Trainity project 8

ABC Call Volume Trend Analysis

Project Description

In this project, you'll be diving into the world of Customer Experience (CX) analytics, specifically focusing on the inbound calling team of a company. You'll be provided with a dataset that spans 23 days and includes various details such as the agent's name and ID, the queue time (how long a customer had to wait before connecting with an agent), the time of the call, the duration of the call, and the call status (whether it was abandoned, answered, or transferred).

A Customer Experience (CX) team plays a crucial role in a company. They analyze customer feedback and data, derive insights from it, and share these insights with the rest of the organization. This team is responsible for a wide range of tasks, including managing customer experience programs, handling internal communications, mapping customer journeys, and managing customer data, among others.

In the current era, several AI-powered tools are being used to enhance customer experience. These include Interactive Voice Response (IVR), Robotic Process Automation (RPA), Predictive Analytics, and Intelligent Routing.

One of the key roles in a CX team is that of the customer service representative, also known as a call center agent. These agents handle various types of support, including email, inbound, outbound, and social media support.

Inbound customer support, which is the focus of this project, involves handling incoming calls from existing or prospective customers. The goal is to attract, engage, and delight customers, turning them into loyal advocates for the business.

Approach

Firstly I imported the raw data to Microsoft excel 2021 where I will perform the data analysis tasks ,I cleaned the data any columns containing blanks and replaced or deleted them and started doing the tasks given from the final data.

Tech-Stack Used

I used Microsoft Excel 2021 for this project for its easy to use data analysis features to perform tasks faster and efficiently.

Insights

With this project we got various insights of calls in a certain time bucket like its average call duration or volume of calls or no of additional agents required to make call attended to 90%.

Result

With this project I was further able to master my skills in excel by doing the tasks for this project and gained a better understanding of calls

My workbook:
https://docs.google.com/spreadsheets/d/1tTJ1jss0K0jXmKaQYP4sm1Yazshh8GKf/edit?usp=sharing&ouid=110428113670481159623&rtpof=true&sd=true

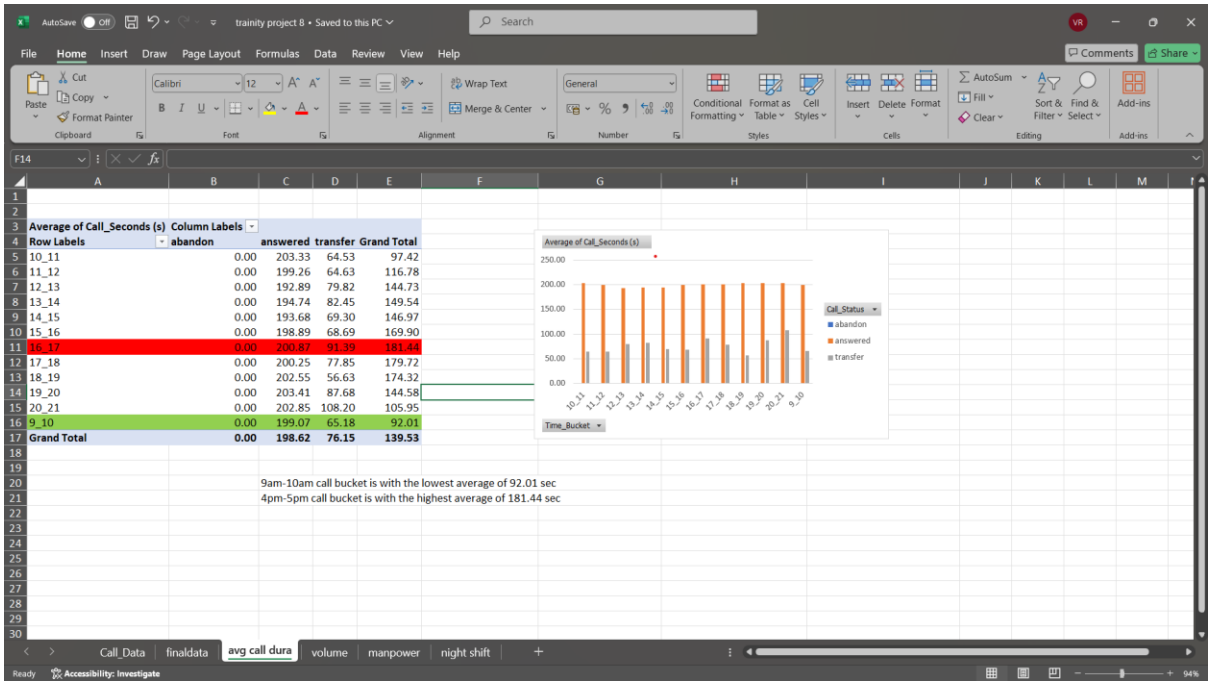
Data Analytics Tasks:

You have been provided with a dataset that contains information about the inbound calls received by a company named ABC, which operates in the insurance sector. Your task is to use this data to answer the following questions:

Before performing the tasks we clean the data by finding blanks and replacing them or deleting them in this data set the column Wrapped_by only had blanks so I deleted the column and created the final data.

1. **Average Call Duration:** Determine the average duration of all incoming calls received by agents. This should be calculated for each time bucket.

Your Task: What is the average duration of calls for each time bucket?



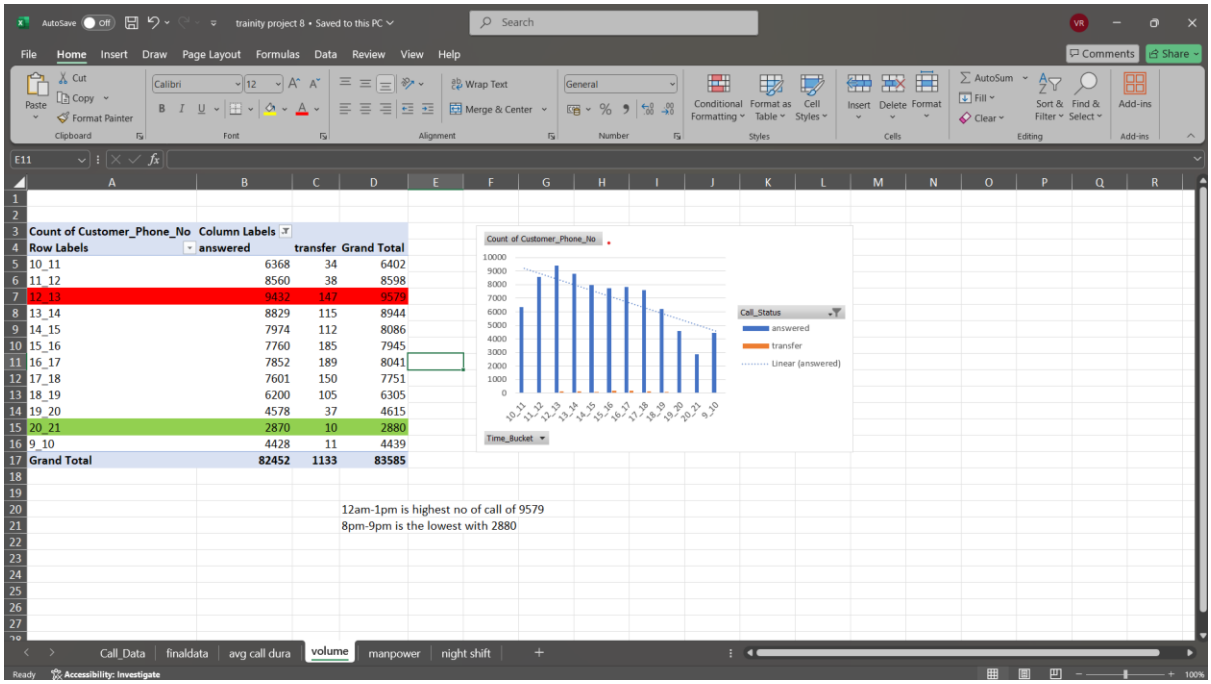
Average of Call_Seconds (s)	Column Labels			
Row Labels	abandon	answered	transfer	Grand Total
10_11	0.00	203.33	64.53	97.42
11_12	0.00	199.26	64.63	116.78
12_13	0.00	192.89	79.82	144.73
13_14	0.00	194.74	82.45	149.54
14_15	0.00	193.68	69.30	146.97
15_16	0.00	198.89	68.69	169.90
16_17	0.00	200.87	91.39	181.44
17_18	0.00	200.25	77.85	179.72
18_19	0.00	202.55	56.63	174.32
19_20	0.00	203.41	87.68	144.58
20_21	0.00	202.85	108.20	105.95
9_10	0.00	199.07	65.18	92.01
Grand Total	0.00	198.62	76.15	139.53

9am-10am call bucket is with the lowest average of 92.01 sec
4pm-5pm call bucket is with the highest average of 181.44 sec

Result: the highest and lowest average of call duration in seconds is 9am-10am and 4pm-5pm with 181.44 and 92.01 seconds respectively.

2. **Call Volume Analysis:** Visualize the total number of calls received. This should be represented as a graph or chart showing the number of calls against time. Time should be represented in buckets (e.g., 1-2, 2-3, etc.).

Your Task: Can you create a chart or graph that shows the number of calls received in each time bucket?



Count of Customer_Phone_No	Column Labels		
Row Labels	answered	transfer	Grand Total
10_11	6368	34	6402
11_12	8560	38	8598
12_13	9432	147	9579
13_14	8829	115	8944
14_15	7974	112	8086
15_16	7760	185	7945
16_17	7852	189	8041
17_18	7601	150	7751
18_19	6200	105	6305
19_20	4578	37	4615
20_21	2870	10	2880
9_10	4428	11	4439
Grand Total	82452	1133	83585

12am-1pm is highest no of call of 9579
8pm-9pm is the lowest with 2880

Result: the highest and lowest no of calls is 12am-1pm and 8pm-9pm with 9579 and 2880 respectively.

Assumptions: An agent works for 6 days a week; On average, each agent takes 4 unplanned leaves per month; An agent's total working hours are 9 hours, out of which 1.5 hours are spent on lunch and snacks in the office. On average, an agent spends 60% of their total actual working hours (i.e., 60% of 7.5 hours) on calls with customers/users. The total number of days in a month is 30.

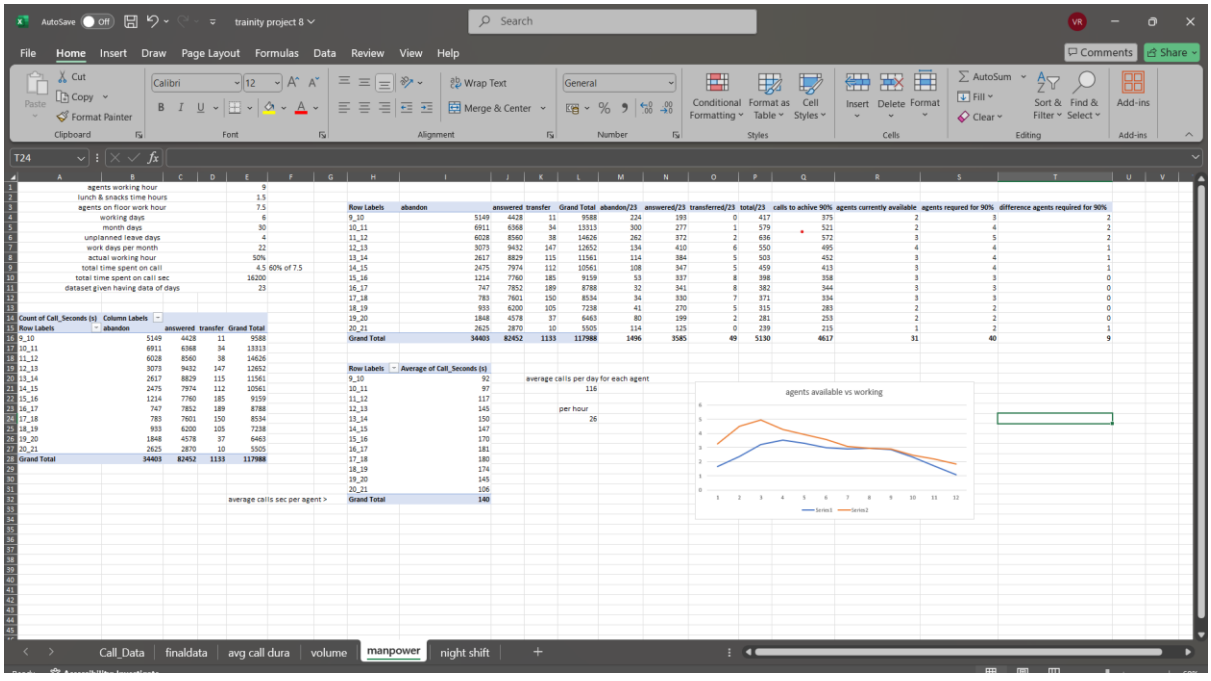
assumptions	
agents working hour	9
lunch & snacks time hours	1.5
agents on floor work hour	7.5
working days	6
month days	30
unplanned leave days	4
work days per month	22
actual working hour	50%

		60% of
total time spent on call	4.5	7.5
total time spent on call sec	16200	
dataset given having data of days	23	

average calls per day for each agent=	116
per hour=	26

3. **Manpower Planning:** The current rate of abandoned calls is approximately 30%. Propose a plan for manpower allocation during each time bucket (from 9 am to 9 pm) to reduce the abandon rate to 10%. In other words, you need to calculate the minimum number of agents required in each time bucket to ensure that at least 90 out of 100 calls are answered.

Your Task: What is the minimum number of agents required in each time bucket to reduce the abandon rate to 10%?

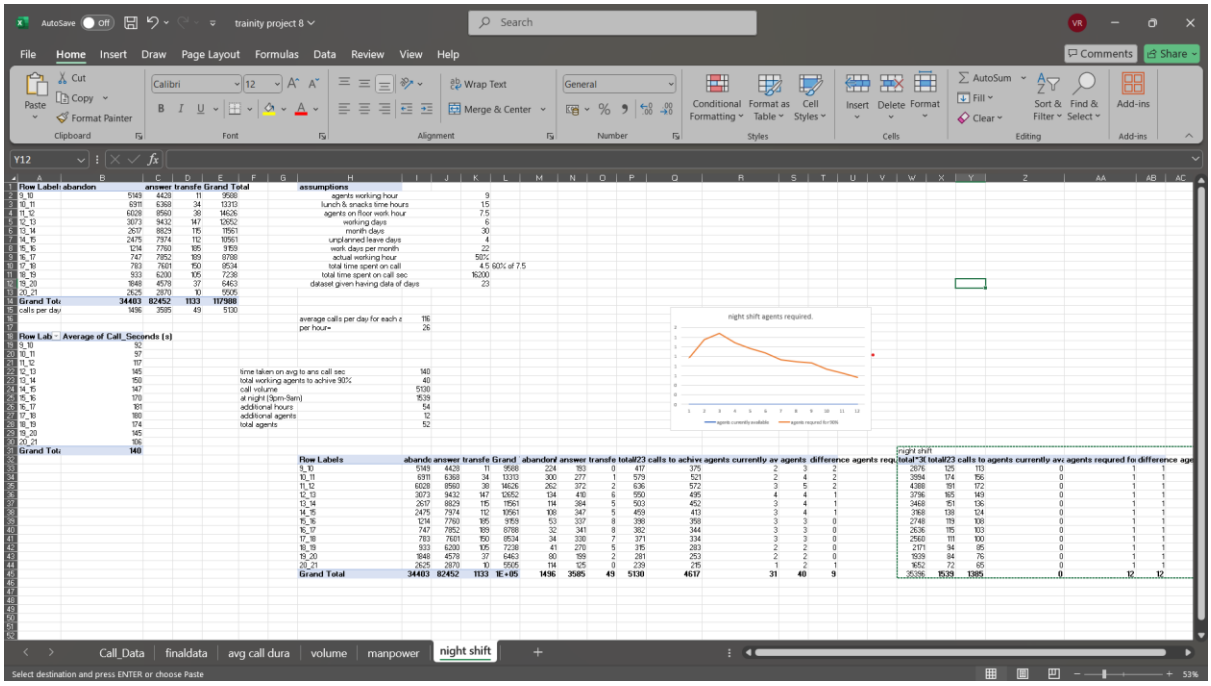


Result: the no of additional agents required to answer 90% of calls in day time is 9 with the already working agents. Between 3pm-6pm there is no need of addition workers/agents.

4. **Night Shift Manpower Planning:** Customers also call ABC Insurance Company at night but don't get an answer because there are no agents available. This creates a poor customer experience. Assume that for every 100 calls that customers make between 9 am and 9 pm, they also make 30 calls at night between 9 pm and 9 am. The distribution of these 30 calls is as follows:

Your Task: Propose a manpower plan for each time bucket throughout the day, keeping the maximum abandon rate at 10%.

Result: for night shift one agent is required in each time slot with a total of 12 agents working in night shift.



Thank You