

ABC Call Volume Trend Analysis

Project Description

In this project, we will be diving into the world of Customer Experience (CX) analytics, specifically focusing on the inbound calling team of a company.

A Customer Experience (CX) team plays a crucial role in a company. They analyze customer feedback and data, derive insights from it, and share these insights with the rest of the organization.

This team is responsible for a wide range of tasks, including managing customer experience programs, handling internal communications, mapping customer journeys, and managing customer data, among others.

One of the key roles in a CX team is that of the customer service representative, also known as a call center agent. These agents handle various types of support, including email, inbound, outbound, and social media support.

Inbound customer support, which is the focus of this project, involves handling incoming calls from existing or prospective customers. The goal is to attract, engage, and delight customers, turning them into loyal advocates for the business.

Approach

We are provided with a dataset that spans 23 days and includes various details such as the agent's name and ID, the queue time (how long a customer had to wait before connecting with an agent), the time of the call, the duration of the call, and the call status (whether it was abandoned, answered, or transferred).

In this project, we will be using analytical skills to understand the trends in the call volume of the CX team and derive valuable insights from it.

Tech-Stack Used

I used Microsoft Excel 2019 for this project.

Insights

We have been provided with a dataset that contains information about the inbound calls received by a company named ABC, which operates in the insurance sector.

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

I used the pivot tables to calculate the average call durations

Row Labels	Average of Call_Seconds (:
10_11	97.42
11_12	116.78
12_13	144.73
13_14	149.54
14_15	146.97
15_16	169.90
16_17	181.44
17_18	179.72
18_19	174.32
19_20	144.58
20_21	105.95
9_10	92.01
Grand Total	139.53

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.).

Row Labels	Count of Time_Bucket
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

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.

First I calculated the number of calls using pivot tables and calculated the average calls per day. Then we calculate calls to be picked to get the percentage to 10%. We calculate the hours of call using average call timing. Then use average working hours of an agent to calculate no. of agents required.

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:

Distribution of 30 calls coming in night for every 100 calls coming in between 9am - 9pm (i.e. 12 hrs slot)											
9pm- 10pm	10pm - 11pm	11pm- 12am	12am- 1am	1am - 2am	2am - 3am	3am - 4am	4am - 5am	5am - 6am	6am - 7am	7am - 8am	8am - 9am
3	3	2	2	1	1	1	1	3	4	4	5

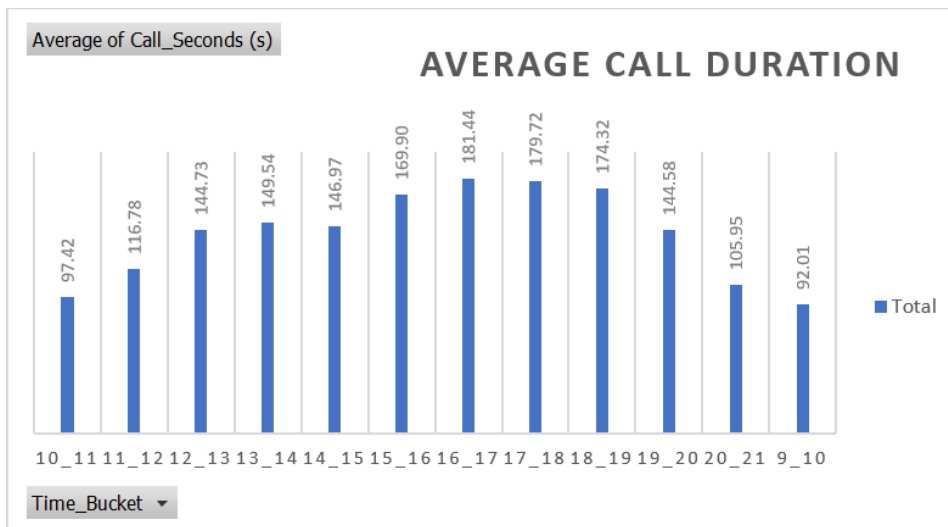
Propose a manpower plan for each time bucket throughout the day, keeping the maximum abandon rate at 10%.

To calculate the calls at night we found the 30% of the total day calls. Then we calculated number of hours required to maintain the call receiving rate at 90% by using the average call duration and number of calls. Then we calculated the no. of agents by dividing the number of hours by average working hours of an agent.

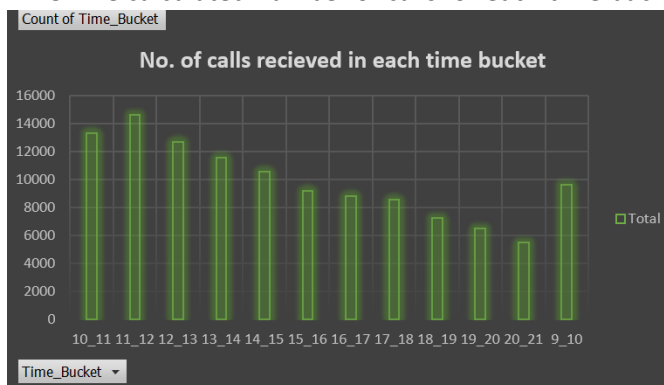
Assumptions: An agent works for 6 days a week; On average, each agent takes 4 unplanned leaves per month; An agent's total working hours are 9 hours, out of which 1.5 hours are spent on lunch and snacks in the office. On average, an agent spends 60% of their total actual working hours (i.e., 60% of 7.5 hours) on calls with customers/users. The total number of days in a month is 30.

Result

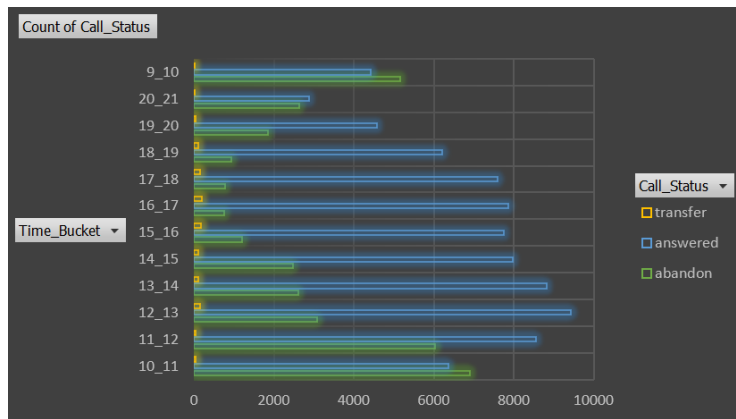
First we calculated average call durations during different bucket time



Then we calculated number of calls for each time bucket. And categorized by different call



status:



We also calculated that we needed 9 more agents at day to maintain abandon rate at 10%.

Calls to be picked after reducin	1026
No. of hours each agent works	4.5
Average call duration	139.53
Total man hours needed	39.76598792
No. of agents needed	9

Also at night we need a total of 12 agents to pick calls so that abandon rate is at 10%.

Average calls at night	1539
No. of hours needed at night to	54
No. of agents needed at night	12