Case Study: Enhancing Call Centre Efficiency through Data Analysis

Background

In a competitive market, customer service is a key differentiator for businesses. The call Centre has been facing challenges related to high call volumes, extended wait times, and decreasing customer satisfaction. To address these issues, the management sought to Analyse call Centre performance metrics to uncover insights that would lead to improved operational efficiency and enhanced customer experience.

Problem Statement

The call Centre observed a significant increase in customer complaints regarding long wait times and unsatisfactory call handling. The management needed to identify the root causes of these challenges and implement data-driven strategies to optimise call Centre operations.

Objectives

The primary objectives of the data analysis were to:

- Identify patterns in call volume to better allocate resources.
- Assess average and total call durations to improve efficiency.
- Analyse the top reasons for calls to target common issues.
- Evaluate response times to ensure timely customer service.
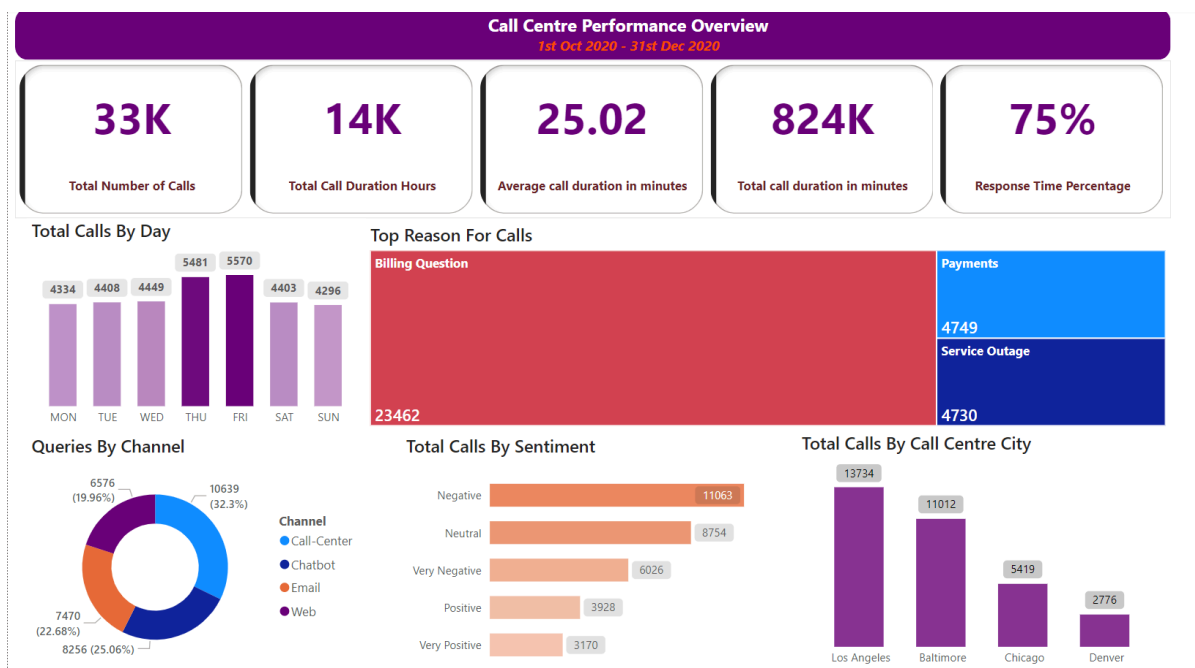- Measure customer sentiment to gauge satisfaction levels.

Data Collection

The data included the following key performance indicators (KPIs) from **1st October 2020 to 31st December 2020**:

- **Total Number of Calls**: 33,000
- **Total Call Duration**: 14,000 hours
- **Average Call Duration**: 25.02 minutes
- **Total Call Duration in Minutes**: 824,000 minutes
- **Response Time Percentage**: 75%

Additionally, various charts were created to visualise the following data:

- **Total Calls by Day**:

- Monday: 4,334
  - Tuesday: 4,408
  - Wednesday: 4,449
  - Thursday: 5,481
  - Friday: 5,570
  - Saturday: 4,403
  - Sunday: 4,296
- **Top Reasons for Calls**:
  - Billing Questions: 23,462
  - Payments: 4,749
  - Service Outage: 4,730
- **Queries by Channel**:
  - Call Centre: 10,639 (32.3%)
  - Chat Bot: 8,256 (25.06%)
  - Email: 7,470 (22.68%)
  - Web: 6,576 (19.96%)
- **Total Calls by Sentiment**:
  - Negative: 11,063
  - Neutral: 8,754
  - Very Negative: 6,026
  - Positive: 3,928
  - Very Positive: 3,170
- **Total Calls by Call Centre City**:
  - Los Angeles: 13,734
  - Baltimore: 11,012
  - Chicago: 5,419
  - Denver: 2,776

Call Centre Performance Overview
1st Oct 2020 - 31st Dec 2020

33K	14K	25.02	824K	75%
Total Number of Calls	Total Call Duration Hours	Average call duration in minutes	Total call duration in minutes	Response Time Percentage

Total Calls By Day

MON	TUE	WED	THU	FRI	SAT	SUN
4334	4408	4449	5481	5570	4403	4296

Top Reason For Calls

Billing Question 23462
Payments 4749
Service Outage 4730

Queries By Channel

6576 (19.96%)
10639 (32.3%)
7470 (22.68%)
8256 (25.06%)

Channel
- Call-Center
- Chatbot
- Email
- Web

Total Calls By Sentiment

Negative	11063
Neutral	8754
Very Negative	6026
Positive	3928
Very Positive	3170

Total Calls By Call Centre City

Los Angeles	Baltimore	Chicago	Denver
13734	11012	5419	2776

Analysis Methodology

The data analysis was conducted using the following steps:

1. **Data Cleaning**: The dataset was cleaned to remove duplicates and handle missing values, ensuring accuracy in the analysis.
2. **Data Visualization**: Various charts were created to represent the data visually, enabling easier interpretation of call patterns and trends.
3. **KPI Calculation**: Key performance indicators were calculated to quantify call Centre performance and identify areas needing improvement.
4. **Sentiment Analysis**: Customer sentiments were categorised based on call transcripts, providing insights into overall customer satisfaction.

Key Findings

- **Call Volume Patterns**: The analysis revealed that call volumes peaked on Thursdays (5,481 calls) and Fridays (5,570 calls), indicating a need for increased staffing during these days.
- **Average Call Duration**: The average call duration (25.02 minutes) was significantly higher than industry benchmarks, suggesting inefficiencies in call handling.
- **Common Call Reasons**: The top reasons for customer calls included billing enquiries (23,462), payment support (4,749), and service complaints (4,730), highlighting areas for potential improvement in service delivery.
- **Response Times**: The response time percentage (75%) was below the acceptable threshold, indicating delays in addressing customer enquiries.
- **Customer Sentiment**: Sentiment analysis showed that while most calls were resolved satisfactorily, a notable percentage of customers expressed frustration, primarily due to wait times and call handling quality.

Recommendations

Based on the analysis findings, the following recommendations were made:

1. **Resource Allocation**: Increase staffing during peak call times (especially Thursdays and Fridays) to reduce wait times and enhance customer service.
2. **Training Programs**: Implement training sessions focused on effective call handling and addressing common customer concerns to reduce average call duration.
3. **Proactive Communication**: Develop a customer education program to address common issues, such as billing and payment enquiries, potentially reducing call volumes.
4. **Performance Monitoring**: Continuously monitor response times and customer sentiment to ensure ongoing improvements in service quality.

<u>Conclusion</u>

The data analysis provided valuable insights into the operational challenges faced by the call Centre. By implementing the recommended strategies, the call Centre management aims to enhance operational efficiency, improve customer satisfaction, and maintain a competitive edge in the market. Future analyses will be essential in tracking the effectiveness of these strategies and identifying new opportunities for improvement.