**PWS-Task2 - project1**

**e-mail:**

I'm looking for transparency and insight into the data . total number of calls answered and abandoned, speed of answer, length of calls, overall customer satisfaction , etc

Create a dashboard in Power BI for Claire that reflects all relevant Key Performance Indicators (KPIs) and metrics in the dataset. Get creative!

Possible KPIs include (to get you started, but not limited to):

Overall customer satisfaction

Overall calls answered/abandoned

Calls by timeSs

Average speed of answer

Agent’s performance quadrant -> average handle time (talk duration) vs calls answered

**Key Performance Indicators (KPIs) and Metrics:**

**1. Total Calls Answered**: This will show how many calls were answered in total.

**2**. **Total Calls Abandoned:** This will count calls that were not answered.

**3.Speed of Answer:** The average time it took to answer calls.

**4.Average Talk Duration**: The average length of calls.

**5.Customer Satisfaction:** The average satisfaction score based on ratings (1-5).

**6.Calls by Topic:** This will show how many calls were related to each topic (Contract related, Technical Support, etc.).

**7**.**Agent Performance Quadrant:** Plot of average talk duration vs. number of calls answered for each agent.

**8.Satisfaction by Agent:** The average satisfaction score for each agent.

Great! 😎 Let’s start building the **Call Center Performance Dashboard** step-by-step in **Power BI**.

### **✅ Step 1: Import Data**

1. Open Power BI.
2. Go to **Home → Get Data → CSV**.
3. Select your CallCenter\_Fact.csv file and click **Load**.

👉 Let me know once the data is loaded! 😎

4o

##### **You said:**

next

###### **ChatGPT said:**

### **✅ Step 2: Data Cleaning**

Now let's clean the data:

1. Go to **Transform Data** (in the top menu).
2. In **Power Query**, do the following:

👉 **Convert AvgTalkDuration to seconds**

* Select the AvgTalkDuration column.
* Go to **Add Column → Custom Column**.
* Add this formula:

DAX

CopyEdit

AvgTalkDurationSeconds =

Time.Hour([AvgTalkDuration]) \* 3600 +

Time.Minute([AvgTalkDuration]) \* 60 +

Time.Second([AvgTalkDuration])

👉 **Replace Empty Fields with NULL Values**

* Select all columns.
* Go to **Transform → Replace Values**.
* Replace blank ("") with NULL.

👉 **Set Data Types**

* Ensure the following data types are set:
  + AvgTalkDurationSeconds → **Whole Number**
  + Satisfaction rating → **Decimal Number**
  + Resolved → **Text**

1. Click **Close & Load**.

👉 Let me know once done! 😎

1. **Navigate to Add Column Tab:**
   * Click on the **Add Column** tab.
2. **Create a Custom Column:**
   * Click on **Custom Column**.
3. **Enter the Formula:  
   s**

In the **Custom Column** dialog box, enter the following formula:  
  
= DateTime.FromText(Text.From([Date]) & " " & Time.ToText([Time], "hh:mm:ss tt"))

* + Click **OK**.s

### **✅ Step 3: Create Measures**

Now let’s create the key measures using DAX:

1. Go to **Modeling → New Measure**.
2. Create the following measures one at a time:

👉 **Total Calls Answered**

DAX

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TotalCallsAnswered =

COUNTROWS(

FILTER(

'CallCenter\_Fact',

TRIM(UPPER('CallCenter\_Fact'[Answered (Y/N)])) = "Y"

)

)

👉 **Total Calls Abandoned**

DAX

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TotalCallsAbandoned =

COUNTROWS(

FILTER(

'CallCenter\_Fact',

TRIM(UPPER('CallCenter\_Fact'[Answered (Y/N)])) = "N"

)

)

👉 **Calls by Time**

DAX

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CallsByHour =

COUNTROWS('CallCenter\_Fact')

### **Method 1: Create a New Column**

1. Go to **Data View** in Power BI.
2. In the Fields pane, right-click on 'CallCenter\_Fact' → **New Column**.
3. Enter the following DAX formula:

DAX

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CallHour = HOUR('CallCenter\_Fact'[DateTime])

👉 **Average Speed of Answer**

DAX

CopyEdit

AvgSpeedOfAnswer =

AVERAGE('CallCenter\_Fact'[AvgTalkDurationSeconds])

👉 **Resolution Rate**

DAX

CopyEdit

ResolutionRate =

IF(

'CallCenter\_Fact'[Resolved] = "Y",

1,

0

)

👉 **Average Satisfaction**

DAX

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AvgCustomerSatisfaction =

AVERAGE('CallCenter\_Fact'[Satisfaction rating])

👉 **Average Handle Time**

DAX

CopyEdit

AvgHandleTime =

AVERAGE('CallCenter\_Fact'[AvgTalkDurationSeconds])

👉 **Calls Answered By Agent**

DAX

CopyEdit

CallsAnsweredByAgent =

COUNTROWS(

FILTER(

'CallCenter\_Fact',

TRIM(UPPER('CallCenter\_Fact'[Answered (Y/N)])) = "Y"

)

)

👉 **Total Calls**

DAX

CopyEdit

TotalCalls = COUNTROWS('CallCenter\_Fact')

1. ✅ After adding each measure, press **Enter**.
2. ✅ Save the file.

👉 Let me know once done! 😎

### **✅ Step 4: Create Visualizations**

Now that the measures are ready, let's build the key visualizations step-by-step:

### **1. Bar Chart → Calls by Time (Hour of Day)**

👉 **Goal:** Show the number of calls received at different hours of the day.

1. Go to **Report View** → **Insert → Bar Chart**.
2. Drag and drop:
   * **X-Axis:** Hour of the day (from CallCenter\_Fact)
   * **Y-Axis:** CallsByHour (measure)
3. Format:
   * Sort the X-Axis by ascending order of hour.
   * Add Data Labels → On
   * Set chart title → *"Calls by Hour"*

### **2. Line Chart → Resolution Rate Over Time**

👉 **Goal:** Show how resolution rate has changed over time.

1. Go to **Report View** → **Insert → Line Chart**
2. Drag and drop:
   * **X-Axis:** Date (from CallCenter\_Fact)
   * **Y-Axis:** ResolutionRate (measure)
3. Format:
   * Set Line Style to **solid**
   * Add Data Labels → On
   * Set chart title → *"Resolution Rate Over Time"*

### **3. Matrix → Calls and Satisfaction by Agent**

👉 **Goal:** Show total calls handled and satisfaction rating per agent.

1. Go to **Report View** → **Insert → Matrix**
2. Drag and drop:
   * **Rows:** Agent Name
   * **Values:** CallsAnsweredByAgent, AvgCustomerSatisfaction, ResolutionRate
3. Format:
   * Add a background color for better readability
   * Sort by CallsAnsweredByAgent → Descending
   * Set title → *"Agent Performance Summary"*

### **4. Scatter Plot → Performance Quadrant**

👉 **Goal:** Show agent performance (Handle Time vs Number of Calls).

1. Go to **Report View** → **Insert → Scatter Chart**
2. Drag and drop:
   * **X-Axis:** AvgHandleTime
   * **Y-Axis:** CallsAnsweredByAgent
   * **Legend:** Agent Name
3. Format:
   * Set color coding:
     + Top-right → Red
     + Top-left → Green
     + Bottom-right → Orange
     + Bottom-left → Blue
   * Set chart title → *"Agent Performance Quadrant"*

### **5. Card → Key Metrics**

👉 **Goal:** Show key performance indicators at a glance.

1. Go to **Report View** → **Insert → Card**
2. Create individual cards for:
   * **Total Calls** → TotalCalls
   * **Average Satisfaction** → AvgCustomerSatisfaction
   * **Resolution Rate** → ResolutionRate
3. Format:
   * Adjust font size
   * Set background color
   * Center align
   * Set title → *"Key Metrics"*

### **6. Pie Chart → Call Topics**

👉 **Goal:** Show the distribution of calls by topic.

1. Go to **Report View** → **Insert → Pie Chart**
2. Drag and drop:
   * **Values:** Count of Calls
   * **Legend:** Call Topic
3. Format:
   * Add Data Labels
   * Set chart title → *"Call Topics"*