ABC CALL VOLUME TREND ANALYSIS

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Agenda

Project Description

This project centres on optimising ABC Company's inbound calling team by harnessing data analytics. With a 23-day dataset encompassing agent information queue times call data and statuses, we aim to improve consumer satisfaction and operational efficiency. We'll explore AI tools like IBR, RPA, Predictive Analytics and Intelligent Routing and examine the role of customer service representatives in delivering exceptional support. Our primary focus is on inbound customer support, where we'll strive to captivate and delight customers, turning them into loyal advocates for our business.
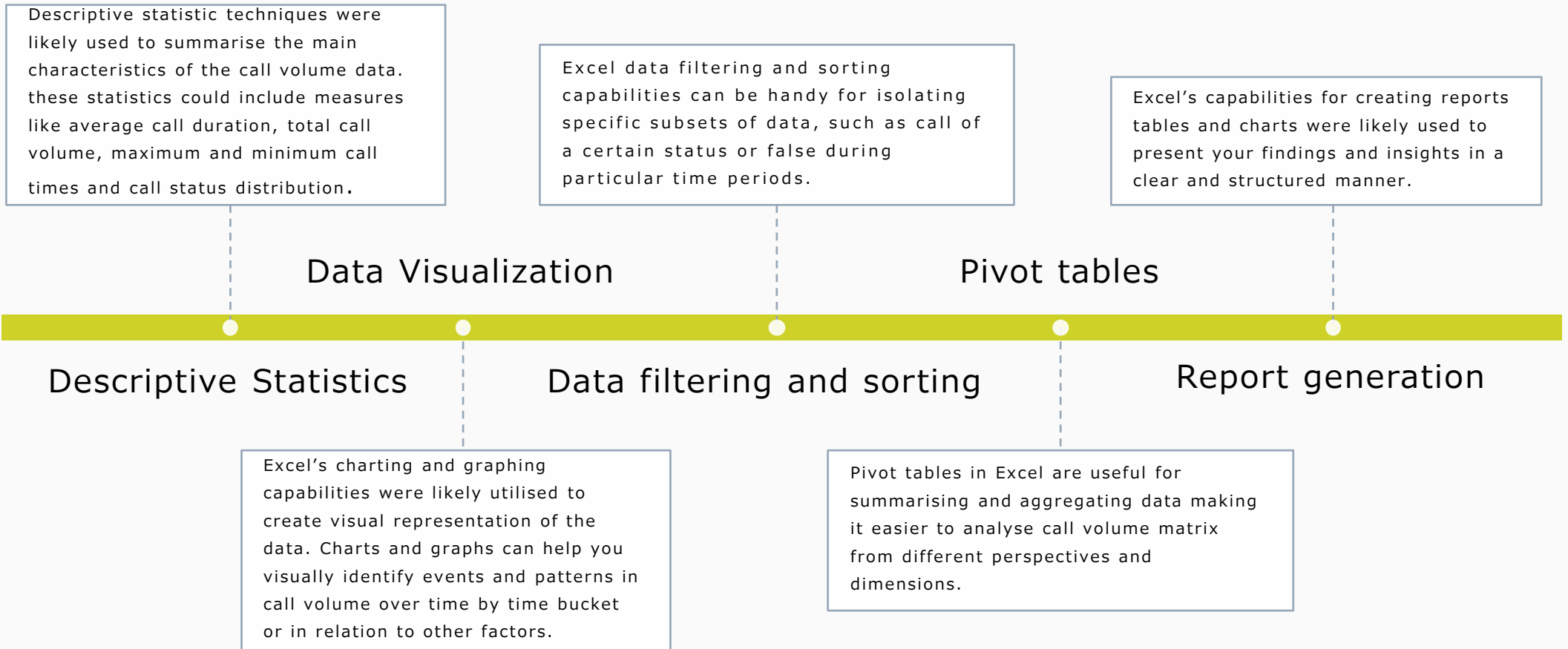
Business Understanding

Effective advertising is vital for any business, as it drives sales and shapes initial perceptions. Business have diverse target audiences, ranging from local to international. They employ various advertising channels, from online directories to traditional media like radios, cinema and print. In the fiercely competitive advertising landscape, analytics plays a pivotal role. The objective is to identify cost effective media platforms that can efficiently convert audiences into customers. This project leverages analytic skills on cover call volume trends with the CX team yielding valuable insights for the business.

Descriptive statistic techniques were likely used to summarise the main characteristics of the call volume data. these statistics could include measures like average call duration, total call volume, maximum and minimum call times and call status distribution.

Excel data filtering and sorting capabilities can be handy for isolating specific subsets of data, such as call of a certain status or false during particular time periods.

Excel's capabilities for creating reports tables and charts were likely used to present your findings and insights in a clear and structured manner.

Data Visualization

Pivot tables

Descriptive Statistics

Data filtering and sorting

Report generation

Excel's charting and graphing capabilities were likely utilised to create visual representation of the data. Charts and graphs can help you visually identify events and patterns in call volume over time by time bucket or in relation to other factors.

Pivot tables in Excel are useful for summarising and aggregating data making it easier to analyse call volume matrix from different perspectives and dimensions.

APPROACHES

Teck-Stack Used

Microsoft Excel 2021

It is a widely accessible and user friendly tool for data analysis and visualisation. It allows for efficient data manipulation calculation and presentation making it idle for understanding call volume tends or driving insights. It's a practical choice for projects where data analysis is required due to its familiarity and versatility.

DATA ANALYTICS TASKS

Average call duration

Determine the average duration of all incoming calls received by agents this should be calculated for each time bucket.

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

Time Bucket	Call_Seconds
9_10	200.74
10_11	215.36
11_12	205.35
12_13	194.33
13_14	197.31
14_15	195.22
15_16	198.63
16_17	198.88
17_18	200.84
18_19	205.82
19_20	206.77
20_21	203.34
Grand Total	**200.71**

By using PIVOT TABLE and using following columns under different areas:
- **FILTERS**
  Call_Status
  Wrapped_By
- **ROWS**
  Time_Bucket
- **VALUES**
  Call_Seconds

This table includes average of call seconds answered by agent in the respective time bucket.

Average call duration

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

AVERAGE CALL DURATION
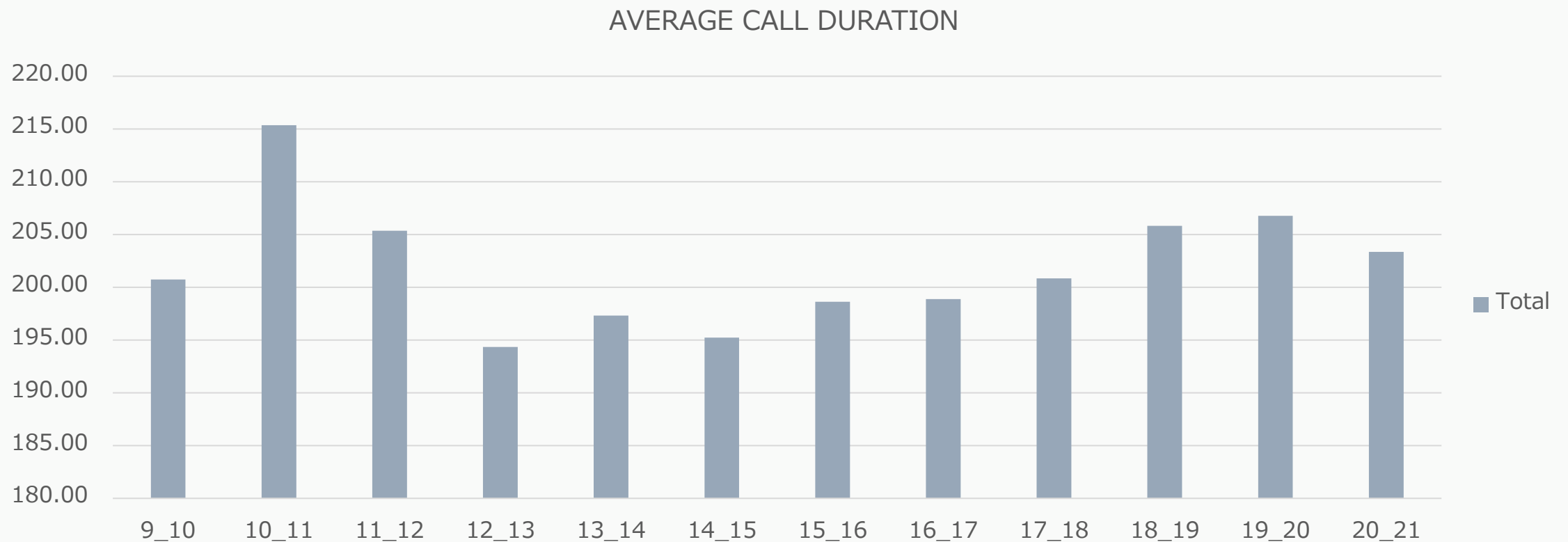
Call Volume Analysis

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

Time_bucket	Count of Calls	Calls percentage
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%
Grand Total	**117988**	**100.00%**

Call Volume Analysis

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

CALL VOLUME ANALYIS
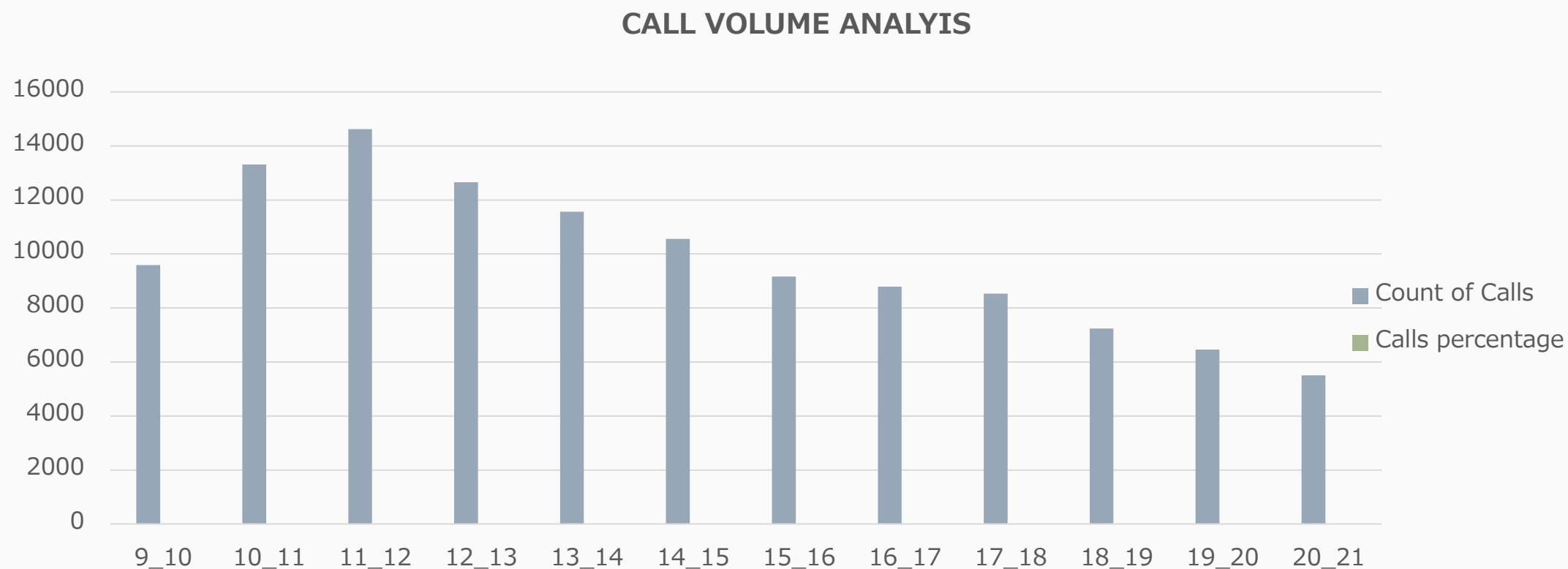
Assumptions

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

Days in month	30
Work day per week	6
Leaves per month	4
Total working hours	9
Lunch and snacks	1.5
Total actual working hours	7.5
60% actual working hours	4.5

Manpower Planning

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

Days (Time)	01-Jan

Row Labels	Sum of Call_Seconds (s)
09	35313
10	53087
11	67751
12	72680
13	59693
14	76137
15	65689
16	59464
17	68155
18	53096
19	40141
20	25281
21	177
Grand Total	676664

01-Jan-22 SUM OF ALL CALL SECONDS	HOURS
676664	187.96

Total No. Of Agents for 60%	42
Agent required for 90%	63

Manpower Planning

time bucket	Count of Call_Seconds (s)	Count of Call_Seconds (s)2	Agent Required
9_10	8.13%	0.08	5
10_11	11.28%	0.11	7
11_12	12.40%	0.12	8
12_13	10.72%	0.11	7
13_14	9.80%	0.10	6
14_15	8.95%	0.09	6
15_16	7.76%	0.08	5
16_17	7.45%	0.07	5
17_18	7.23%	0.07	5
18_19	6.13%	0.06	4
19_20	5.48%	0.05	3
20_21	4.67%	0.05	3
Grand Total	**100.00%**	**1.00**	**63**

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Night Shift Manpower Planning

TASK: Propose a manpower plan for each bucket throughout the day, keeping the maximum abandon rate to 10%?

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 customer makes between 9 AM to 9 PM they also make 30 calls at nights between 9 PM to 9 AM the distribution of these calls is follows:

average calls per day	5130
Night calls (9PM-9AM)	1539
hours	77
agents	17

Time bucket	Distribution of time calls	distribution	Agents Required
9PM-10PM	3	10	2
10PM-11PM	3	10	2
11PM-12AM	2	15	1
12AM-1AM	2	15	1
1AM-2AM	1	30	1
2AM-3AM	1	30	1
3AM-4AM	1	30	1
4AM-5AM	1	30	1
5AM-6AM	3	10	2
6AM-7AM	4	7.5	2
7AM-8AM	4	7.5	2
8AM-9AM	5	6	3
TOTAL	**30**	**201**	**17**

Night Shift Manpower Planning

TASK: Propose a manpower plan for each bucket throughout the day, keeping the maximum abandon rate to 10%?

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

Result

Throughout this project, I have gained valuable insights into ABC call volume trend analysis. I now understand the nuances of call duration patterns across different time buckets, allowing for precise resource allocation and enhance customer satisfaction. Visualising call volume trends has provided a clarity on when peak call times occur, enabling effective staffing strategies. Additionally, by calculating the minimum required agents for each time bucket, we have a concrete plan to reduce the abundant rate to 10%, ultimately leading to the better customer service. Addressing nighttime calls with a dedicated manpower plan ensures the round-the-clock support. This project simplified the practicality of excel for data analysis, showcasing its role in data-driven decision making in the sum, these insights contribute to improve custom experience and operational efficiency within the inbound calling team at ABC company.

https://docs.google.com/spreadsheets/d/1m7SthfefpNGVgi8K99FIifcTRYJV42eh/edit?usp=sharing&ouid=102610263604488941402&rtpof=true&sd=true

Excel Sheet Drive link

THANK YOU

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