ABC CALL VOLUME ANALYSIS

FINAL PROJECT - 4

PROJECT DISCRIPTION

- The attached dataset is of Inbound calls of an ABC company from the insurance category consists 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 FILE LINK -

Call_Volume_Trend_Analysis_Project_9 (1).xlsx

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

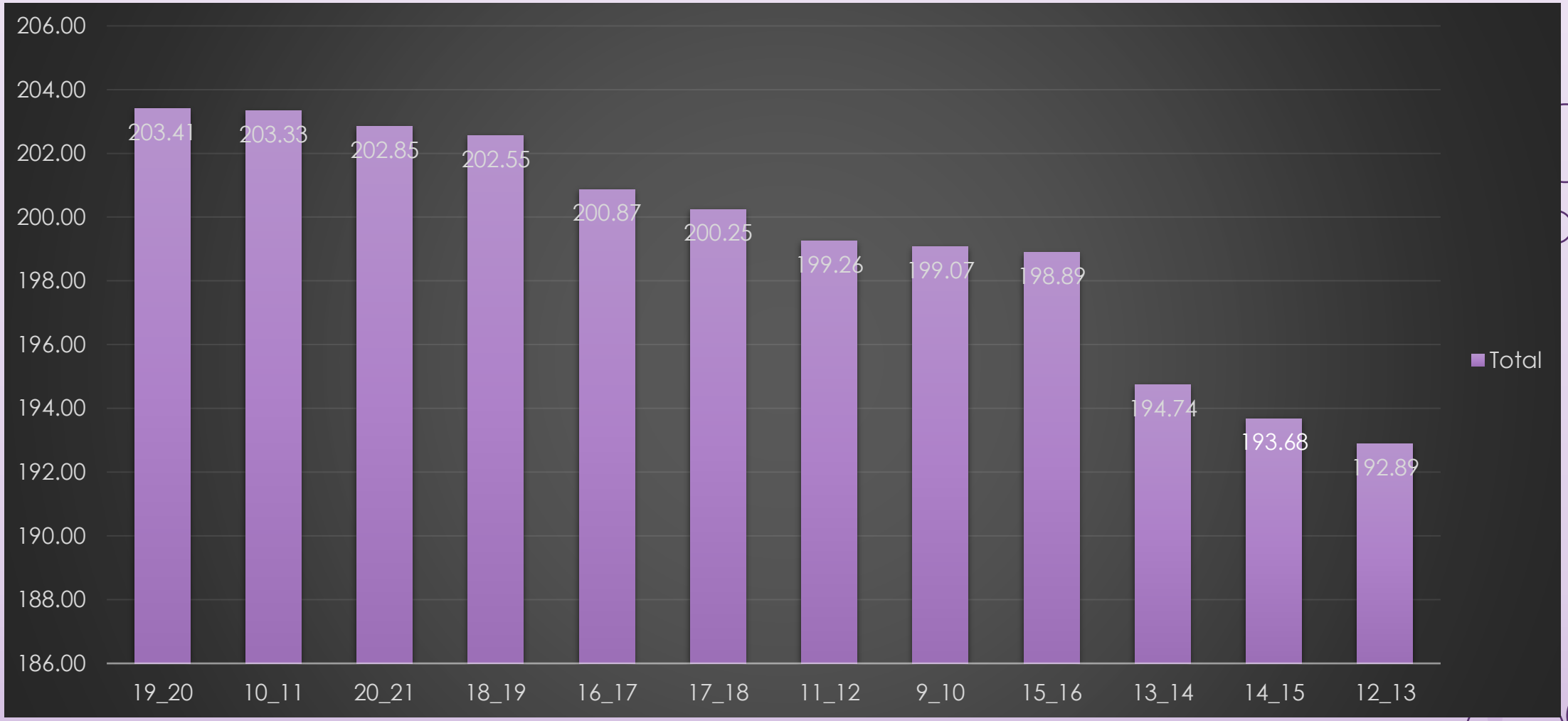
Q1. Calculate the average call time duration for all incoming calls received by agents (in each Time_Bucket).

RESULT :-

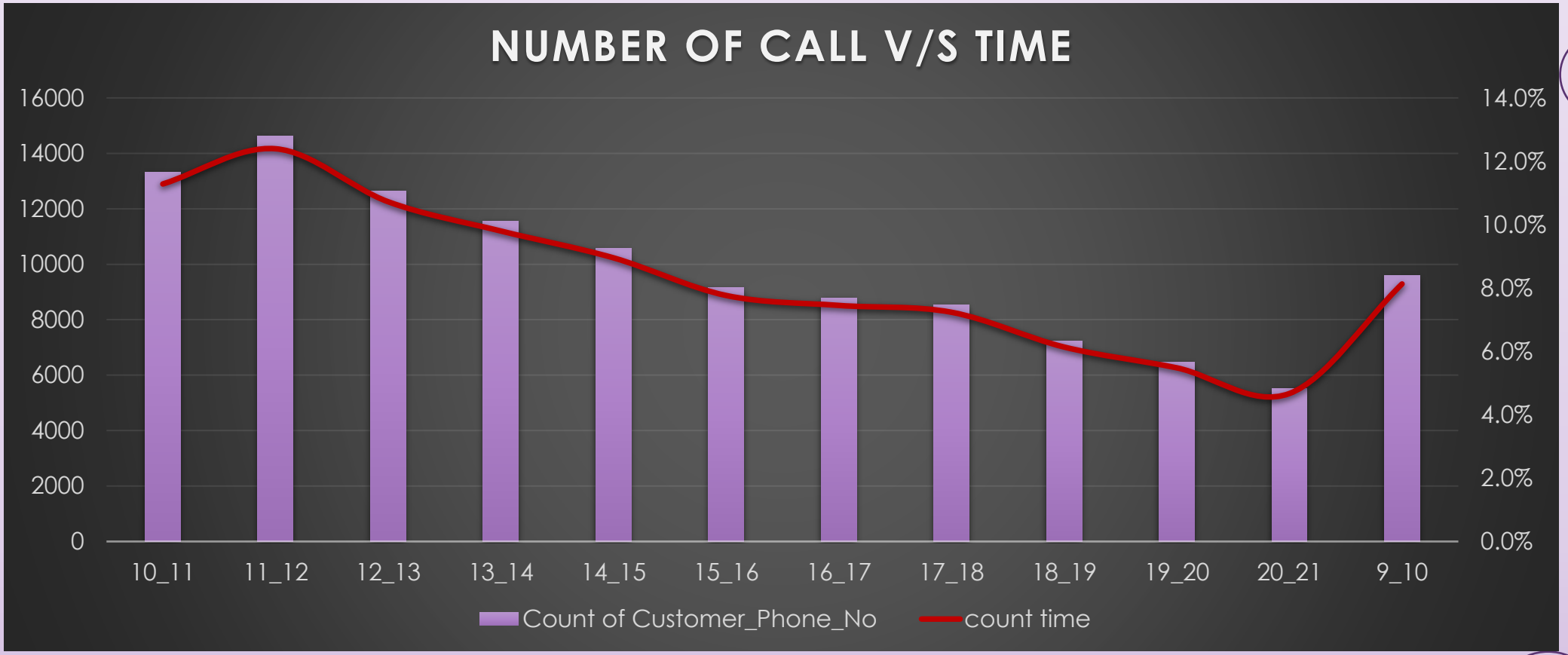
1. From this pivot and chart we can clearly see the insights.
2. During 10-11, and 19-21 time bucket average call duration is the highest.
3. During 14-15 time bucket average call duration is the lowest.
4. Average of call duration which are received by the agents is 198.622 seconds.

Call_Status	answered
Row Labels	Average of Call_Seconds (s)
19_20	203.4060725
10_11	203.3310302
20_21	202.845993
18_19	202.5509677
16_17	200.8681864
17_18	200.2487831
11_12	199.2550234
9_10	199.0691057
15_16	198.8889175
13_14	194.7401744
14_15	193.6770755
12_13	192.8887829
Grand Total	198.6227745

AVERAGE CALL DURATION OF AGENTS IN EACH TIME BUCKETS



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, …..)



RESULT :-

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.

Row Labels	Count of Customer_Phone_No	Count of Time
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%

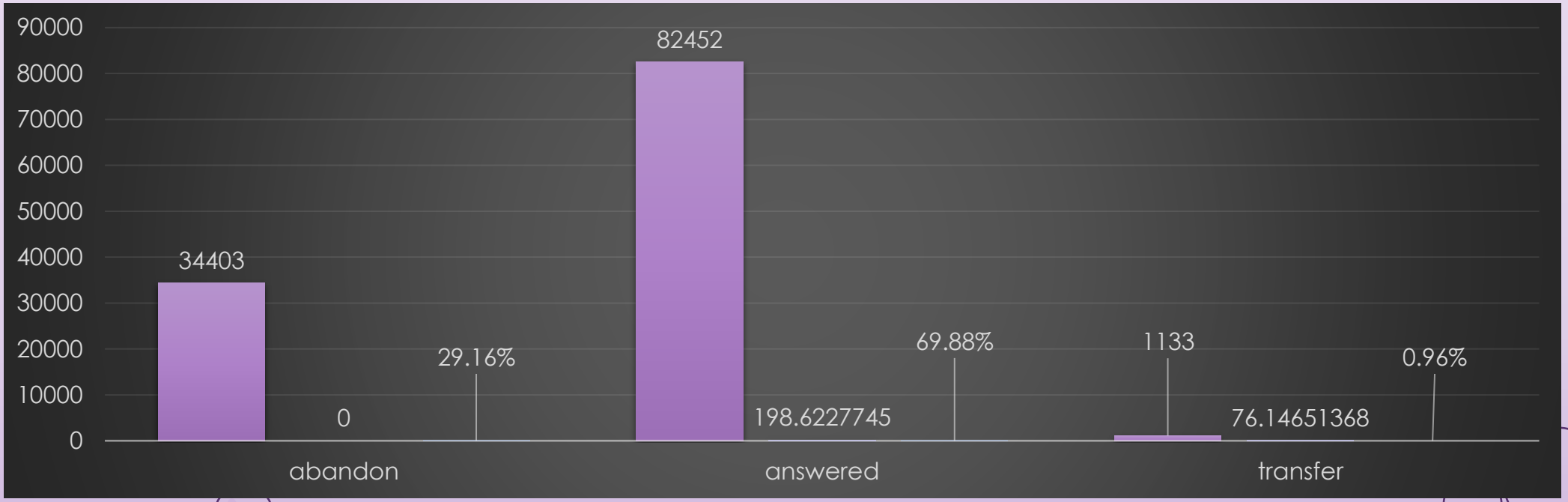
ASSUMPTION

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 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.)

Row Labels	Count of Customer_Phone_No	Average of Call_Seconds (s)	Count of Customer_Phone_No2
abandon	34403	0	29.16%
answered	82452	198.6	69.88%
transfer	1133	76.1	0.96%
Grand Total	117988	139.5	100.00%



Avg calls per day	5130
Avg answered call time duration(s)	198.6
Actual working hrs per agent	4.5
Time req to ans 5130 calls in hrs	283
Time req to ans 90% call in hrs	254.7
Manpower req	56.6

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:

FROM THIS CALCULATION WE CAN GET:

AVG. CALL DAILY (BETWEEN 9AM-9PM) =5130

AVG. CALL DAILY (BETWEEN 9PM-9AM) =1539

AVERAGE CALL DURATION FOR EACH DAY = 198.6 HRS

ADDITIONAL HOURS = (1539*0.9*198.6)/3600
= 76.49 HRS
ADDITIONAL AGENTS REQUIRED
= ADDITIONAL HOURS/4.5
= 76.49/4.5
= 17

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 :-

1. We first calculated the Time Distribution by dividing each calls distribution by total calls i.e., 30.
2. The number of agents required for each time bucket is calculated by 15 * Time Distribution
3. 15 is calculated above by dividing the additional hours required to answer the night calls by 5 (actual working hours of agents).
4. 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.


THANK
YOU