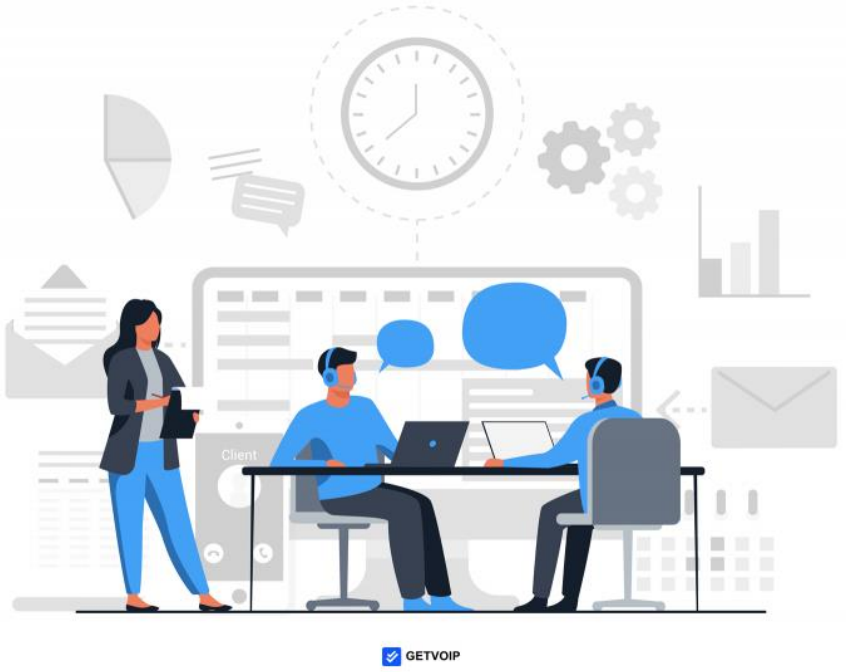
ABC Call Volume Trend

Final Project-4

DESCRIPTION

- The project is about analyzing the call volume trend and call handling of a Customer Experience (CX) Inbound calling team of ABC Company for 23 days. The data includes various parameters such as Agent_Name, Agent_ID, Queue_Time, Time, Time_Bucket, Duration, Call_Seconds, and call status. The objective of this project is to calculate the average call time duration for all incoming calls received by agents, show the total volume/ number of calls coming in via charts/ graphs [Number of calls v/s Time], propose a manpower plan required during each time bucket [between 9 am to 9 pm] to reduce the abandon rate to 10%, and propose a manpower plan required during each time bucket in a day for answering the night calls. The project aims to provide insights into the call handling of the CX team and help in improving the overall customer experience.



PROBLEM APPORACH

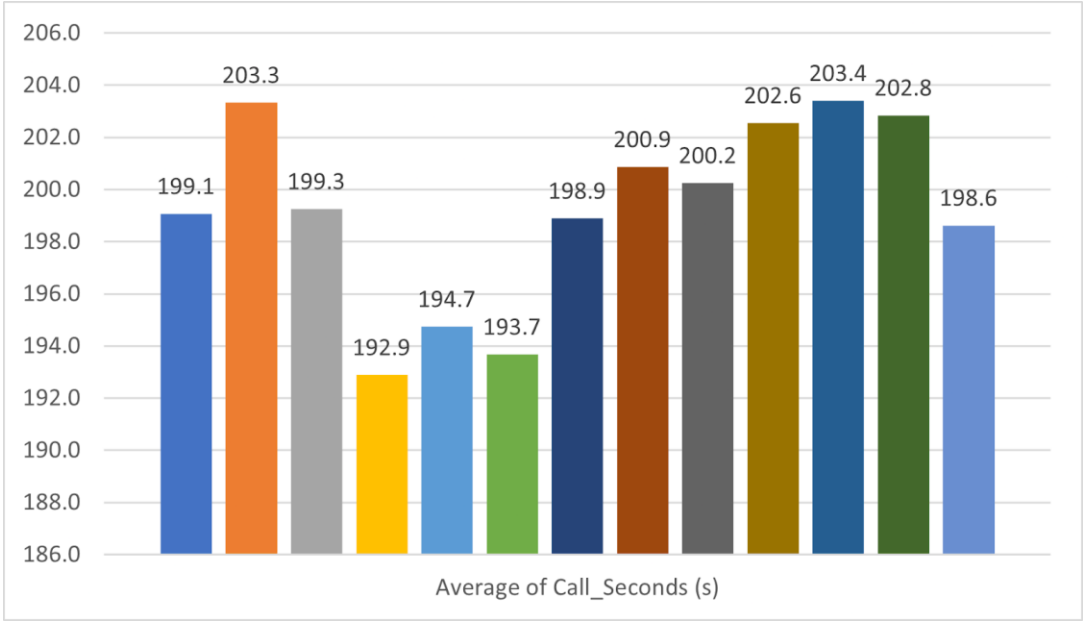
- The dataset comprises 117,837 data points and 13 columns that offer various features, such as Agent_Name, Agent_ID, Queue_Time (i.e., the waiting duration before a customer gets connected to an agent), Time (i.e., the time at which a call was made by a customer), Time_Bucket, Duration (i.e., the duration of the call between a customer and an executive), Call_Seconds (time in seconds), and call status (Abandon, answered, transferred). Initially, we imported the dataset to an Excel sheet and removed duplicates.

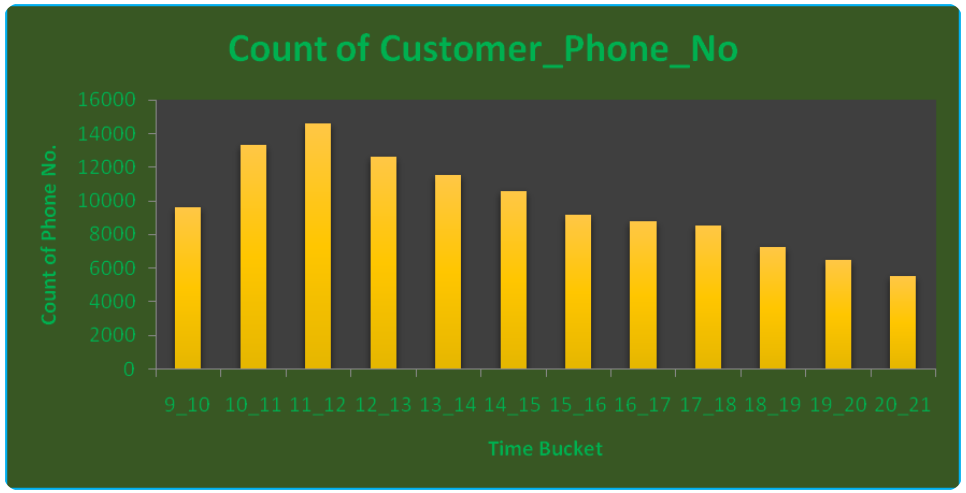
TASK –1 Average Call Time Duration

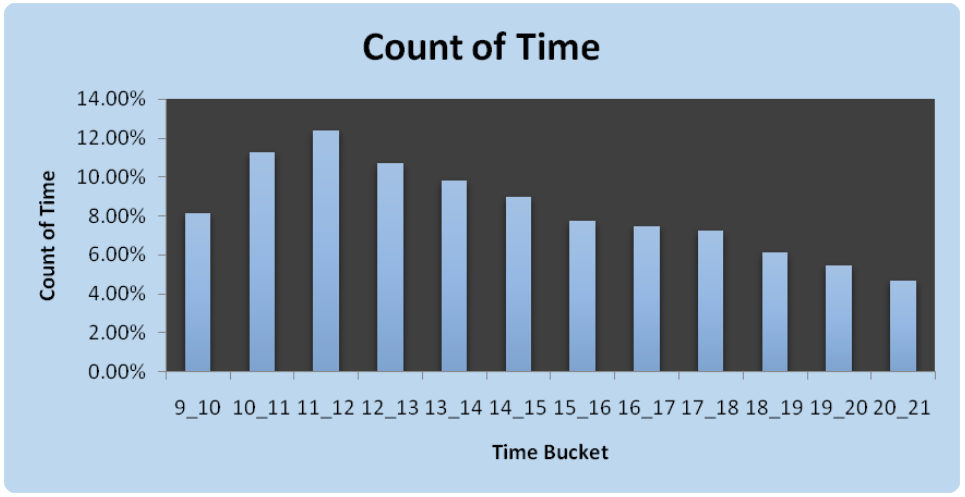
- **Calculate the average call time duration for all incoming calls received by agents (in each Time _Bucket).**

Here in this Plot Time Bucket on X-axis & Average call on Y-Axis

The average call time duration for all incoming calls received by agents in each Time_Bucket ranges from 192.9 seconds to 203.4 seconds







TASK –2 Number of Calls v/s Time

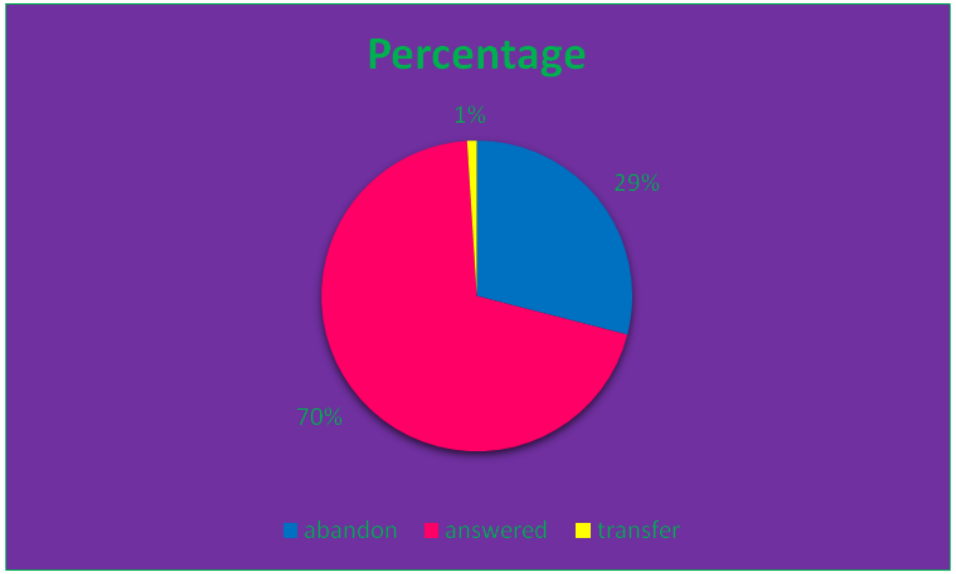
- **Show the total volume/ number of calls coming in via charts/ graphs [Number of calls v/s Time]. You can select time in a bucket form (i.e. 1-2, 2-3, …..)**

Graphs shows the call volume distribution across the day and how it is distributed in percentage.

The total volume/number of calls coming in is highest during the time bucket 11-12 and lowest during the time bucket 20-21.

TASK-3 Manpower Plan

- As you can see, the 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 the minimum number of agents required in each time bucket so that at least 90 calls should be answered out of 100.)
- To reduce the abandon rate to 10%, the manpower plan required during each time bucket has been proposed in the report. The number of agents required varies from 4 to 7 during different time buckets.



Average time to answer a call
= 198.6 seconds

Total time spent on call
= 7.5 * 60%
= 4.5
Time required to answer 90% of calls = 5130 * 198.6 * 0.9 / 3600
= 254.7001826

Total person required per day = 254.7001826 / 4.5
= 57
So, the total person required per day to reduce the abandon rate is 57.

TASK 4- Minimizing Abandon Rate

- Let’s say customers also call this ABC insurance company at night but don't get an 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:
- Now propose a manpower plan required during each time bucket in a day. Maximum Abandon rate assumption would be same 10%.

- The number of agents required varies from 1 to 6 during different time buckets.To answer the night calls, the manpower plan required during each time bucket in a day has been proposed in the report

  Total person required per day = 57

  Call volume daily [9am to 9 pm] = 5130

  If we provide support in night [9am to 9pm] = 5130 * 30%

  = 1539

  Additional hours required = 1539 * 198.6 * 0.9 / 3600

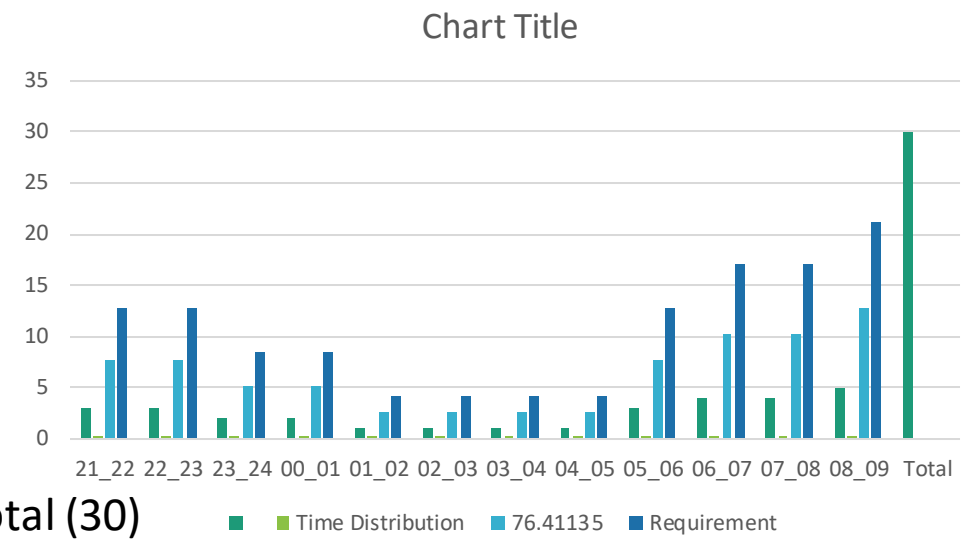
  = 76.41135

  Additional person required = 76.41135 / 4.5

  = 17

  Total Manpower = 57 + 17 = 74

TASK 4- Minimizing Abandon Rate Contd...



- In night slot, the total hours needed is 76.41135
- Then we have a distribution of time for the night slot (9 pm to 9am)
- We can get the distribution of time in percentage by Time Distribution/Total (30)
- Then convert these percentage in hours to get the required result
- Assuming 60% efficiency in first two slots of time distribution we get different requirement for different shifts
- So, we'll just not have a additional shift at night, we;ll create 24 hours booster, so that people who were earlier ending their shift at 9 pm they might end at 11 pm and so on, to get some more coverage
- The highlighted part shows the time for lunch break, or any other thing because this is the time where we expect lower calls

Insights that I Gained from This Project

Through this project, I gained knowledge in different statistical methods and problem-solving techniques, including determining the necessary additional manpower required to decrease the abandon rate of calls.

The insights gained through data analysis can help businesses optimize their operations, reduce costs, and ultimately increase sales and customer satisfaction.

For Analyzed Excel Sheet :
ABC Call Volume Analysis Analyzed Data