

ABC Call Volume Trend Analysis



Project Description

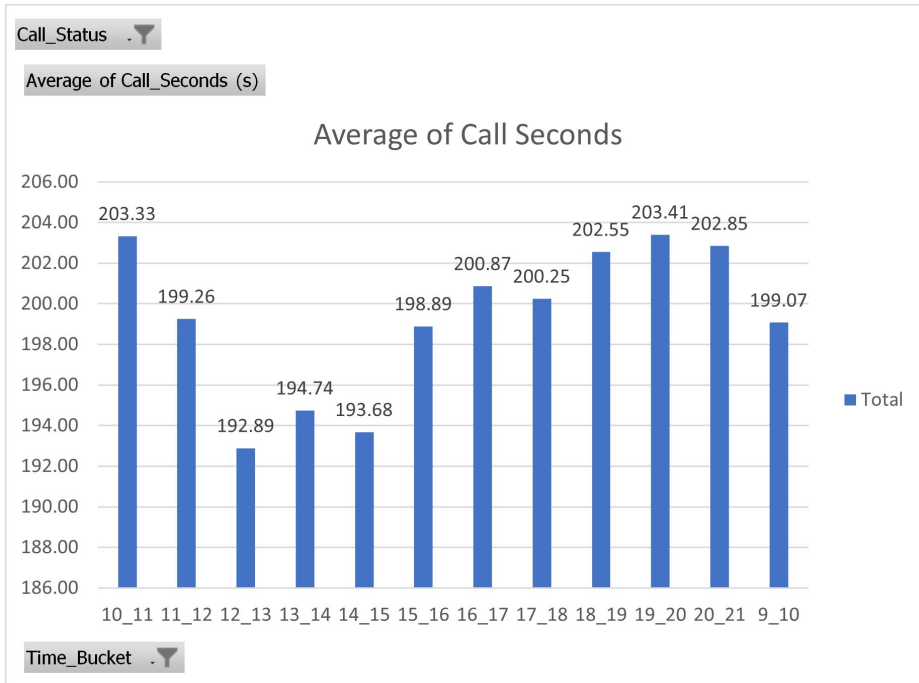
- The attached dataset is of Inbound calls of an ABC company from the insurance category consists of a Customer Experience (CX) Inbound calling team for 23 days. Data includes Agent_Name, Agent_ID, Queue_Time [duration for which customer have to wait before they get connected to an agent], Time [time 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. ▪ Interactive Voice Response (IVR), Robotic Process Automation (RPA), Predictive Analytics, Intelligent Routing are some of the most impactful AI-empowered customer experience tools we can use in this project.
- In a Customer Experience team there is a huge employment opportunities for Customer service representatives A.k.a. call centre agents, customer service agents. Some of the roles for them include: Email support, Inbound support, Outbound support, social media support
- Inbound customer support is defined as the call centre which is responsible for handling inbound calls of customers. Inbound calls are the incoming voice calls of the existing customers or prospective customers for our business which are attended by customer care representatives.
- Inbound customer service is the methodology of attracting, engaging, and delighting our customers to turn them into our business' loyal advocates. By solving our customers' problems and helping them achieve success using our product or service, we can delight our customers and turn them into a growth engine for our business.

Tech Stack Used

Microsoft Excel used for calculation and to show graphs and showing and PPT used to make a report (PDF) to be presented to the leadership team

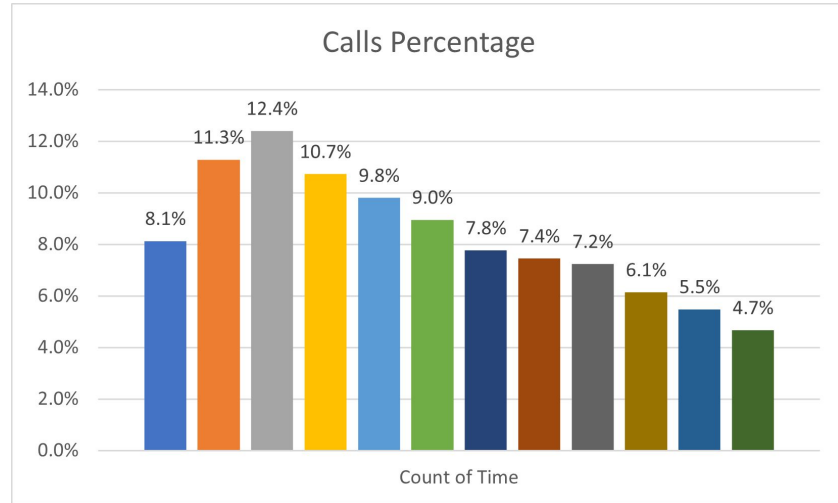
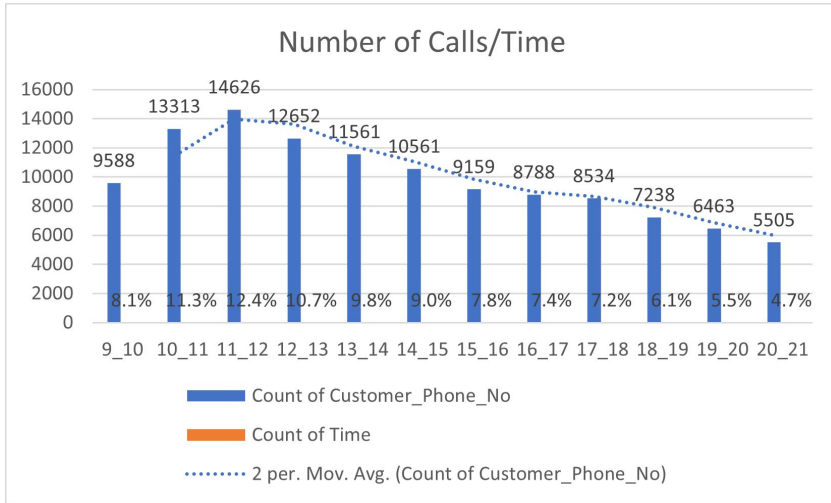
Approach & Insights

1. What is the average duration of calls for each time bucket?



- Time_Bucket is measured in the Rows and average of Call_Seconds is measured in the Values section And we put Call_Status in the Filters section.
- The total average of call time duration which are answered by the agents is 198.6 seconds.
- The average call time duration for all incoming calls received by agents is the highest in between 10 am to 11 am and from 7 pm to 8 pm

2. Create a chart or graph that shows the number of calls received in each time bucket?



- We plotted Time_Bucket in the rows and total Count of Customer_Phone_No and Count of Time in the Values section.
- We measured Count of Time as the percentage of Column Total.
- The customers call the most in between 11 am to 12 noon.
- The customers call the least in between 8 pm to 9 pm

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

Working Hours per agent	4.5			Time_Bucket	Count of Time	Required no. of Agents
Time taken on an Average Call to answer	198.62			9_10	8.1%	5
				10_11	11.3%	6
Time required to answer 90% of the call (hrs)	254.73			11_12	12.4%	7
No. of agents required in a day	57			12_13	10.7%	6
Call Volume - 9am- 9 pm	5130			13_14	9.8%	6
Call Volume - 9pm- 9 am	1539			14_15	9.0%	6
To increase call rate to 90% in night	76			15_16	7.8%	4
No. of agents needed in night	17			16_17	7.4%	4
				17_18	7.2%	4
				18_19	6.1%	3
				19_20	5.5%	3
				20_21	4.7%	3
				Grand Total	100.0%	57

we created pivot table with Date & Time is dragged down to Rows, Call Status to Columns, while taking count Call Duration in the Values section.

Then, we calculated the average of abandon, answered and transfer by using the average excel formula. 29% of the calls are abandoned, 1% is transferred, while 70% of the calls are answered in the day time.

Total agents required to answer the 90% of calls per day is 57

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

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:

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 the analysis we can say that the company needs to hire employees to work a night shift and it needs a minimum of 19 employees. The managers must schedule the employees break time so that in each time bucket the minimum agents required are available to attend the call. In this way we would be able to reduce the abandon rate due to unavailability of staff.

Night Call (9 pm- 9 am)	Call Distribution	Time Distribution	Agents Required
21_22	3	10%	2
22_23	3	10%	2
23_24	2	7%	1
00_01	2	7%	1
01_02	1	3%	1
2_3	1	3%	1
3_4	1	3%	1
4_5	1	3%	1
5_6	3	10%	2
6_7	4	13%	2
7_8	4	13%	2
8_9	5	17%	3
Total	30	100%	19

ABC Call Volume Analysis File

Link_

https://docs.google.com/spreadsheets/d/1mBk_tpqgPT5HLg52Hv1TTtKtwwhLaxmO/edit?usp=drive_link&ouid=115986816887265464875&rtpof=true&sd=true

Results

I have learned how a staffing plan in a company might affect their productivity and customer satisfaction. As a data analyst this has helped to get some domain knowledge about customer service team and helped me in deriving useful insights from the analysis which is the main role of a data analyst