

Introduction

You've come a long way on your journey to master data analytics. By now, you're well-versed in visualizing and analyzing data in Power BI. Today, you'll apply that knowledge in a scenario, working on an Adventure Works Microsoft Power BI report that urgently needs your expertise. In this exercise, you'll be doing more than just creating visuals; you'll translate data into actionable insights for decision-making at the highest levels. Specifically, you will be asked to:

- Utilize the table, column chart, line chart, KPI, and Q&A visuals to bring data to life.
- Implement forecasting on your line chart to anticipate future trends.
- Employ the Q&A visual to enable a more natural conversation with data.

Scenario

You've just received an email marked "URGENT" from the executives at Adventure Works. They've heard about your expertise in data analytics and have a pressing request: "We need a comprehensive Power BI report and dashboard ASAP!" Now, the room you find yourself in isn't just any room; you're in the executive suite of Adventure Works, surrounded by the company's top minds. These decision-makers juggle multi-million-dollar budgets, eyeing global expansion and continually adapting to ever-changing market dynamics. They don't just want data; they need actionable insights, and they need them now.

The executives understand that in the modern business landscape, data isn't just an asset; it's the essence of strategic decision-making. As you look around, you see various department heads clutching different pieces of the data puzzle—sales printouts, customer demographics, and inventory reports—but they're fragmented, disjointed, and not speaking to each other. The executives look to you to make the data understandable and actionable. You've been given a significant responsibility: to harness the potential of sales and customer data that will influence high-stakes decision-making. So, are you ready to dive in?

Instructions

Download and open the Adventure Works Power BI report titled *Adventure Works executive summary.pbix* and follow the prompts below to complete the exercise.



Adventure Works executive summary
PBIX File

Step 1: Create core visualizations

Table visualization

In a bustling company like Adventure Works, getting lost in the noise of numerous SKUs, fluctuating sales, and changing order statuses is easy. First, create a table visualization that will serve as a quick reference, telling the executive team what products are selling and where it's at in the delivery pipeline.

1. From the **Visualizations** pane, select the **Table** icon to create an empty table visualization on the canvas.
2. On the **Fields** pane, select the **Sales** table to expand it and view its fields.
3. Drag **Product ID** from the **Fields** pane to the **Columns** well in the **Visualizations** pane.
4. Next, drag **Product Name**, **Order ID**, **Order Status**, and **Order Total** to the same **Columns** well.
5. In the **Format** tab, expand the **Style** preset option and select the **Minimal** preset from the available dropdown.
6. Select and drag the edges of the table visualization on your canvas to resize it and place the visualization on the right side of the canvas.

Column chart

It's not enough to know what sold; it's crucial to know what's selling dominantly and what's not leaving the warehouse. A column chart instantly displays which product categories at Adventure Works are revenue-generators and which need a strategic revisit.

1. Select the **Clustered column** chart icon in the **Visualizations** pane.
2. Drag **Product Category** from the **Sales** table and drop it into the **X-Axis** well.
3. Drag **Order Total** from the same **Sales** table and drop it into the **Y-Axis** well.
4. In the **Format** tab, locate the **Columns > Colors** option. Input **Dark Blue: #2D386D** for a unified look.
5. Drag **Order Quantity** and **Product Weight** fields from the **Sales** table into the **Tooltips** field well.
6. Upon selecting the ellipsis at the visualization's top right corner, select the **Sort Axis** dropdown, followed by **Sum of Order Total**. Then select **Sort ascending** to sort the values in ascending order.
7. Observe the column chart results and note the **Product Category** with the lowest **Order Total** value.

Line chart

Remembering the conversation while seated in the executive suite, you overheard the Adventure Works executive team ponder “When did the sales peak? When did they drop?” as their seasonal strategies depend on these insights. Sales figures are meaningless without context, so you decide to take action and create a line chart.

1. Select the **Line chart** icon in the **Visualizations** pane.
2. Drag **OrderDate** from the **Sales** table into the **X-Axis** well.
3. Then, drag **Order Total** and put it in the **Y-Axis** well.
4. Select and drag the edges of the **Line chart** visualization on your canvas to resize it, and place it in the middle of the canvas, below the column chart, next to the table visualization.

Step 2: Create KPIs

KPIs offer the executive team a precise performance check into questions like, "Are we hitting our sales goals? How

expansive is our customer reach? How are we tracking our goals of being a global player?" These KPIs provide a reality check and inspiration rolled into one.

1. Select the **KPI** icon in the **Visualizations** pane.
2. Drag **Order Total** from the **Sales** table to the **Value** field well.
3. Then drag **OrderDate** from the **Sales** table to the **Trend Axis** field well.
4. Repeat steps 1–3, adding two more KPIs:
 - Drag **Customer ID** from the **Customers** table to the **Value** field well and the **OrderDate** from the **Sales** table to the **Trend Axis**.
 - Drag **City** from the **Customers** table to the **Value** field well and the **OrderDate** from the **Sales** table to the **Trend Axis**.

Step 3: Setup forecasting

You know that forecasting is a critical feature in Power BI that enables the prediction of future trends based on historical data. This is especially useful for executives at Adventure Works looking to make data-driven decisions for the future.

1. Upon selecting the line chart visualization you've created, you'll notice different tabs in the **Visualizations** pane.
2. Select the **Analytics** tab, represented by a magnifying glass icon.
3. In the **Analytics** pane, locate the **Forecast** option and toggle the switch beside it. This will add a forecast line to your chart.
4. Once you've added the forecast, adjust the **Seasonality** and **Confidence interval** parameters. Set the **Seasonality** to 12, as this is useful to account for monthly seasonality. Adjust the **Confidence interval** value to 99% to ensure high forecast confidence.
5. Once you've configured the parameters, select **Apply**.
6. Observe the line chart and note the day of the month with the lowest order total for Q1 in 2023.

Step 4: Configure Q&A

Instead of sifting through several visualizations, you want Adventure Works stakeholders to converse with your data. For the executive team, the Q&A feature could be transformative, allowing them to interact with the data in a conversational manner and generate insights on-the-fly.

1. On the **Visualizations** pane, locate and select the **Q&A** icon that looks like a chat bubble.
2. The initial size of the **Q&A** box may not fit your needs. Select the corners to resize the box and select and drag the title bar to reposition it on the left side of your canvas.
3. Inside the **Q&A** box, you'll see a text prompt titled **Ask a question about your data**. Select inside this box,

type the following queries, and note down the results:

- Which Customer City has the lowest average **Order Total**?
- Which **Product Category** has the highest average **Order Quantity**?
- Which **Product Subcategory** has the highest **Product Weight**?