ABC Call Volume Trend Analysis

Final Project-4

Project Description :

In ABC call volume Trend Analysis project we have 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 , Duration [duration for which a customer and executives are on call, Call_, call status (Abandon, answered, transferred). I used my statistical knowledge and founded several type of insights from the data which helped the hiring team.

Approach :

I carefully understood the requirements and looked what actual data the team needs and then performed data cleaning in excel and use some excel command to derive meaningful insights. Also used some business analytical perspective mentioned in the project description.

Tech-stack Used :

Excel by Microsoft Corporation – For carrying out EDA on the datasets & Visualisation.

WordPad by Microsoft Corporation – For creating the project report.

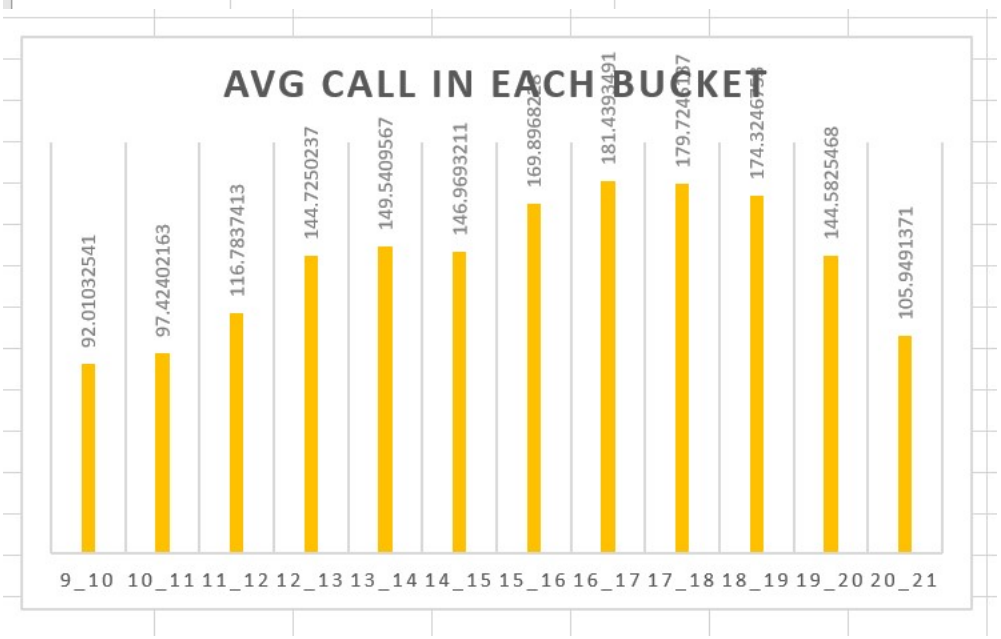
Insights :

Performed several excel formulas to get the insights from the data and able to understood that how to perform a real time data analysis in Excel.

Case Study Objectives :

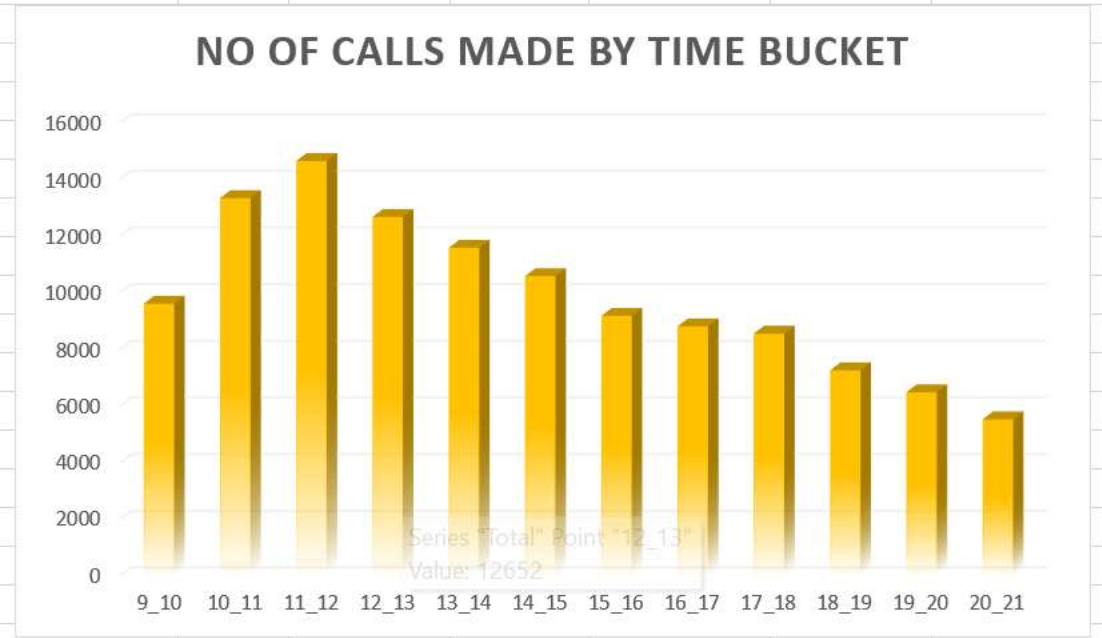
1. Calculate the average call time duration for all incoming calls received by agents (in each Time_Bucket).

Time_Bucket	Average of Call_Seconds (s)
9_10	92.01032541
10_11	97.42402163
11_12	116.7837413
12_13	144.7250237
13_14	149.5409567
14_15	146.9693211
15_16	169.8968228
16_17	181.4393491
17_18	179.7245137
18_19	174.3246753
19_20	144.5825468
20_21	105.9491371
Grand Total	**139.5321473**



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, ...)

Row Labels	Count of Ringing
9_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
Grand Total	**117988**



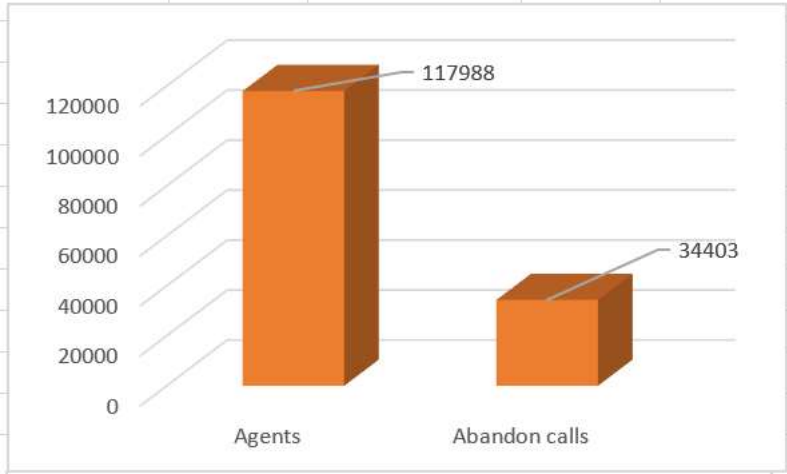
C . As you can see current abandon rate is approximately 30%. Propose a manpower plan required during each time bucket [between 9am to 9pm] to reduce the abandon rate to 10%. (i.e. You have to calculate minimum number of agents required in each time bucket so that at least 90 calls should be answered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

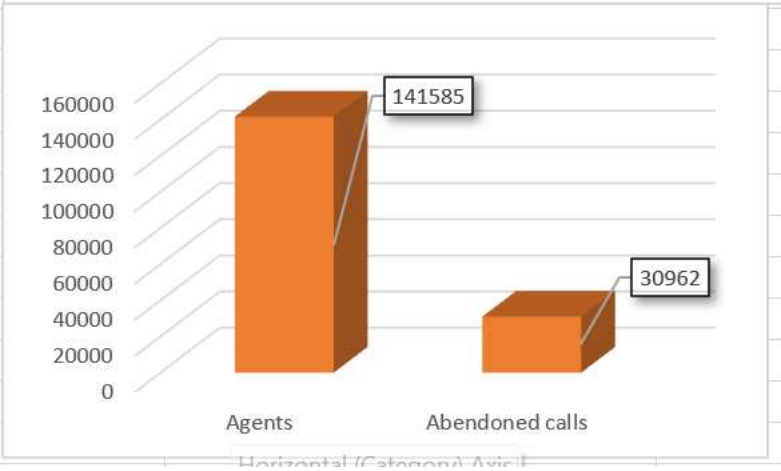
Solution : we need 23,579 more manpower totally.

Row Labels	Count of Ringing
abandon	29.16%
answered	69.88%
transfer	0.96%
Grand Total	**100.00%**

Agents	Abandon calls
117988	34403

Agents	Abendoned calls
141585	30962





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:

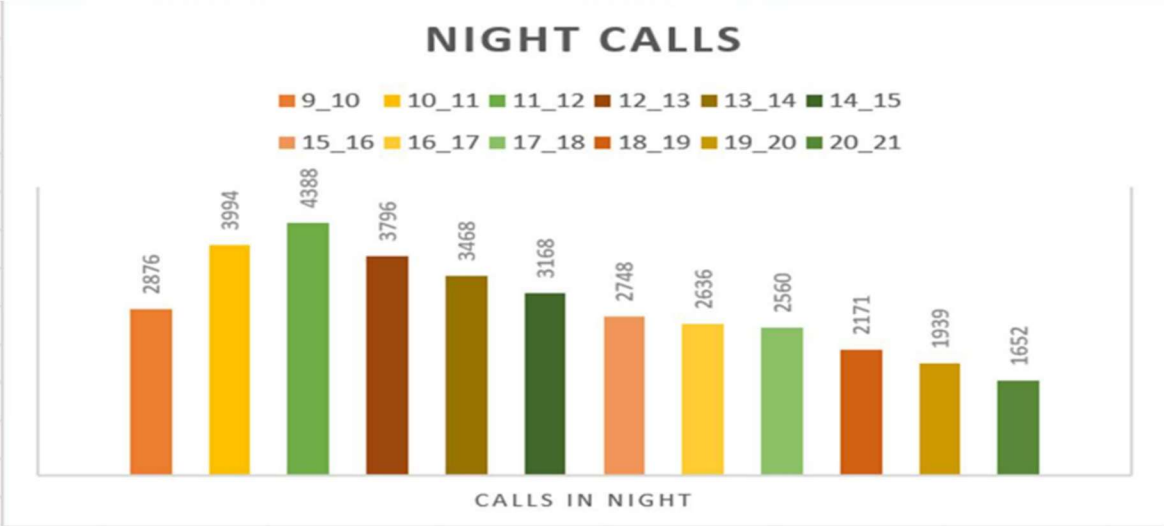
Time_Bucket	9_10	10_11	11_12	12_13	13_14	14_15	15_16	16_17	17_18	18_19	19_20	20_21
Calls In Night	2876	3994	4388	3796	3468	3168	2748	2636	2560	2171	1939	1652

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

Solution :

From the question 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]

• From the graph we can say that highest call received is 5 in between 8 to 9 am, so from analyzing the data we can say that we must hire executive for night shift we can be maximum to 5- 6.



Second suggestion can be like if we do not want to spend extra for night executive then we can shift some of day employee shift to night as it only required only 5-6 maximum executive.

• Or as said in question that company can consider 10% abandon So, with that data we can add 3-4 executive manpower.

Result :

Performed all the analysis in Microsoft Excel using pivot tables and charts to create actionable insights to make data driven decision.

Please refer all sheets in Call_Volume_Trend_Analysis.xlsx for all pivot tables and analysis in Drive folder.