ABC CALL VOLUME TREND ANALYSIS

PROJECT DESCRIPTION:

- In this project, we will move into the world of Customer Experience (CX) analytics, specifically focusing on the inbound calling team of a company. A dataset that spans 23 days and includes various details such as the agent's name and ID, the queue time (how long a customer had to wait before connecting with an agent), the time of the call, the duration of the call, and the call status (whether it was abandoned, answered, or transferred) is provided to us. The goal is to attract, engage, and delight customers, turning them into loyal advocates for the business.

APPROACH:

- To perform the project a systematic approach was followed. A dataset having relevant information on agent's name and ID, the queue time, the time of the call, the duration of the call, and the call status was downloaded. Microsoft Excel 2021 was selected as the primary tool for data analysis due to its versatility and robust capabilities in handling tabular data. There are N/A in the dataset but as per the tasks those data columns are not required so they remain there in the dataset which will not affect our analysis.

TECH-STACK USED:

- Software: Microsoft Excel 2021
- Purpose: Excel was chosen for its extensive data analysis functions, including pivot tables, charts, and statistical functions and visualization of the call data

INSIGHTS: various key insights were uncovered through the data analytics process. These are the following tasks which have to be done as per the client requirement

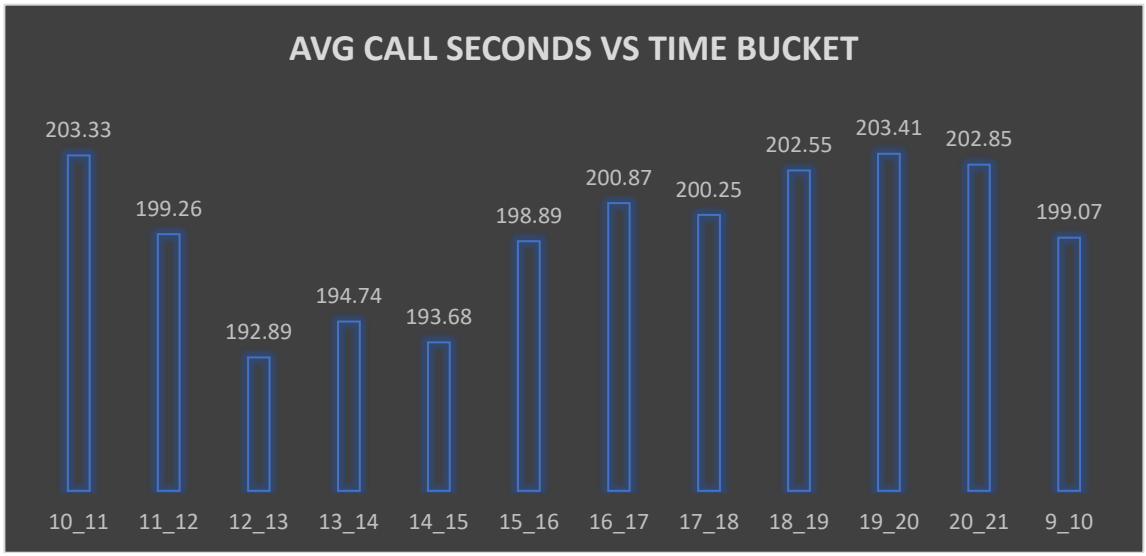
- **Average Call Duration:**
- **Call Volume Analysis**
- **Manpower Planning**
- **Night Shift Manpower Planning:**

AVERAGE CALL DURATION:

Your Task: What is the average duration of calls for each time bucket?

Call_Status	answered

Time Bucket	Average of Call_Seconds (s)
10_11	203.33
11_12	199.26
12_13	192.89
13_14	194.74
14_15	193.68
15_16	198.89
16_17	200.87
17_18	200.25
18_19	202.55
19_20	203.41
20_21	202.85
9_10	199.07
Grand Total	**198.62**

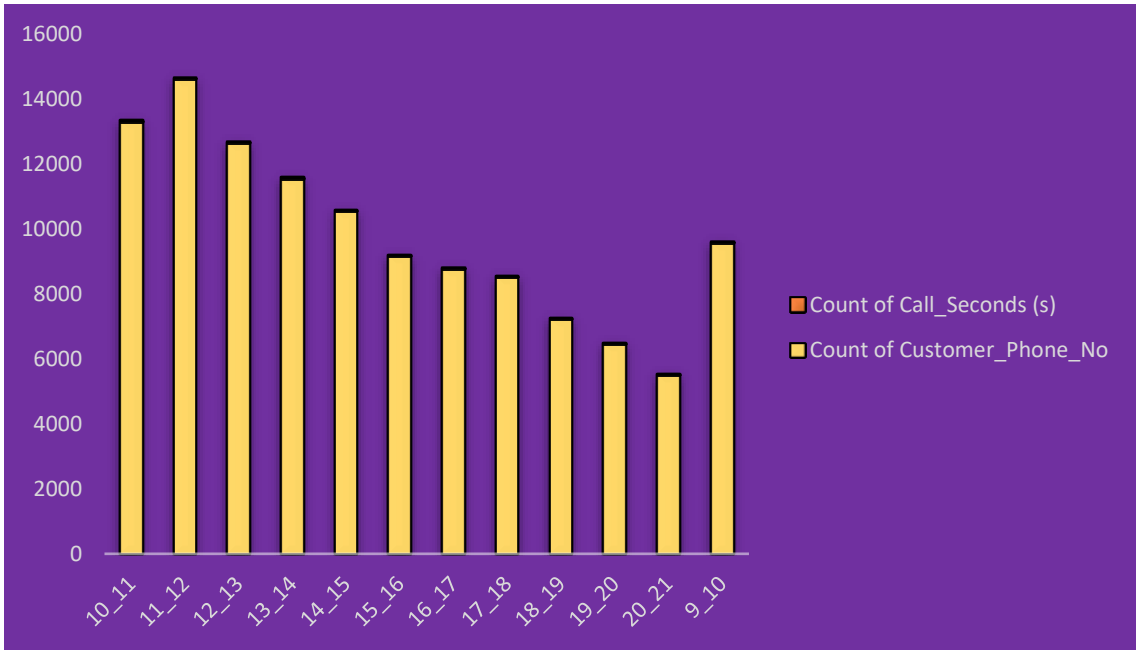


- As seen in the graph we can clearly the average duration of calls for each time buckets for answered calls only. For **7pm-8pm** the duration of calls is the **highest** and for **12 pm -1 pm** the value is the **lowest** amongst all

CALL VOLUME ANALYSIS:

Your Task: Can you create a chart or graph that shows the number of calls received in each time bucket?

Time Bucket	Count of Customer_Phone_No	Count of Call_Seconds (s)
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%
9_10	9588	8.13%
Grand Total	**117988**	**100.00%**

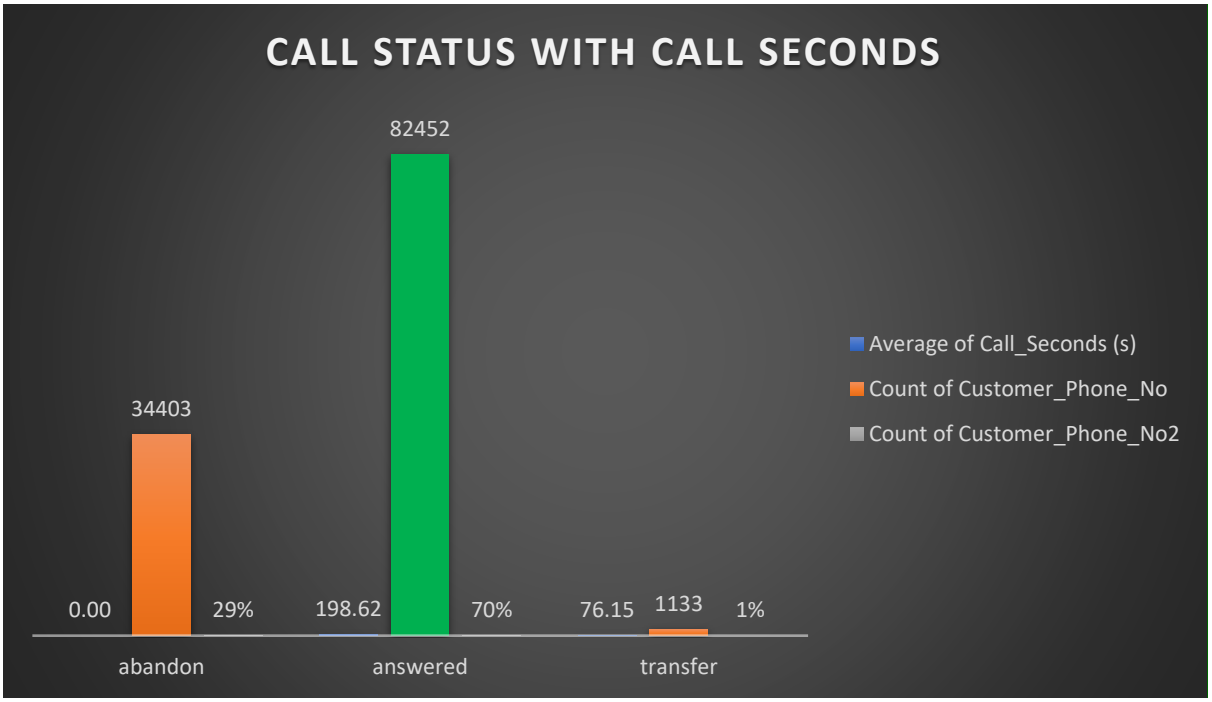


- Highest no of calls received during between **11 am to 12** pm as clearly seen in this graph

MANPOWER PLANNING:

Your Task: What is the minimum number of agents required in each time bucket to reduce the abandon rate to 10%?

Row Labels	Average of Call_Seconds (s)	Count of Customer_Phone_No	Count of Customer_Phone_No2
abandon	0.00	34403	29%
answered	198.62	82452	70%
transfer	76.15	1133	1%
Grand Total	**139.53**	**117988**	**100.00%**



The current rate of abandoned calls is approximately 30%.

Propose a plan for manpower allocation during each time bucket (from 9 am to 9 pm) to reduce the abandon rate to 10%.

In other words, you need to calculate the minimum number of agents required in each time bucket to ensure that at least 90 out of 100 calls are answered.

So

Time Bucket	Count of Call_Seconds (s)	Count of Call_Seconds (s)2	call_seconds	Agent Required
10_11	11.28%	0.11	0.11	6
11_12	12.40%	0.12	0.12	7
12_13	10.72%	0.11	0.11	6
13_14	9.80%	0.10	0.10	6
14_15	8.95%	0.09	0.09	5
15_16	7.76%	0.08	0.08	4
16_17	7.45%	0.07	0.07	4
17_18	7.23%	0.07	0.07	4
18_19	6.13%	0.06	0.06	3
19_20	5.48%	0.05	0.05	3
20_21	4.67%	0.05	0.05	3
9_10	8.13%	0.08	0.08	5
Grand Total	**100.00%**	**1.00**	1.00	57

Date_&_Time2	**01-Jan**

Row Labels	Sum of Call_Seconds (s)
09	35313.00
10	53087.00
11	67751.00
12	72680.00
13	59693.00
14	76137.00
15	65689.00
16	59464.00
17	68155.00
18	53096.00
19	40141.00
20	25281.00
21	177.00
Grand Total	**676664.00**

So

188.0	**Per one day**	
38	As mentioned, 60%	
60%	38	
90%	**57**	Total agent req

- Total agent required are **57** and the **minimum number of agents** required in each time bucket to ensure that at least 90 out of 100 calls are answered are also shown by the table

NIGHT SHIFT MANPOWER PLANNING:

Your Task: Propose a manpower plan for each time bucket throughout the day, keeping the maximum abandon rate at 10%.

Count of Call_Status	Column Labels			
Row Labels	**abandon**	**answered**	**transfer**	**Grand Total**
01-Jan	684	3883	77	4644
02-Jan	356	2935	60	3351
03-Jan	599	4079	111	4789
04-Jan	595	4404	114	5113
05-Jan	536	4140	114	4790
06-Jan	991	3875	85	4951
07-Jan	1319	3587	42	4948
08-Jan	1103	3519	50	4672
09-Jan	962	2628	62	3652
10-Jan	1212	3699	72	4983
11-Jan	856	3695	86	4637
12-Jan	1299	3297	47	4643
13-Jan	738	3326	59	4123
14-Jan	291	2832	32	3155
15-Jan	304	2730	24	3058
16-Jan	1191	3910	41	5142
17-Jan	16636	5706	5	22347
18-Jan	1738	4024	12	5774
19-Jan	974	3717	12	4703
20-Jan	833	3485	4	4322
21-Jan	566	3104	5	3675
22-Jan	239	3045	7	3291
23-Jan	381	2832	12	3225
Grand Total	**34403**	**82452**	**1133**	**117988**

5130	TOTAL AVG CALLS
1539	FOR NIGHT
76	ADDITIONAL hr. REQ
15	ADDITIONAL AGENT REQ

ASSUMPTION: we have an assumption value as provided for call between 9pm-9am and their call distribution value

CALL BETWEEN 9PM-9AM	CALL DISTRIBUTION	TIME DISTRIBUTION	AGENT REQUIRED	ROUND FIGURE
9PM-10PM	3	10	1.5	2
10PM-11PM	3	10	1.5	2
11PM-12PM	2	15	1	1
12PM-1AM	2	15	1	1
1AM-2AM	1	30	0.5	1
2AM-3AM	1	30	0.5	1
3AM-4AM	1	30	0.5	1
4AM-5AM	1	30	0.5	1
5AM-6AM	3	10	1.5	2
6AM-7AM	4	7.5	2	2
7AM-8AM	4	7.5	2	2
8AM-9AM	5	6	2.5	3
TOTAL	30		15	19

- Total **Average calls** are **5130**
- For night it was told that **30% of calls** so **30%*5130= 1539**
- Then for additional hour we calculate by round formula **=round (1539*198.6*0.9/3600,0)**, it will result into **76 hr**
- Then for agent who work **5** hr in a day the we will, calculate by round formula **=round (76/5,0)** and we get **15 as additional agent** required for the night hour Planning.

RESULT: We have achieved so many fruitful insights about the ABC Call Volume Trend Analysis by doing so many tasks such as call status, call duration, man power planning with the help of Microsoft Excel and its useful functions which will help us get better idea about how a call volume analysis have been doing

EXCEL LINK: PROJECT-8-ABC CALL VOLUME TREND ANALYSIS.xlsx

PPT LINK: https://drive.google.com/file/d/12I0cSG4Ja-1aKg2Uy0buh-ZmU_txG4ux/view?usp=sharing


THANK
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