PWC Project POWER BI for a BPO

Project Overview

A call center manager from a BPO company has requested our expertise to identify and analyze key call center trends. They aim to enhance their operations by focusing on critical KPIs such as calls answered, issues resolved, call duration, customer satisfaction scores, and first call resolution rates. By leveraging our data analysis expertise, we will uncover patterns and insights from these metrics, helping the call center optimize performance, improve efficiency, and improve customer service.

Objective

The objective is to create a dashboard using Power BI that showcases the following main KPIs and some additional KPI:

- **Overall customer satisfaction**

- **Overall calls answered/abandoned**

- **Calls by time**

- **Average speed of answer**

- **Agent's performance quadrant -> average handle time (talk duration) vs calls answered**

Data Collection and Cleaning

Identifying Relevant Datasets

To conduct a thorough analysis for our project, we procured a dataset from Kaggle, a renowned platform for data science competitions and datasets. The dataset includes both object like Call ID, Agent Name etc and numeric type variables like call duration, satisfaction rating. Kaggle's datasets are high-quality and well-documented, providing valuable metadata and user discussions. Additionally, we explored other sources, including online databases, internal spreadsheets etc.

Data Cleaning

Processes followed

Converting Columns to the Right Format:

- Ensured that dates were correctly formatted in the Date format, times in the Time format, and numerical values in the Number format.

- Applied consistent formatting to ensure data was in a standardized form, making it easier to analyze and visualize.

Removing Duplicates and Errors:

- Identified and removed duplicate records to maintain data integrity and prevent skewed results.

- Conducted thorough checks to correct any inconsistencies or errors, such as incorrect entries or formatting issues, ensuring data accuracy.

Handling Missing Values:

- Detected missing values and employed appropriate strategies to address them, such as filling them with mean, median, or mode values, or using interpolation methods.

- Evaluated the impact of missing data on the analysis and decided on the best approach to handle them without compromising the overall data quality.
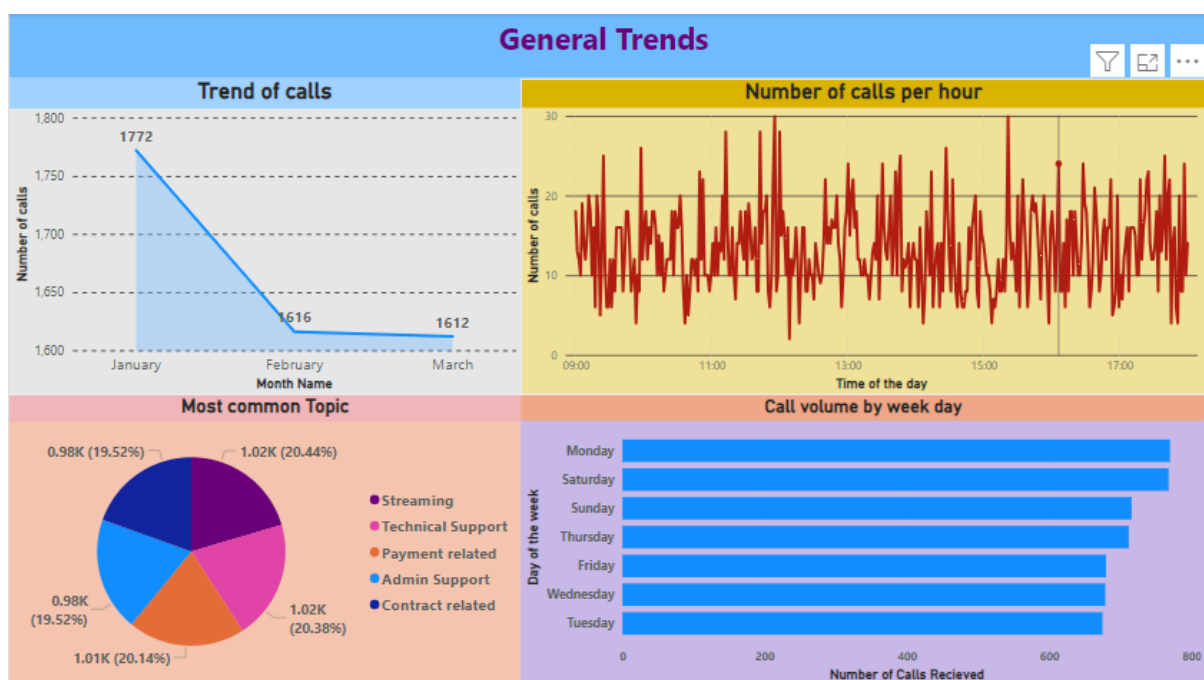
Tools Used

Excel has been used for data cleaning and rest of the work was done using Power BI

Data Visualizations in Report

Visualizations Included: Three dashboards were created to analyse 3 aspects.

1. **General Trends Dashboard:**

- **Overview of Current Situation:** This dashboard provides a high-level view of the overall call center performance. Key metrics such as total number of calls, calls answered vs. abandoned, and average speed of answer are displayed.

- **Time-Based Analysis:** Visualizations include call volumes by time of day, day of the week, and trends over specific periods (e.g., daily, weekly, monthly).

- **Topic Distribution:** Analysis of the most common call topics, allowing us to understand the primary reasons for customer inquiries.

2.Call Quality Dashboard:
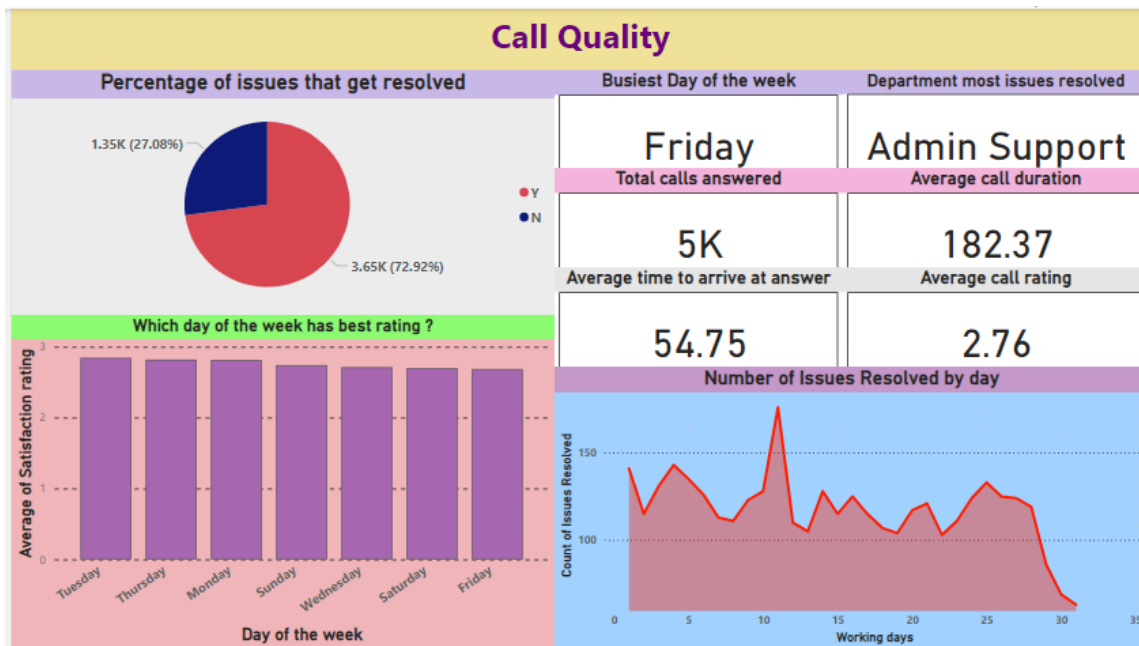
- **Customer Satisfaction Analysis:** This dashboard focuses on customer satisfaction metrics, including overall satisfaction scores and trends over time.

- **Detailed Satisfaction Ratings:** Breakdowns of satisfaction ratings by different call topics, times of day, and days of the week to identify patterns and areas needing attention.

- **Resolution Quality:** Insights into the quality of resolutions provided, correlating resolution rates with satisfaction scores to ensure high-quality service.

3.Agent Performance Dashboard:
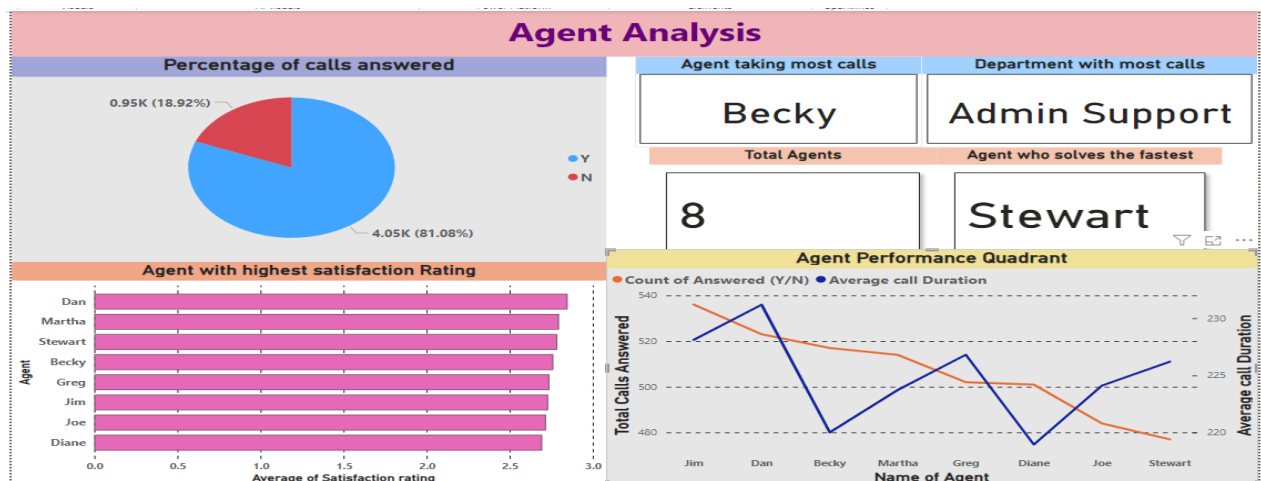
- **Individual Agent Performance:** Detailed analysis of each agent's performance, including metrics such as number of calls handled, average talk duration, and resolution rates.

- **Performance Quadrant:** Visualizations of average handle time versus calls answered for each agent, identifying high performers and those needing additional training or support.

- **Speed of Answer:** Visualizations show the relationship between the speed of answer and customer satisfaction, highlighting areas for potential improvement.

Key Findings

Findings:

1. January had the highest call volume.

Implication: Additional staffing and resources might be needed during January to manage the increased call volume effectively and maintain service levels.

2. All issues reportedly have the same number of calls.

Implication: Uniform issue distribution suggests a well-balanced call flow. However, specific strategies for handling different types of issues can be optimized.

3. Monday had the highest call volume.

Implication: Mondays may require more agents on duty to handle the higher call volume and reduce wait times.

4. Peak call times were around 12 PM and 3 PM.

Implication: Scheduling more agents during these peak times can help manage the influx and maintain service quality.

5. Around 5,000 calls have been received to date.

Implication: This metric helps in resource planning and performance tracking over time.

6. About 73% of issues are resolved at the call center.

Implication: While a good resolution rate, there is room for improvement. Training and resources can be enhanced to increase this percentage.

7. The average call time was 182 seconds.

Implication: This average call duration can be used to forecast staffing needs and ensure agents are managing calls efficiently.

8. Tuesday, Thursday, and Monday have the best average ratings.

Implication: Best practices from these days can be analyzed and implemented on other days to improve overall service quality.

9. Day 11 had the highest number of issues resolved.

Implication: Analyzing what made Day 11 successful can provide insights for improving resolution rates on other days.

10. Admin-related issues are the most common.

 Implication: Specialized training for agents in handling admin-related issues can improve efficiency and resolution rates.

11. Friday is the busiest day for the BPO.

Implication: Additional staffing or extended hours may be needed on Fridays to handle the increased volume and maintain service levels.

12. The average time to answer was 55 seconds.

 Implication: This relatively quick response time indicates good initial service levels but should be monitored to maintain or improve it.

13. Around 81% of calls were answered.

Implication: While a good rate, there's still 19% of calls that are unanswered. Strategies to improve this rate can enhance overall customer satisfaction.

14. There are a total of 8 agents employed.

Implication: Staffing levels seem to manage current call volumes, but may need adjustments based on call trends and peak times.

15. Dan is the agent with the highest average rating. Becky gets the most calls, and Stewart is the most efficient.

Implication: Recognizing and rewarding these agents can boost morale and performance. Analyzing their methods can provide training insights for other agents.

16. Jim is the most hardworking agent with the most calls answered and highest average duration. -**Implication:** Jim's workload and efficiency strategies should be studied to optimize overall agent performance and workload distribution.

17. Admin Support resolves the most issues. Implication: Admin Support is a critical area and may need further resources and training to continue performing effectively.

Summary

In conclusion, the data analysis has revealed key insights into the call center's operations, highlighting areas of strength and opportunities for improvement. By understanding call volume patterns, agent performance, and issue resolution metrics, we can make strategic decisions to enhance efficiency, customer satisfaction, and overall service quality. Peak call times and busy days indicate where additional staffing and resources are needed, while high resolution rates and average call durations showcase the effectiveness of current operations. Recognizing top-performing agents and analysing issue distribution allows for targeted training and support, ensuring continued excellence. Implementing these strategies will drive success, leading to a more efficient and effective call center operation.