

ABC Call Volume Trend

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[Excel Worksheet :- Click Here to Download](#)

[Video Presentation:- Click Here to Watch Video Presentation](#)

Project Description!

In this CX analytics project, we will delve into the world of customer experience by analyzing a dataset spanning 23 days, focusing on the inbound calling team of a company. The dataset contains essential details such as agent information, queue times, call timestamps, call durations, and call statuses. Specifically, we'll spotlight the pivotal role of customer service representatives in managing inbound customer support, aiming to engage and delight customers and foster their loyalty to the business.

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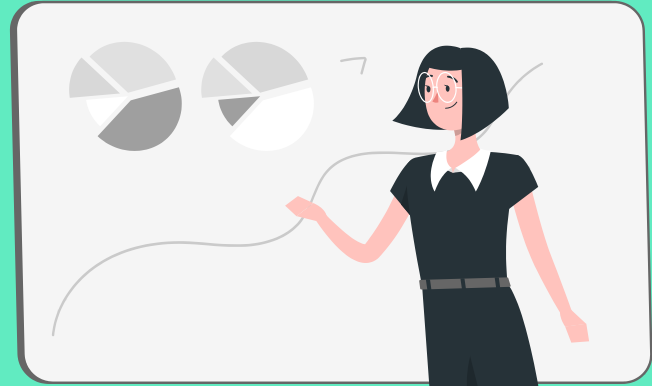
Tech Stack Used :-

- > Excel
- > PowerPoint
- > Github
- > Google Drive

A

Average Call Duration

Determine the average duration of all incoming calls received by agents.



Average Call Duration

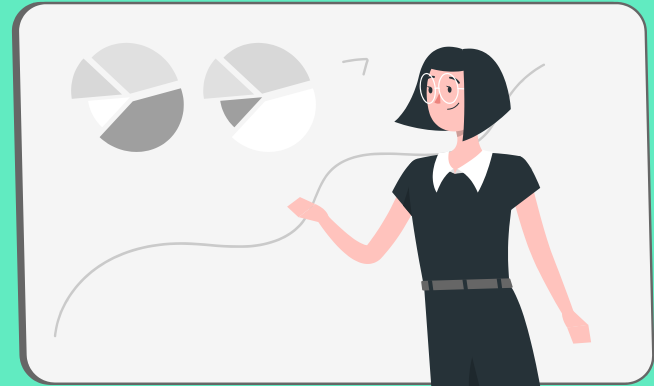
- To find the Average Call Duration first I created a new pivot table using the raw data.
- Then, I added Time_Bucket to the rows.
- I used Call_Status as a filter for filtering data. Since we have only asked for the call that are answered.
- And in values area I have added Call_seconds. And calculated the Average value of Call seconds.
- Then finally I got the Average Call Duration of all incoming calls received by agents.
- This duration is calculated for each time bucket.

A	B
Call_Status	answered
Row Labels	Average of Call_Seconds (s)
10_11	203.3
11_12	199.3
12_13	192.9
13_14	194.7
14_15	193.7
15_16	198.9
16_17	200.9
17_18	200.2
18_19	202.6
19_20	203.4
20_21	202.8
9_10	199.1
Grand Total	198.6

B

Call Volume Analysis

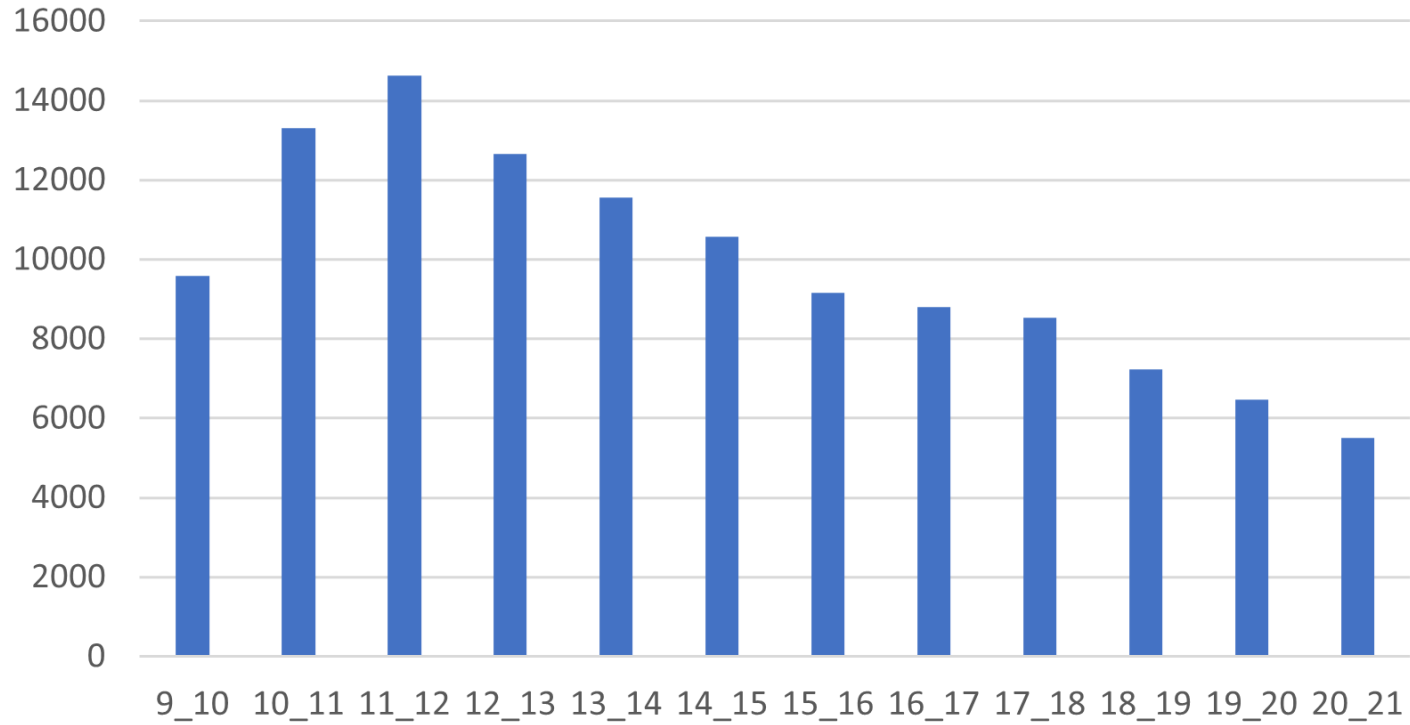
Visualize the total number of calls received.



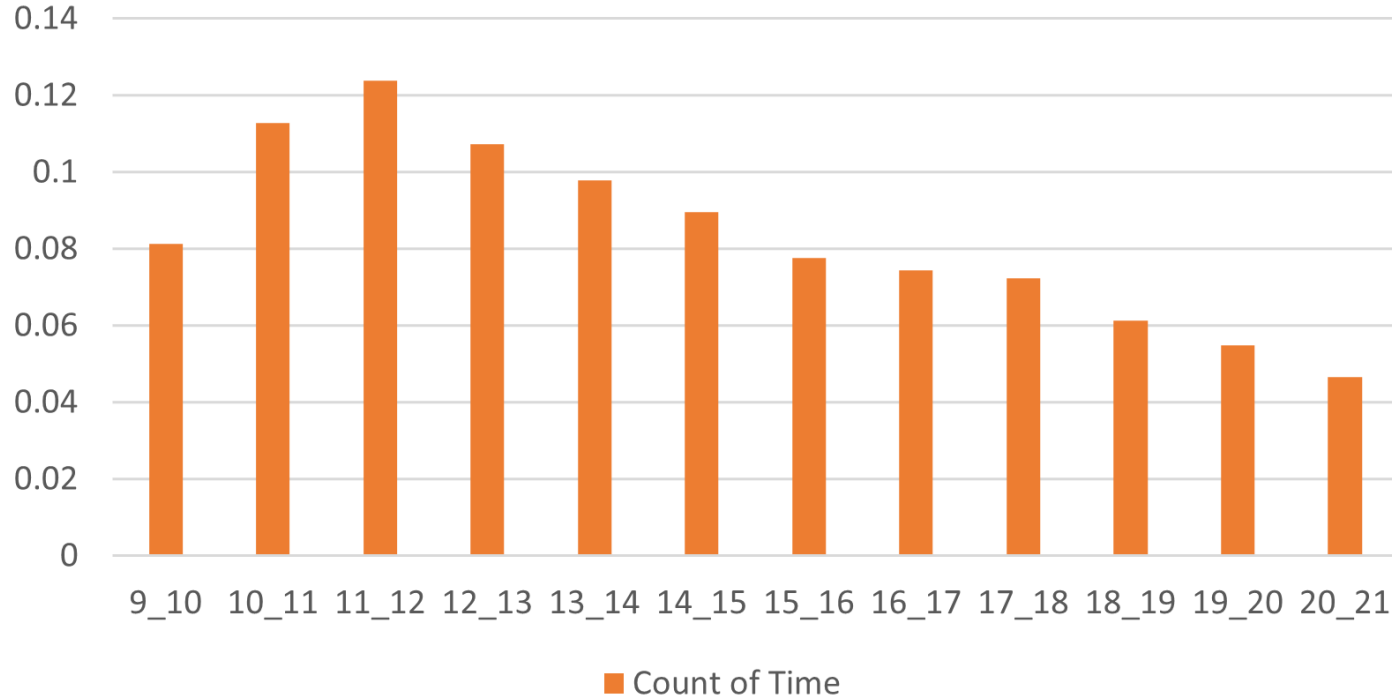
Call Volume Analysis

- To perform Call Volume Analysis first I created a new pivot table using the raw data.
- Then, I added Time_Bucket to the rows.
- For columns I used Values of Time and Customer_Phone_No.
- And in the values area, I have added Time and Customer_Phone_No. And calculated the Count of those variables.
- Then finally I got how many calls I made for each time_bucket and what percentage it represents.
- This duration is calculated for each time bucket.
- Lastly, I have represented the result in the form of Bar Chart.

Count of Customer_Phone_No



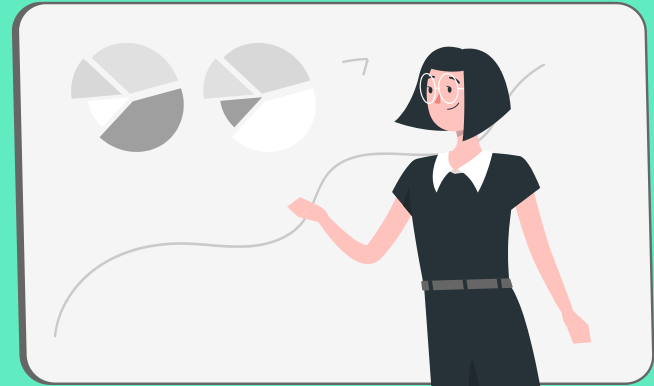
Count of Time



C

Manpower Planning

To calculate the minimum number of agents required in each time bucket to ensure that at least 90 out of 100 calls are answered.



Manpower Planning

- First, I have calculated how many hours an agent works on Average daily.
- I got that an agent on average works 4.5 hours daily. And they work for a minimum of 20 days in a month.
- Then, I created a new pivot table by selecting all the raw data.
- Then, I added Date_ & Time to the rows.
- For columns I used Values of Duration(hh:mm:ss).
- Then I calculated the Average call on a daily basis for all Call_Status types.
- Then I calculated the Time Requirement to Answer 90% of the call using the following formula.
- $=E59*198.6*0.9/3600$
- Lastly, to find the total number of working persons required per day. I divided the time required to answer 90% of the calls by the total hour calls attended by the agents.

Count of Duration(hh:mm:ss)	Column Labels			
Row Labels	abandon	answered	transfer	(blank)
<01-01-2022				
01-Jan	684	3883	77	4644
02-Jan	356	2935	60	3351
03-Jan	599	4079	111	4789
04-Jan	595	4404	114	5113
05-Jan	536	4140	114	4790
06-Jan	991	3875	85	4951
07-Jan	1319	3587	42	4948
08-Jan	1103	3519	50	4672
09-Jan	962	2628	62	3652
10-Jan	1212	3699	72	4983
11-Jan	856	3695	86	4637
12-Jan	1299	3297	47	4643
13-Jan	738	3326	59	4123
14-Jan	291	2832	32	3155
15-Jan	304	2730	24	3058
16-Jan	1191	3910	41	5142
17-Jan	16636	5706	5	22347
18-Jan	1738	4024	12	5774
19-Jan	974	3717	12	4703
20-Jan	833	3485	4	4322
21-Jan	566	3104	5	3675
22-Jan	239	3045	7	3291
23-Jan	381	2832	12	3225
Grand Total	34403	82452	1133	117988

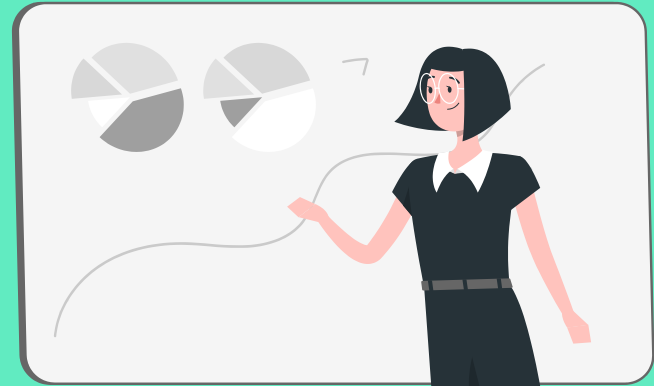
Result

Average Time Taken to Answer a Call	198.6
Time Requirement to Answer 90% of the call	254.7001826
Total Manpower Required Perday	57

D

Night Shift Manpower Planning

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



Night Shift Manpower Planning

- This is the extended question to the previous question.
- Thus, I duplicated the previous sheet and calculated the Night Shift manpower planning.
- Then, as we know about 30% of calls are Call Volume at Night(9 PM – 9 AM).
- I calculated it by taking 30% of total calls daily.
- Then I calculated the Additional Hours Required using the following formula.
➤ $=B69*198.6*0.9/3600$
- Lastly, to find the total number of working persons required for the Night Shift. I divided the additional hours required to answer the calls by the total hours of calls attended by the agents.
- Then by using the total calls distribution table given in the question by time_buckets. I calculated the Total_Additional_hours using the following formula.
➤ $=\$B\$70*B81/30$
- And Lastly calculated the Required_Agents using $=D81/0.6$ as each agent can be active on call only for 60% of time.

Morning Shift Manpower Planning

Average Time Taken to Answer a Call	198.6
Time Requirement to Answer 90% of the call	254.7001826
Total Manpower Required Perday	57

Night Shift Manpower Planning

Call Volume daily(9 AM - 9 PM)	5130
Call Volume in Night(9PM - 9A)	1539
Additional Hours Required	76.41005478
Additional Head Count	17
Total Head Count	74

Distribution of Required_Agents across each Time_Bucket

Time_Buckets	No_of_Calls	Time_distribution	Total_Additional_hours	Required_Agents
21_22	3	10%	7.64	13
22_23	3	10%	7.64	13
23_24	2	7%	5.09	8
00_01	2	7%	5.09	8
01_02	1	3%	2.55	4
2_3	1	3%	2.55	4
3_4	1	3%	2.55	4
4_5	1	3%	2.55	4
5_6	3	10%	7.64	13
6_7	4	13%	10.19	17
7_8	4	13%	10.19	17
8_9	5	17%	12.74	21
Total	30	100%	76.41	127

Conclusion

- ❖ Thus, I have completed a Call Volume Trend Analysis.
- ❖ Given key findings and all meaningful trends or patterns I have discovered.
- ❖ I have learned to use Excel formulas and Pivot tables to analyze the dataset.
- ❖ GitHub Repository and drive links are given as follows.

GitHub Repository:- https://github.com/ShindeYash/ABC_Call_Volume_Trend.git

Excel Worksheet:- https://docs.google.com/spreadsheets/d/1tZ8Ac_IgpyuS8OM-dpL6ROi267wYDAEG/edit?usp=sharing&oid=104957742252162470359&rtpof=true&sd=true

Drive Link:-

https://drive.google.com/drive/folders/1JyZV5MwtrUY1I9D_W0g3Z9wZqXSnaz4G?usp=sharing

Video Presentation:-

<https://www.loom.com/share/5d2280b814304e439ec37c61cc287731?sid=b3ea99be-43c2-4cd6-88a4-bca75f389587>



Thanks!

Do you have any questions?
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