MODULE 8

ABC CALL VOLUME
TREND ANALYSIS
REPORT

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ABC CALL VOLUME TREND ANALYSIS

FINAL PROJECT 4

PROJECT DESCRIPTION

This project involves analysing a dataset spanning 23 days related to the company's inbound calling team. The dataset includes information about the customer support agents. Their names and IDs, queue time, call time, call durations and call statuses (abandoned, answered, or transferred) for each time bucket.

The primary objective of this project is to gain insights into the team's performance and customer interactions. By analysing factors such as average queue times, peak call times, agent performance metrics, and call outcomes, we aim to identify areas for improvement in customer service processes and enhance overall customer experience.

Advanced analytics techniques, such as predictive analytics for call volume forecasting, trend identification and clustering analysis for grouping similar types of calls or customers, may be employed to extract deeper insights from the data.

The ultimate goal of this project is to leverage data analytics to optimise the inbound calling team's performance, improve operational efficiency, and enhance customer satisfaction levels.

BUSINESS PROBLEM:

The inbound calling team of a company is facing challenges in effectively managing customer interactions, leading to high queue times, low customer satisfaction levels, and inefficiencies in customer service processes. The company aims to improve the performance of its inbound calling team and enhance overall customer experience.

Specifically, the company wants to: Reduce average queue times, Improve agent performance, Enhance call outcomes, and Optimize customer service processes.

DATA CLEANING AND PROCESSING:

Before starting the analysis, we cleaned and processed the data to ensure its accuracy and reliability. This involved tasks like handling missing values, removing duplicates, standardising data formats, and addressing any inconsistencies or errors in the dataset.

APPROACH:

1. Data Collection: Obtain the dataset that contains information about the inbound calling team, including agent details, queue times, call times, durations, and call statuses.

2. Data Cleaning and Preparation: Clean the dataset to remove any duplicates, missing values, or irrelevant information. Convert data types if necessary and ensure data consistency.

3. Exploratory Data Analysis (EDA): Perform EDA to understand the variables in the dataset. We analyse key metrics such as average queue times, call durations, and call outcomes. Identify patterns and trends in the data.

4. Insights and Recommendations: Based on the analysis, generate insights into the team's performance and customer interactions. Provide recommendations for improving customer service processes and enhancing overall customer experience.

5. Reporting and Presentation: Prepare a report summarising the findings, insights, and recommendations. Use visualisations and charts to present the results effectively to stakeholders.

6. Implementation: Work with stakeholders to implement the recommendations and track the impact on the inbound calling team's performance and customer satisfaction level.

7. Monitoring and Optimization: Continuously monitor the team's performance metrics and customer feedback. Optimize strategies based on ongoing analysis to ensure continuous improvement in customer experience.

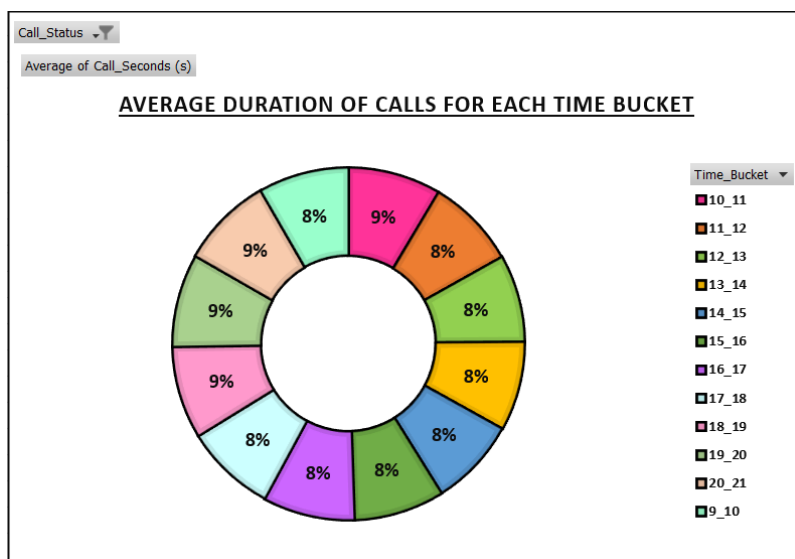## TECH STACK USED:

MICROSOFT EXCEL

INSIGHTS AND TASKS:

1.) **AVERAGE CALL DURATION**:

-Determine the average duration of all incoming calls received by agents. This should be calculated for each time bucket.

Call_Status	answered

TIME BUCKET	Average of Call_Seconds (s)
10_11	203
11_12	198
12_13	191
13_14	194
14_15	193
15_16	199
16_17	199
17_18	199
18_19	203
19_20	203
20_21	201
9_10	196
Grand Total	**198**

Call_Status

Average of Call_Seconds (s)

AVERAGE DURATION OF CALLS FOR EACH TIME BUCKET

Time_Bucket

- 10_11
- 11_12
- 12_13
- 13_14
- 14_15
- 15_16
- 16_17
- 17_18
- 18_19
- 19_20
- 20_21
- 9_10

INSIGHTS:

Time Buckets: The chart is divided into segments, each representing a specific time bucket. These buckets likely correspond to different periods during the day.

Colours: Each segment is coloured differently. These colours help distinguish between the various time buckets.

Percentages: The percentages within each segment indicate the proportion of Answered calls into that specific time bucket.

2.) CALL VOLUME ANALYSIS:

Visualise the total number of calls received.

Call_Status	(All)	

TIME BUCKET	Count of Customer_Phone_No	Count of Call_Seconds (s)
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%
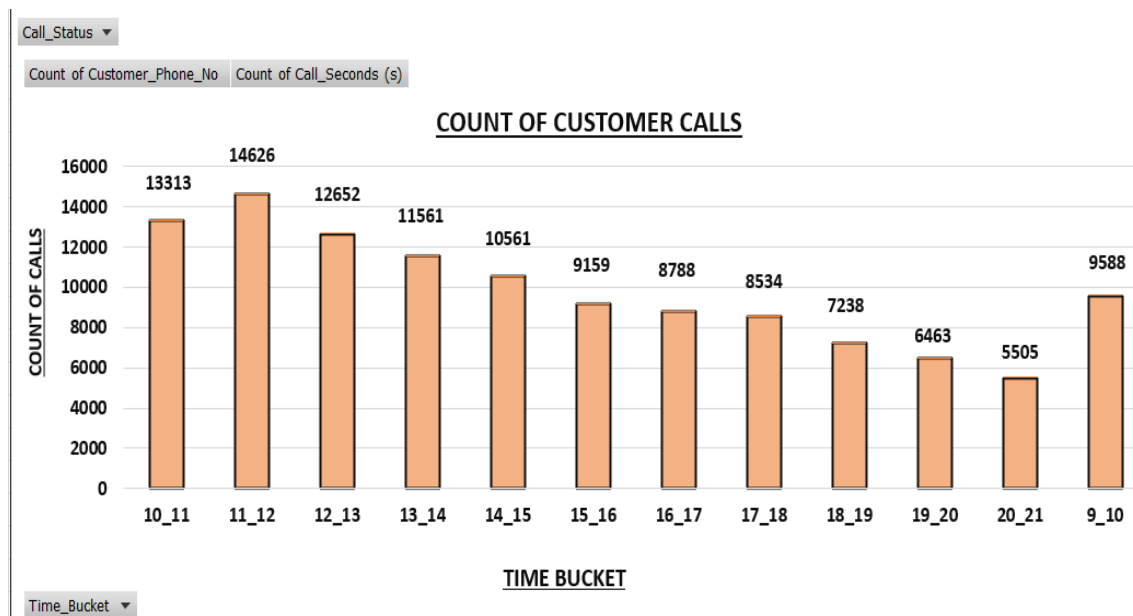
INSIGHTS:

Time Buckets: The x-axis likely represents different time intervals.

Customer Phone Numbers: The y-axis represents the count of customer phone numbers. It shows how many unique phone numbers were involved in the calls during each time bucket.

Call Seconds: The y-axis on the right side represents the count of call seconds. It indicates the total duration of calls (in seconds) during each time interval.

Comparison: The bars show the relationship between the number of phone numbers and the total call duration for each time bucket. For example, if a bar is taller, it indicates more phone numbers were active during that period, resulting in a longer total call duration.

We can identify peak call times, patterns of customer engagement, and potential areas for optimisation.

3.) MANPOWER PLANNING:

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

AGENTS REQUIRED		
time bucket	abandon per day	agents required
9_10	224	10
10_11	300	13
11_12	262	11
12_13	134	6
13_14	114	5
14_15	108	5
15_16	53	2
16_17	32	1
17_18	34	1
18_19	41	2
19_20	80	3
20_21	114	5
Grand Total	1496	64

ABANDONED CALLS PER DAY V/S AGENTS REQUIRED
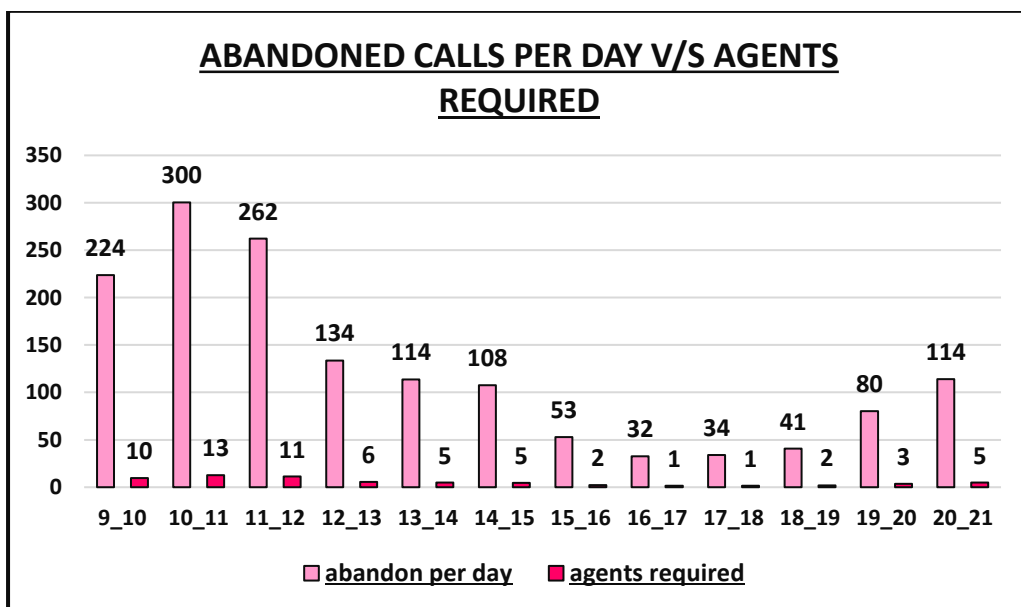
INSIGHTS:

1. X-Axis (Time Buckets): The x-axis likely represents different time intervals.

2. Y-Axis (Agent Requirements): The y-axis represents the count of agents required per day. It shows how many agents are needed during each time bucket.

3. Y-Axis (Abandonments): The y-axis represents the count of abandonments per day. It indicates how many calls were abandoned during each time interval.

4. Comparison: The bars show the relationship between agent requirements and call abandonments for each time bucket. If a bar is taller on the left side, it means more agents

are needed during that period. Conversely, if a bar is taller on the right side, it indicates a higher number of call abandonments during that time.

you can identify peak call times, staffing inefficiencies, and potential areas for improvement. For example, if there are frequent abandonments during specific hours, adjustments to agent schedules or additional staffing may be necessary.

4.) NIGHTSHIFT MANPOWER PLANNING:

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

NUMBER OF AGENTS REQUIRED FOR NIGHT SHIFT KEEPING MAXIMUM ABANDON RATE TO 10%

time bucket	daily call volume to achieve 90%	required agents
9_10	375	21
10_11	521	29
11_12	572	32
12_13	495	28
13_14	452	25
14_15	413	23
15_16	358	20
16_17	344	19
17_18	334	19
18_19	283	16
19_20	253	14
20_21	215	12
total calls per day	4617	256

AGENTS REQIRED FOR NIGHT SHIFT TO REDUCE ABANDON RATE TO 10%
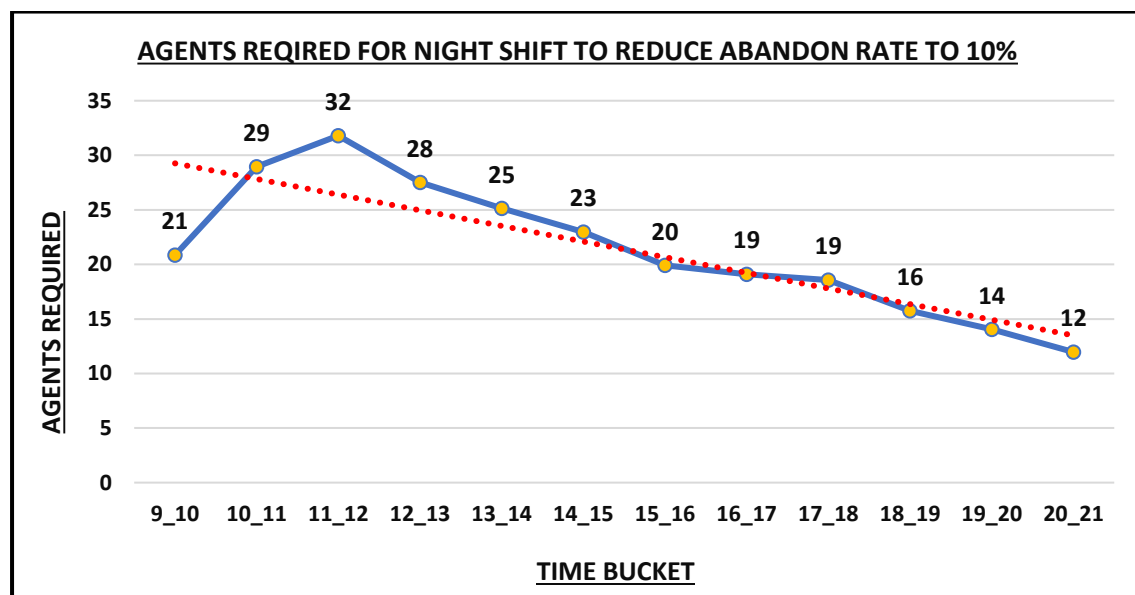
AVG OF TOTAL CALL	5130
30% OF AVG CALL	1539
ADDITIONAL HOURS REQUIRED	77
AGENTS REQUIRED	10

INSIGHTS:

1. **AVERAGE TOTAL CALLS (5130):** This represents the average number of calls received. On average, <u>the call centre handles 5130 calls</u>.

2. **30% OF AVERAGE CALLS (1539):** This corresponds to 30% of the average total calls. Approximately 1539 calls fall within this category.

3. **ADDITIONAL HOUR REQUIREMENT (77):** The call centre requires an additional 77 hours to manage the workload effectively. This suggests that during specific time buckets, there is a surge in call volume that necessitates extra staffing hours.

4. **AGENT REQUIREMENT (10):** To meet the increased demand during those specific hours, the call centre needs 10 additional agents. Proper staffing ensures efficient handling of calls and minimises wait times for customers.

   In summary, analysing these metrics helps optimise staffing levels, allocate resources effectively, and maintain.

CONCLUSION:

leveraging data analytics to optimise the inbound calling team's performance can significantly impact customer experience and operational efficiency. By implementing the recommendations derived from the analysis, businesses can improve customer satisfaction, increase operational efficiency, and drive business growth. Continued monitoring and optimisation will be key to sustaining these improvements over time.

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HYPERLINKS:

EXCEL FILE:
https://docs.google.com/spreadsheets/d/1T5VlRxgXExhqOnJMfkfpmTPc7r1NG5B6/edit?usp=sharing&ouid=102683227032029211056&rtpof=true&sd=true

PPT: https://drive.google.com/file/d/1sBUjIxAFkKVTOdQnD_-TMSmgfq2MqadX/view?usp=sharing

VIDEO SUBMISSION:
https://drive.google.com/file/d/1AV9BoSQ3WeJ0qDiXniFVzMI_bvvt0QVn/view?usp=sharing