ABC

CALL VOLUME

TREND ANALYSIS

PROJECT DESCRIPTION

A customer experience (CX) team consists of professionals who analyze customer feedback and data, and share insights with the rest of the organization. Typically, these teams fulfil various roles and responsibilities such as: Customer experience programs (CX programs), Digital customer experience, Design and processes, Internal communications, Voice of the customer (VoC), User experiences, Customer experience management, Journey mapping, Nurturing customer interactions, Customer success, Customer support, Handling customer data, Learning about the customer journey.

APPROACH

Firstly, the data needs to be read and cleaned in order to eliminate any errors. This involves checking for missing or incorrect values and addressing them appropriately. Null values can be filled with the most appropriate value based on the context of the data. It may also be necessary to delete certain columns that are not relevant to the analysis, such as the IVR rating column.

TECK STACK USED

Excel is a valuable tool for conducting data analysis as it allows for the creation of visual representations of the results. Graphs and charts can be utilized to gain a better understanding of the data set and identify trends or patterns. In addition to its graphing capabilities, Excel offers numerous features for organizing and manipulating data, making it an essential tool for many industries and professions. It is important, however, to ensure that the data entered into Excel is accurate and reliable, as errors can lead to flawed analysis and incorrect conclusions.

INSIGHTS

1. Calculate the average call time duration for all incoming calls received by agents (in each Time_Bucket).

1.

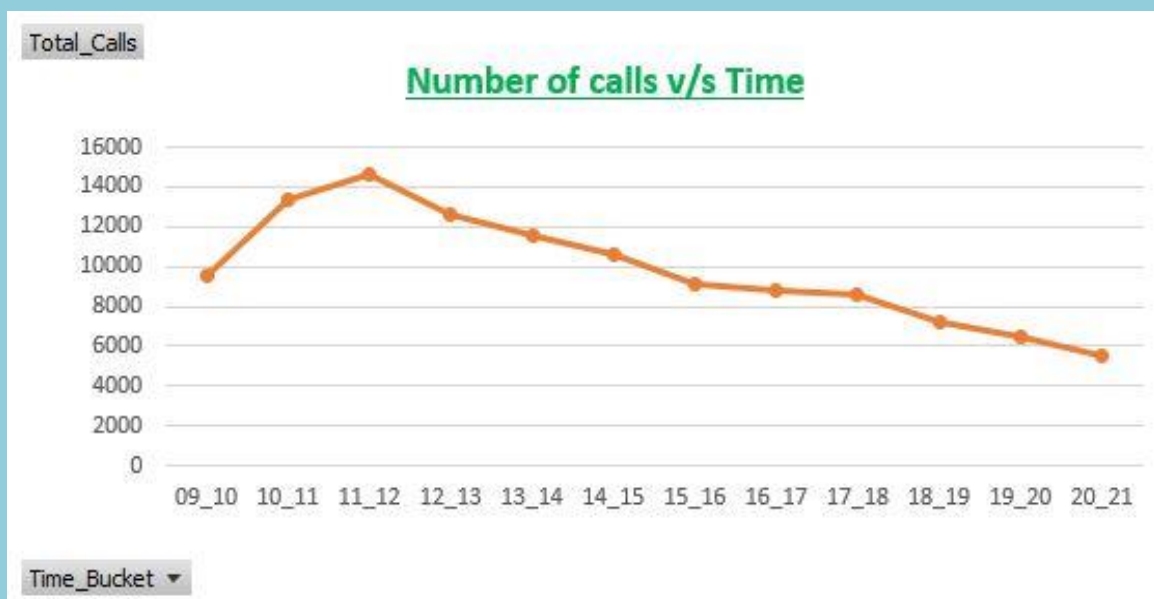| Time_Bucket	Average of Call_Seconds (s)
09_10	198.7
10_11	202.6
11_12	198.7
12_13	191.2
13_14	193.3
14_15	192.0
15_16	195.9
16_17	198.3
17_18	197.9
18_19	200.1
19_20	202.5
20_21	202.5
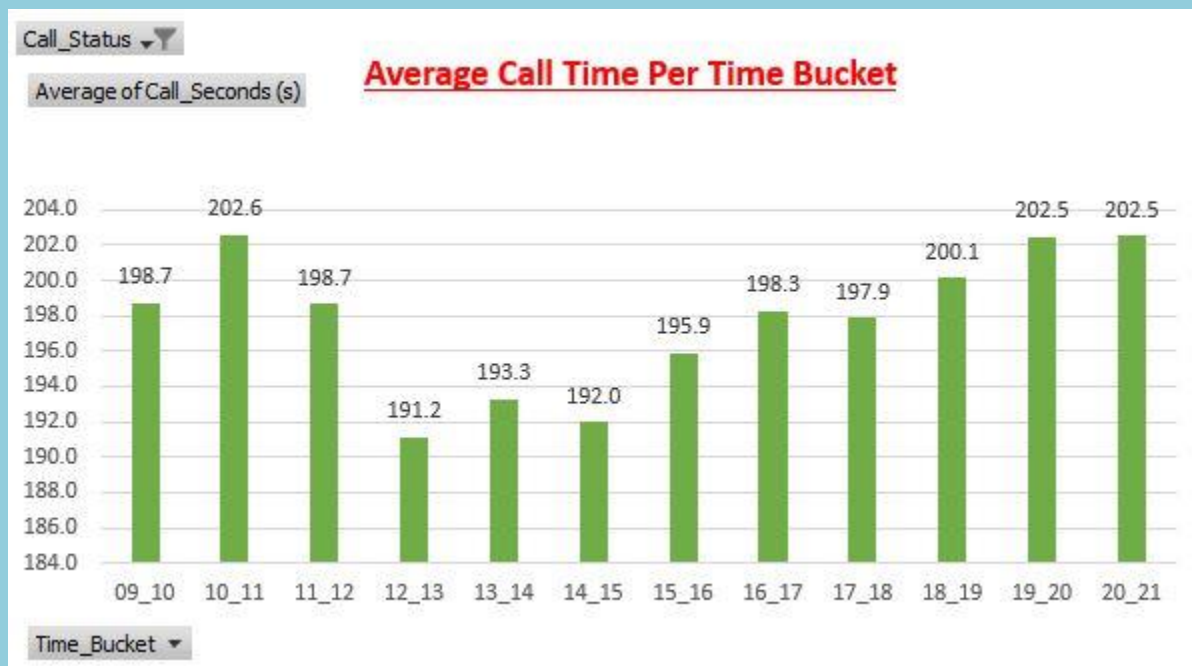
- The average duration of incoming calls handled by agents is approximately 197 seconds. However, during the time buckets of 10_11,

18_19, 19_20, and 20_21, the average call duration exceeds 200 seconds. In contrast, the time bucket between 12 noon and 1 pm has the shortest average call duration at 191.2 seconds.

2. Show the total volume/ number of calls coming in via charts/ graphs [Number of calls v/s Time]. You can select time in a bucket form (i.e. 1-2, 2-3).

2.

Time_Bucket	Total_Calls
09_10	9588
10_11	13313
11_12	14626
12_13	12652
13_14	11561
14_15	10561
15_16	9159
16_17	8788
17_18	8534
18_19	7238
19_20	6463
20_21	5505

Total_Calls

Number of calls v/s Time

16000
14000
12000
10000
8000
6000
4000
2000
0

09_10 10_11 11_12 12_13 13_14 14_15 15_16 16_17 17_18 18_19 19_20 20_21

Time_Bucket ▼

It has been observed that the number of calls per day increases from 9 to 12 and then begins to decrease.

3. As you can see current abandon rate is approximately 30%. Propose a manpower plan required during each time bucket [between 9am to 9pm] to reduce the abandon rate to 10%. (i.e. You have to calculate minimum number of agents required in each time bucket so that at least 90 calls should be answered out of 100.)

3.

Call Status	Count of Customer_Phone_No	% ofCount of Custon	Average of Call / Sec
abandon	34403	29.16%	0
answered	82452	69.88%	198.6227745
transfer	1133	0.96%	76.14651368
Grand Total	117988	100.00%	139.5321473

Total Working Hours	9 hrs
Lunch	1.5 hrs
Time left	7.5 hrs
60% occupancy	4.5 hrs
Total calls coming per day	5130 calls
Time taken on an average to answer a call	198.6 sec.
Time requirement to answer 90% of the calls (hrs)	254.7045 hours
Agents Required	57

Time Bucket	Count of Call_Seconds (s)	Agents Required
09_10	8.13%	5
10_11	11.28%	6
11_12	12.40%	7
12_13	10.72%	6
13_14	9.80%	6
14_15	8.95%	5
15_16	7.76%	4
16_17	7.45%	4
17_18	7.23%	4
18_19	6.13%	3
19_20	5.48%	3
20_21	4.67%	3
		57

- First, I created a pivot table, with Date & Time in the Rows section, Call Status in the Columns section, and Call Duration counted in the Values section.
- Using the Excel formula for averages, computed the average values for abandon, answered, and transfer.
- Based on analysis, determined that 29% of calls were abandoned, 1% were transferred, and 70% were answered during the day.
- To ensure that 90% of calls were answered per day, It is calculated that 57 agents would be needed.
- Finally, I calculated the minimum number of agents required for each time bucket, multiplying the count of time by 57.

4. Let's say customers also call this ABC insurance company in night but didn't get answer as there are no agents to answer, this creates a bad customer experience for this Insurance company. Suppose every 100 calls that customer made during 9 Am to 9 Pm, customer also made 30 calls in night between interval [9 Pm to 9 Am] and distribution of those 30 calls are as follows:

Distribution of 30 calls coming in night for every 100 calls coming in between 9am - 9pm (i.e. 12 hrs slot)											
9pm- 10pm	10pm - 11pm	11pm- 12am	12am- 1am	1am - 2am	2am - 3am	3am - 4am	4am - 5am	5am - 6am	6am - 7am	7am - 8am	8am - 9am
3	3	2	2	1	1	1	1	3	4	4	5

Now propose a manpower plan required during each time bucket in a day. Maximum Abandon rate assumption would be same 10%.

Assumption: An agent works for 6 days a week; On an average total unplanned leaves per agent is 4 days a month; An agent total working hrs is 9 Hrs out of which 1.5 Hrs goes into lunch and snacks in the office. On average an agent occupied for 60% of his total actual working Hrs (i.e 60% of 7.5 Hrs) on call with customers/ users. Total days in a month is 30 days.

4.

Average calls coming per day(9am to 9pm)	5130 calls	Total Working Hours	9 hrs
Time taken on an avg to answer a call	198.184 seconds	Lunch	1.5 hrs
For Night(9pm to 9am)	1539 calls	Time left	7.5 hrs
		60% occupancy	4.5 hrs
Hours Required	76.25 hours		
Agents Required	17		

- ✚ To decrease the abandon rate up to 10%, a total of **17 agents** are required during the night

We cannot take agents needed in decimal value so we will take the approximate value

Time Bucket	Call Distribution	Time Distribution	Agents Needed		approx(Agents Needed)
9pm-10pm	3	0.10	1.69		2
10pm-11pm	3	0.10	1.69		2
11pm-12-am	2	0.07	1.13		1
12am-1am	2	0.07	1.13		1
1am-2am	1	0.03	0.56		1
2am-3am	1	0.03	0.56		1
3am-4am	1	0.03	0.56		1
4am-5am	1	0.03	0.56		1
5am-6am	3	0.10	1.69		2
6am-7am	4	0.13	2.26		2
7am-8am	4	0.13	2.26		2
8am-9am	5	0.17	2.82		3
	30		17		19

- The company could potentially reduce the number of customer support agents available during evening hours when call volume tends to be lower.
- Additionally, they could consider hiring 17 agents specifically for night shift work or shifting some of the daytime workers to night shift schedules.
- The manager could also adjust the schedules of workers currently working from 9 am to 9 pm to ensure that the most calls are answered, with some workers starting as early as 5 am and others working until 11 pm.
- Alternatively, the company could create three separate shifts to ensure 24/7 availability of customer support agents.
- It should be noted that there were some outliers in the data, and if these were removed, the resulting strategies may differ.

RESULTS

- Tracking the average handling time can be achieved by calculating the average call duration for each time period.
- The total volume of calls can be tracked by calculating the call volume percentage for each call status.
- I have gained insights into how an analyst can bring about a positive impact in the customer service department.
- Another insight I have gained that how a company can effectively handle customers to ensure their utmost satisfaction.

PROJECT LINK

https://docs.google.com/spreadsheets/d/12Dsje8dmg8PCxXfc_dd0jzdkty_6MJq0/edit?usp=share_link&ouid=102139911538202355724&rtpof=true&sd=true

THANK YOU