ABC CALL VOLUME TREND ANALYSIS

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PROJECT DESCRIPTION

IN THIS PROJECT WE ARE SUPPOSED TO MAKE A DETAILED REPORT OF CALLS BY DIFFERENT AGENTS ON DIFFERENT TIME BUCKET. THIS WILL ALSO HELP TO REDUCE ABANDON RATE AND INCREASE NUMBER OF AGENTS AS PER THE REQUIREMENT.

APPROACH

FOR THIS PROJECT I HAVE USED EXCEL FOR ANALYSIS. I HAVE USED DIFFERENT PIVOTS AND CHARTS TO GATHER INSIGHTS. I HAVE USED DIFFERENT FORMULAS AND METHODS TO SOLVE SOME CALCULATIONS.

TECH-STACK USED

I HAVE USED MS EXCEL FOR COMPLETE DATA ANALYSIS USING DIFFERENT PIVOTS AND CHARTS. I HAVE ALSO USED POWER POINT TO CREATE THE COMPLETE REPORT AND USED SOME PICTURES FROM GOOGLE TO MAKE THE REPORT MORE ATTRACTIVE.

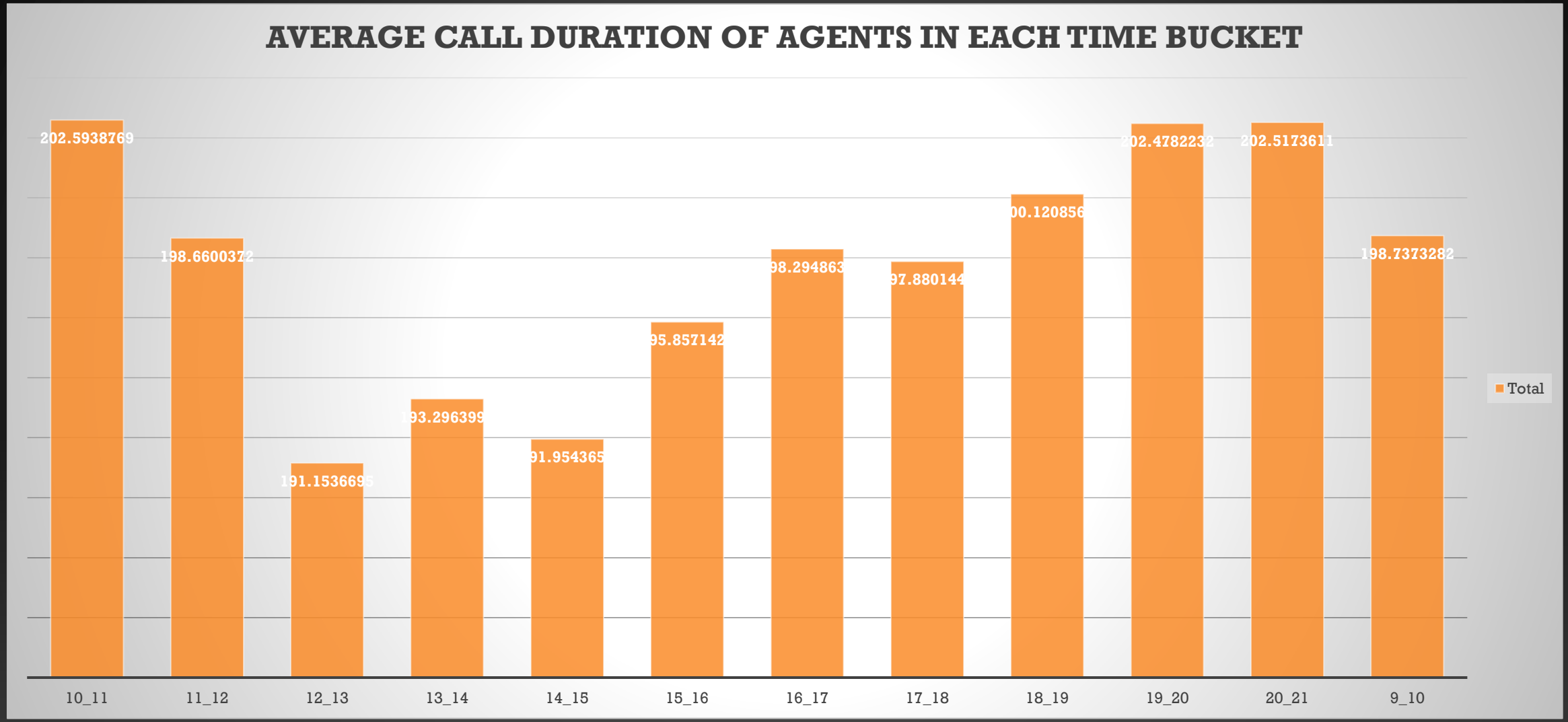
INSIGHTS

Q1. Calculate the average call time duration for all incoming calls received by agents (in each Time_Bucket).

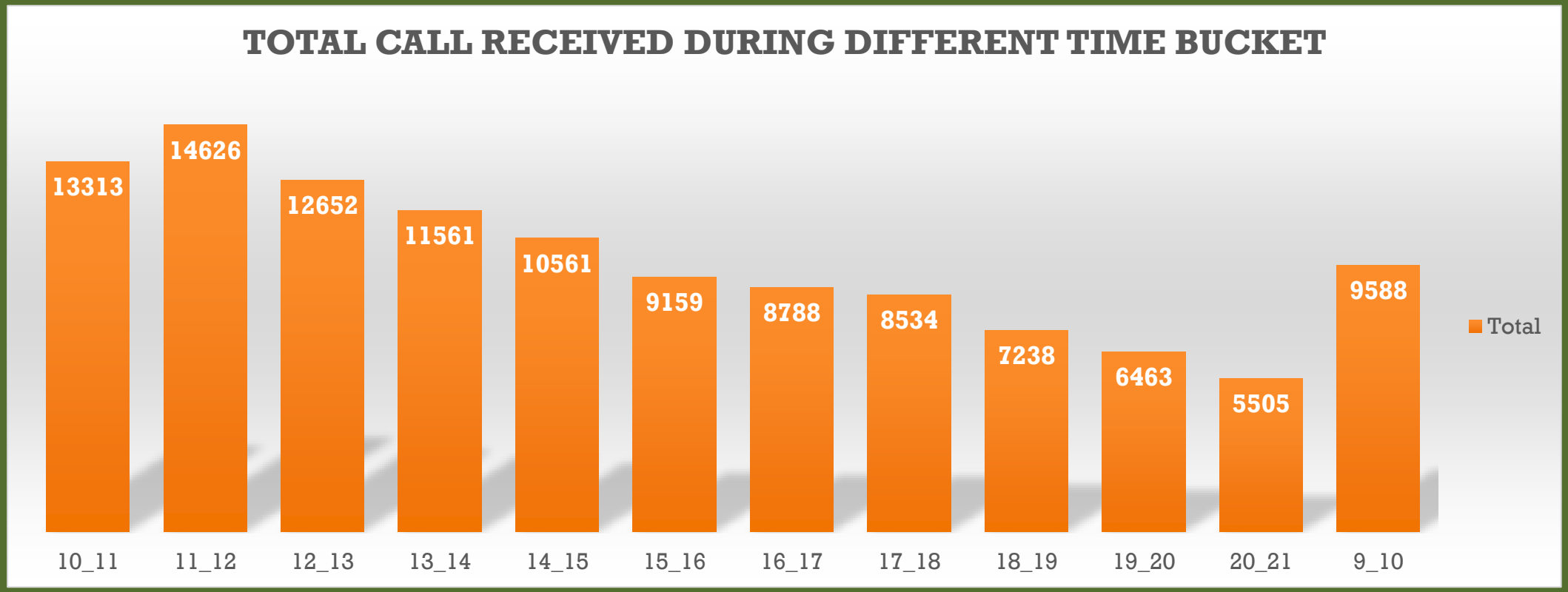
1. FROM THIS PIVOT AND CHART WE CAN CLEARLY SEE THE INSIGHTS.
2. DURING 10-11, AND 19-21 TIME BUCKET AVERAGE CALL DURATION IS THE HIGHEST.
3. DURING 14-15 TIME BUCKET AVERAGE CALL DURATION IS THE LOWEST.

Call_Status	(Multiple Items)
Time Bucket	Average of Call_Seconds (s)
10_11	202.5938769
11_12	198.6600372
12_13	191.1536695
13_14	193.2963998
14_15	191.9543656
15_16	195.8571429
16_17	198.2948638
17_18	197.8801445
18_19	200.1208565
19_20	202.4782232
20_21	202.5173611
9_10	198.7373282
Grand Total	196.9626009

AVERAGE CALL DURATION OF AGENTS IN EACH TIME BUCKET



Q2. 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, …..)



1. FROM THE ABOVE CHART WE CAN CLEARLY SEE THE INSIGHTS.

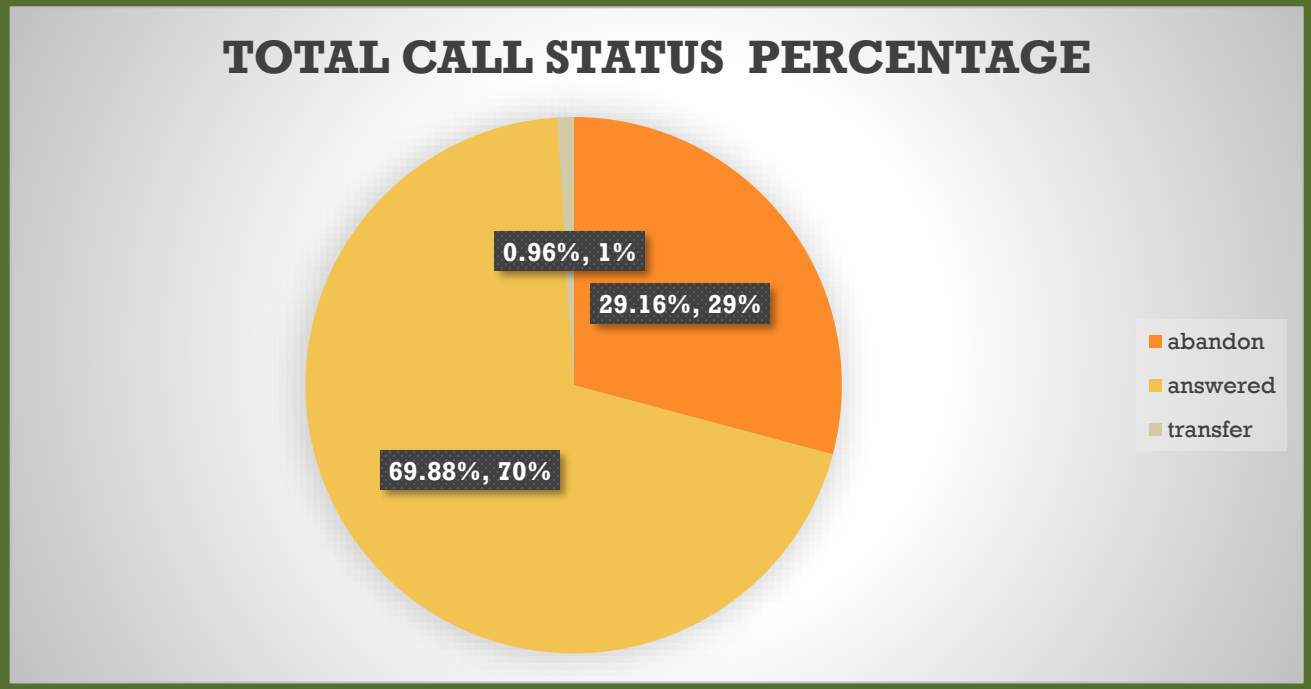
2. WE CAN SEE DURING 11-12 TIME BUCKET THE NUMBER OF CALLS RECEIVED ARE 14626.

3. DURING 20-21 TIME BUCKET LESS NUMBER OF CALL ARE RECEIVED WHICH IS 5505.

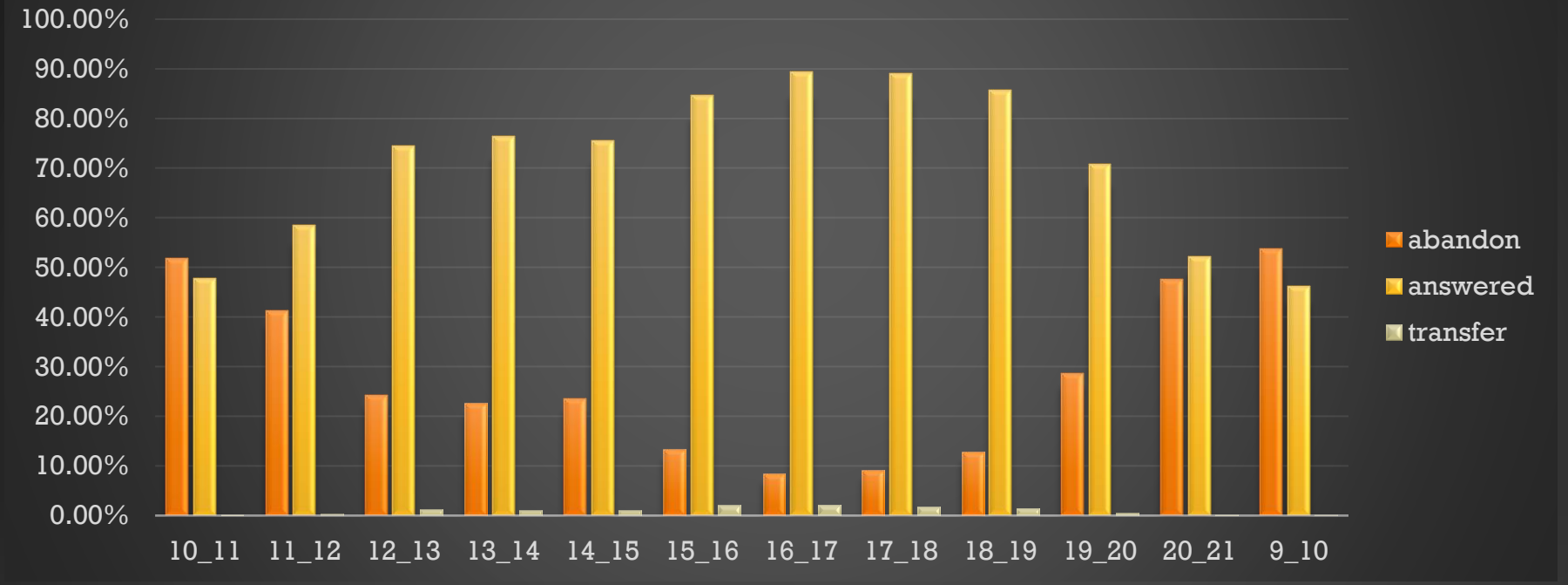
4. DURING 16-17 AND 17-18 TIME BUCKET THE NUMBER OF CALLS ARE ALMOST SAME THAT IS 8788 AND 8534 RESPECTIVELY.

Time Bucket	No. of Calls Received
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

Q3. 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.)



CALL STATUS PERCENTAGE DURING DIFFERENT TIME BUCKET



FROM THE ABOVE CHART WE CAN SEE THE PERCENTAGE OF CALL STATUS DURING DIFFERENT TIME FRAMES.

Sum of call duration (seconds)	Hrs
16463119	**198.8299**

HERE THE SUM OF TOTAL CALL DURATION OF ONE DAY IS 16463119 SECONDS AND 198.8299 HRS.

NOW LETS SUPPOSE AN AGENTS IS WORKING 4.5 HRS DAILY EXCLUDING (BREAK, MEETINGS ETC.)

Total Agents = 255.85/4.5
57

WHEN THE ANSWERED RATE IS 70% AND ABONDAN RATE IS 30%,SO IN ORDER TO REDUCE ABONDAN RATE TO 10% AND INCREASE ANSWERED RATE TO 90% WE DO SOME MATHEMATICAL OPERATION								
	=	AVERAGE IN HOUR DURATION*90%/70%						
TOTAL HOUR	=	255.8571429						

TOTAL AGENT = 255.85/4.5 = 57 AGENTS

Time Bucket	Count of Call_Seconds (s)	Man Required
10_11	11.28%	6
11_12	12.40%	7
12_13	10.72%	6
13_14	9.80%	6
14_15	8.95%	5
15_16	7.76%	4
16_17	7.45%	4
17_18	7.23%	4
18_19	6.13%	3
19_20	5.48%	3
20_21	4.67%	3
9_10	8.13%	5
Grand Total	100%	57

FROM THE ABOVE DATA WE CAN CLEARLY SEE THE NUMBER OF AGENTS REQUIRED FOR EVERY TIME BUCKET.

Q4. 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:

Date	abandon	answered	transfer	Grand Total
1-Jan	684	3883	77	4644
2-Jan	356	2935	60	3351
3-Jan	599	4079	111	4789
4-Jan	595	4404	114	5113
5-Jan	536	4140	114	4790
6-Jan	991	3875	85	4951
7-Jan	1319	3587	42	4948
8-Jan	1103	3519	50	4672
9-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	1496	3585	49	5130

FROM THIS CALCULATION WE CAN GET:

AVG. CALL DAILY (BETWEEN 9AM-9PM)

=5130

AVG. CALL DAILY (BETWEEN 9PM-9AM)

=1539

Date	Sum of Call_Seconds (s)
1-Jan	676664
2-Jan	574003
3-Jan	812863
4-Jan	861946
5-Jan	846798
6-Jan	829040
7-Jan	757019
8-Jan	735444
9-Jan	541147
10-Jan	778739
11-Jan	785717
12-Jan	709934
13-Jan	691320
14-Jan	564227
15-Jan	556267
16-Jan	674394
17-Jan	945615
18-Jan	796768
19-Jan	750270
20-Jan	759613
21-Jan	639855
22-Jan	621577
23-Jan	553899
Average(seconds)	715787.8
Average(hours)	199.3024

AVERAGE CALL DURATION FOR EACH DAY = 199 HRS

ADDITIONAL HOURS = (1539*0.9*199)/3600
= 76.49 HRS

ADDITIONAL AGENTS REQUIRED = ADDITIONAL HOURS/4.5
= 76.49/4.5
= 17

FROM THE ABOVE CALCULATION WE HAVE CALCULATED ADDITIONAL HOURS AND ADDITONAL AGENTS REQUIRED.

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

FROM THIS TABLE WE CAN EASILY GET CALL DISTRIBUTION, TIME DISTRIBUTION AND AGENT REQUIRED DURING DIFFERENT TIME BUCKET.

I HAVE CALCULATED TIME DISTRIBUTION BY CALL DISTRIBUTION WITH EACH TIME BUCKET BY TOTAL CALL DISTRIBUTED.

THERE ARE TOTAL 30 CALLS DISTRIBUTED OVER DIFFERENT TIME BUCKET.

THERE ARE TOTAL 17 AGENTS REQUIRED TO FULFILL THE REQUIREMENT OF AGENTS BETWEEN 9 PM – 9 AM.

Time Bucket	Call Distribution	Time Distribution	Agent Required
10_11	3	0.10	2
11_12	2	0.07	1
12_13	2	0.07	1
13_14	1	0.03	1
14_15	1	0.03	1
15_16	1	0.03	1
16_17	1	0.03	1
17_18	3	0.10	2
18_19	4	0.13	2
19_20	4	0.13	2
20_21	5	0.17	3
9_10	3	0.10	2
Total	30		**17**

RESULT

- 1. I HAVE LEARNT HOW CALL VOLUME DATA ARE ANALYSED.
- 2. I HAVE LEARNT HOW TO DEAL WITH HUGE AMOUNTS OF DATA.
- 3. I HAVE LEARNT TO MAKE DIFFERENT PIVOTS AND CHARTS.
- 4. I HAVE ALSO LEARNT HOW TEAMS INCREASE THEIR MAN POWER USING DATA ANALYSIS.
- 5. OVERALL I HAVE LEARNT HOW COMPANIES USE CALL VOLUME DATA TO GATHER MEANINGFUL INSIGHTS.

DRIVE LINK: EXCEL FILE
https://docs.google.com/spreadsheets/d/1S443xLLe53EeGlJf6r18o1L8twnx5s9z/edit?usp=share_link&ouid=113747271976476220784&rtpof=true&sd=true


THANK YOU