

TRAINITY

ABC CALL VOLUME TREND ANALYSIS

MOGULAGANI PRASHANTH

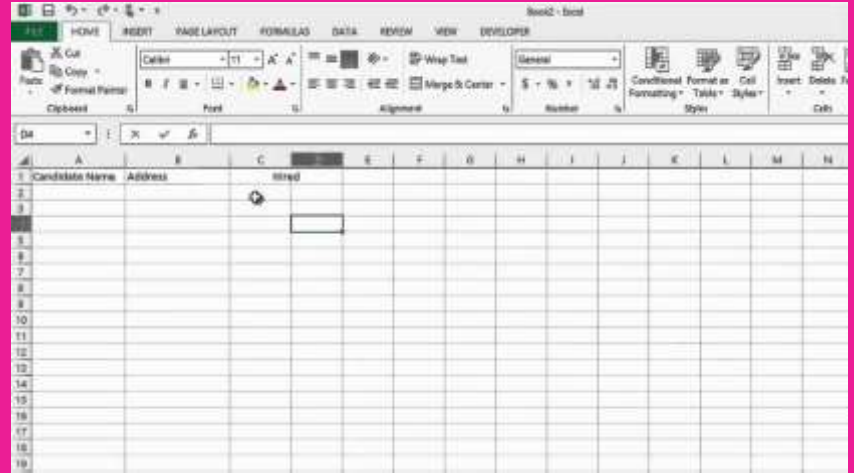
PROJECT DESCRIPTION

In that project, I worked with data from a company's inbound calling team, focusing on incoming customer calls. My objective was to enhance customer experiences, a critical aspect for businesses. CX teams utilized data and AI tools like Interactive Voice Response, Robotic Process Automation, Predictive Analytics, and Intelligent Routing to achieve this. My specific task in that project was to analyze the performance of agents handling incoming calls, contributing to overall customer satisfaction and loyalty.



APPROACH

1. *We are using MS excel to solve the problems.*
2. *Microsoft Excel is an application developed by Microsoft for Windows, macOS, Android, and iOS*
3. *We use MS excel formulas to analyze the solutions.*



TASKS : ANALYSIS

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?

- USED PIVOT TABLE TO FIND OUT THE AVERAGE DURATION OF CALLS FOR EACH TIME BUCKET.
- USED FILTER OPTION TO FILTER BASED ON THE CALL STATUS.

| Call_Status | answered |
|-------------|--------------------------------|
| | |
| TIME BUCKET | Average of DURATION IN SECONDS |
| 10_11 | 203.3310302 |
| 11_12 | 199.2550234 |
| 12_13 | 192.8887829 |
| 13_14 | 194.7401744 |
| 14_15 | 193.6770755 |
| 15_16 | 198.8889175 |
| 16_17 | 200.8681864 |
| 17_18 | 200.2487831 |
| 18_19 | 202.5509677 |
| 19_20 | 203.4060725 |
| 20_21 | 202.845993 |
| 9_10 | 199.0691057 |
| Grand Total | 198.6227745 |

INSIGHTS

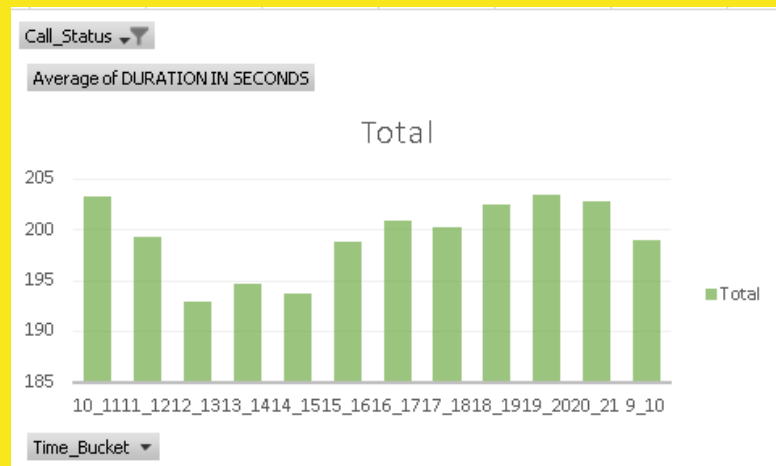
Consistent Durations: Call durations remain remarkably stable, consistently falling within a tight range of 190 to 205 seconds.

Predictable Service: Customers enjoy the predictability of uniform call durations, enhancing their service experience.

Efficient Staffing: Resource allocation for agents can be optimally managed throughout the day, thanks to this uniformity.

Performance Benchmark: The consistency of call durations sets a performance benchmark for agent efficiency and customer service quality.

Visual Validation: The clustered column chart visually validates the uniformity of call durations, providing a clear and concise representation of the data.



TASK 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?

Utilized a Pivot Table for comprehensive call volume analysis, delving into insights across various time buckets.

Presented the findings with finesse through a sleek clustered column chart, providing a clear and visually engaging representation of call volumes in each time bucket.

| Row Labels | Count of DURATION IN SECONDS |
|--------------------|------------------------------|
| 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 |
| 9_10 | 9588 |
| Grand Total | 117988 |

INSIGHTS

🕒 **Time-Based Patterns:** The data reveals discernible patterns in call volume across different time buckets. Understanding these patterns can aid in optimizing agent staffing and resource allocation throughout the day.

🕒 **Peak Call Volume:** The time bucket between 11 AM and 12 PM consistently receives the highest number of calls, as highlighted in the clustered column chart.

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📊 **Visual Confirmation:** The chart visually reinforces this observation, making it evident that this specific time period experiences the most significant call traffic.

These insights suggest the need for special attention and potentially additional resources during the 11 AM to 12 PM time slot to handle the higher call volume effectively.



TASK 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%?

✓ **Assumptions-Based Approach:** To reduce the abandon rate from 30% to 10%, I've made certain assumptions and then calculated the minimum agent requirements for each time bucket (9 am to 9 pm).

📊 **Efficient Resource Allocation:** These calculations are based on assumptions and aim to ensure that at least 90 out of 100 calls are answered, thereby improving customer service quality.

| ASSUMPTIONS | |
|-------------------------------|-------|
| WORKING HOURS : | 9 |
| BREAK TIME : | 1.5 |
| ACTUAL WORKING HOURS : | 7.5 |
| OCCUPANCY : | 60% |
| WORKING IN SECONDS : | 16200 |
| AVERAGE CALL TIME / AGENT | 199 |
| CALL CAPACITY OF AGENT/DAY | 81 |
| CALL CAPACITY OF AGENT/HOUR : | 16 |

FORMULAS OF CALCULATIONS MADE

WORKING IN SECONDS : $=0,6*7,5*3600$

CALL CAPACITY OF AGENT/DAY

$=\text{ROUND}(E24/E25,0)$

CALL CAPACITY OF AGENT/HOUR : $=\text{ROUND}(E26/5,0)$

NO OF CALLS TO BE ANSWERED

$=\text{ROUND}(0,9*O3,0)$

NO OF AGENTS NEEDED TO UPDATED ANSWERED COLUMN $=\text{ROUND}(L19/16,0)$

| TIME_BUCKET | CURRENT NO OF AGENTS | REQUIRED NO OF AGENTS |
|-------------|----------------------|-----------------------|
| 10_11 | 17 | 32 |
| 11_12 | 23 | 36 |
| 12_13 | 26 | 31 |
| 13_14 | 24 | 28 |
| 14_15 | 22 | 26 |
| 15_16 | 21 | 22 |
| 16_17 | 21 | 21 |
| 17_18 | 21 | 21 |
| 18_19 | 17 | 17 |
| 19_20 | 12 | 16 |
| 20_21 | 8 | 13 |
| 9_10 | 12 | 23 |

INSIGHTS

Call Volume Patterns: Peak call times, notably between 11 AM and 12 PM, demand optimized agent staffing.

Efficiency Opportunities: Efficient resource allocation during peak hours enhances service quality.

Consistent Call Durations: Calls consistently average around 199 seconds, ensuring predictable customer interactions.

Resource Allocation: Precise staffing during peak times is vital to reduce abandon rates and improve satisfaction.

Agent Shortage: Current agent numbers, ranging from 8 to 26, fall below requirements, which range from 13 to 36 agents during various time buckets. This shortage highlights the critical need for staffing adjustments to meet service demands.

Assumption-Driven Strategies: Assumptions guide plans to achieve a 10% abandon rate by ensuring 90% of calls are answered.



TASK 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%.

| TIME SLOT | GIVEN DISTRIBUTION OF CALLS |
|-------------|-----------------------------|
| 9pm - 10pm | 3 |
| 10pm - 11pm | 3 |
| 11pm - 12am | 2 |
| 12am - 1am | 2 |
| 1am - 2am | 1 |
| 2am - 3am | 1 |
| 3am - 4am | 1 |
| 4am - 5am | 1 |
| 5am - 6am | 3 |
| 6am - 7am | 4 |
| 7am - 8am | 4 |
| 8am - 9am | 5 |

✓ Manpower Planning for Day and Night:

- Leveraged Pivot Tables and calculations.
- Designed to maintain a maximum 10% abandon rate.
- Factored in 30 nightly calls per 100 daytime calls.
- Aimed at improving nighttime customer experiences.

FORMULAS OF CALCULATIONS USED

=SUM(B18:B29)

=ROUND(0.3*C18,0)

TOTAL CALLS ON AN AVERAGE/DAY TOTAL CALLS ON AN AVERAGE/NIGHT

4573

1372

OUTPUT

| TIME SLOT | NO OF AGENTS NEEDED |
|-------------|---------------------|
| 9pm - 10pm | 9 |
| 10pm - 11pm | 9 |
| 11pm - 12am | 6 |
| 12am - 1am | 6 |
| 1am - 2am | 3 |
| 2am - 3am | 3 |
| 3am - 4am | 3 |
| 4am - 5am | 3 |
| 5am - 6am | 9 |
| 6am - 7am | 11 |
| 7am - 8am | 11 |
| 8am - 9am | 14 |



INSIGHTS

🕒 Manpower Planning Insights - Day and Night:

- Peak Staffing Needs:
 - Highest agent demand: 8 AM to 9 AM (14 additional agents).
 - Mornings (5 AM to 9 AM) consistently high in staffing needs.
 - Second-highest demand: 9 PM to 12 AM.

🌙 Night Shift Optimization: Crucial for effective handling of late-night customer calls.

These insights highlight the importance of morning staffing boosts and nighttime optimization for better service quality and call management.

Project Insights and Conclusions:

Call Volume Patterns:

- Peak hours at 11 AM to 12 PM highlight the need for optimized staffing.

Consistent Call Durations:

- Call durations within 190 to 205 seconds offer predictability.
- Efficient resource allocation can be maintained throughout the day.

Agent Shortages:

- Addressing shortages during critical time periods is essential.

Manpower Planning Strategies:

- Assumption-driven plans aim to reduce the abandon rate to 10%.
- Night shift optimization is vital for late-night call management.

These insights guide strategies to enhance customer experiences, optimize agent staffing, and address operational challenges within the call center.

RESULT

I became acquainted with new EXCEL features, lingo, and methods. By obtaining the appropriate insights from the problem description, practical problems can be resolved. Thanks to the concepts, I was able to comprehend the description of the problem. This project has improved my problem-solving skills and taught me how to apply the theoretical concepts I learned in training to actual-world circumstances.

LINK FOR EXCEL FILE

https://docs.google.com/spreadsheets/d/1E1A_yBY5heCq7BGtGX6Q8Fiy6qjVNCKz/edit?usp=sharing&oid=108547673521600619650&rtpof=true&sd=true

