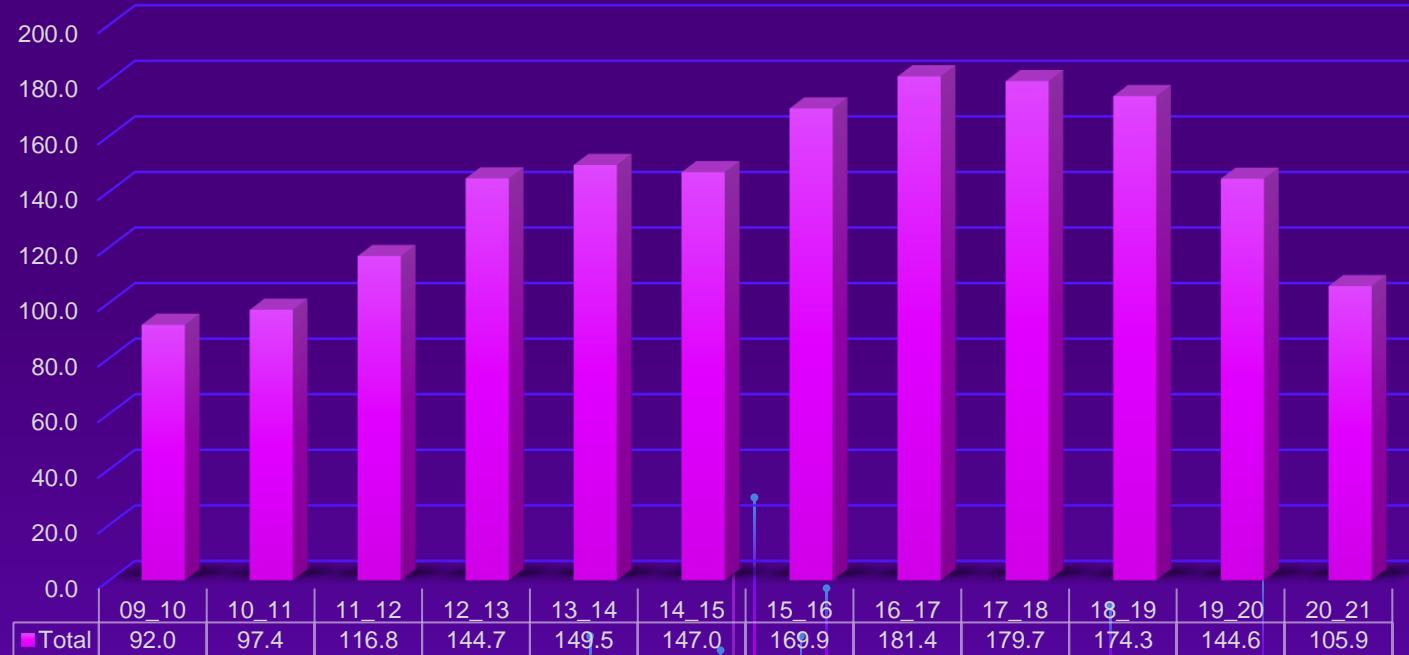


# Calculate the average call time duration for all incoming call received by the agents .

Call_Status	(All)
Row Labels	Average of Call_Seconds (s)
09_10	92.0
10_11	97.4
11_12	116.8
12_13	144.7
13_14	149.5
14_15	147.0
15_16	169.9
16_17	181.4
17_18	179.7
18_19	174.3
19_20	144.6
20_21	105.9
<b>Grand Total</b>	<b>139.5</b>

Pivot was drawn to calculate the Average of Call time duration using the time buckets for better understanding.

## Average calls



# Show the total call volume / Number of incoming calls

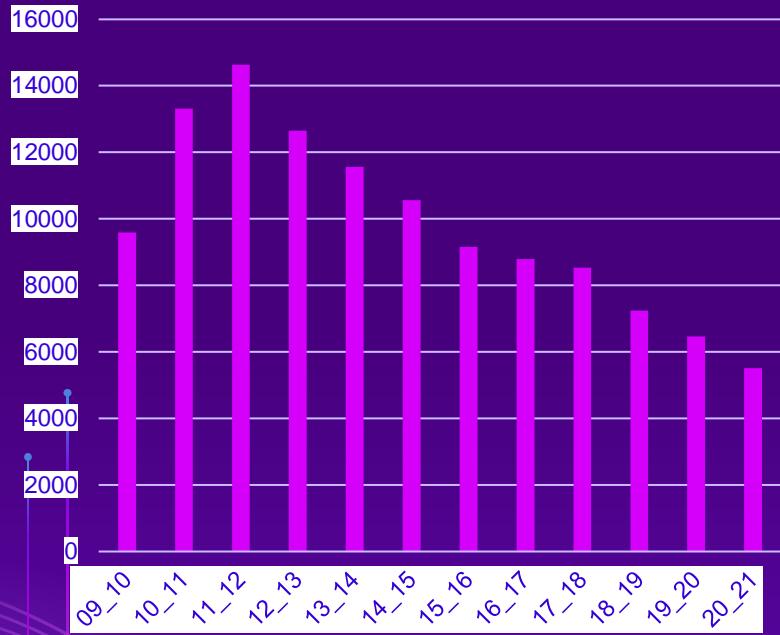
Row Labels	Count of Customer_Phone_No	Count of Call_Seconds (s)
09_10	9588	8.13%
10_11	13313	11.28%
11_12	14626	12.40%
12_13	12652	10.72%
13_14	11561	9.80%
14_15	10561	8.95%
15_16	9159	7.76%
16_17	8788	7.45%
17_18	8534	7.23%
18_19	7238	6.13%
19_20	6463	5.48%
20_21	5505	4.67%
<b>Grand Total</b>	<b>117988</b>	<b>100.00%</b>

Pivot was drawn to calculate the total call volume by calculating Count of calls during each shift (time\_bucket) and finding the Count of call seconds that are calculated in form of % of column total.

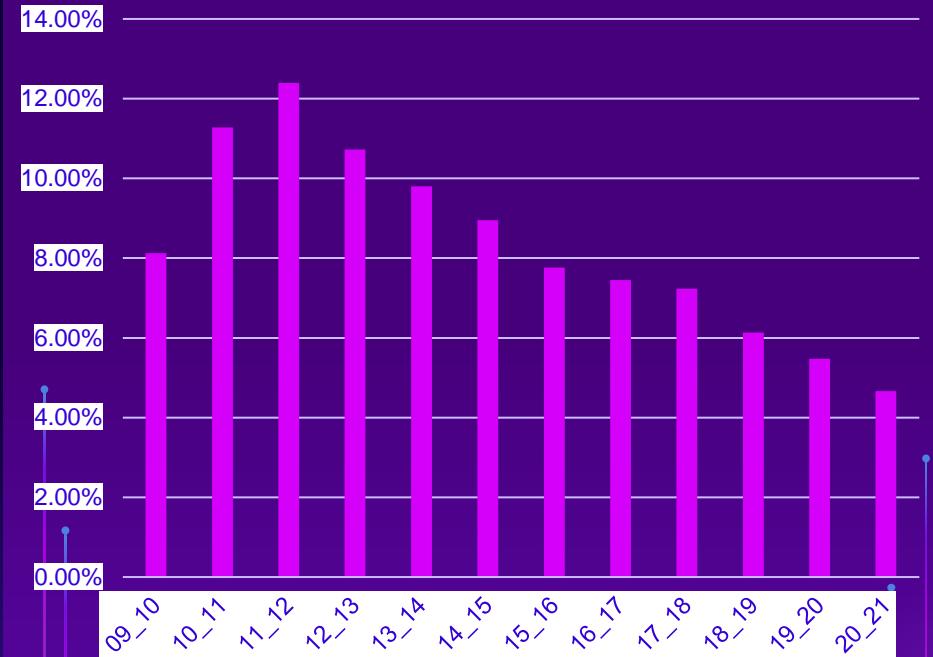
## Total Call Volume per Time\_Bucket



### Count of Customer Phone No.



### Count of Call Duration



# Call Rates

Count of Duration(hh:mm:ss) Column Labels					
Days		abandon	answered	transfer	Grand Total
9 AM		5149	4428	11	9588
10 AM		6911	6368	34	13313
11 AM		6028	8560	38	14626
12 PM		3073	9432	147	12652
1 PM		2617	8829	115	11561
2 PM		2475	7974	112	10561
3 PM		1214	7760	185	9159
4 PM		747	7852	189	8788
5 PM		783	7601	150	8534
6 PM		933	6200	105	7238
7 PM		1848	4578	37	6463
8 PM		2543	2836	10	5389
9 PM		82	34		116
Grand Total		34403	82452	1133	117988
Average		2646	6342	94	9076
Rate		29%	70%	1%	

Pivot was drawn to understand the count of duration based on various call status(abandoned, answered, transferred) for various time durations in the day.

Average was calculated for the count of durations and rate of each of the three call status was measured.

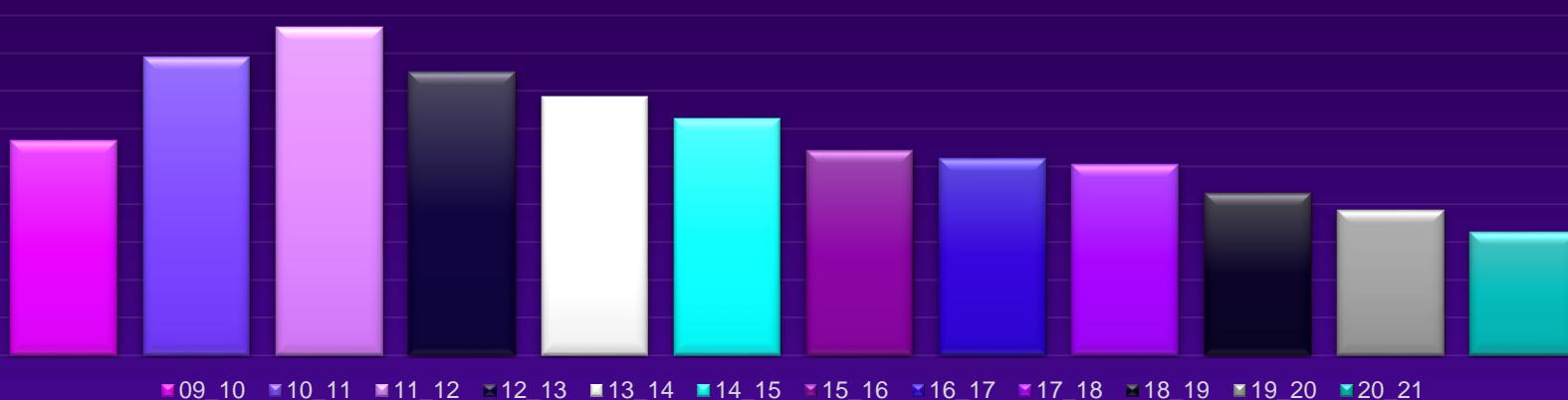
We can see that there is approx. 30% of abandoned rate.

Average time to answer a call	139.5
Time required to answer 90% calls	316.5255
Total Number of working person per day	70
Daily Total Call Volume	5130
Night support	1539
Additional hours req	53.672625
Additional head count	12
Total head count	82

Following calculations were made to find the number of agents that will be required to decrease the abandon rate to 10% and propose a new man power plan

# Agents required 9AM-9PM

Number of agents required (9am-9pm)

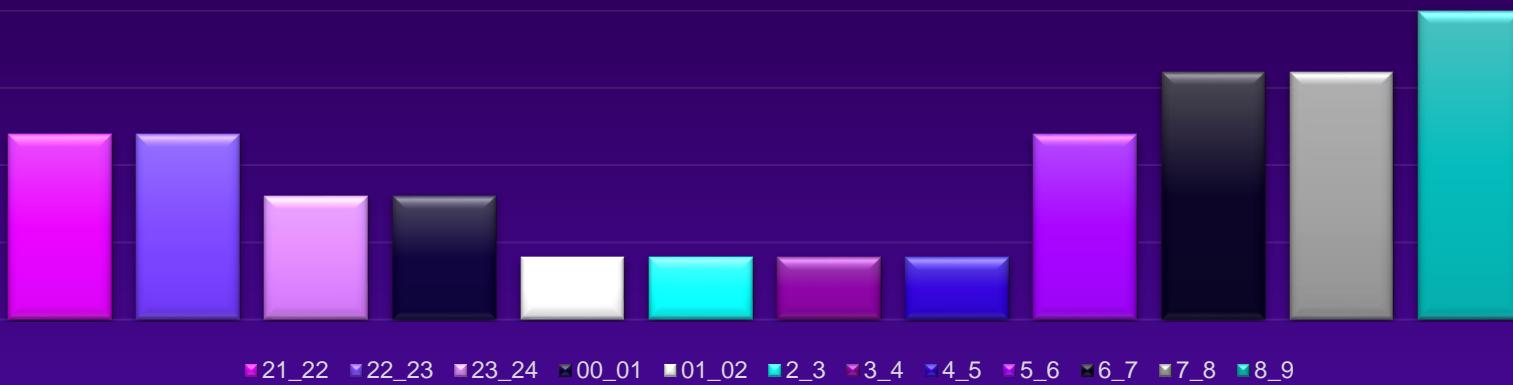


# Required Head Count for Day

Time_Bucket	Time Distribution	Required Agents
09_10	8.13%	6
10_11	11.28%	8
11_12	12.40%	9
12_13	10.72%	8
13_14	9.80%	7
14_15	8.95%	6
15_16	7.76%	5
16_17	7.45%	5
17_18	7.23%	5
18_19	6.13%	4
19_20	5.48%	4
20_21	4.67%	3
Total	100.00%	40

# Agents required 9PM-9AM

Number of agents required (9pm-9am)



# Required Head Count for Night

Nights Call (9 pm - 9 am)	Calls Distribution	Time Distribution	Agents required
21_22	3	10%	1
22_23	3	10%	1
23_24	2	7%	1
00_01	2	7%	1
01_02	1	3%	0
2_3	1	3%	0
3_4	1	3%	0
4_5	1	3%	0
5_6	3	10%	1
6_7	4	13%	2
7_8	4	13%	2
8_9	5	17%	2
Total	30	100%	12

# 06

# Result

Manpower Plan proposed  
after analysing the dataset

**1**

## Average Calls

Total Average call duration was approx 139 secs.

**2**

## Call Volume

Maximum calls were made during 11am to 12 pm and minimum were made from 8 pm to 9 pm.

**3**

## Day Shift

40 more agents are required during Day shift.

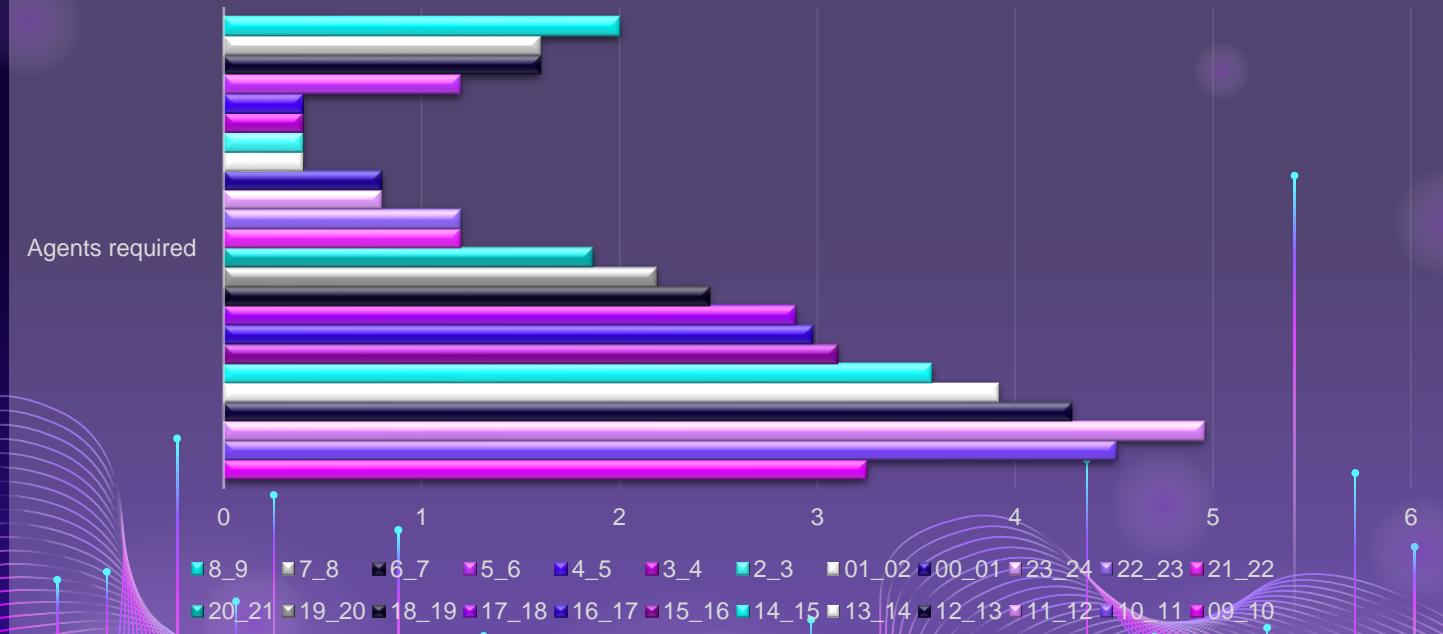
**4**

## Night Shift

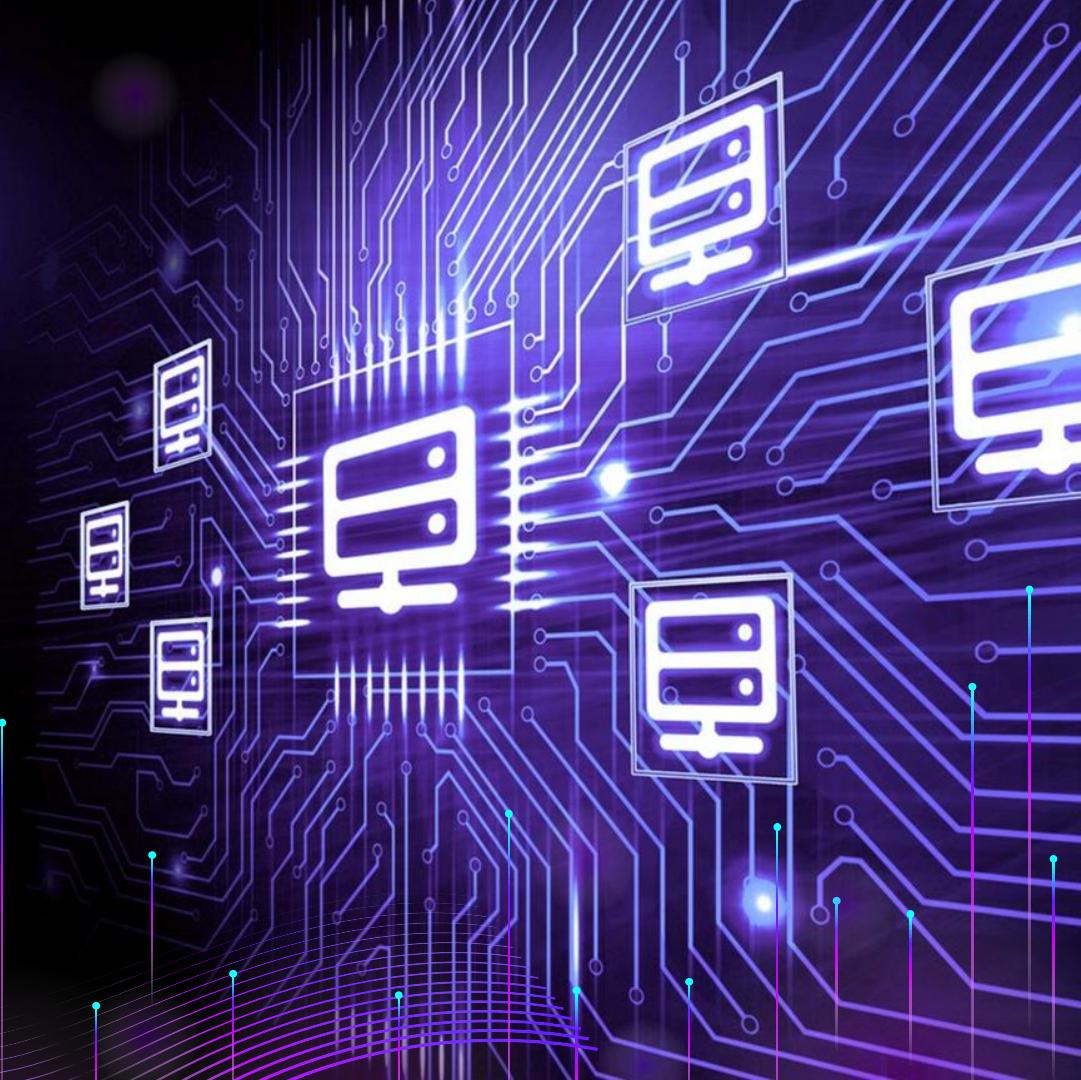
12 more agents are required during Night shift.

# Manpower Plan

## **Manpower plan for shift-wise**



Customer service  
was improved to  
90% and abandon  
rate date was  
dropped to 10%.



# THANKS!

ankitaydv07@gmail.com

# Drive Link

<https://drive.google.com/drive/folders/1jvRodeMVehfExl2wMYsJtLX9NDFL9hrW?usp=sharing>