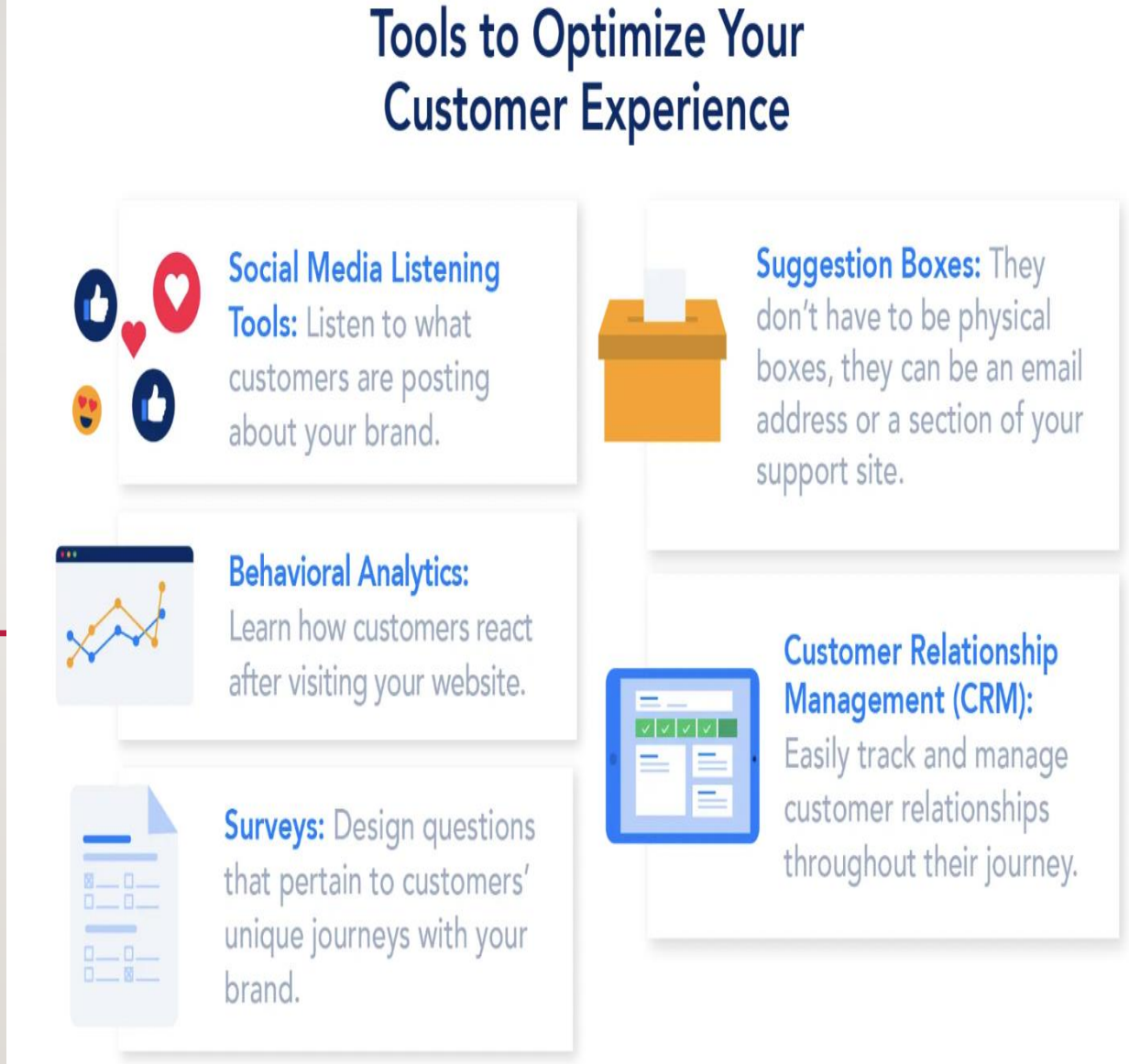
ABC CALL VOLUME TREND ANALYSIS

FINAL PROJECT-4



Project Description

- For you final project we are providing you with a dataset of a Customer Experience (CX) Inbound calling team for 23 days. Data includes 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).

- 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

- For this project I have used excel for analysis.
- I have used different pivots and charts to gather insights.
- I have used different formulas and methods to solve some calculations.

Excel worksheet link-: https://1drv.ms/x/s!As8HBhJc-A2NgVNN3OlqtNFfNoLo?e=wsy6SQ

Tech-Stack Used:

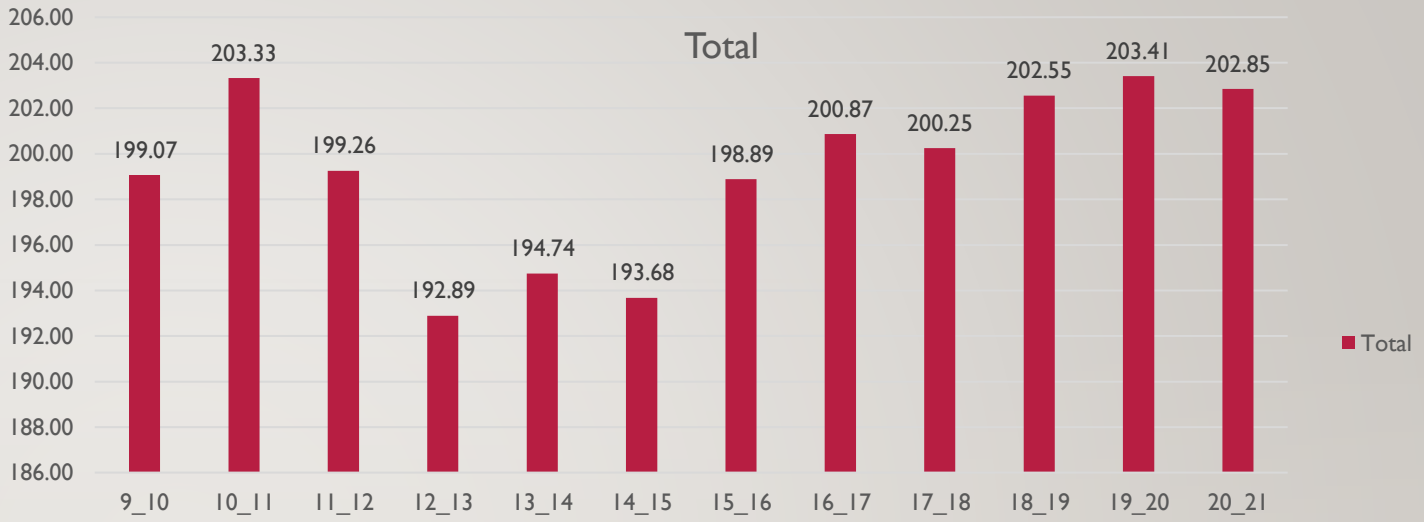
- I have used ms excel for complete data analysis using different pivots and charts.

- I have also used power point to create the complete report.

INSIGHTS

Q1. Calculate the average call time duration for all incoming calls received by agents (in each Time_Bucket).

Row Labels	Average of Call_Seconds (s)
9_10	199.07
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
Grand Total	**198.62**



1. Time_Bucket is measured in the Rows and average of Call_Seconds is measured in the Values section. And we put Call_Status in the Filters section.

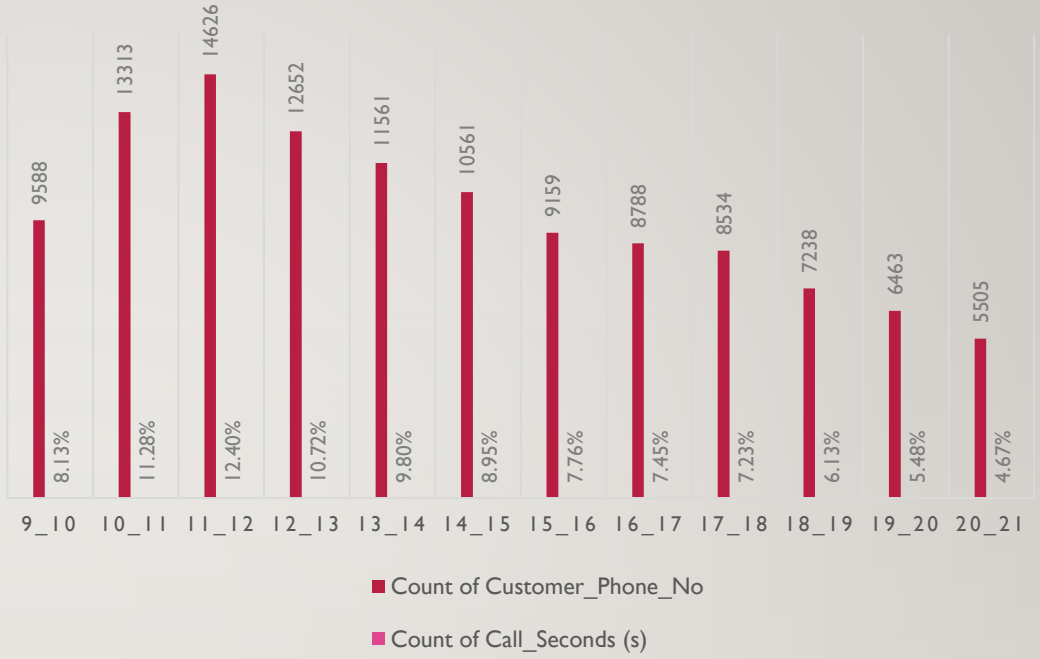
2. The total average of call time duration which are answered by the agents is 198.6 seconds.

3. The average call time duration for all incoming calls received by agents is the highest in between 10 am to 11 am and from 7 pm to 8 pm.

5. The average call time duration for all incoming calls received by agents is the least in between 12 noon to 1 pm.

Q2. 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, ...)

Row Labels	Count of Customer_Phone_No	Count of Call_Seconds (s)
9_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%
Grand Total	**117988**	**100.00%**



- We plotted Time_Bucket in the rows and took Count of Customer_Phone_No and Count of Time in the Values section.
- We measured Count of Time as the percentage of Column Total.
- The customers call the most in between 11 am to 12 noon.
- The customers call the least in between 8 pm to 9 pm.

ASSUMPTION

An agent work for 6 days a week; On an average total unplanned leaves peragent 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.

Agents working hour	9
Agents on-floor work hour	8
Working Days	6
Out of 28 days, an agent works	24
Unplanned leave days	4
Work days per month	20
Days an agent work in a week	5
Actual working hours	60%
Total time spent on call	4.5

Q3. As we 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. We have to calculate minimum number of agents required in each time bucket so that at least 90 calls should be answered out of 100.)

	Count of Customer_Phone_No	Count of Customer_Phone_No2	Average of Call_Seconds (s)
abandon	34403	29.16%	0
answered	82452	69.88%	198.62
transfer	1133	0.96%	76.15
Grand Total	**117988**	**100.00%**	**139.53**

Avg calls per day	5130
Avg answered call time duration(s)	198.60
Actual working hrs per agent	4.5
Time req to ans 5130 calls in hrs	283
Time req to ans 90% call in hrs	254.70
Manpower req	56.60

Row Labels	Count of Call_Seconds (s)	REQ Manpower
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
9_10	8.13%	5
Grand Total	**100.00%**	**57**

- First, we created pivot table. Date & Time is dragged down to Rows, Call Status to Columns, while taking count Call Duration in the Values section.
- Then, we calculated the average of abandon, answered and transfer by using the average excel formula.
- 29% of the calls are abandoned, 1% is transferred, while 70% of the calls are answered in the day time.
- Total agents required to answer the 90% of the calls per day is 57.
- The minimum number of agents required for each time bucket is calculated by 57 * count of time (calculated in the 2nd question).

Q4. 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:

Avg call count per day(9am - 9pm)	5130
Avg call count night shift(9pm-9am) 30% of day	1539
Additional Hours Required	76.41135
Additional Headcount	16.9803

Time Part	Calls Received	Call dist. In %	Req Manpower	
21_22	3	10%	2	
22_23	3	10%	2	
23_24	2	7%	1	
00_01	2	7%	1	
01_02	1	3%	1	
02_03	1	3%	1	
03_04	1	3%	1	
04_05	1	3%	1	
05_06	3	10%	2	
06_07	4	13%	2	
07_08	4	13%	2	
08_09	5	17%	3	
Total	30	100%	17	

RESULT :-

- We first calculated the Time Distribution by dividing each calls distribution by total calls i.e., 30.
- The number of agents required for each time bucket is calculated by 15 * Time Distribution
- 15 is calculated above by dividing the additional hours required to answer the night calls by 5 (actual working hours of agents).
- Also, while calculating, the round figure is taken into consideration as there cannot be 1.5 men working.

CONCLUSION

1. I have learnt how call volume data are analysed.

2. I have learnt how to deal with huge amounts of data.

3. I have learnt to make different pivots and charts.

4. I have also learnt how teams increase their man power using data analysis.

5. Overall I have learnt how companies use call volume data to gather meaningful insights.