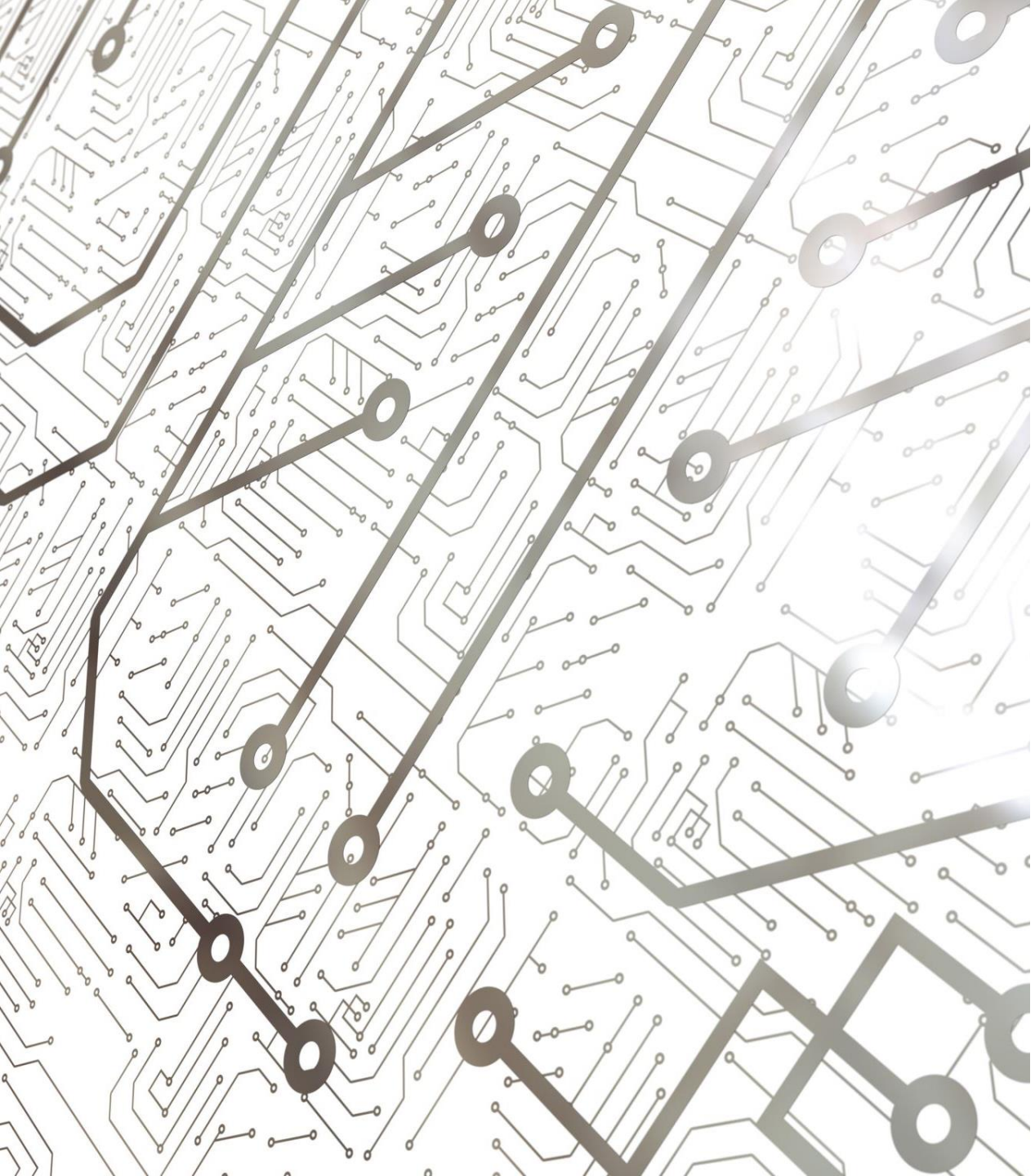
ABC Call Volume Trend Analysis

Project Description

In this project, we're diving into the world of Customer Experience (CX) analytics, specifically focusing on the inbound calling team of our company. We have a dataset covering 23 days that includes details like agent names and IDs, queue times, call times, call durations, and call statuses (abandoned, answered, or transferred). Our goal is to understand customer interactions and derive insights to enhance customer satisfaction and operational efficiency. Our CX team is crucial in analyzing customer feedback, managing experience programs, and using modern AI-powered tools like Interactive Voice Response (IVR), Robotic Process Automation (RPA), Predictive Analytics, and Intelligent Routing to improve our services. Effective advertising is vital for increasing sales and raising awareness, and it plays a significant role in forming first impressions of our business. Given the competitive nature of the advertising industry, it's essential to identify cost-effective media platforms that convert audiences into customers. By analyzing the CX data, we aim to optimize resource allocation, improve customer satisfaction, and enhance the overall customer experience.

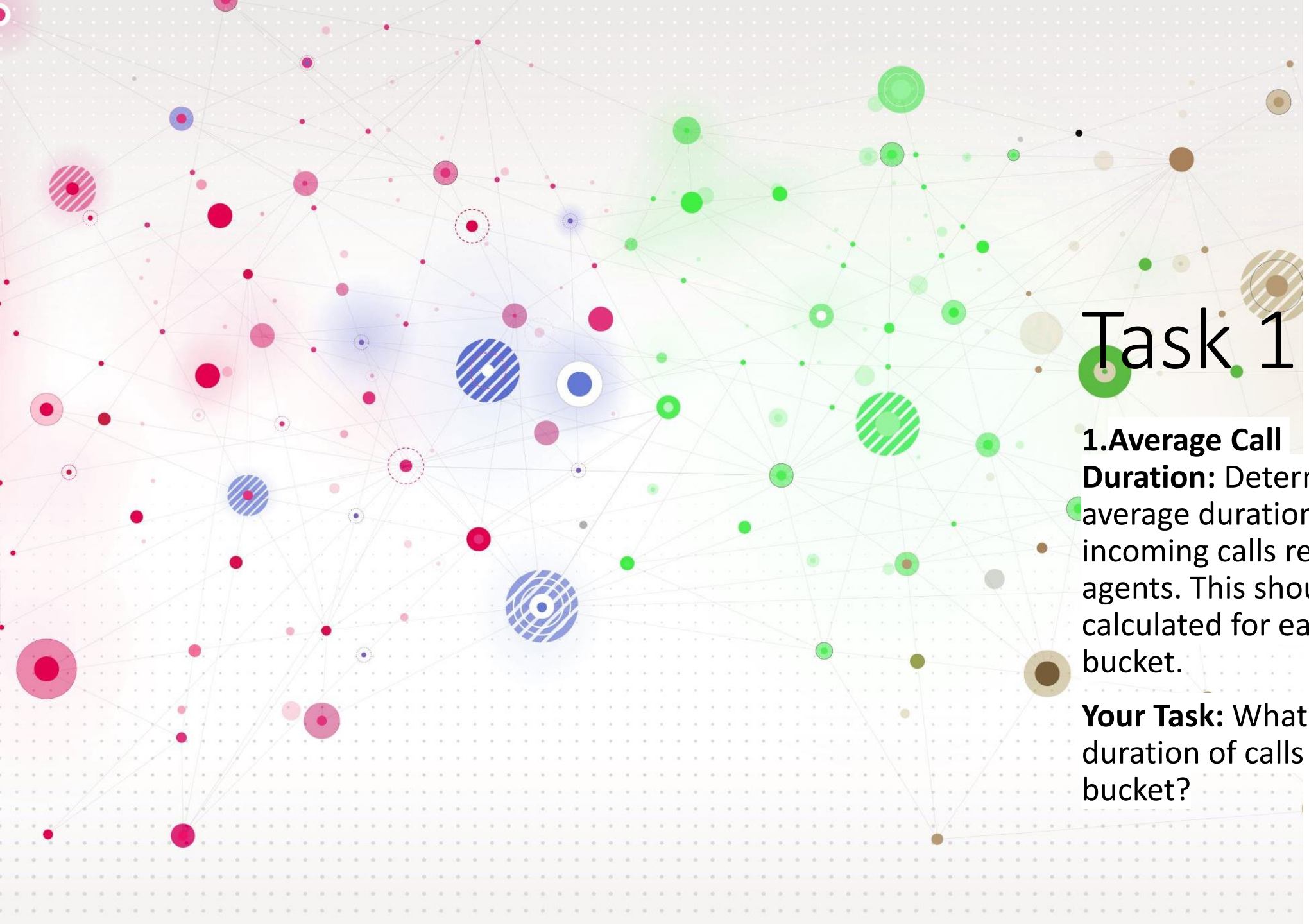
Approach

- For our project, we utilized Excel to analyze the dataset provided, which spans 23 days and includes details such as agent names and IDs, queue times, call times, call durations, and call statuses.
- We started by cleaning and organizing the data to ensure accuracy and consistency.
- We then performed descriptive statistics to understand the distribution and trends within the dataset. Visualization tools within Excel helped us identify patterns in call volumes, queue times, and agent performance.
- By creating pivot tables and charts, we could easily compare metrics across different dimensions. This approach allowed us to derive actionable insights and make data-driven recommendations to improve the customer experience for the inbound calling team.



Tech-Stack Used

For this project, we are using Excel as our primary tool for data analysis. Excel is chosen for its versatility and user-friendly interface, which allows for efficient data manipulation and visualization. It offers powerful features like pivot tables, advanced charting capabilities, and various statistical functions that are essential for in-depth analysis of our customer experience data. Additionally, Excel's widespread use and familiarity among team members make it an accessible and practical choice for collaborating and sharing insights. By leveraging Excel, we can effectively analyze call volumes, queue times, and customer interactions to derive valuable insights that will enhance our customer experience strategies and optimize our inbound calling operations.



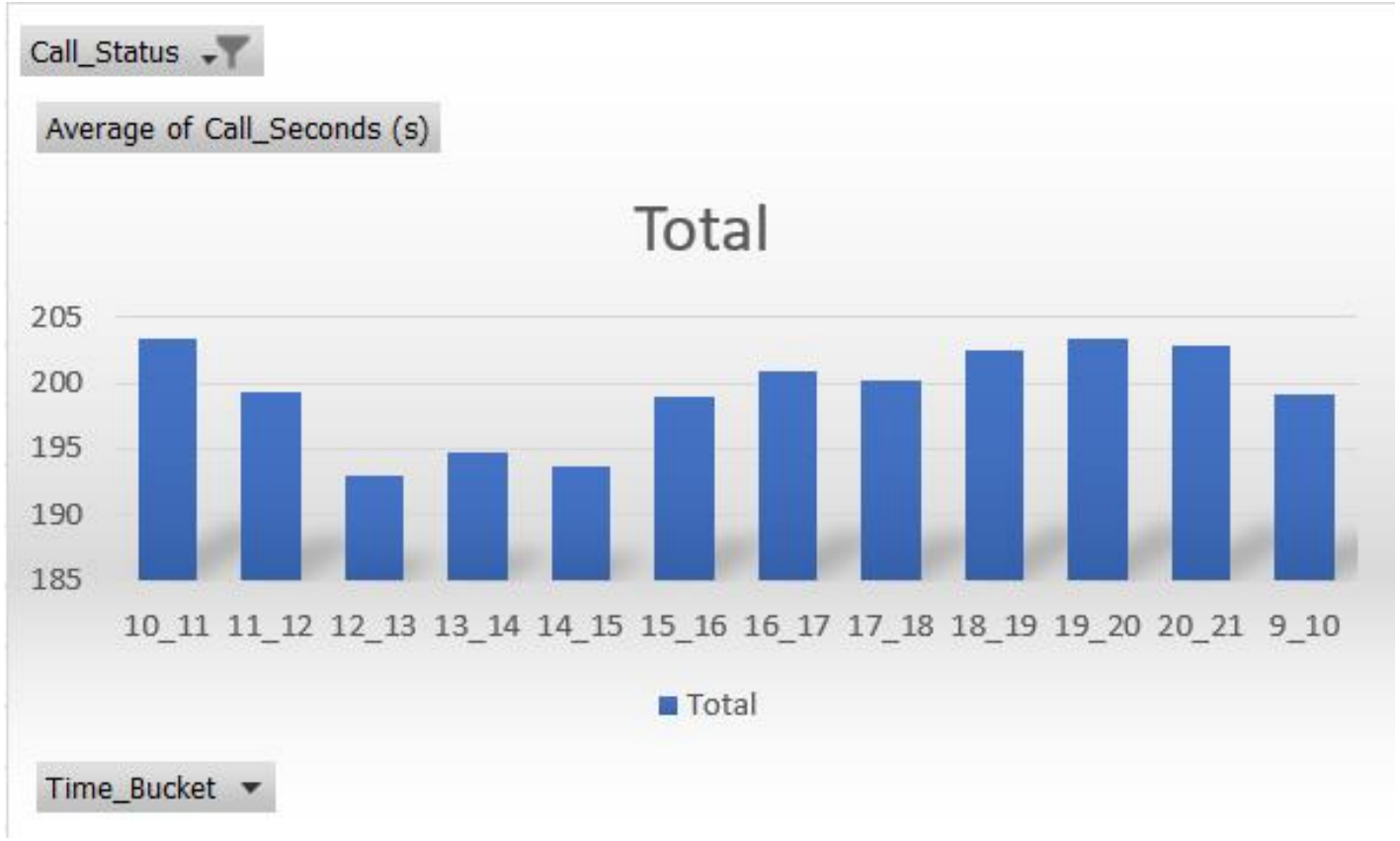
Task 1

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

Your Task: What is the average duration of calls for each time bucket?

Insights

Call_Status	answered
Row Labels	Average of Call_Seconds (s)
10_11	203.3310302
11_12	199.2550234
12_13	192.8887829
13_14	194.7401744
14_15	193.6770755
15_16	198.8889175
16_17	200.8681864
17_18	200.2487831
18_19	202.5509677
19_20	203.4060725
20_21	202.845993
9_10	199.0691057
Grand Total	198.6227745



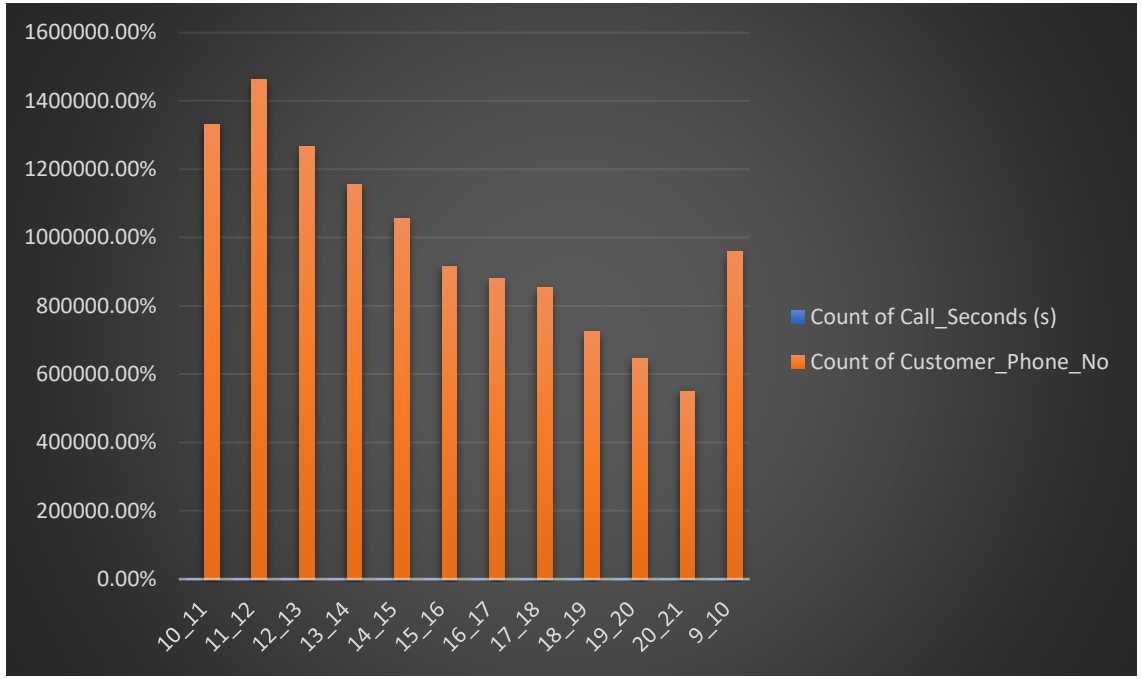
Task 2

2.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.).

Your Task: Can you create a chart or graph that shows the number of calls received in each time bucket?

Insights

Row Labels	Count of Call_Seconds (s)	Count of Customer_Phone_No
10_11	11.28%	13313
11_12	12.40%	14626
12_13	10.72%	12652
13_14	9.80%	11561
14_15	8.95%	10561
15_16	7.76%	9159
16_17	7.45%	8788
17_18	7.23%	8534
18_19	6.13%	7238
19_20	5.48%	6463
20_21	4.67%	5505
9_10	8.13%	9588
Grand Total	100.00%	117988



Task 3

3.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.

Your Task: What is the minimum number of agents required in each time bucket to reduce the abandon rate to 10%?

Insights

DateTime	1-Jan
Row Labels	Sum of Call_Seconds (s)
9 AM	35313
10 AM	53087
11 AM	67751
12 PM	72680
1 PM	59693
2 PM	76137
3 PM	65689
4 PM	59464
5 PM	68155
6 PM	53096
7 PM	40141
8 PM	25281
9 PM	177
Grand Total	676664

Total hours per day	187.9622222
Agent available for 60% time	37.59244444
Agent required for 90% time	56.38866667

	Count of Call_Seconds (s)	No. of Agent Needed
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	100.00%	56.38866667

Task 4

4.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:

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

Insights

Count of Call_Status	Call Status				
Date	abandon	answered	transfer	(blank)	Grand Total
<1/1/2022					
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
Grand Total	34403	82452	1133		117988

Average call per day	5129.913043
Calls per night	1538.973913
Additional Hours Required	76
Agent required for additional hours	15

Time Bucket	Calls	Time	Agent Required
9_10	3	10	1.5
10_11	3	10	1.5
11_12	2	15	1
12_13	2	15	1
13_14	1	30	0.5
14_15	1	30	0.5
15_16	1	30	0.5
16_17	1	30	0.5
17_18	3	10	1.5
18_19	4	7.5	2
19_20	4	7.5	2
20_21	5	6	2.5
Total	30		15

Conclusion

Through the project, I analyzed ABC Call Volume Trends to identify peak times and assess patterns, significantly improving resource allocation and response strategies. Excel played a crucial role by providing powerful tools for data visualization and trend analysis, which enhanced our ability to make informed decisions and streamline planning.