ABC Call Volume Trend Analysis

Description:

Customer Experience (CX) Inbound calling team for 23 days. Data includes Agent_Name, Agent_ID, Queue_Time [duration for which customer have to wait before they get connected to an agent], Time [time at which call was made by customer in a day], Time_Bucket [for easiness we have also provided you with the time bucket], Duration [duration for which a customer and executives are on call, Call_Seconds [for simplicity we have also converted those time into seconds], call status (Abandon, answered, transferred). A customer experience (CX) team consists of professionals who analyze customer feedback and data, and share insights with the rest of the organization. Typically, these teams fulfil various roles and responsibilities such as: Customer experience programs (CX programs), Digital customer experience, Design and processes, Internal communications, Voice of the customer (VoC), User experiences, Customer experience management, Journey mapping, Nurturing customer interactions, Customer success, Customer support, Handling customer data, Learning about the customer journey.

ABC Call Volume Trend Analysis

Business Understanding:

Advertising is a way of marketing your business in order to increase sales or make your audience aware of your products or services. Until a customer deals with you directly and actually buys your products or services, your advertising may help to form their first impressions of your business. Target audience for businesses could be local, regional, national or international or a mixture. So they use different ways for advertisement. Some of the types of advertisement are: Internet/online directories, Trade and technical press, Radio, Cinema, Outdoor advertising, National papers, magazines and TV. Advertising business is very competitive as a lot of players bid a lot of money in a single segment of business to target the same audience. Here comes the analytical skills of the company to target those audiences from those types of media platforms where they convert them to their customers at a low cost.

Approach

THE given data is cleaned there is not required clean the data for analysis

117989 rows are their I done some of the analysis with the help of pivot table

And some formulas it is very important understand the learn the concept excel in the analytics

Tech stack used

power point ,excel

Insight

I got more information about usage of excel as well the real power of excel in the

Analytics and got the information about call trends means customer support

Concept of Timeslot, Call_Status, IVR_Duration, etc understand clearly

REQUIREMENTS

- Calculate the average call time duration for all incoming calls received by agents (in each Time_Bucket).
- Show the total volume/ number of calls coming in via charts/ graphs [Number of calls v/s Time]. You can select time in a bucket form (i.e. 1-2, 2-3, …..)
- As you can see current abandon rate is approximately 30%. Propose a manpower plan required during each time bucket [between 9am to 9pm] to reduce the abandon rate to 10%. (i.e. You have to calculate minimum number of agents required in each time bucket so that at least 90 calls should be answered out of 100.)
- Let’s say customers also call this ABC insurance company in night but didn’t get answer as there are no agents to answer, this creates a bad customer experience for this Insurance company. Suppose every 100 calls that customer made during 9 Am to 9 Pm, customer also made 30 calls in night between interval [9 Pm to 9 Am] and distribution of those 30 calls are as follows:

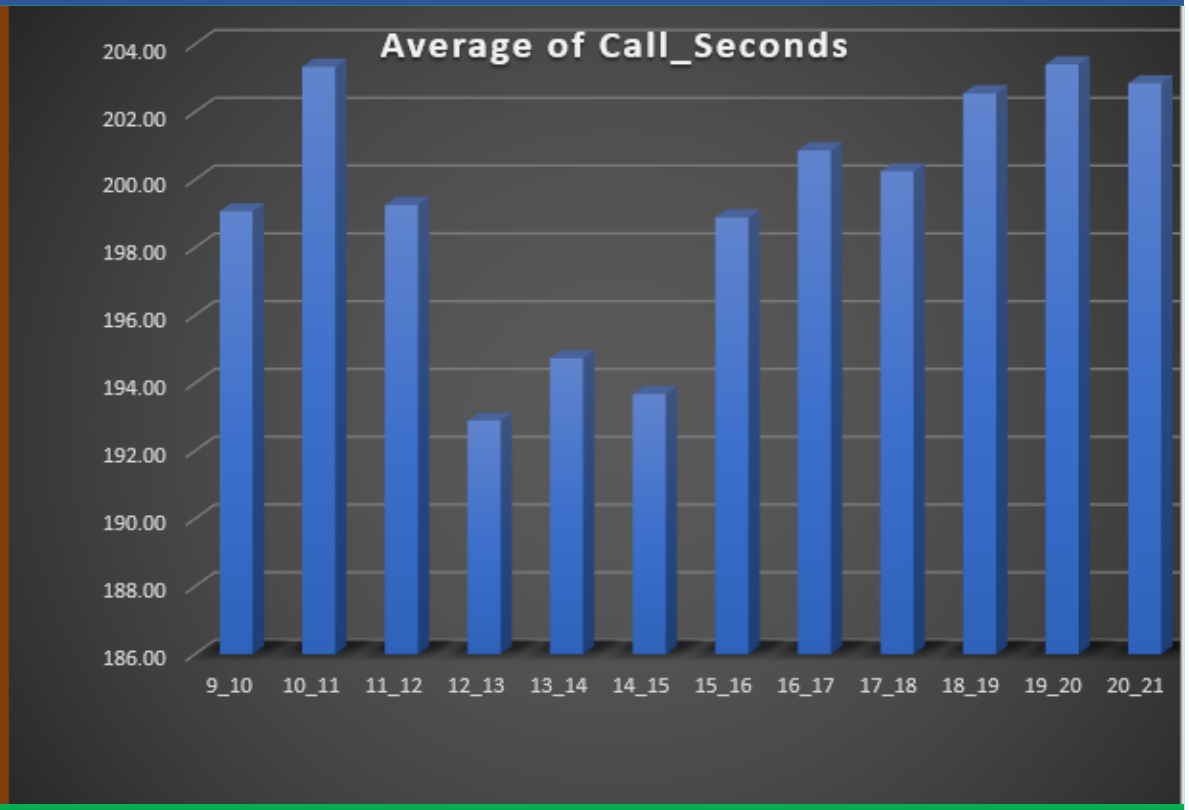
average call time duration

TIME_BUCKET	Average of Call_Seconds
10_11	203.33
11_12	199.26
12_13	192.89
13_14	194.74
14_15	193.68
15_16	198.89
16_17	200.87
17_18	200.25
18_19	202.55
19_20	203.41
20_21	202.85
9_10	199.07

TIME_BUCKET	Average of Call_Seconds
9_10	199.07
10_11	203.33
11_12	199.26
12_13	192.89
13_14	194.74
14_15	193.68
15_16	198.89
16_17	200.87
17_18	200.25
18_19	202.55
19_20	203.41
20_21	202.85

Call_Status

- abandon
- answered
- transfer

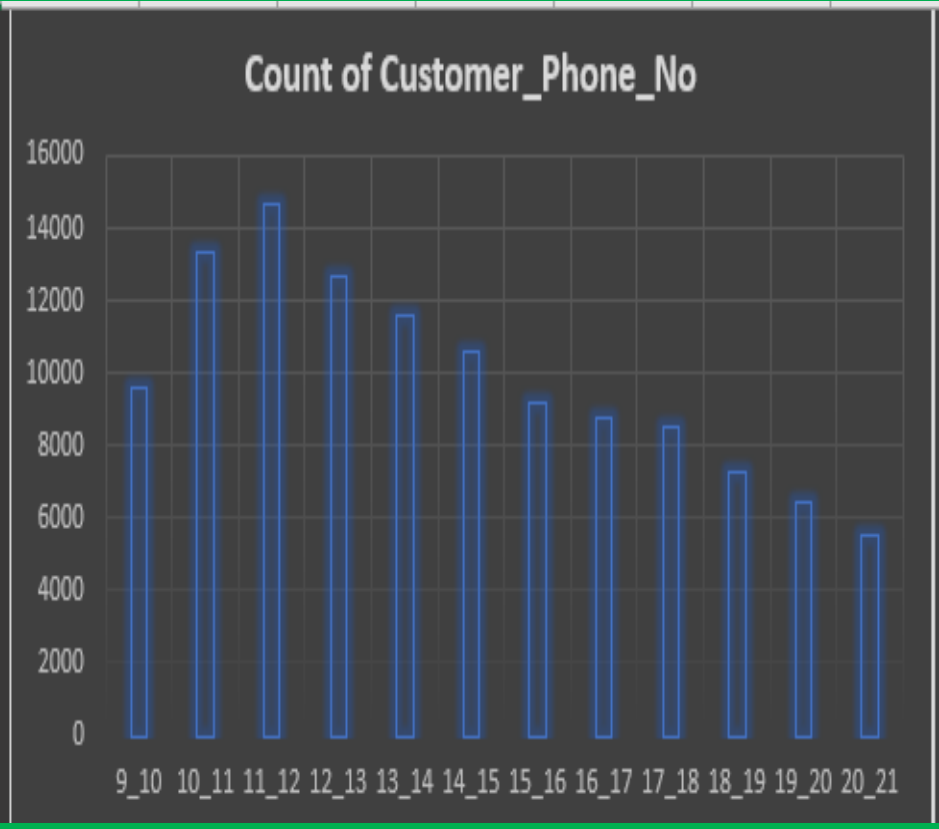


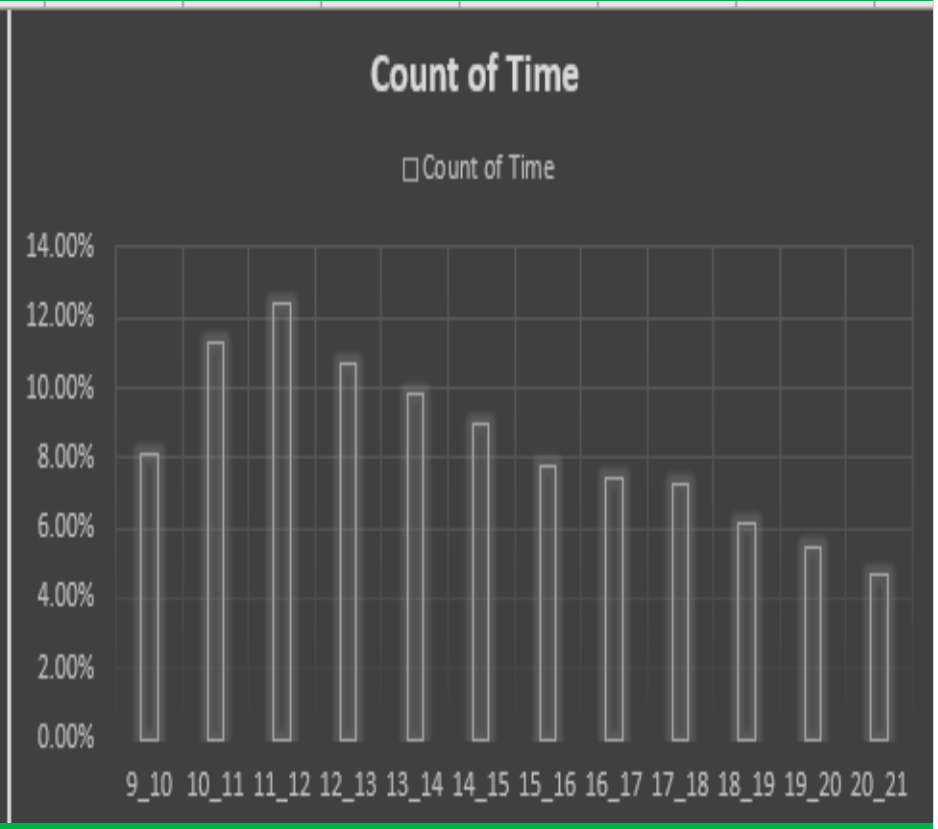
Maximum number of call in 10-11 time bucket

Average call time for all answered call is 198.6

total volume/ number of calls coming in via charts/ graphs

TIME BUCKET	Count of Custom	Count of Time
9_10	9588	8.13%
10_11	13313	11.28%
11_12	14626	12.40%
12_13	12652	10.72%
13_14	11561	9.80%
14_15	10561	8.95%
15_16	9159	7.76%
16_17	8788	7.45%
17_18	8534	7.23%
18_19	7238	6.13%
19_20	6463	5.48%
20_21	5505	4.67%





Maximum count of call in 11_12 bucket

And least in 20_21

We can observe that there is drastically down after 11_12 time bucket

As you can see current abandon rate is approximately 30%. Propose a manpower plan required during each time bucket [between 9am to 9pm] to reduce the abandon rate to 10%. (i.e. You have to calculate minimum number of agents required in each time bucket so that at least 90 calls should be answered out of 100.)

DATE	abandon	answered	transfer	Grand Total
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
AVERAGE	1495.78261	3584.8696	49.26087	5129.913043
%	29%	70%	1%	100%

Assumption: An agent work for 6 days a week; On an average total unplanned leaves per agent is 4 days a month; An agent total working hrs is 9 Hrs out of which 1.5 Hrs goes into lunch and snacks in the office. On average an agent occupied for 60% of his total actual working Hrs (i.e 60% of 7.5 Hrs) on call with customers/ users. Total days in a month is 30 days.

AGENT WORKING HOUR	9
AGENT OF FLOOR OF WORK HOUR	7.5
DAYS OF AGENT WORK IN A WEEK	5
TOTAL TIME SPENT ON CALL	4.5

6 working days
out of 28 days work 24 days
out of 28 days of work for 20 days after unplanned leave

TIME TAKEN ON AN AVG TO ANSWER THE CALL	198.6
TIME REQUIRE TO ANSWER 90%OF CALL	254.7002
TOTAL WORKING PERSON REQUIRED PER DAY	57

Average duration spent in a call is 198.6 sec

Time required to answer 70% of the calls

198.6 * 5130 * 0.7 / 3600 = 198.10 hours.

A person works 4.5 hours a day,

Total number of people need to work in a day to get a 70%

198.10/4.5

= 44 People.

Time required to answer 90% of the calls

= 198.6 * 5130 * 0.9 / 3600

= 254.700 hours.

Total number of people need to work in a day to get 90% answering rate

=254.700/4.5

= 57 People

Let’s say customers also call this ABC insurance company in night but didn’t get answer as there are no agents to answer, this creates a bad customer experience for this Insurance company. Suppose every 100 calls that customer made during 9 Am to 9 Pm, customer also made 30 calls in night between interval [9 Pm to 9 Am] and distribution of those 30 calls are as follows:

CALL VOLUME DAILY 9AM TO 9PM	5129.913
IF WE PROVIDE SUPPORT IN NIGHT 9PM TO 9AM	1539
ADDITIONAL HOUR REQUIRED	76.41135
ADDITIONAL HEAD COUNT	17
TOTAL HEAD COUNT	74

		TIME DIS	76.4114	REQUIREMENT	CALL DISTRIBUTION
21_22	3	10%	7.64114	13	8
22_23	3	10%	7.64114	13	8
23_24	2	7%	5.09409	8	6
00_01	2	7%	5.09409	8	6
01_02	1	3%	2.54705	4	3
2_3	1	3%	2.54705	4	3
3_4	1	3%	2.54705	4	3
4_5	1	3%	2.54705	4	3
5_6	3	10%	7.64114	13	8
6_7	4	13%	10.1882	17	11
7_8	4	13%	10.1882	17	11
8_9	5	17%	12.7352	21	14
	30				

A person works effectively 4.5 hours a day

Average duration spent in a call 198.6 sec

Call volume daily 5129.913

Provide support in night 1539

Additional hour requires 76

Additional headcount 17

Total head count 17+57=74

Need 17 more man-power to support at night each day and also keeping the abandon rate to 10%.