

# ABC

## CALL VOLUME TREND ANALYSIS



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# Project Description

- ❑ The CX team is responsible for analyzing customer feedback and data to provide insights to the organization.
- ❑ Their roles encompass a range of areas, including CX programs, digital customer experience, design, internal communications, voice of the customer, user experience, journey mapping, customer success, customer support, data management, and understanding the customer journey.
- ❑ AI-driven customer experience tools like IVR, RPA, predictive analytics, and intelligent routing can greatly enhance customer service. The Customer Experience team also offers various job opportunities for customer service representatives, covering email, inbound, outbound, and social media support.
- ❑ Inbound customer support focuses on managing incoming calls from current or potential customers, aiming to attract, engage, and convert them into loyal advocates.
- ❑ By effectively addressing customer issues and aiding them in achieving their goals, businesses can delight customers and drive growth.

# Business Understanding

Advertising plays a vital role in any business, serving to boost sales and raise awareness about the company's products or services. Often, a business's initial impression is shaped by its advertising strategies.

Businesses can target a variety of audiences, ranging from local and regional to national and international. To reach these audiences, companies employ different types of advertising, such as online directories, trade and technical publications, radio, cinema, and outdoor advertising, as well as national newspapers, magazines, and TV.

The advertising industry is highly competitive, with numerous companies investing significant sums to attract the same audience segments. This is where a company's analytical abilities are essential. The objective is to pinpoint the media platforms that can effectively convert audiences into customers at a minimal cost.

# Analysis Tasks

- **Average Call Duration:** Calculate the average call time duration for all incoming calls received by agents (Each Time Bucket).
- **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.).
- **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.
- **Night Shift Manpower Planning:** 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 for every 100 calls that the customer made from 9 A.m. to 9 P.m., the customer also made 30 calls in the night between intervals [9 P.m. to 9 A.m.] Now propose a manpower plan required during each time bucket in a day. The maximum Abandon rate assumption would be the same 10%.

# Assumptions

<u>Description</u>	<u>Values</u>
Working days per week	6
Unplanned holidays per month	4
Working hours per day	9 Hrs.
Time spent on Lunch and Snack time	1.5 Hrs.
Actual working hours/day	7.5 Hrs.
Agents occupied in actual working hours/day	60 % of the actual working hours
Agents average working time/day	4.5 Hrs. (16200 Sec.)

# Tech - Stack



MS EXCEL

- Data Cleaning
- Data Analyzing
- Data Visualization



MS POWERPOINT

- Report Creation

# Approach

- **Dataset Familiarization:** Understanding the dataset by exploring its structure, contents, and key features. Identifying important variables, data types, and any initial patterns or trends.



- **Data Cleaning:** Preparing the data for analysis by handling missing values, correcting inconsistencies, and removing duplicates. To ensure that the dataset is clean and ready for analysis.



- **Data Exploration:** Performed exploratory data analysis (EDA) to uncover patterns, relationships, and trends in the data. Use statistical methods to gain deeper insights into the data.



- **Data Analysis:** Conducted a thorough analysis using appropriate methods and techniques.



- **Data Visualization:** Presented the findings and insights through clear and informative visualizations, such as Bar graphs, Line charts, and Pivot Tables.



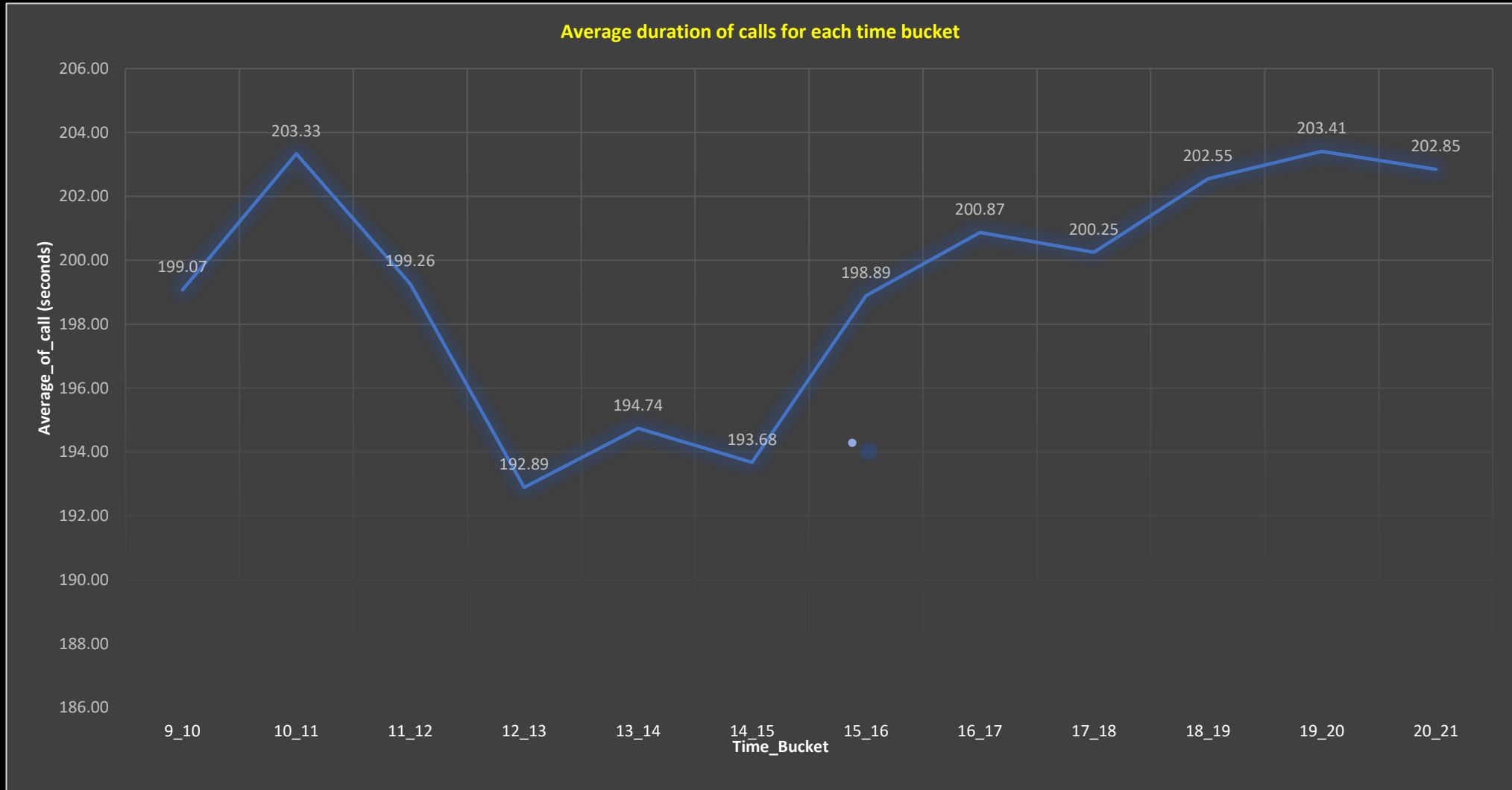
- **Project Report:** Compiled a comprehensive report detailing the methodology, analysis, findings, and conclusions, including visualizations, key insights, and recommendations based on the analysis.



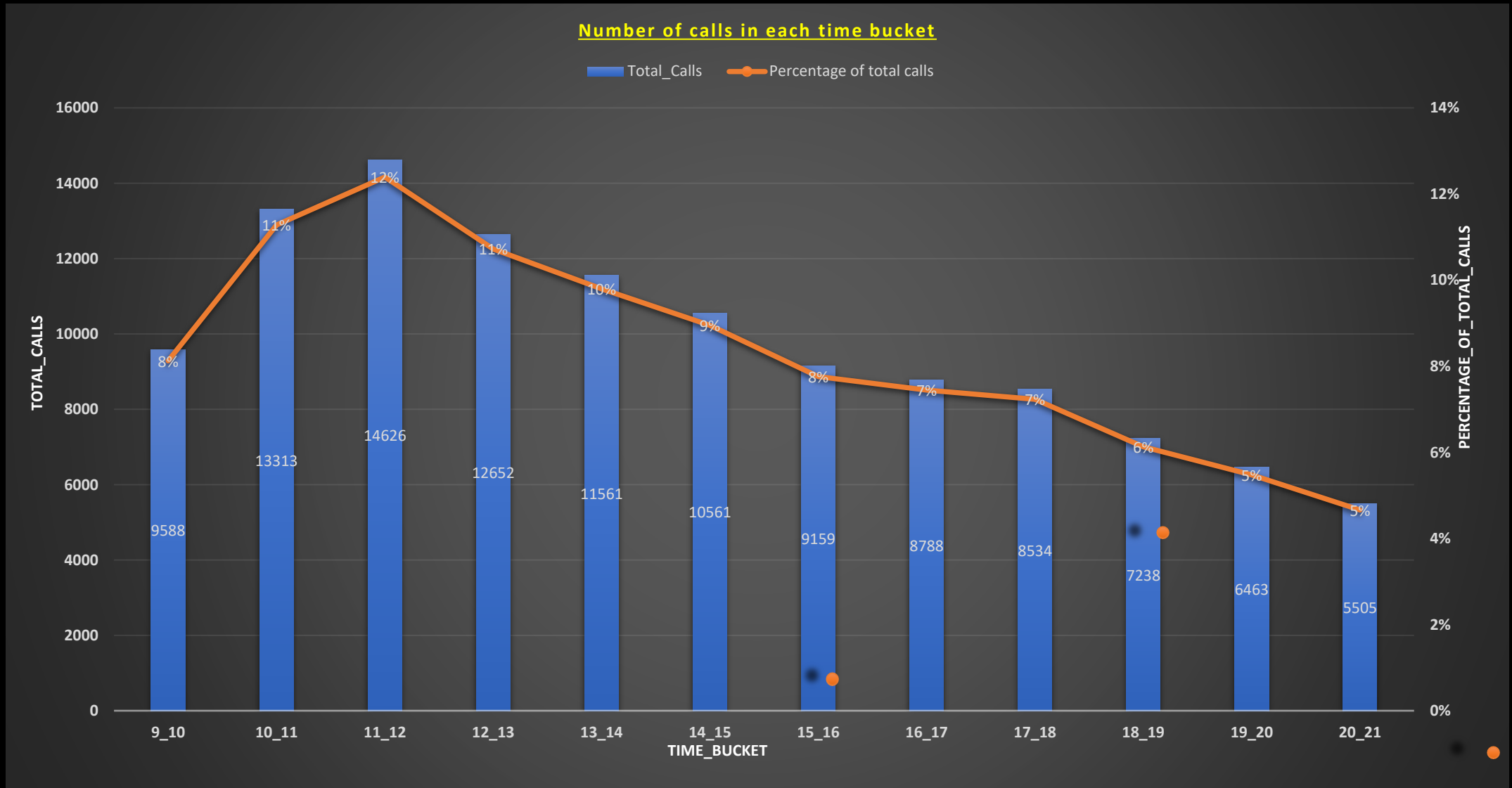
# Insights

- **Average Call Time Duration:** The longest average call durations were recorded during the 10 to 11, 18 to 19, and 19 to 20 time slots, with an average length of 203 seconds. Conversely, the 12 to 13 time slot had the shortest average call duration.
- **Number of Calls per Time Bucket:** The 11 to 12 time slot had the highest percentage of incoming calls, making up 12.4% of all calls. This was followed by the 10 to 11 time slot, which received 11.28% of the calls. In contrast, the 20 to 21 and 19 to 20 time slots experienced the lowest call volumes, with 4.67% and 5.48% of the calls, respectively.
- **Manpower Plan to Reduce Abandonment Rate:** To lower the abandonment rate to 10%, it was calculated that 79 unique agents would be necessary. Initially, when the abandonment rate was at 30%, there were 66 unique agents employed.
- **Night-time Call Volume and Agents Required:** It was noted that for every 100 calls received between 9:00 a.m. and 9:00 p.m., there were an additional 30 calls made during the night from 9:00 p.m. to 9:00 a.m. To manage these night-time calls effectively, 22 unique agents would be required.
- **Additional Responsibilities:** Instead of just handling calls, agents are required to spend 23% of their total occupied time (23% of 4.5 hours) on tasks such as uploading call data and performing other related duties.
- **Maximizing Agent Capacity:** Agents are capable of handling more calls than the projected workload if they operate at full capacity, as there is additional time available for them to take on more calls.

# -: AVERAGE CALL DURATION :-

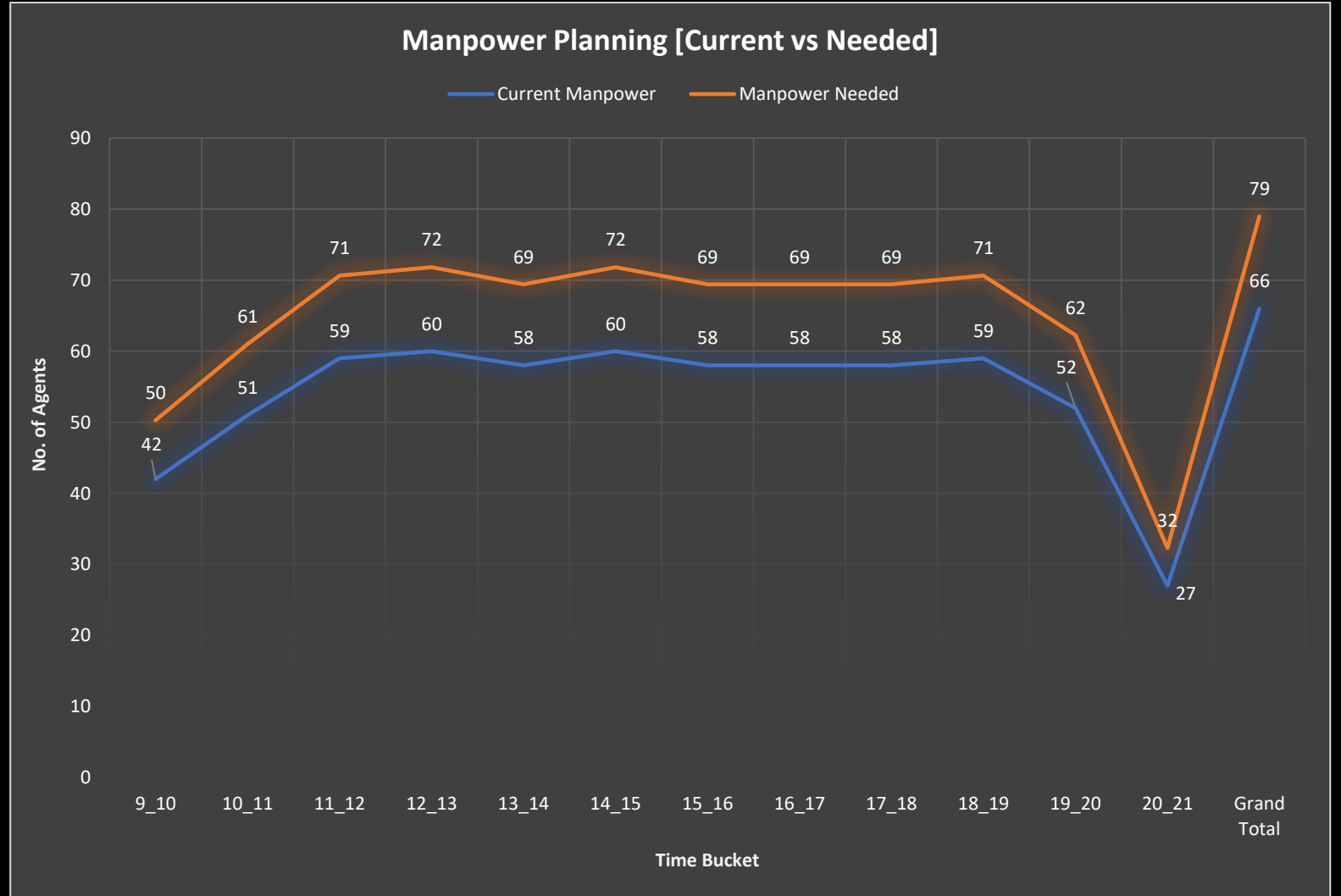


# -: CALL VOLUME ANALYSIS :-



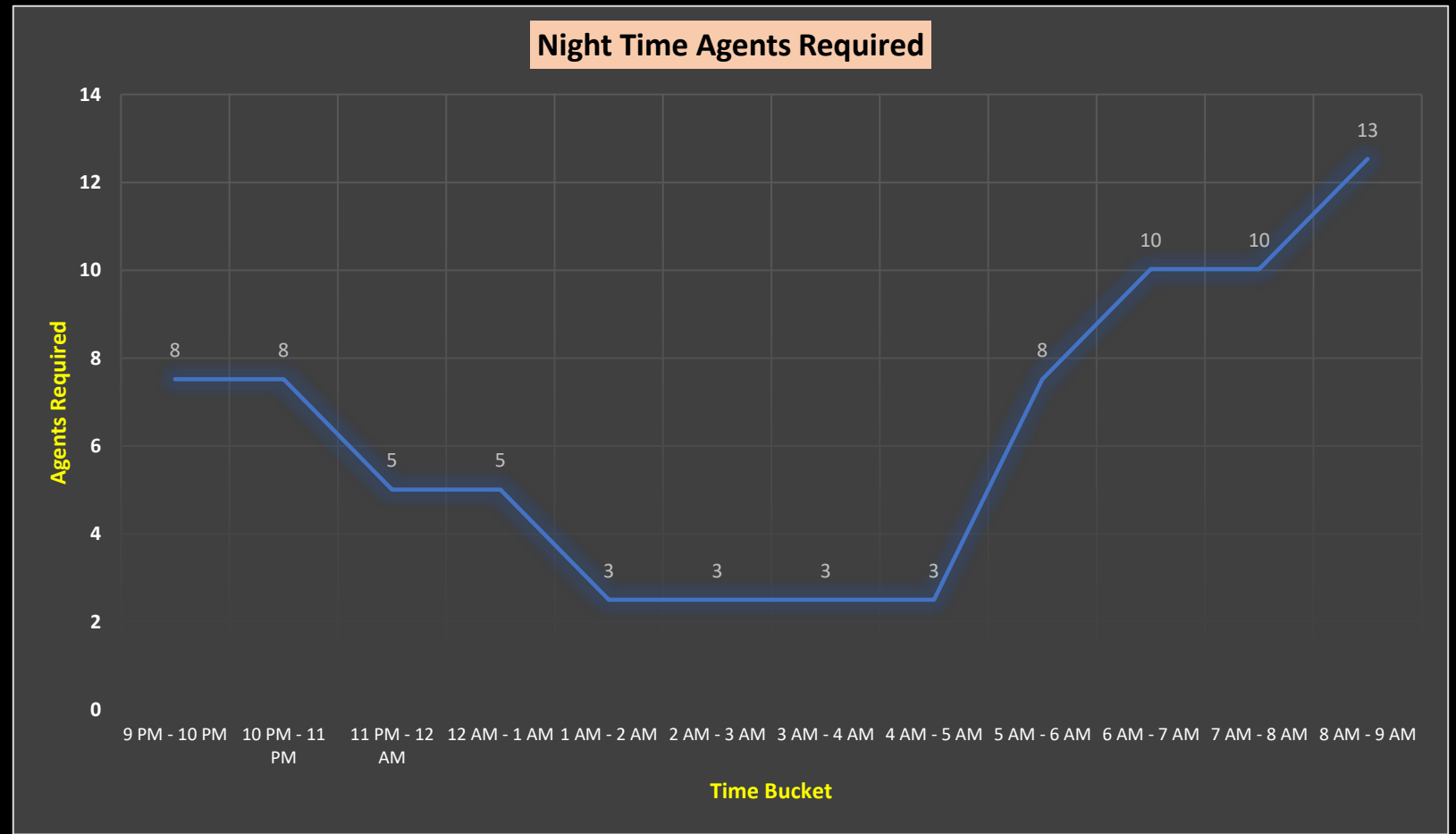
# -: MANPOWER PLANNING :-

Time_Bucket	Current Manpower	Manpower Needed
9_10	42	50
10_11	51	61
11_12	59	71
12_13	60	72
13_14	58	69
14_15	60	72
15_16	58	69
16_17	58	69
17_18	58	69
18_19	59	71
19_20	52	62
20_21	27	32
Grand Total	66	79



# -: NIGHT SHIFT MANPOWER PLANNING :-

Time Bucket	Agents Required
9 PM - 10 PM	8
10 PM - 11 PM	8
11 PM - 12 AM	5
12 AM - 1 AM	5
1 AM - 2 AM	3
2 AM - 3 AM	3
3 AM - 4 AM	3
4 AM - 5 AM	3
5 AM - 6 AM	8
6 AM - 7 AM	10
7 AM - 8 AM	10
8 AM - 9 AM	13



# Conclusion

- In this project, I examined the dataset of incoming calls received by agents and assessed various aspects of their performance and workload. I took into account factors such as agent work schedules, unplanned leaves, working hours, time spent on calls, and other job-related tasks.
- From the analysis, I discovered that the average call duration differed across various time slots, with certain periods showing longer call times than others. I also noted the pattern of incoming calls across these time slots, identifying specific periods with a higher call volume.
- To enhance customer satisfaction and decrease the abandonment rate, I proposed a manpower strategy aimed at ensuring at least 90 out of every 100 calls are answered. Based on the current and target abandonment rates, I calculated the minimum number of agents required in each time slot to achieve this objective.
- Taking into account the agents' working hours, time occupied on calls, and other duties, I estimated the number of agents necessary for each time slot. I also included extra time needed for tasks like uploading call data. The suggested manpower plan aimed to allocate a sufficient number of agents to each time slot to manage the workload effectively and lower the abandonment rate.
- Additionally, I identified the occurrence of calls during nighttime and determined the manpower needed to handle these calls. It was found that 22 unique agents were required to manage the night shift calls.
- Overall, this project offered valuable insights into agent performance, call patterns, and manpower planning. By adopting the proposed manpower strategy, the organization can enhance customer service, reduce the abandonment rate, and ensure effective use of agent resources.

Project File Drive Link:-

<https://docs.google.com/spreadsheets/d/1J5r7xogw0dKeUsEGHULyzlvar7d4eCA1/edit?usp=sharing&ouid=103027981944924775198&rtpof=true&sd=true>

