

ABC Call Volume Trend Analysis

Submitted By Harshita Mundhe



PROJECT DESCRIPTION

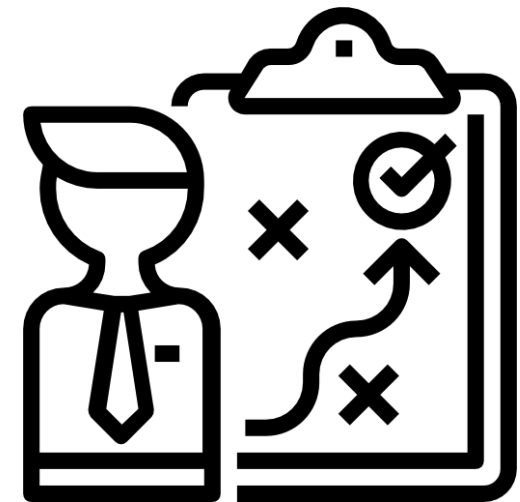
In this project we have given a dataset of a Customer Experience (CX) Inbound calling team for 23 days. A customer experience (CX) team consists of professionals who analyze customer feedback and data, and share insights with the rest of the organization. Dataset contains Agent_Name, Agent_ID, Queue_Time [duration for which customer have to wait before they get connected to an agent], Time [time at which call was made by customer in a day], Time_Bucket [for easiness we have also provided you with the time bucket], Duration [duration for which a customer and executives are on call, Call_Seconds [for simplicity we have also converted those time into seconds], call status (Abandon, answered, transferred).

We have to use this dataset for providing meaningful insights and analysis which will help the company to figure out the answers to some business questions or problems.



APPROACH

For implementing this project first we have to download the given dataset and open it using Google Sheets or Excel. I used different excel formulas to get the results like min, max, avg and so on. I also used pivot table and pivot chart concepts for getting output. And to present the output in more effectively I used graphs, charts and so on as they help us to quickly analyze data and see relationships.



TECH-STACK USED

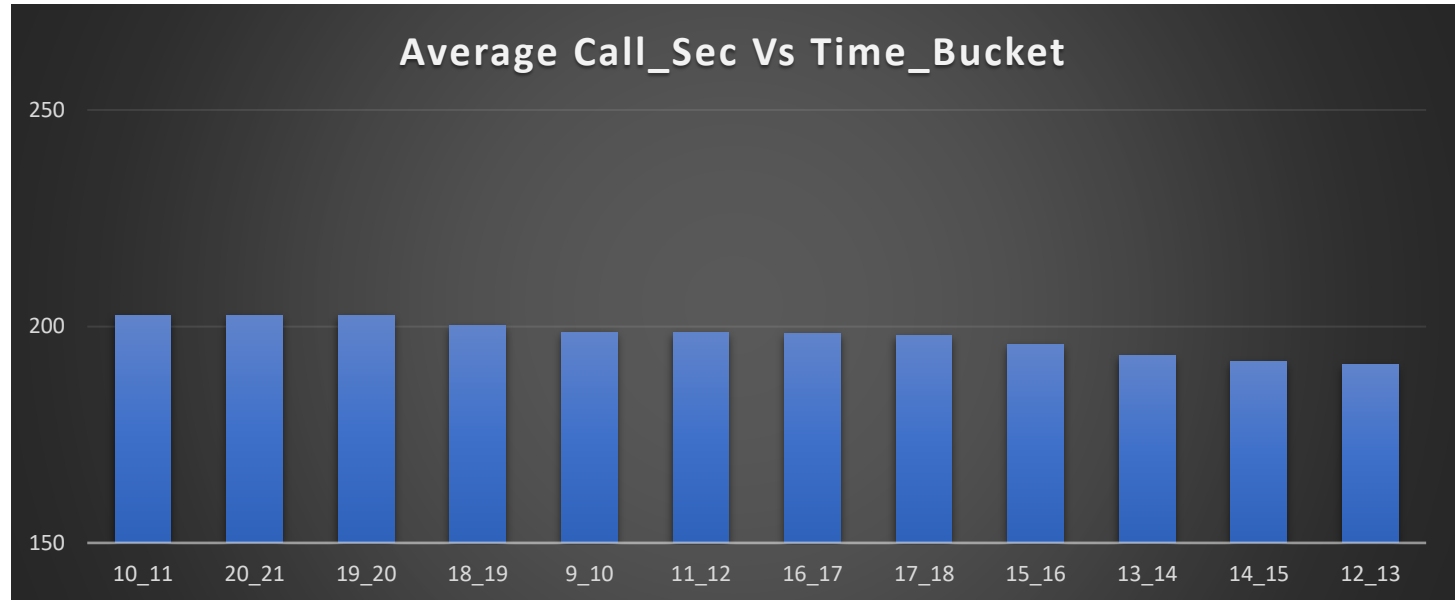
- **Microsoft Excel:** I have used Microsoft Excel 2019 MSO (Version 2212 Build 16.0.15928.20196) for getting the meaningful insights from given dataset as it provides high-level visual summaries, trends and it helps us to understand the data through natural language queries that allow us to ask questions about the data without having to write complicated formulas.
- **PowerPoint Presentation:** I have used Microsoft PowerPoint 2019 MSO (Version 2212 Build 16.0.15928.20196) 64-bit to create a report as it allow us to present the complex ideas, facts, or figures into easily digestible visuals.



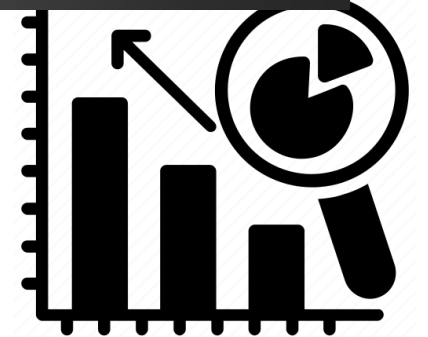
INSIGHTS

- Average Call time duration for each time bucket:-

Call_Status	(Multiple Items)
Row Labels	Average of Call_Seconds (s)
10_11	202.5938769
20_21	202.5173611
19_20	202.4782232
18_19	200.1208565
9_10	198.7373282
11_12	198.6600372
16_17	198.2948638
17_18	197.8801445
15_16	195.8571429
13_14	193.2963998
14_15	191.9543656
12_13	191.1536695
Grand Total	196.9626009



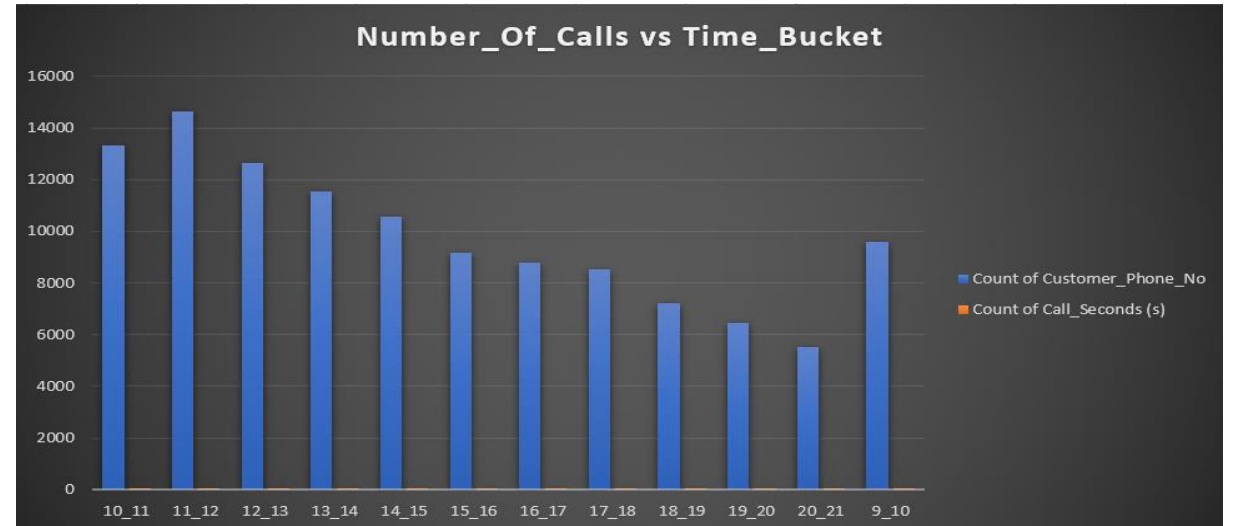
- Average call time duration is highest in between 9 am to 7 pm and is decreasing after 7.



INSIGHTS

- Number of calls in each Time Bucket:-

Row Labels	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%



- Number of calls are highest in between 11 am to 12 pm and are least in between 8 pm to 9 pm or we can say it is decreasing after 5 pm.



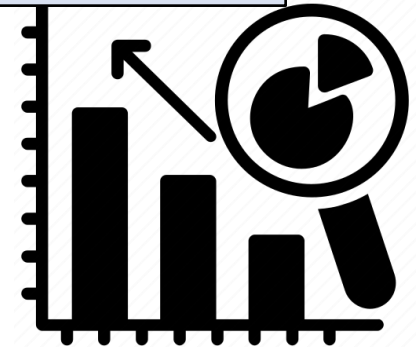
INSIGHTS

- Reduce Abandon Rate:-

Row Labels	Count of Customer_Phone
abandon	34403
answered	82452
transfer	1133
Grand Total	117988

Row Labels	Sum of Call_Seconds (s)	Sum of Hour
01-Jan	676664	187.96
02-Jan	574003	159.45
03-Jan	812863	225.80
04-Jan	861946	239.43
05-Jan	846798	235.22
06-Jan	829040	230.29
07-Jan	757019	210.28
08-Jan	735444	204.29
09-Jan	541147	150.32
10-Jan	778739	216.32
11-Jan	785717	218.25
12-Jan	709934	197.20
13-Jan	691320	192.03
14-Jan	564227	156.73
15-Jan	556267	154.52
16-Jan	674394	187.33
17-Jan	945615	262.67
18-Jan	796768	221.32
19-Jan	750270	208.41
20-Jan	759613	211.00
21-Jan	639855	177.74
22-Jan	621577	172.66
23-Jan	553899	153.86
Grand Total	16463119	4573.09

Row Labels	Count of Call_Seconds (s)
10_11	0.11
11_12	0.12
12_13	0.11
13_14	0.10
14_15	0.09
15_16	0.08
16_17	0.07
17_18	0.07
18_19	0.06
19_20	0.05
20_21	0.05
9_10	0.08
Grand Total	1.00



INSIGHTS

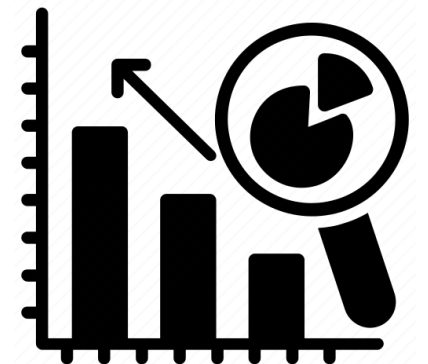
- **Reduce Abandon Rate :-**

- We can calculate total agents working by dividing average calls in one single days by total working hours of one employee in single day
- To find out how many more Agents required I have multiplied 90 by total agent working and divide it with 60

Total Agents Working
$187.96/4.5 = 41.76$
Total Agents Required
$90 * 41.76 / 60 = 62.64 \sim 63$

time_bucket	count of call_sec	Agents Required
10_11	0.11	7
11_12	0.12	7
12_13	0.11	7
13_14	0.10	6
14_15	0.09	6
15_16	0.08	5
16_17	0.07	4
17_18	0.07	4
18_19	0.06	4
19_20	0.05	3
20_21	0.05	3
9_10	0.08	5

- As we can see to answer 90% of the calls we require 63 Agents.



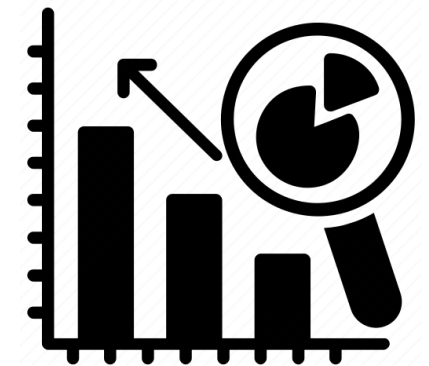
INSIGHTS

- Arrange/Organize night calls:-

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

Average Call in Day				
	abandon	answered	transfer	total
	1496	3585	49	5130
Average Call in Night				
	1539			

- To calculate total number of agents required I have calculated average of each call status and it is mentioned that 30 calls are made in night, so for calculating average calls in night I multiplied average call made in days by 0.3.



INSIGHTS

- **Arrange/Organize night calls:-**
 - To calculate how many extra hours required I multiplied average calls done in night with time required in each single day and 0.9 then divided with 3600.
 - To calculate Total Agents required I divided extra hours by total working hours of one employee in single day.

Total Hours Required
72.31761
Agents Required
16

Night_Call_Time_Bucket	Call Distribution	Time Required	Agents Required
9pm - 10pm	3	0.1	2
10pm - 11pm	3	0.1	2
11pm - 12pm	2	0.07	1
12pm - 1am	2	0.07	1
1am - 2am	1	0.03	1
2am - 3am	1	0.03	1
3am - 4am	1	0.03	1
4am - 5am	1	0.03	1
5am - 6am	3	0.1	2
6am - 7am	4	0.13	2
7am - 8am	4	0.13	2
8am - 9am	5	0.17	3



RESULTS

From these project I understood how to analyze the call centre data to solve business problems. I also understood how to use excel formulas to get the desired output. I got to learn what is pivot table, how to create it and importance of the same. I also got to learn how to represent the data using graphs/charts to make the data / insights quickly and easily understandable.

Drive link:

https://docs.google.com/spreadsheets/d/1pyl4znoMf6ildoE1kNBw2Lc84RjkxvZu/edit?usp=share_link&oid=107724859837928146273&rtpof=true&sd=true



THANK
YOU

