



Getting Started With Dashboards

Workshop Guide

Cognos Analytics 11.2.0 June 2021

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1 Prepare for this workshop

This workshop assumes you have a working Cognos Analytics 11.2.0 environment available to you and that you have capabilities to create and edit dashboards.

Requirements:

- Cognos 11.2 environment
- A working ID and Password
- Dashboard creation capabilities
- The flat file given by your workshop host titled CustomerLoyaltyProgram.csv

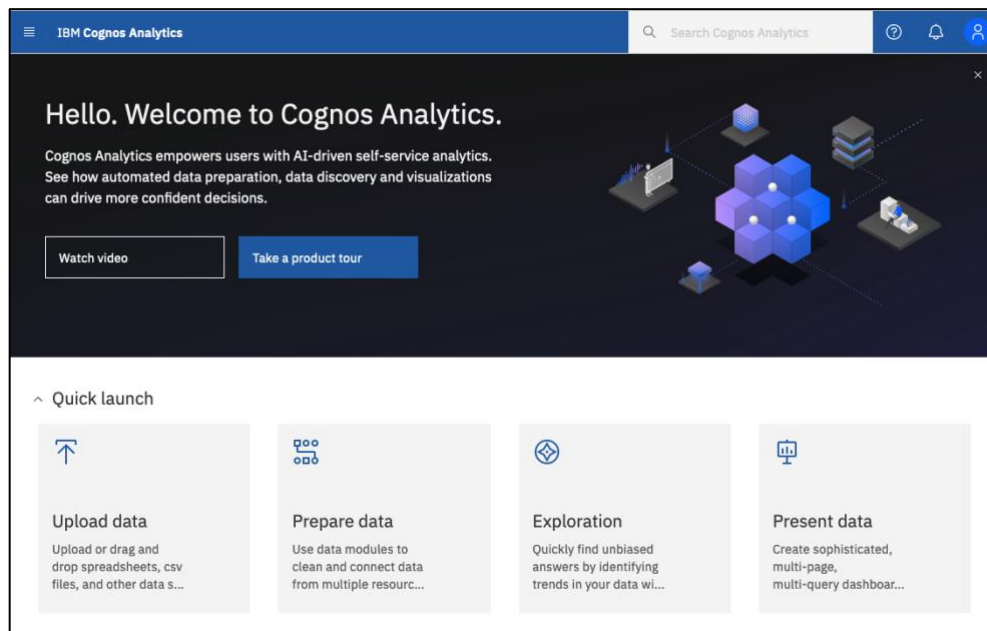
Steps:

1. Log into your Cognos Analytics 11.2.0 environment.
2. Stay on the home page.
3. Start the lab.

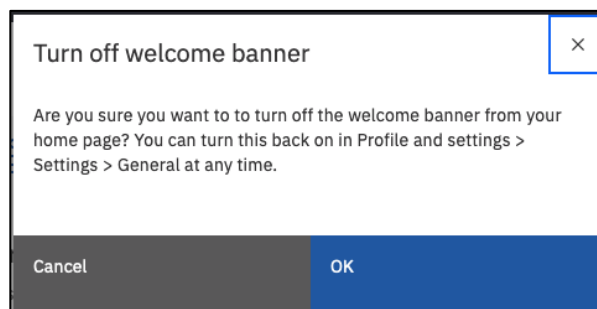
2 Learn the Cognos Analytics User Interface

The goal of the User Interface (UI) is to provide users with a streamlined way to get started using Cognos Analytics and view content and activities pertinent to them.

1. Look around the default home page (note: this can be personalized to use a dashboard, report, or different view as the default home page)

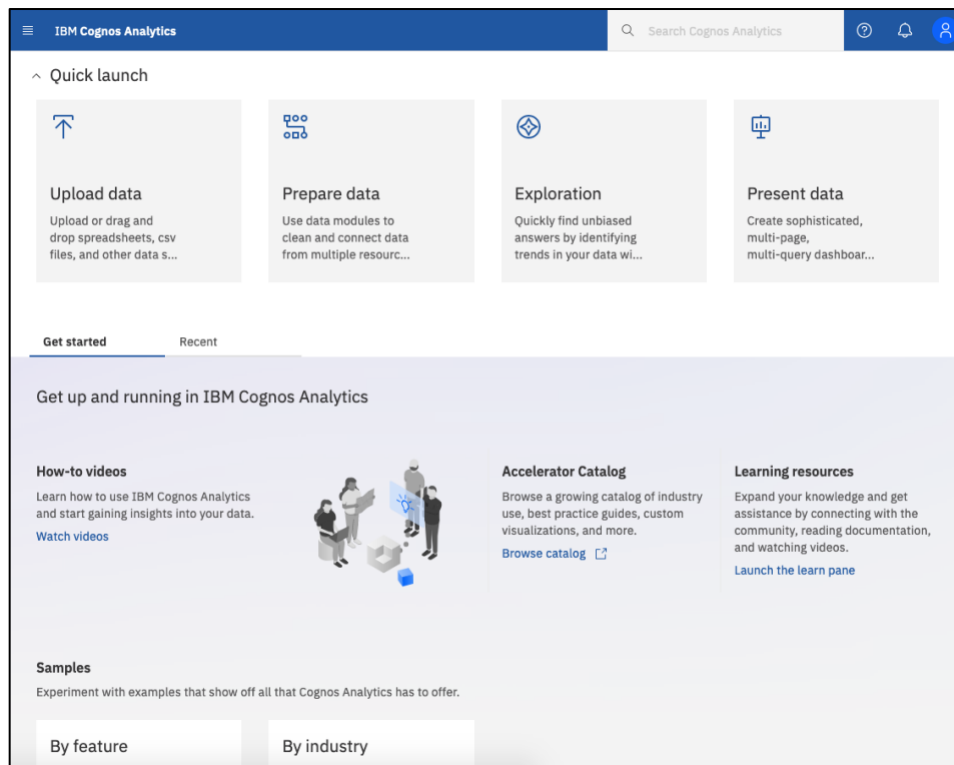



2. Click on the X in the upper-right to close the Welcome Banner.

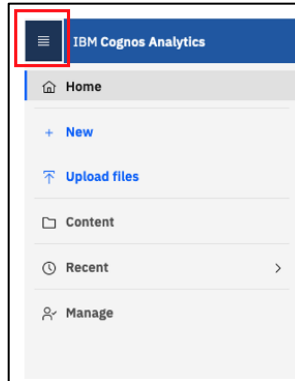


This lets you view more of the default home page options.

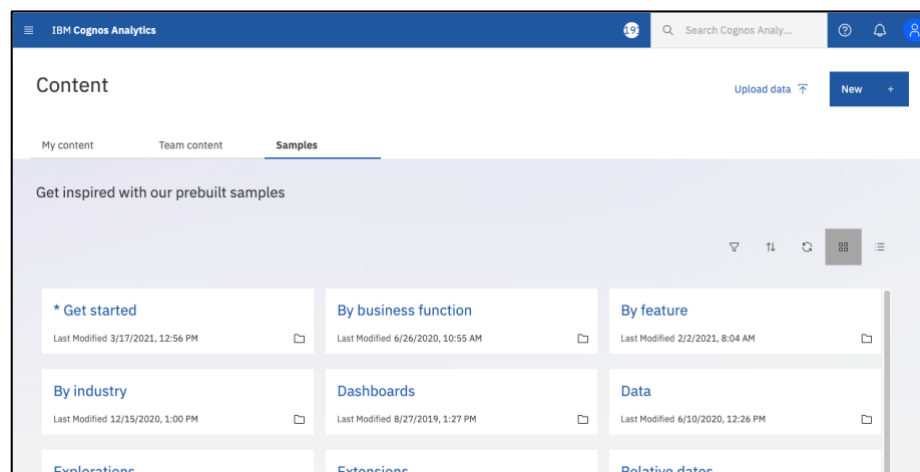
You should see this:



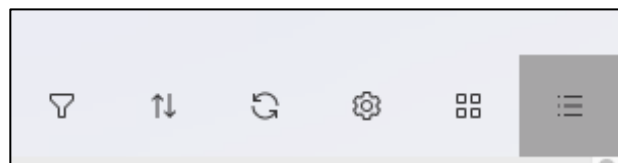
3. Click on the three lines  on the upper-left to open the action menu.



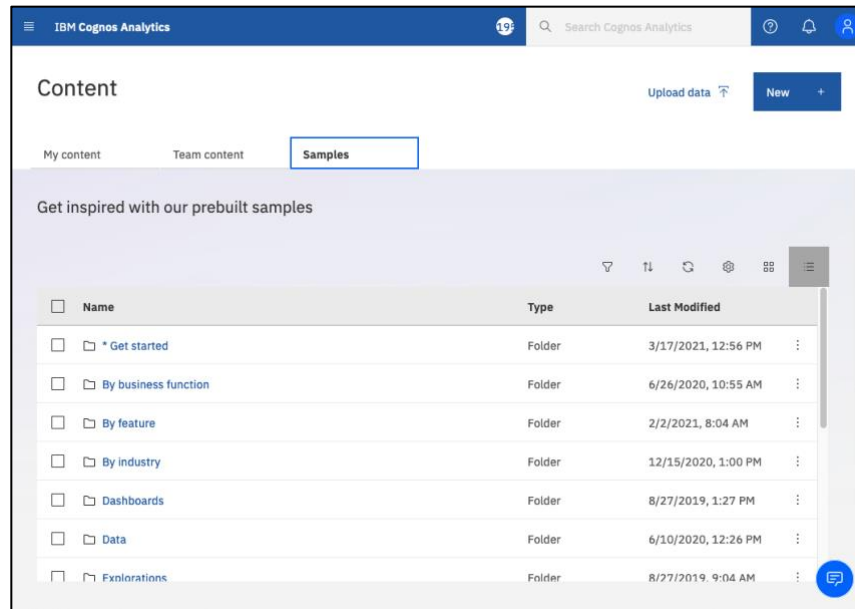
4. Click on the menu item called Content.
5. Select Samples.



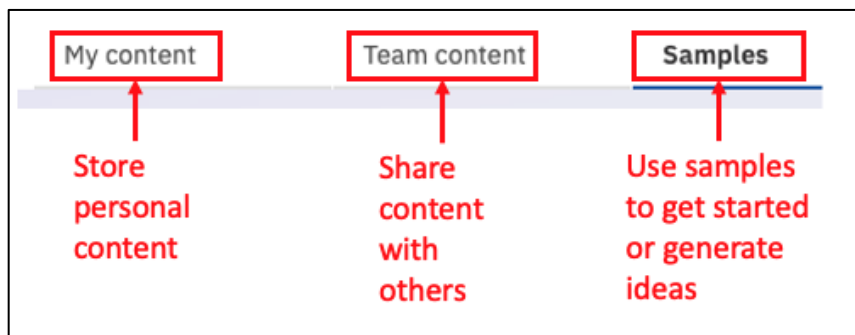
6. Click on the List View symbol for simpler reading of content.



7. Notice the many samples that are pre-loaded and available to help you get started or to help you generate ideas.



8. Notice the three tabs of content:

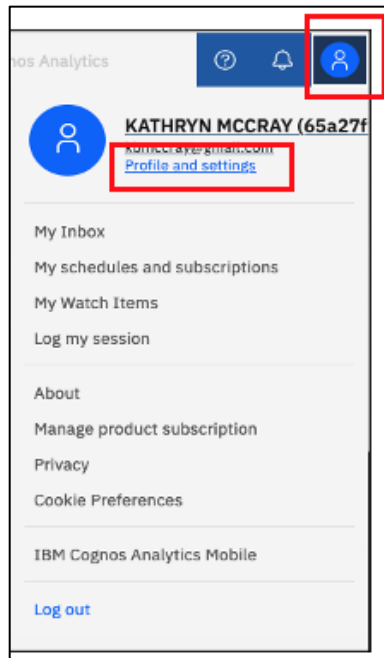


9. Select Team Content.

You prefer this page to be your default home page each time you log in, so you change this to be your landing page.

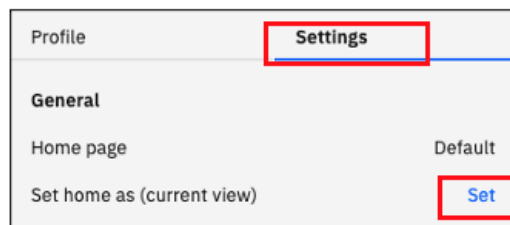
10. Click on the person symbol to view your profile and settings.

11. Click on the Profile and Settings link under your name.



12. Click on Settings.

13. Click on Set next to Set home as (current view). This sets the current view to be your homepage.

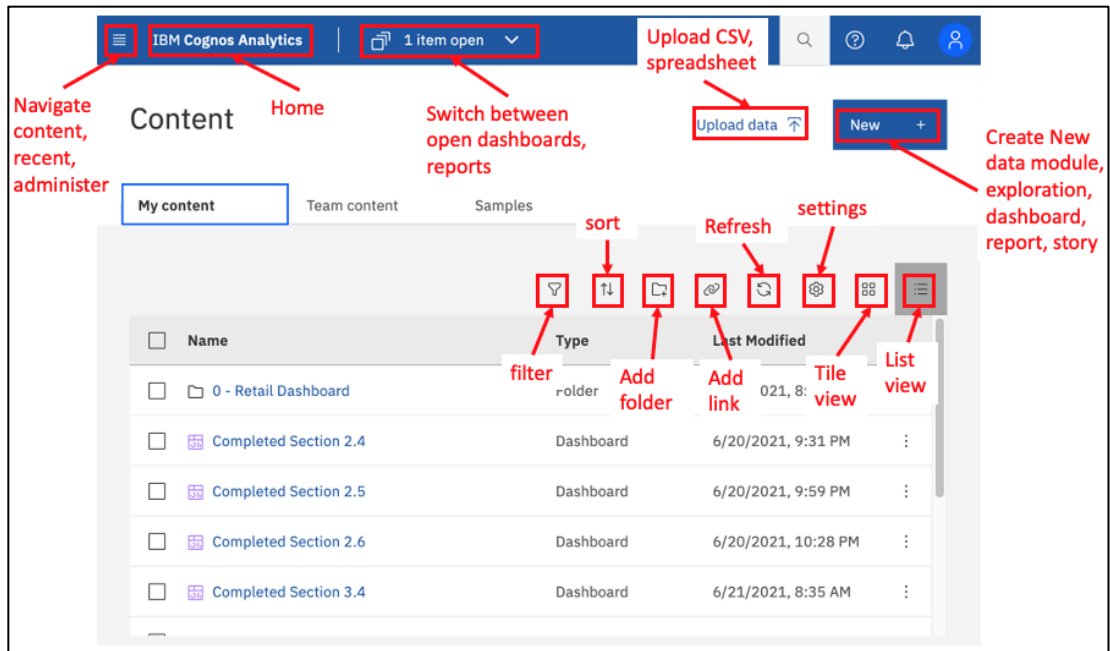


14. Click on the Person symbol in the upper right to close the settings menu.

TECH TIP: IF YOU EVER NEED TO COME BACK TO THIS NEW HOME SCREEN, YOU CAN SELECT IBM COGNOS ANALYTICS IN THE UPPER TOOLBAR.

15. Click on the Person symbol in the upper right to close the settings menu.

16. Take a moment to explore the Content area to learn how to navigate this UI.



You now know the basics of navigating the User Interface.

3 The Business Use Case for this workshop

For this workshop, you will play the role Retail Marketer. You have received the following email from one of the Product Managers asking for assistance:

From: Matt

Sent: Jan 5, 2021, 3:00 pm

Good afternoon!

Based on the recent pandemic, we are looking for additional insights into how customer buying patterns have changed with the shift to more online buying and store pickup only. We need to be able to identify these shifts so that we may adjust our inventory plans to meet customer demands. We also need to understand how our coupon programs and loyalty programs are performing. I've tried to capture this information in a spreadsheet, but it's just not scalable in this format. And what I really need is a dashboard to share with the organization.

Could you take a look at the attached file I've started and investigate further?

Thanks,

Matt

Using the dashboarding capabilities in Cognos Analytics helps you understand what's happening in your business. You begin by uploading this file and building a Cognos Analytics dashboard to analyze department sales.

Using a dashboard template, you quickly assemble content for your analysis. Once your content is assembled, you move on to formatting each of your widgets to polish it up and really make it shine so you can share your findings with others in your organization.

4 Building a Dashboard

4.1 Uploading External Data

The ability for Business Users to use their personal and external data for discovery dramatically broadens the landscape of Users who can make new data available for analysis. Users can upload an external data file and immediately begin self-service data discovery, ad hoc analysis and building dashboards.


For the first exercise, you will use the file “CustomerLoyaltyProgram.csv”.

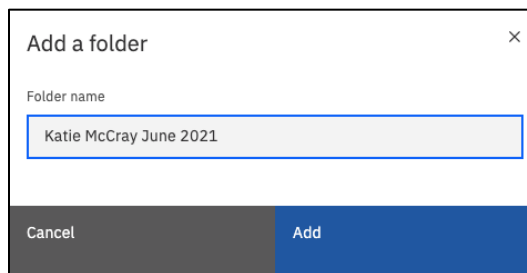
The instructor had you download and save this file earlier.

Alternatively, if you cannot find the file, skip the upload file steps and use the file already uploaded into Cognos Analytics at this location: Team Folder > 1-CHEATER Motio Workshop Uploaded File. Make a COPY of this file and paste into your My content area.

First, you will create a Student Folder in the Team Content area. This will allow the instructor to more easily help you if you get stuck.

Steps to create your student folder:

1. Click on Team Content.
2. Click on the Add Folder button in the content toolbar .
3. Give the folder a name that you recognize like this: First name + Last name + June 2021.
4. Click Add.

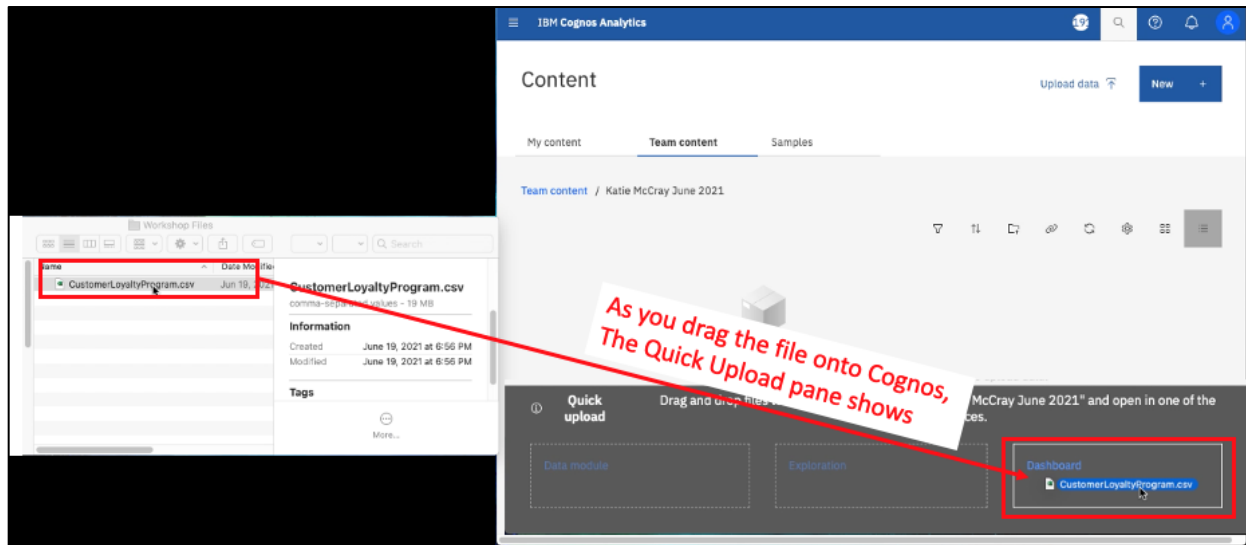


5. Click on the new folder's name to open it.



To Upload the file:

1. Drag this file from your desktop or file location on top of the My Content area.
2. Drop the file into the **Dashboard Zone** at the bottom



3. Notice that as the file uploads, a series of status bars are visible indicating what Cognos is doing with the data in the file:

Initializing file upload...	Cancel Details
Reading CustomerLoyaltyProgram.csv...	Cancel Details
Analyzing CustomerLoyaltyProgram.csv	Cancel Details
CustomerLoyaltyProgram.csv was uploaded successfully.	Hide Details

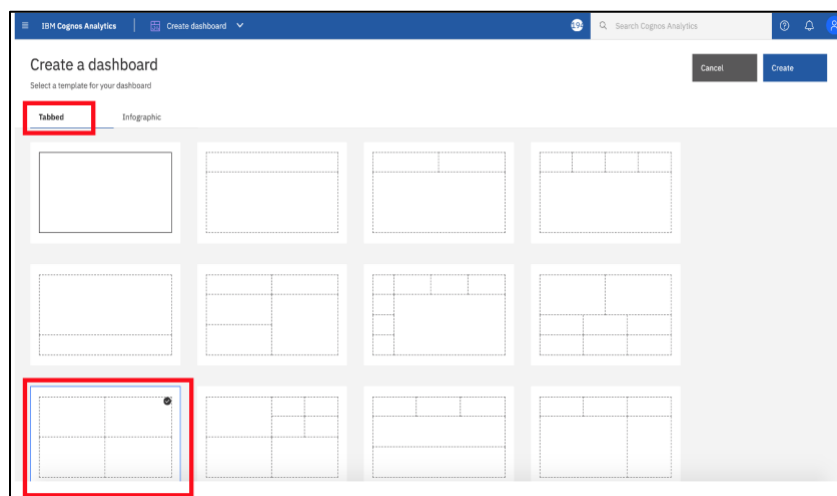
Since you selected to upload the data and launch a Dashboard, the Dashboard user interface will immediately open after the upload is complete. You are now ready to start building your first dashboard from this data.

4.2 Using Templates

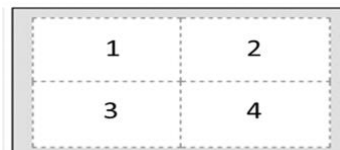
Dashboard templates provide many easy to use, predefined layout styles to assist Users in the layout of content. Templates contain one or more panels where Users quickly assemble various content items, known as “widgets”, onto a dashboard. Widgets can be a visualization, a list or crosstab, a single value, an image, a text box and so on. For this workshop, we will focus on building visualization widgets.

As a starting point, you would like to use the uploaded data file to analyze product performance. You'll use a dashboard template to assist in the layout of the data.

1. Select the tabbed dashboard style.
2. Select the four-panel template with 2x2 configuration.
3. Click **Create**. This will allow you to have multiple pages for your dashboards and to easily organize your objects on the page.

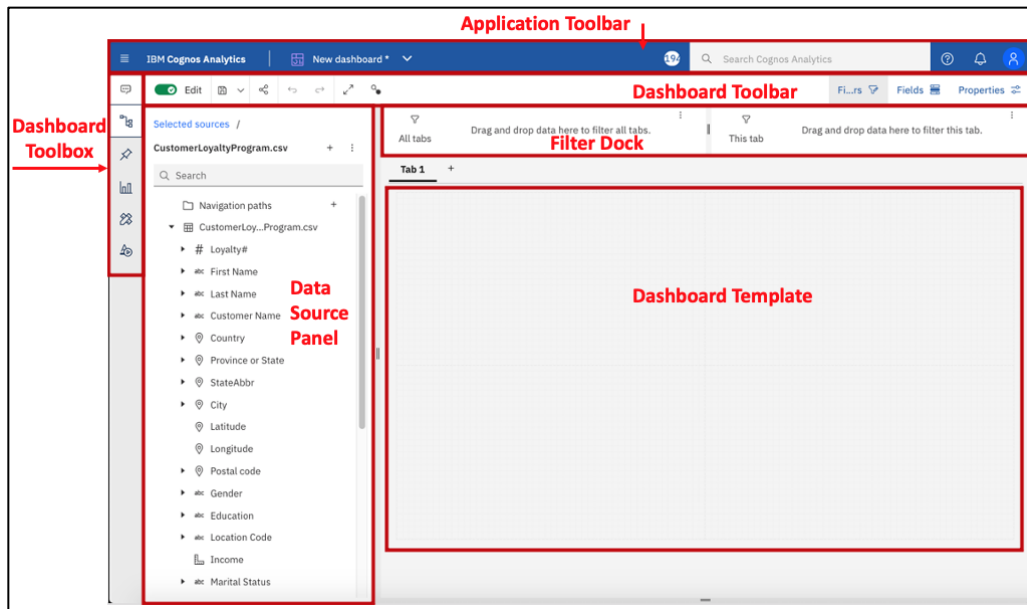


As you build the dashboard, this workshop references the location placement for **Widgets** in the dashboard template using the following **Panel** numbers

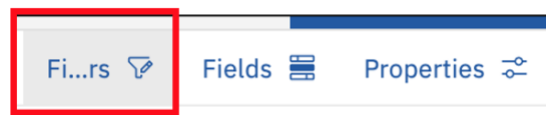


The **dashboard template** opens in the **Canvas** along with the data source open in the **Data Source Panel**.

- Take a moment to notice the main sections of the dashboard feature.



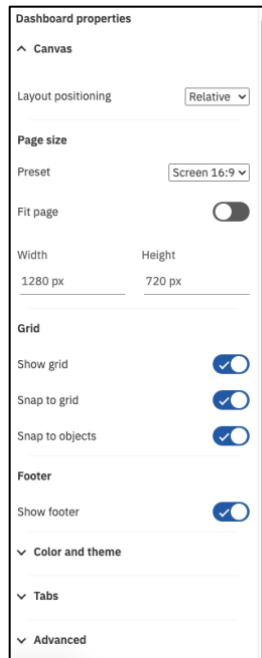
- Click once on the Dashboard Template canvas to bring it into view.
- Click the Filters button on the Dashboard toolbar. We will not be using the filter dock during this exercise, so it may be closed to remove it from view.



- Click the Properties button on the Dashboard toolbar. This opens the dashboard template properties.



- Expand each topic under Dashboard Properties to view the properties that are available.
- Leave all the properties as default and ensure the settings appear as follows:



10. Click the Properties button again to close the properties pane.



11. From the Navigation panel (on the left), select Sources to open the data source panel. It might already be open.



12. Notice the arrows next to various data items. Users can easily expand and collapse the fields in their metadata tree to see individual values or members.

13. Click on the Expand Arrow next to Product Line to see the members in the tree.

14. Then Click on the Collapse Arrow to collapse the member view.

▼ abc Product Line

⇒ Computers ...me Office

⇒ Kitchen Appliances

⇒ Photography

⇒ Smart Electronics


⇒ TV and Video Gaming

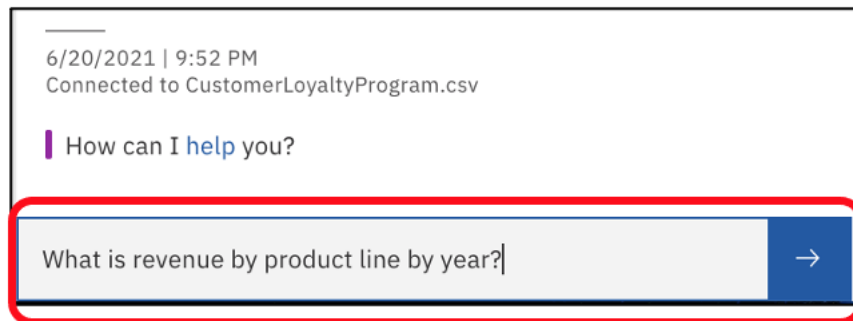
4.3 AI Assistant

The Cognos Analytics Assistant provides recommendations to help answer questions and provide the User with quick insights into their data. Many times, Users will have specific questions they are looking to answer but may not be familiar with the dataset or exact data items they need to uncover the insight or answer they are seeking.

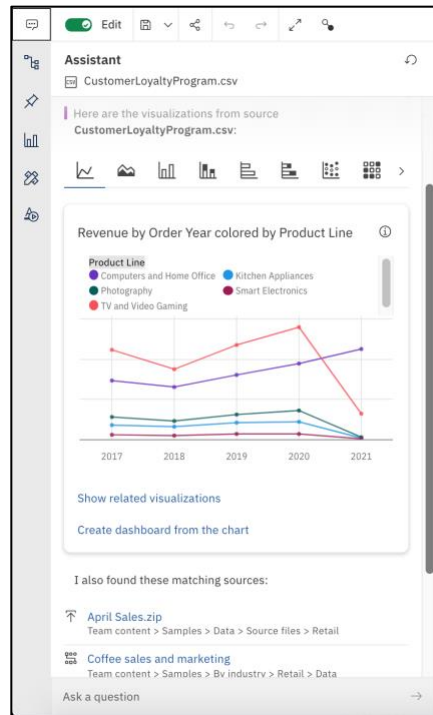
From within a Dashboard or Exploration, the User can type in natural language text to uncover meaningful insight in the data, as well as generate visualizations that can be added to an existing or new dashboard, exploration or story. Simply enter text related to the Users analytical intentions and an AI conversational agent responds with visualizations and other information to satisfy the request.

To get started, you wonder how Product Line sales have historically trended over time. To get started, you use the AI Assistant to ask questions.

1. Click the Assistant Icon  from the Navigation panel. The assistance panel opens.
2. In the Ask a question field, type “What is revenue by product line by year?” and click Enter.



3. Notice that Cognos Analytics identified Product Line, Revenue and Year in the **CustomerLoyaltyProgram.csv** file uploaded earlier and provides recommendations for ways to visualize this data for analysis.




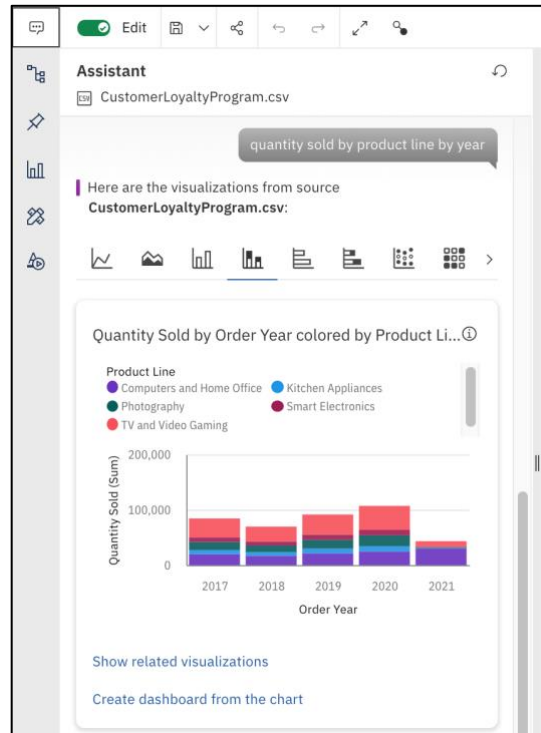
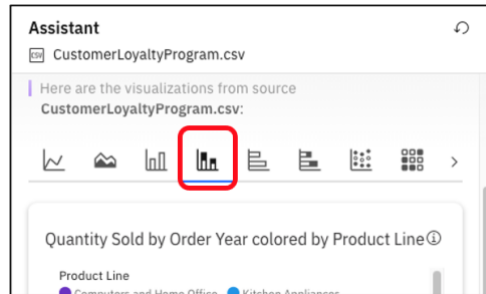
TECH TIP: IF THE DATA ITEMS FROM YOUR INQUIRY EXIST IN ANY OTHER DATA SOURCES, THOSE MAY BE LISTED AS ADDITIONAL MATCHING SOURCES. YOUR WORKSHOP ENVIRONMENT MAY HAVE MORE, FEWER, OR NO OTHER MATCHING SOURCES. THIS WILL NOT IMPACT THE EXERCISE IN THIS WORKSHOP.

Questions made to the AI assistant do not need to be in full context or use proper sentence case and capitalization.

4. In the Ask a question field, type *"quantity sold by product line by year"* and click Enter.

Based on the data items in the inquiry, Cognos Analytics also provides a series of additional visualizations related to the question.

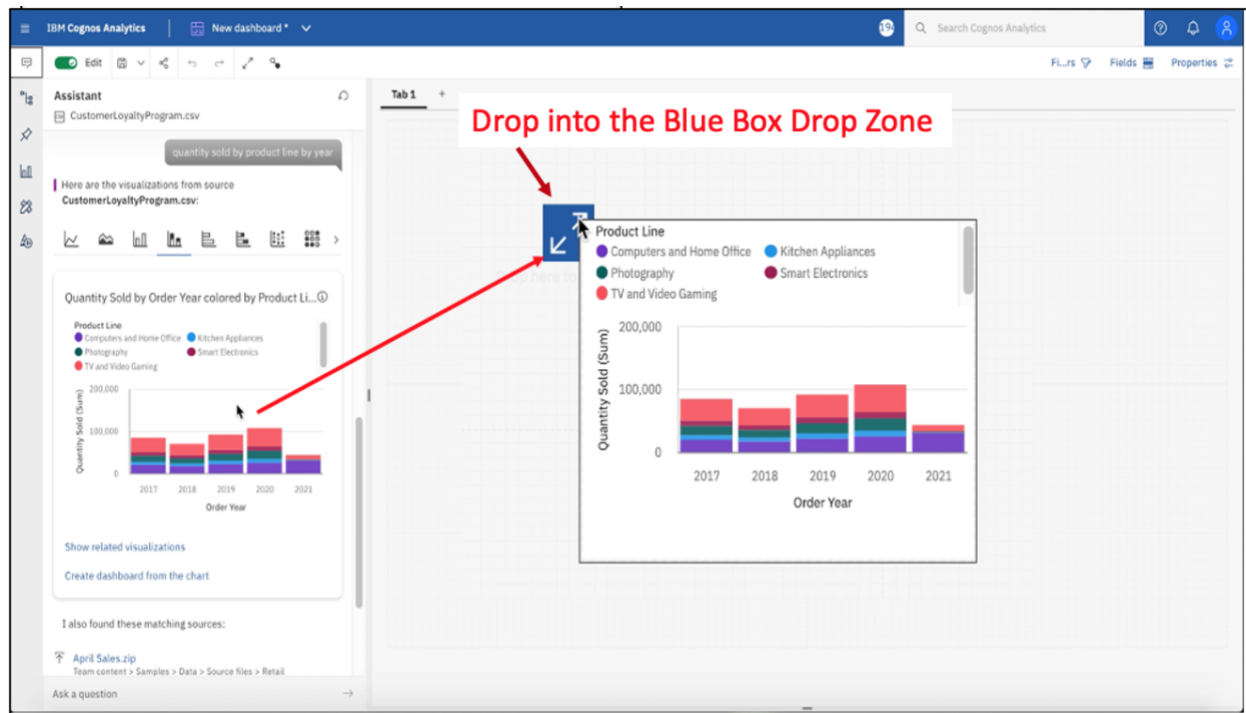
5. Click through the **visualization bar** to view the various visualization recommendations.
6. Click the **Stacked Column**  to bring up a visualization that looks similar following:



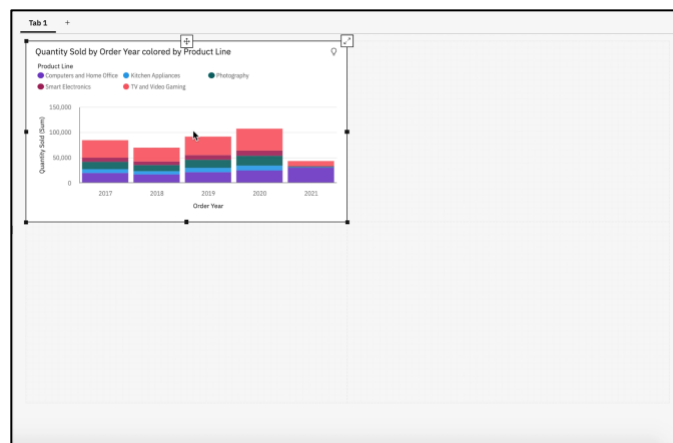
TECH TIP: YOU CAN INCREASE OR DECREASE THE WIDTH OF THE ASSISTANT PANEL AS PREFERRED BY USING THE PANEL SIZING TOOL ON THE RIGHT EDGE OF THE PANEL.

You decide to include this widget in your dashboard.

- Click the **Stacked Column visualization** and drag it over to the **canvas** into **panel 1**, dropping it when the **drop zone** turns blue. You will see this blue zone appear as you start to drop the chart over.



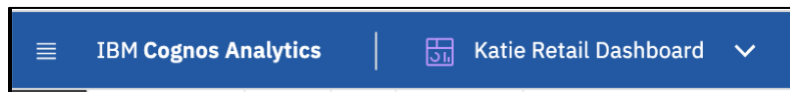
Your dashboard canvas should now appear as follows:



8. Click the **down arrow** next to the **Save icon** on the dashboard toolbar.
9. Click "Save As". Navigate to Team Content > [Your Student Folder].
10. Save as "[YourName] Retail Dashboard".



11. Notice that the name of the dashboard now appears in the Switcher menu.




This visualization shows how each of the product lines contribution of quantity sold to the total has trended over the last few years. You can see that after a dip in sales in 2018, sales have been steadily recovering, having regular growth overall over the last two years.

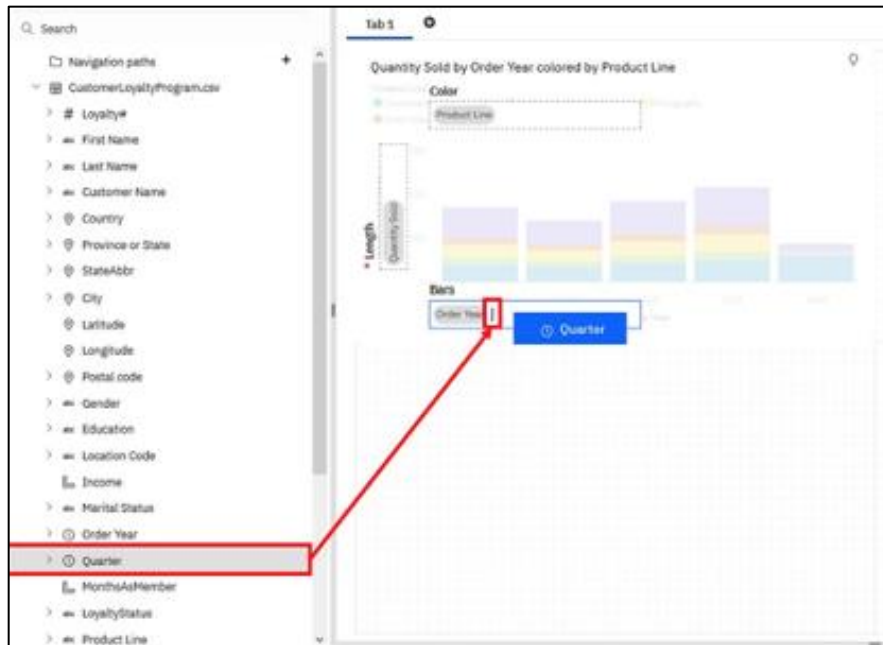
Since the current year 2021 is only a partial year, you will add in quarterly detail to better understand current year performance as well as see if there appears to be seasonal trends in the data.

4.4 Nesting Data

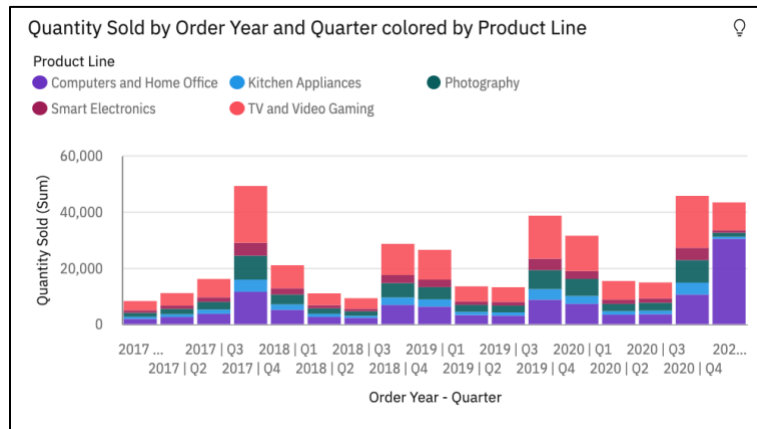
Cognos Analytics allows you to use multiple data items per data slot. With the year already charted out, you can nest in quarterly data to create a more detailed visualization in the same amount of space.

In order to see a more granular view of how product sales have trended over time, you will add in quarterly data so show a more detailed sales history.

1. From the navigation panel, click the Sources icon  to open the data source panel. Use the Panel sizing tool to adjust the width of the data sources panel as preferred.
2. From the Data Source panel, drag Quarter over to the Order year Axis. The Bars data slot window opens.
3. Drop **Quarter** to the right of Order Year. A **vertical blue bar** renders when you've hit the correct location for the **drop zone**.

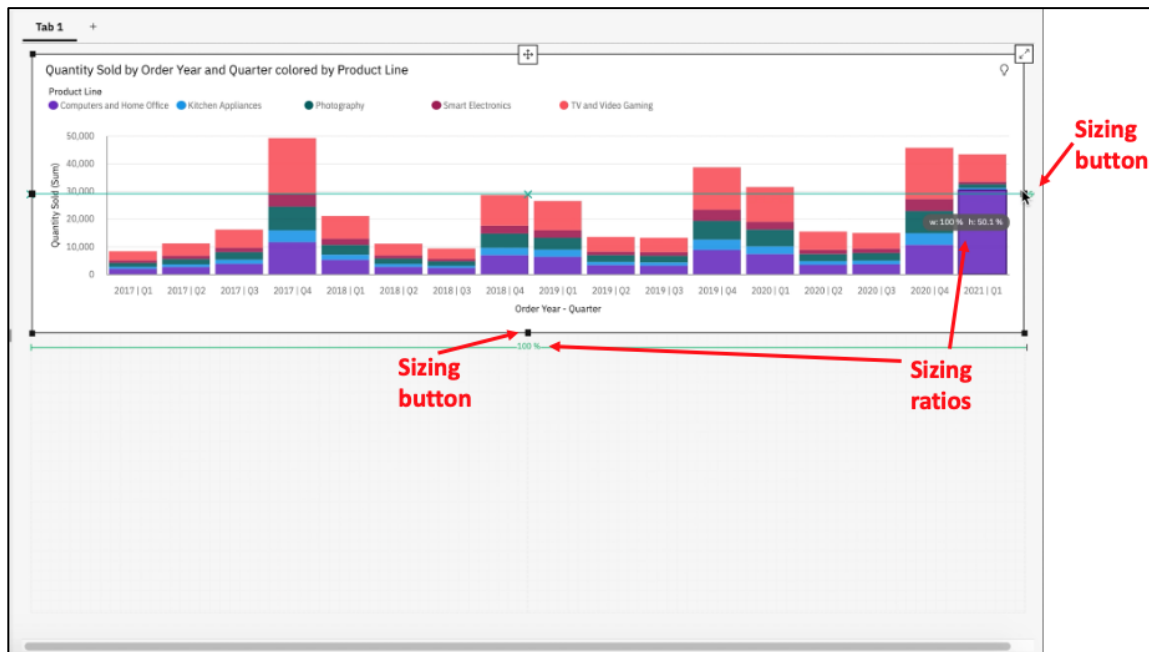


Quarter is now nested under Order Year providing a much more detailed view of the historical sales trends. Your widget should appear as follows:



As you assemble your dashboard, you may want to resize a visualization to optimize its presentation. You can easily use the sizing buttons on the edges of the widgets to resize it while using the Grid to assist you with alignment. As you resize your widget, size guidelines render to show you relative size of the widget to the overall template.

- Using the right **Resizing button**, drag the edge of the widget all the way to the right so it **covers both panels 1 and 2**. Notice that as you drag the edge, the sizing ratios render on the screen.



With the widget resized, we can easily see the quarterly axis titles under the columns. This allows us to quickly identify a distinct seasonality to the data showing the highest sales quantities have traditionally been in Q4. Yet we also see a large spike in sales for Q1 of 2021 of which the majority of this increase is from the Computers and Home Office product line. This is very interesting as this is not what we expected for Q1. What could be causing this?

Almost immediately, we found something unusual that Matt will want to look into further. This dashboard is already providing value.

- Save the dashboard.


TECH TIP: IF YOU ARE LOOKING FOR EXACT “PIXEL PERFECT” FORMATTING AND SIZING, YOU CAN SET THE EXACT SIZING DEFINITIONS IN THE PROPERTIES PANEL FOR BOTH THE DASHBOARD AND THE INDIVIDUAL WIDGETS. FROM THE VISUALIZATION PROPERTIES, YOU CAN ALSO ALIGN WIDGETS RELATIVE TO ONE ANOTHER, PRECISELY POSITION, AND ADJUST THE HEIGHT AND WIDTH OF WIDGETS.

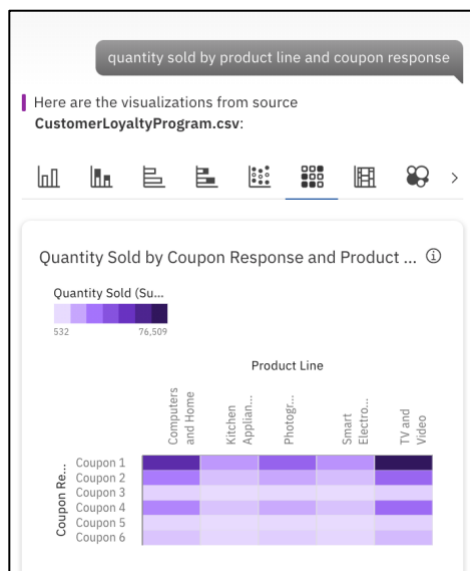
4.5 Working with Visualizations

Dashboards provide Users with a line of sight into their business that allows them to easily monitor KPIs and metrics. With Cognos Analytics, Users have flexibility to create and assemble very attractive and engaging dashboards with meaningful visualizations that are automatically generated with little authoring experience needed. Users can also easily create a customized look and feel as well as set up Corporate color palette standards.

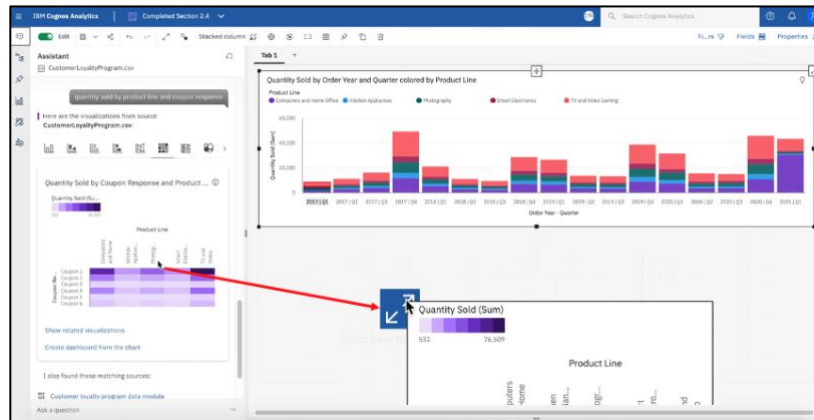
Using the AI Assistant, you easily created a widget that illustrates Sales history over the past few years. Next, you would like to do more data discovery and build additional visualizations that allow you to easily monitor sales performance from the dashboard. You can continue working with the AI Assistant as well as manually build out visualizations for your analysis, or even use a combination of both.

You would like to understand the performance of Coupon programs in place from Marketing for each of the Product Lines. You'll use the AI Assistant to get started, then modify the visualization for your analysis.

1. From the AI Assistant panel, type “*quantity sold by product line and coupon response*” in the Ask a question field and click Enter.
2. Use the scrollbar to select the **Heat Map** . You should see a visualization similar to the following.

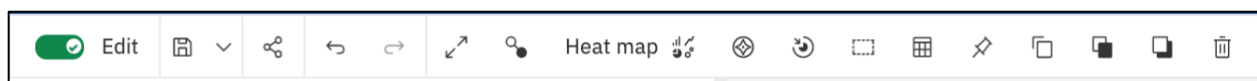


- Click the **Heat Map visualization** and drag it over to the **canvas** into **panel 3**, dropping it when the **drop zone** turns blue.



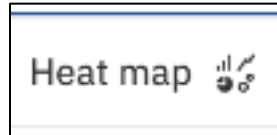
Heatmaps use color intensity in a matrix, which provides the viewer with an immediate visual summary of information. From the heatmap, you can immediately see that the highest quantities sold are under Coupon 1. Two product lines, 'Computers and Home Office' and 'TV and Video Gaming' have the highest quantities sold for all the coupon programs across all Product Lines.

- Click on the Heat Map in panel 3 to bring it into view if it isn't already.
- Notice that the on-demand toolbar now appears above the dashboard template.



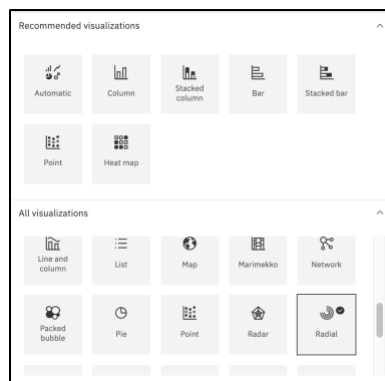
The widget's on-demand toolbar renders tools in context based on the User's selection within the widget.

- Hover over the **on-demand toolbar** to view the capabilities available. You will work with many of these as you go through the exercises.
- Click on the Change Visualization icon (Heat Map, in this case) on the on-demand toolbar to view the Visualization library.

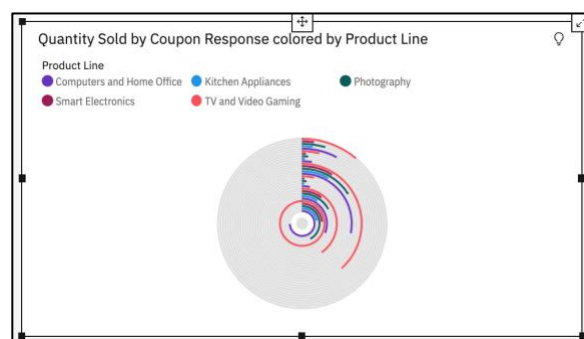


A list of recommended visualizations render. Additional visualizations are also available in the visualization library.

8. **View All Visualizations** to review the numerous styles available. For this exercise, select **Radial** chart from the **visualizations** list.



9. Click anywhere outside the window to close the Change Visualization panel.
10. The visualization updates to a radial chart.



The new radial chart shows all data rendered in a single radial. For your analysis, you would like to have each product line have its own radial visualization, so you will customize the visualization to suit your analysis.

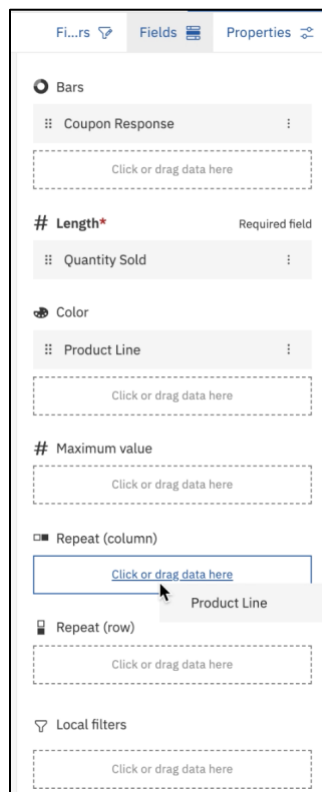
11. Click the radial chart to bring it into focus. Click the **Fields** button on the **Dashboard toolbar** to open the **Fields Panel**.



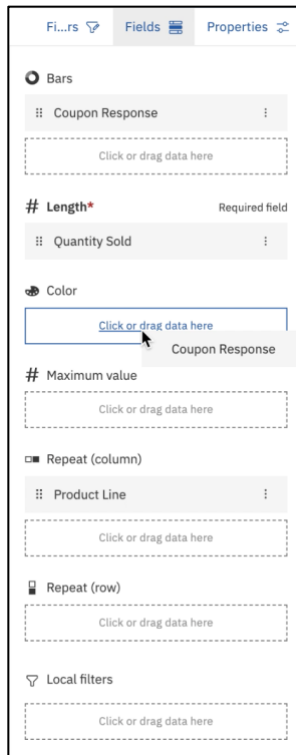
Once the Fields Panel window opens, you are in design mode and will see the data slots available for the widget. The Data slots are used to set the definitions for how you want the data items to be defined for visualization rendering. You would like to see the Coupon

Promotions on individual radial charts repeated for each of the Product Lines. To do so, you'll move the data items around into the data slots to define and render your preferred visualization.

12. Within in the existing Fields shown, Drag **Product Line** down to the **Repeat (column)** slot.



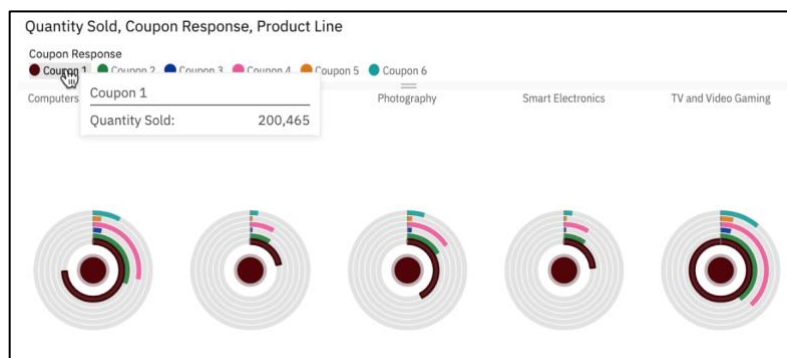
13. Next, move the **Coupon Response** to the **Color** field.



14. Click the **Fields** button to close the fields panel.

The visualization updates to show radial charts for each Product Line.

15. Hover over each of the **Coupon Response codes in the legend**. The visualization highlights the Coupon Response legend color and the corresponding radial bar.



The individual radial charts make it easy to see the coupon response by Product Line Departments. Coupon 1 response is the highest overall, followed by Coupon 4. Of the five product lines, Kitchen Appliances and Smart Electronics appear to have the lowest coupon redemptions overall.

This information is helpful when looking at the success of coupon promotions as it uncovers insights into potential opportunities to drive sales of lower volume product lines. For instance, the company could run a coupon campaign targeting customers purchasing Computers and Home Office and/or TV and Video Gaming products with additional coupons for Smart Electronics as a “bundled” promotion.

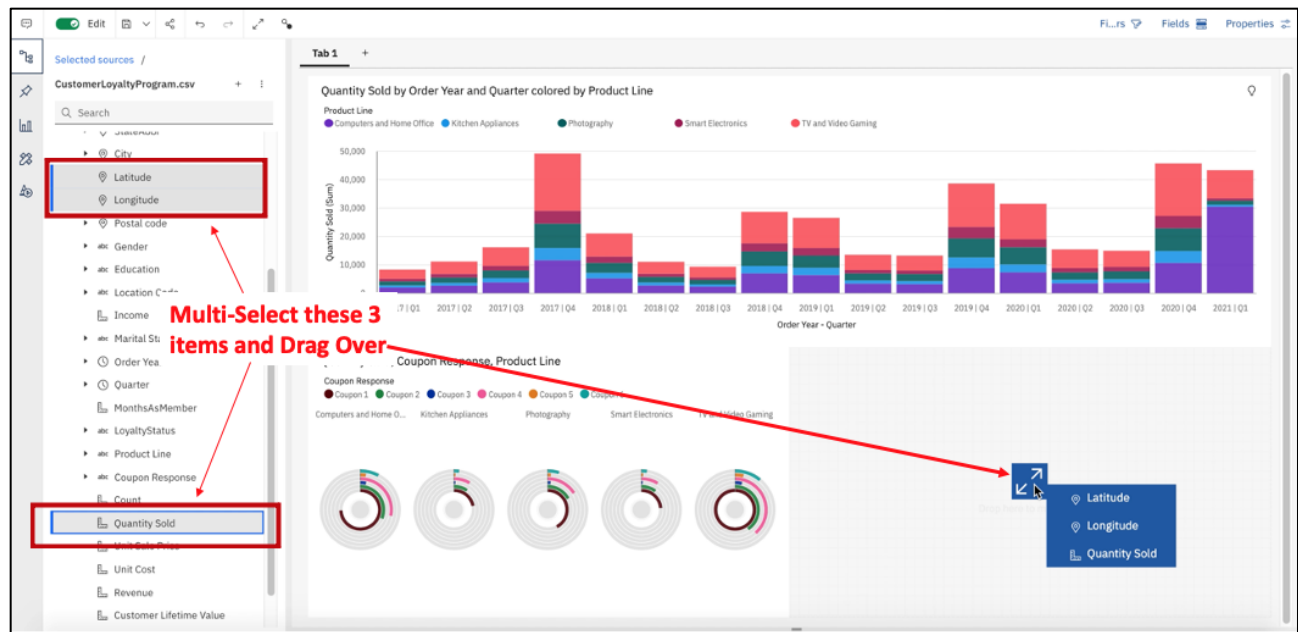
TECH TIP: AS YOU MAKE ADDITIONAL CHANGES TO THE DASHBOARD, AN ASTERISK (*) WILL APPEAR TO THE RIGHT OF THE DASHBOARD NAME. THIS INDICATES THERE ARE UNSAVED CHANGES IN YOUR DASHBOARD.

16. Save the **dashboard**.

4.6 Working with Geospatial Mapping

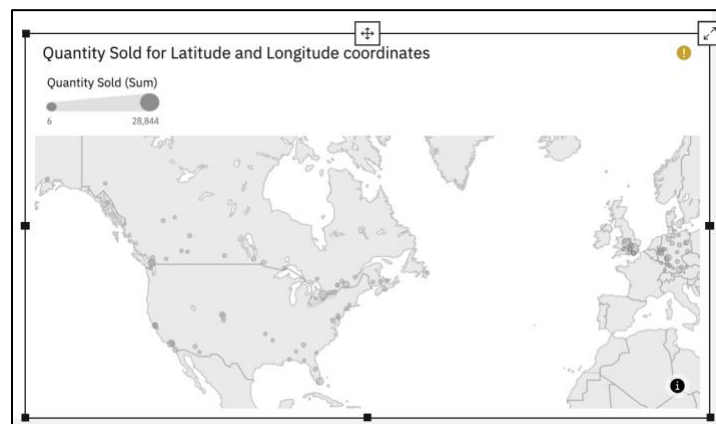
Your corporate data has locations stored by latitude and longitude, so you can select those fields and drop them onto the canvas to map out the store locations.

1. From the Data Sources panel, Expand CustomerLoyaltyProgram.csv, if needed.
2. **Multi-select** the **Latitude**, **Longitude** and **Quantity sold** items and drag them to the dashboard canvas to the **drop zone** of **Panel 4**.

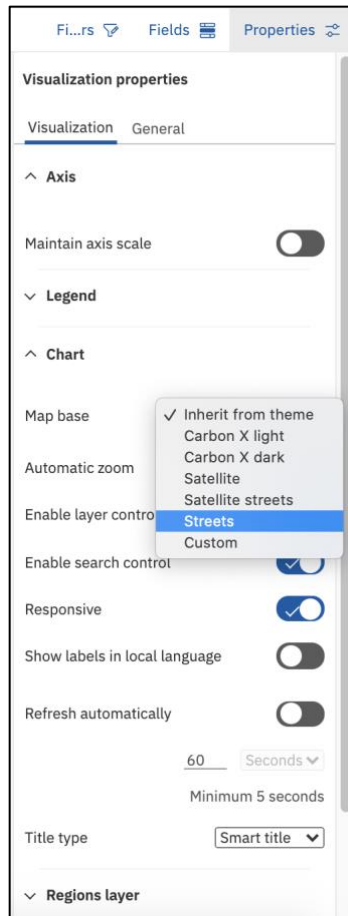


Cognos Analytics' built-in smarts has recognized that because you are working with geolocation data, the most appropriate way to visualize it is with a map.

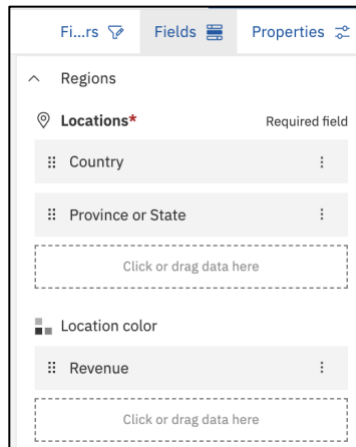
The map visualization appears, automatically zoomed in to optimize the rendering of the data points.



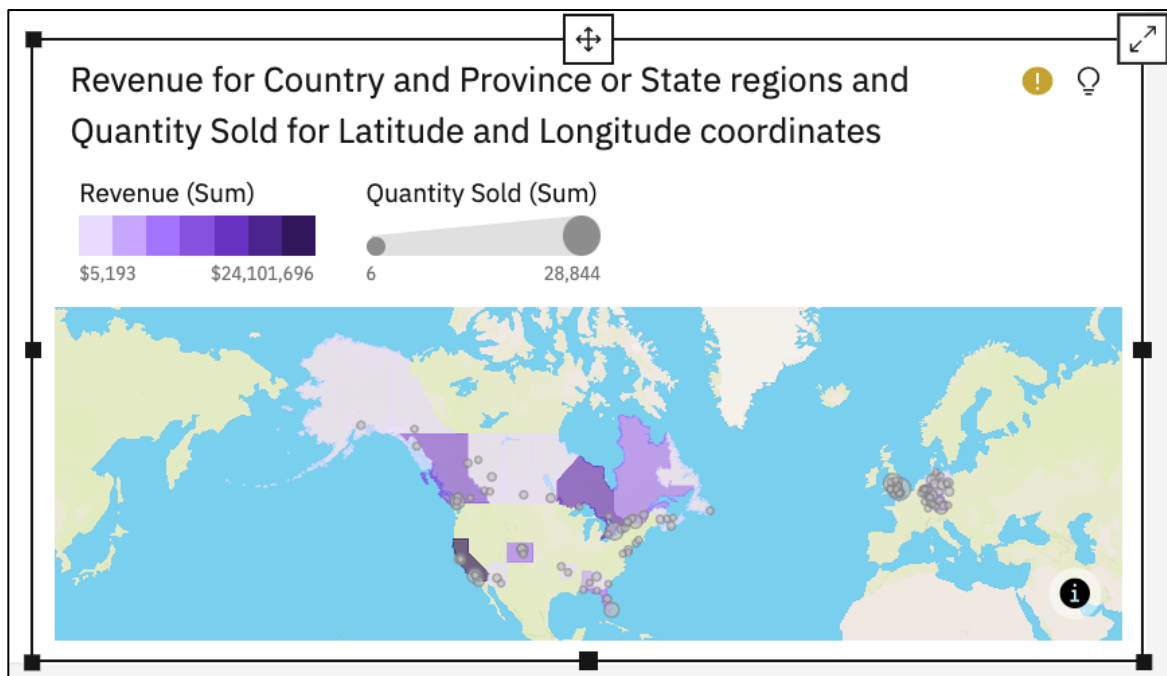
- To change the map style, open the **Properties** panel and Expand the **Chart properties**. Click the down arrow next to Map base the to see the various options of maps available. Select **Streets**.



4. Open the **Fields** panel to view the data slots. From here, you can add in an additional region layer to render on the map. From the **Data Source Panel**, drag **Country**, **Province or State** and **Revenue** into the **Regions** data slots as follows:
 - 📍 Locations: **Country**
 - 📍 Locations: **Province or state** (drop under country when the horizontal blue line appears to indicate the drop zone)
 - ■■ Location color: **Revenue**



Your map should now look similar to the following:



Adding in the additional regions provides location context, removing location ambiguity for data points. For instance, both the UK and Canada have a city named “London”; and in the US, 36 of the 50 states have a city named “Springfield”. By adding in the additional regional context, data is mapped to the proper Country and State.

TECH TIP: YOU CAN ZOOM IN AND OUT ON THE MAP USING THE MOUSE WHEEL OR TRACKPAD.

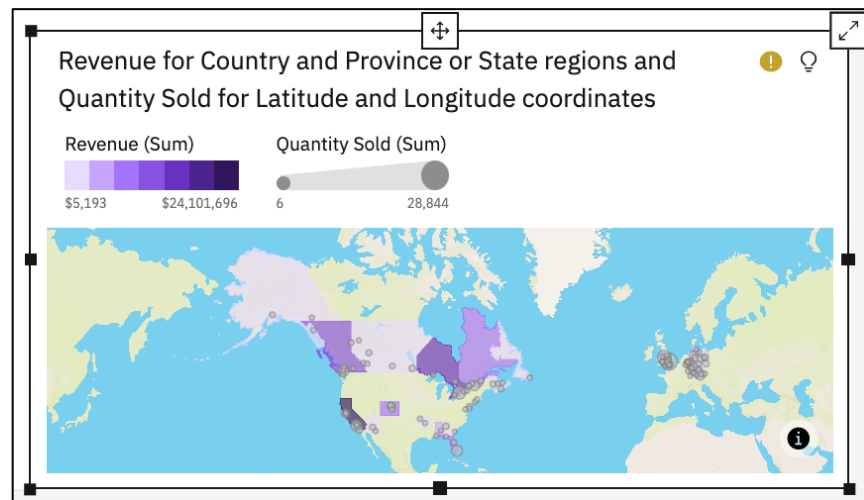
Many times, there are so many individual locations in the data that rendering individual location indicators for each makes the map difficult to read when zoomed out to show larger areas.

To optimize the map presentation at all zoom levels, Cognos Analytics provides Map Clustering to aggregate individual locations into Clusters so that when zoomed out, the map renders a single location indicator with an aggregate sum of locations represented. When the User zooms in on the map, the Clusters update to show more discrete clusters, until fully zoomed in where it shows the individual locations.

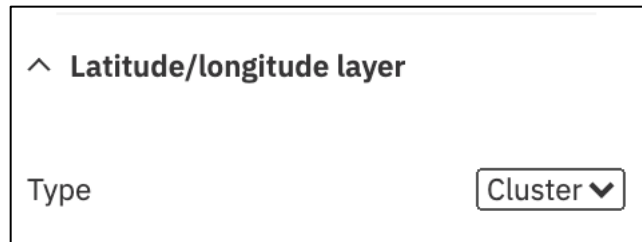
5. Click the **Map** widget to bring it into focus.

Any widget can be maximized for the User while working with the content.

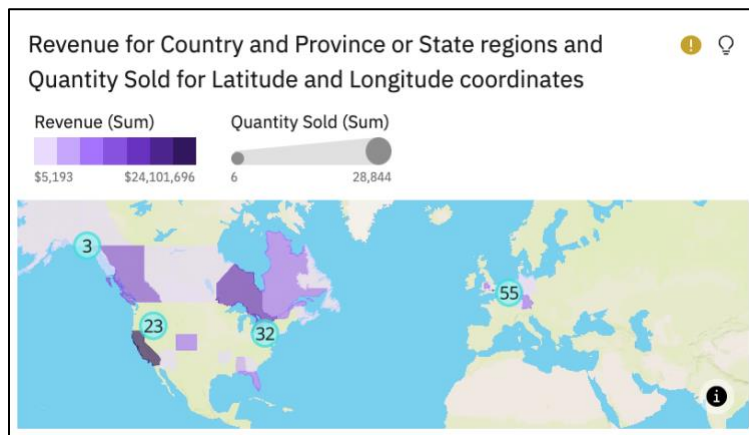
6. Click the **Expand button** in the upper right corner of the Map widget to maximize the widget size.



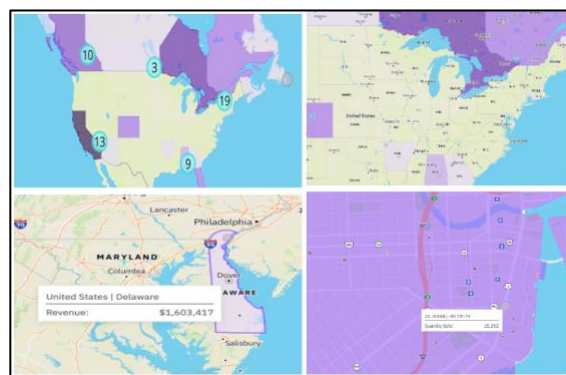
7. Open the Properties panel to the Visualization tab. Expand the Latitude/longitude layer and change Type to Cluster.




8. The map updates to consolidate the data points into clusters. This view makes maps with many data points much more consumable for Users.



9. Begin to **zoom in** over North America to view the Clusters update as they split apart to smaller clusters. As you zoom in, notice also that you begin to see the street level detail on the map. Examples are shown as follows:

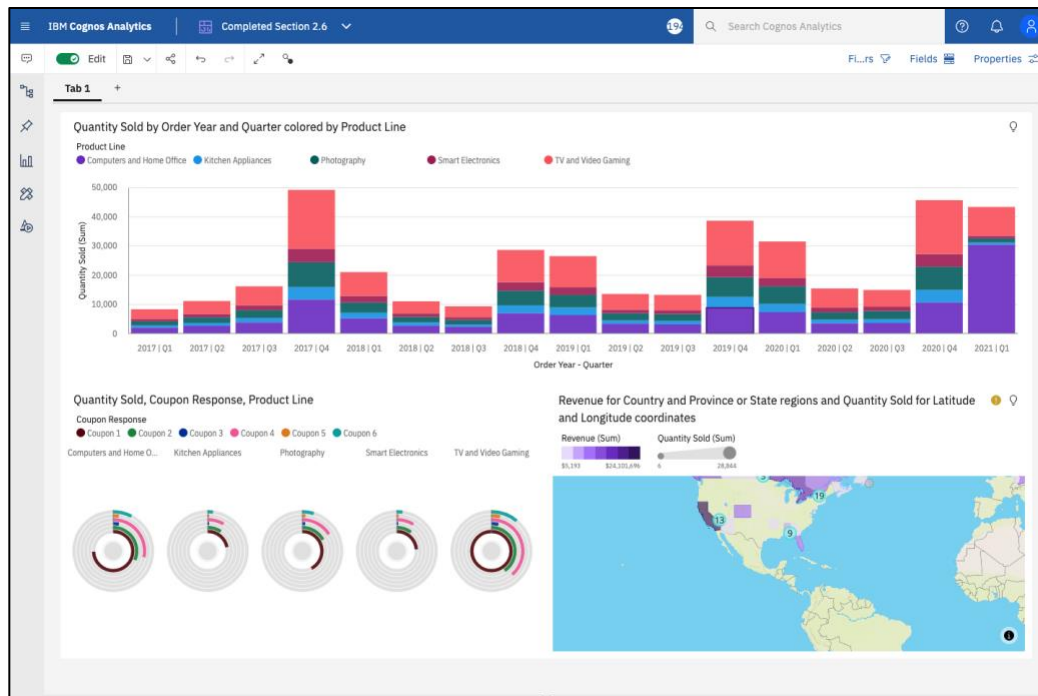


10. Zoom out of the map to see the Clusters reaggregate

11. Click the **collapse button**  in the upper right corner of the widget to restore the widget to its original position on the dashboard.
12. **Save** the Dashboard.

You've got a great start to your dashboard and have gained some valuable insight into the performance of Smart Electronics product lines. You've analyzed Coupon redemption rates, Average Sales price and Quantity sold trends, Loyalty Status Purchasing behavior and yearly sales trends. You've even uncovered potential opportunities on marketing to your Customer Loyalty Program base. Next, you'll format it a bit for easier consumption by your Users.

At this point in time, your dashboard should look similar to this:

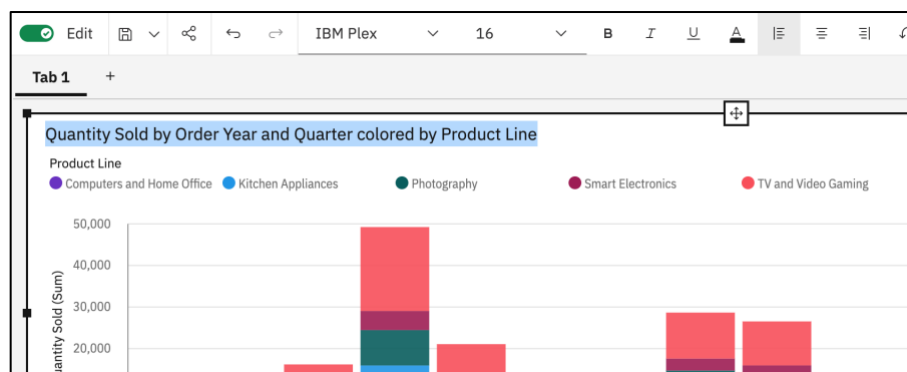


5 Formatting the Dashboard

5.1 Widget Titles

Titles help put the visualization and its data into context, so the User knows exactly what the visualization is representing. As you created your dashboard widgets, Cognos Analytics automatically added a title to identify the data being shown in context. These titles may be updated by the user and customized for font style, font size and justification from the on-demand toolbar when you select the widget title text in a visualization.

1. Click the widget title for the **Column chart in panel 1** to bring it into focus and render the title's **on-demand toolbar**.



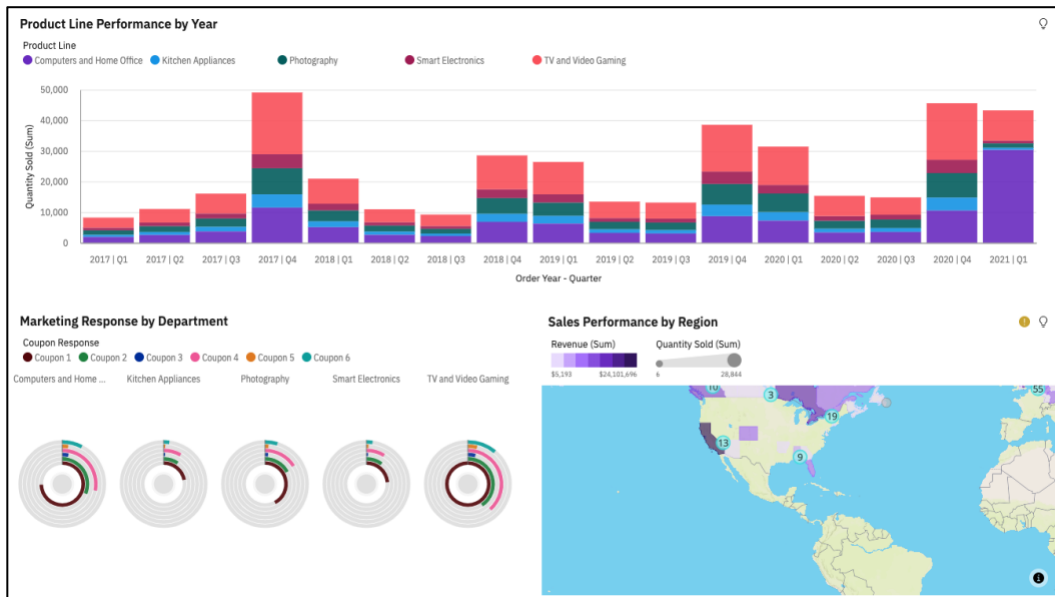
There are many options for Widget title formatting - For a widget title, you can modify the font family, font size, text color, alignment, text wrapping and styles. For this workshop, all

examples will be shown with the default text settings. but feel free to format your titles as time permits. If you make changes and wish to return to the default settings, you may highlight the title to bring up the on-demand toolbar, then select Restore defaults icon

2. Enter the title **"Product Line Performance by Year"** to the visualization and set the title to **Bold**.
3. Click the **Radial chart** widget in **Panel 3** to bring it into focus. Enter the Title **"Marketing Response by Department"** visualization and set the title to **Bold**.

- Click the **Map** widget in **Panel 4** to bring it into focus. Enter Title “**Sales Performance by Region**” visualization and set the title to **Bold**.
- Save the dashboard

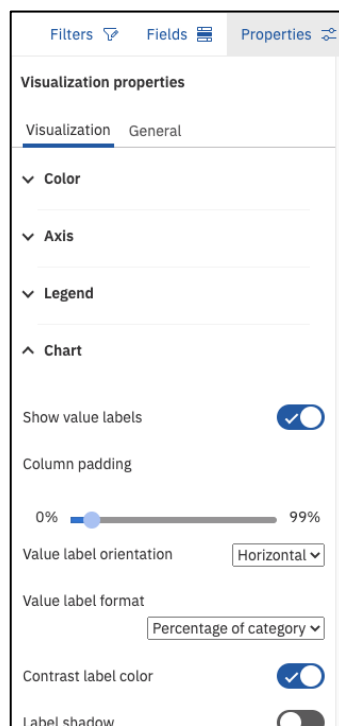
Your dashboard may look similar to the following:



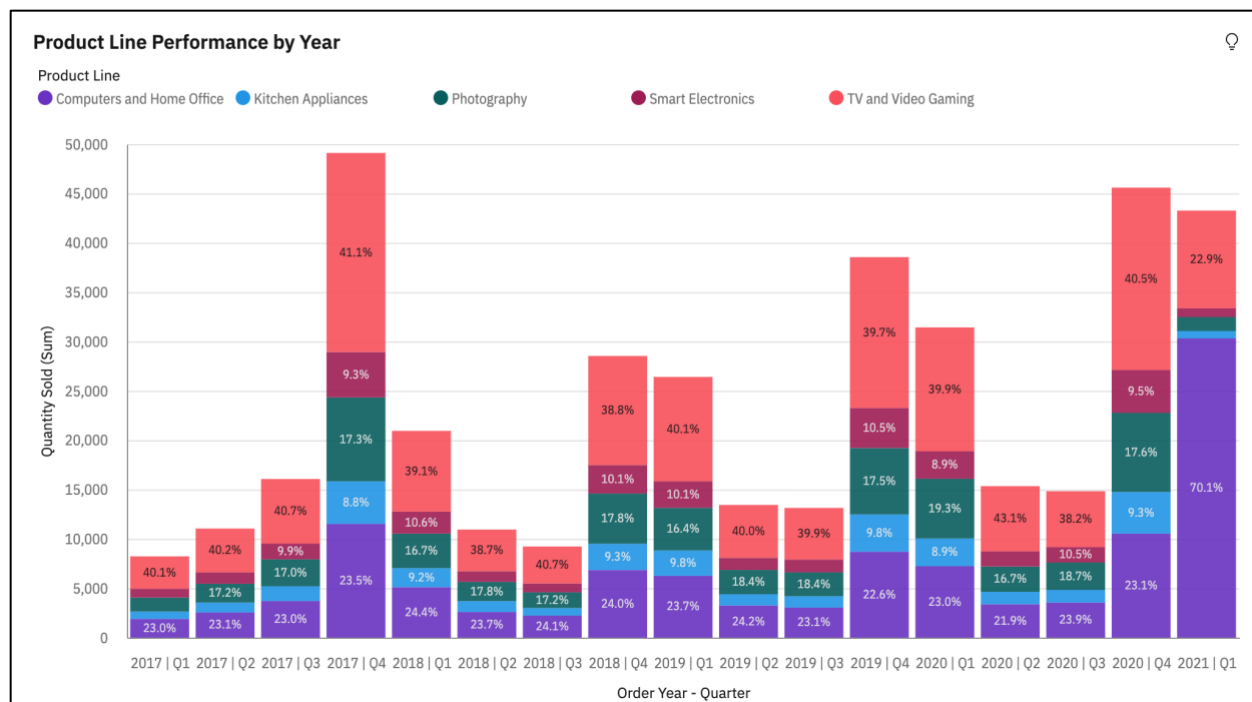
5.2 Displaying Chart Values

Users can hover over any data item in a visualization and the details render in separate window. Values can also be set to render directly on the visualization from the Properties panel for the widget. Values can be set to show the actual value or set to show the value as a percentage of the category or color.

1. Click the **Stacked Column chart** to bring it into focus. Open the **Properties panel** if needed.
2. From the **Visualization** tab, expand the **Chart** section and turn on the “**Show value labels**” checkbox. Then, use the **pull-down** menu for **Value label format** to view the various formats available.
3. Set the format to Percentage of Category.
4. Increase the Column padding slightly using the slider bar.
5. Your **Properties panel** should appear as follows:



6. Click on the Expand symbol to enlarge the Stacked Bar visualization. Notice that values have been added to the chart.



7. Click on the Collapse symbol to bring the entire dashboard into view again.

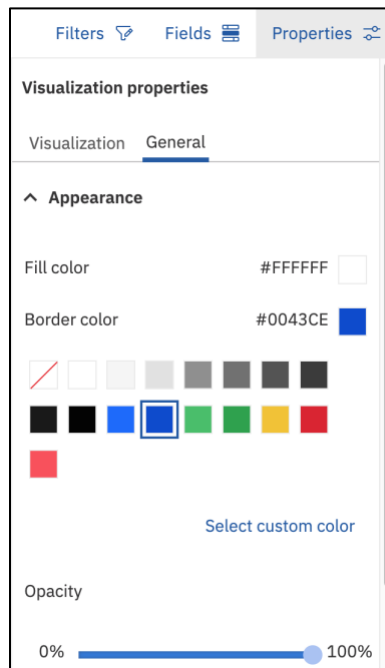
TECH TIP: THE VALUE LABELS WILL OPTIMIZE AS BEST AS POSSIBLE BASED ON YOUR SCREEN RESOLUTION SIZE. VALUES WILL NOT RENDER UNTIL THE WIDGET AND/OR THE DATA SLICE SIZE IS LARGE ENOUGH TO RENDER VALUES. NOTTICE IN THE SCREENSHOT ABOVE, THE DATA SLIVERS, WHICH ARE TOO SMALL TO RENDER VALUES LEGIBLY, HAVE BEEN REMOVED. YOU MAY HOVER OVER THESE DATA SLICES TO VIEW VALUES.

- Expand the **down arrow** next to **Axis** to review the properties settings that can be defined for the Axis titles and labels, such as position, orientation, font, size, color and axis range.
- Expand the **down arrow** next to **Legend** to review the properties settings that can be defined for the Legend such as title, position, font, size, and color.
- Close the Properties panel.
- Save** the dashboard.

5.3 Borders

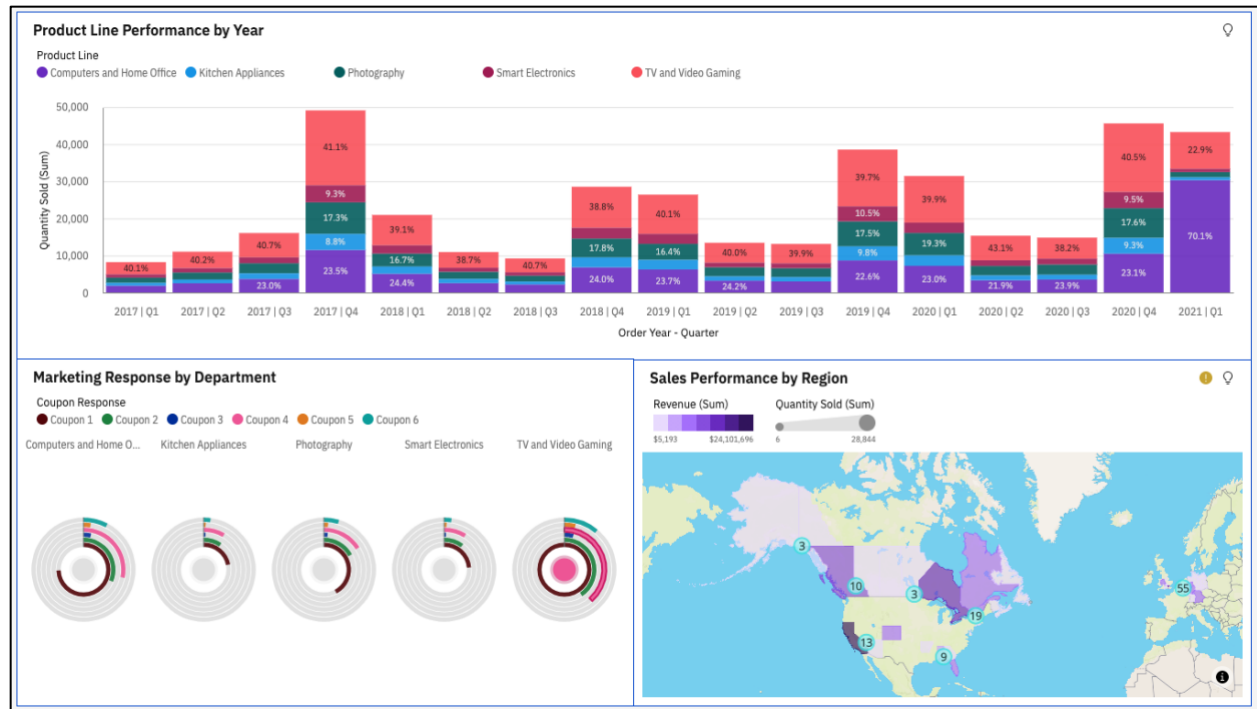
Using borders is an easy way to polish your dashboard for publication. Borders also make the dashboard easier to consume by defining the space dedicated for each widget.

1. Click the **Stacked Column Chart** widget in **Panel 1** to bring it into focus.
2. Open the **Properties panel** and click the **General** tab. Expand the **down arrow** next to **Appearance**. Click **Border Color** to open the color options for borders.
3. Apply a “**Dark Blue**” border.



TECH TIP: “DID I SEE SELECT CUSTOM COLOR”?! YES!! COGNOS ANALYTICS ALLOWS YOU TO SELECT YOUR OWN COLOR PALETTES AND EVEN DEFINE SPECIFIC RGB, CMYK, HSB AND HEX COLORS SO USERS CAN ALIGN THEIR COLOR PALETTES TO THE STANDARD CUSTOM COLOR SCHEMES THEIR ORGANIZATION USE FOR BRANDING. CUSTOM COLORS ARE OUTSIDE THE SCOPE OF THIS WORKSHOP, BUT WE ENCOURAGE YOU TO PLAY AROUND WITH THIS FEATURE USING YOUR CORPORATE BRANDING COLORS OR MAKE ANY COLOR PALETTE YOU CHOOSE.

4. Repeat for the other two widgets in panels 3 and 4.
5. Your dashboard should now look similar to the following:

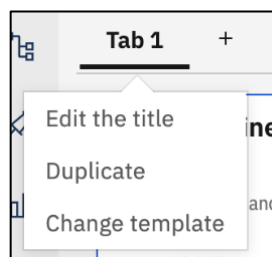


6. Save the dashboard

5.4 Dashboard Tabs

Now that your first dashboard is complete, you would like to rename the dashboard tab to be more descriptive. Then, you can add a new tab to continue building out another dashboard for advanced analysis.

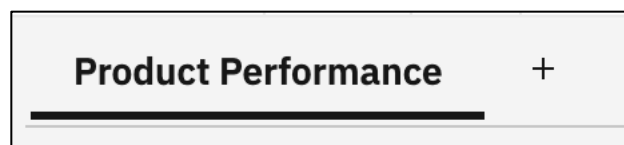
1. Click the tab name **Tab 1** to bring up the Tab's on-demand toolbar.
2. Select the Edit the title.



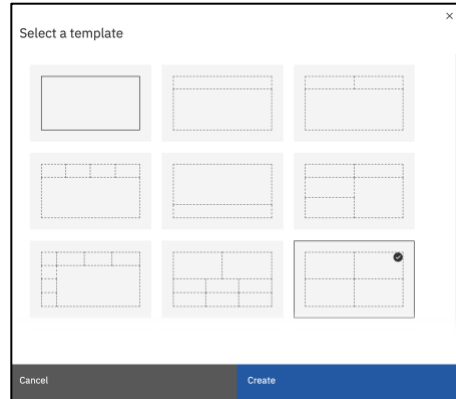
- Rename the tab to Product Performance.

TECH TIP: USERS CAN MODIFY THE COLORS FOR TABS, TAB TITLES AND SELECTION INDICATORS (LINE UNDER THE TAB NAME). TAB LOCATION CAN ALSO BE SET FROM THE DEFAULT LOCATION AT THE TOP, TO THE LEFT, RIGHT OR BOTTOM OF THE DASHBOARD. THESE ADDITIONAL FORMATTING OPTIONS FOR TABS ARE AVAILABLE UNDER THE PROPERTIES PANEL

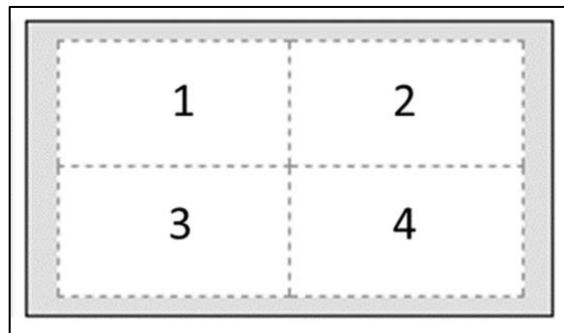
3. Click the “**Add new tab**” button to the right of the Product Performance tab.



4. The Template window appears. Select the four-panel template with 2x2 configuration.
5. Click Create.



6. As you build the dashboard, the workshop will reference the location placement for **Widgets** in the dashboard template using the following **Panel** numbers:



7. Rename the new Tab to “Key Insights”.
8. **Save** the Dashboard.

You're off to a great start with your first dashboard. Next, you'll extend your analysis further by leveraging the Augmented Intelligence (AI) capabilities in Cognos Analytics to answer more of your questions regarding product line performance.

6 Infusing AI into your Dashboard

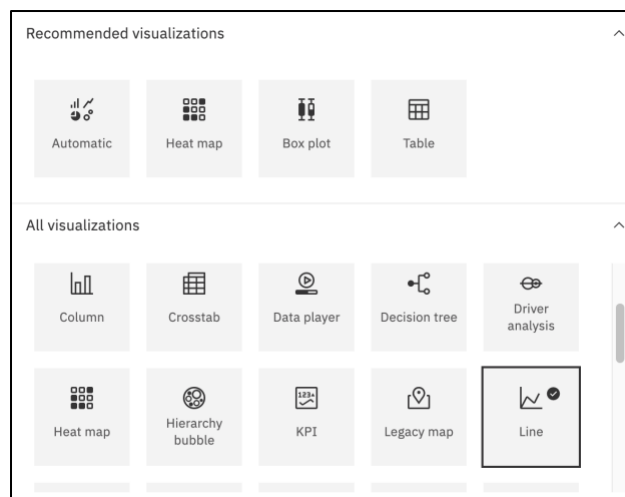
6.1 Forecasts



The Forecast feature in Cognos Analytics provides time series data modeling and forecasts based on data presented in corresponding visualizations. This makes it applicable to a broad range of time series data encountered in business and industry. Automated model selection and tuning makes forecasting easy to use, even for the users not familiar with time series modeling. Forecasts and corresponding confidence bounds are very easy to understand when displayed in a visualization as a continuation of historic data. Statistical details for generated models provide technical background information.

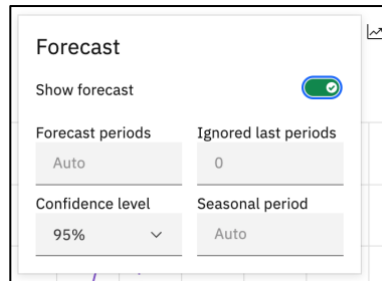
1. Click the Product Performance tab to return to the dashboard.
2. Click the Product Line Performance by Year widget to bring it into focus.
3. From the on-demand toolbar, select Change visualization.



4. Select Line Chart. The visualization updates, but still maintains the customized property settings, such as the value labels.



5. Click the **Expand button**  visualization while you work with it.
6. Click the Forecast icon  in the upper right corner of the visualization to open the Forecast dialog box.
7. Toggle the Forecast on.



TECH TIP: FORECASTING REQUIRES A TIME SERIES DIMENSION. THE TIME SERIES VISUALIZATIONS THAT SUPPORT FORECASTING (FOR EXAMPLE, LINE, COLUMN) WILL PRESENT THE FORECAST ICON IN THE UPPER RIGHT CORNER.

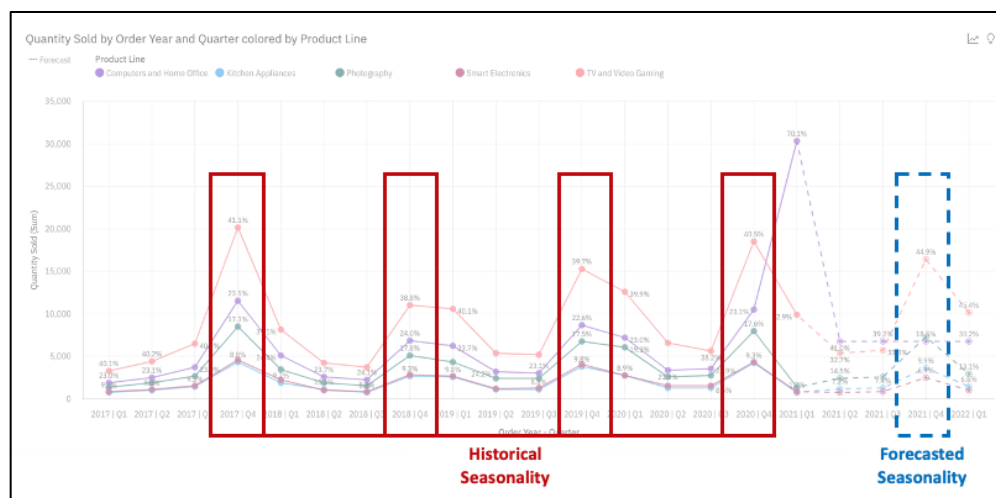
Depending on the visualization, the following forecasting options are shown:

- Forecast periods. The number of steps to forecast ahead. The default value is Auto, which is 20% of the length of the historical data.
- Ignored last periods. Ignores a specified number of data points at the end of a time series when building the model and computing the forecasts. The default value is 0. Up to 100 data points can be ignored. Ignoring the last data period can be useful when the data is incomplete. For example, you might be doing a forecast halfway through a month.
- Confidence level. The certainty with which the true value is expected to be within the given range. You can see corresponding confidence interval in a tooltip by hovering over any forecast value. The confidence interval is displayed as upper and lower bounds. Users can select from 3 different confidence levels: 90%, 95%, and 99%. The default is 95%.

- Seasonal period. The seasonality with which to build the model. Seasonality is when the time series has a predictable cyclic variation. For example, during a holiday period each year. The default value is Auto. Auto automatically detects seasonality by building multiple models with different seasonal periods and choosing the best one. Users can specify seasonality by entering a non-negative integer, such as: 0, 1, 2, 3 as the seasonal period.

- For this exercise, you use all the default settings for Forecast. Click outside the **Forecast dialog box** to close it.
- The visualization updates with the forecasted periods plotted after the last historical data point. Forecasted values are indicated by donut markers (default shape) and connected by a dotted line.


You notice that this historical data indicates a seasonality to the data, whereby the highest sales historically occur in Q4. Cognos Analytics was able to identify this seasonality and incorporated it into the forecast. But you wonder, what else does this visualization indicate?

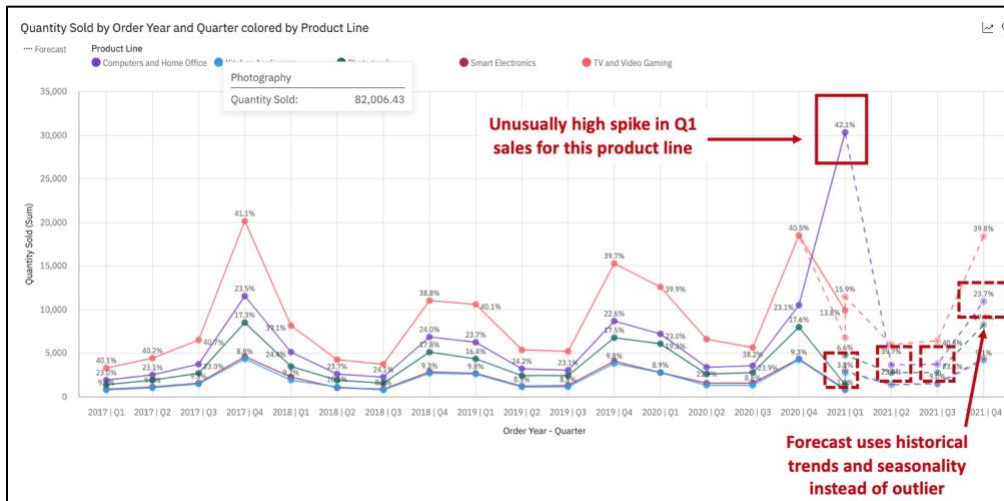


- Notice the sharp increase in sales for Q1 2020 for Computers and Home Office. Yet this is not reflected in the forecast.



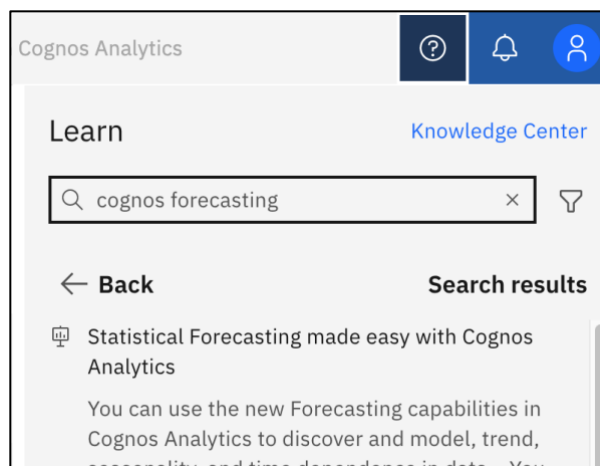
In addition to the historical seasonality that Cognos Analytics identified, it also can identify outliers in the data, which differs from historical performance. After asking around, you uncovered that there was a coupon issued in Q1 with a misprinted discount taking off \$400 instead of \$40. Word spread on social media, and sales went through the roof quickly. The mishap has already been handled; however, it is still affecting our analysis of trends. Cognos Analytics did not take the outlier into account for the forecast. But without this outlier, what would the forecast have looked like before this mistaken coupon?

11. Click the **Forecast icon**  in the visualization to reopen the **Forecast dialog box**.
12. This time set the **Ignore last periods** to **1**. Be sure to hit **ENTER** before closing the Forecast dialog.
13. Click outside the **Forecast dialog box** to close it.
14. The visualization updates. This time, you see that Cognos Analytics generated a forecast for Computers and Home Office based on the historical data, without regard to the outlier in the most recent period.



15. Click the Collapse button on the upper right of the widget to return the widget to the dashboard.
16. Save the dashboard.

TECH TIP: FOR MORE INFORMATION REGARDING FORECASTING IN COGNOS ANALYTICS, OR IF YOU HAVE OTHER COGNOS ANALYTICS INQUIRES, GO TO THE IBM KNOWLEDGE CENTER. YOU CAN ACCESS AND SEARCH THE IBM KNOWLEDGE CENTER FROM THE COGNOS ANALYTICS HOME SCREEN AND OPENING THE **LEARN PANEL**.





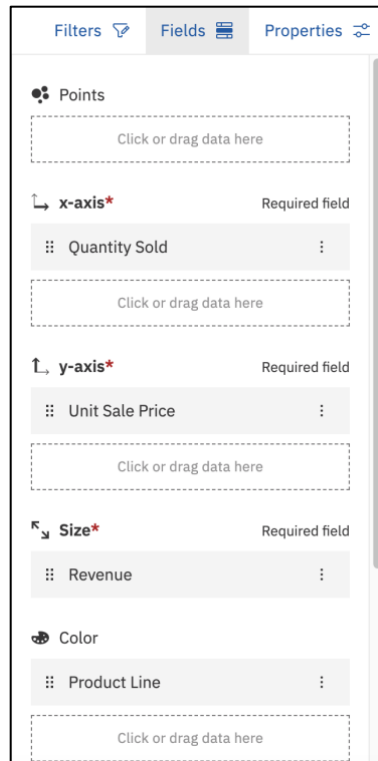
6.2 Insights

You would like to leverage the Augmented Intelligence (AI) capabilities from Cognos Analytics to extend your analysis further.

Recall that as the data file was uploaded into Cognos Analytics, it ran through several steps in the process. During the Analyzing step, Cognos Analytics ran several algorithms against all the rows and columns in the data in order to find statistically significant insights and patterns.

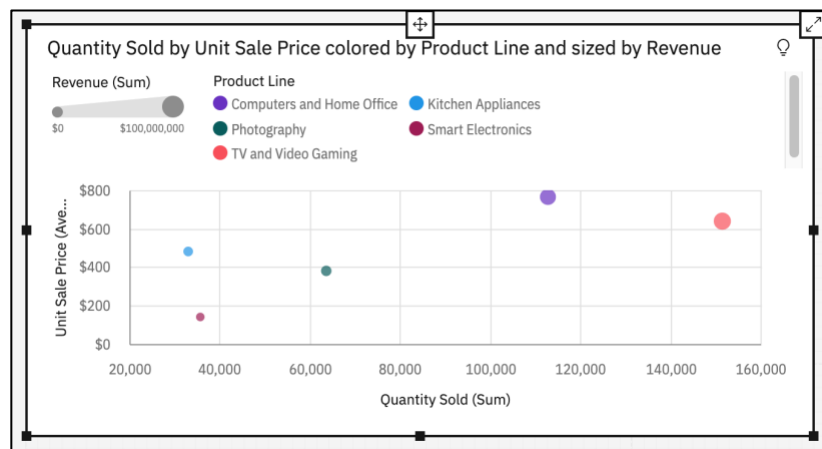
These insights are surfaced up to the User in several ways including adding them into widgets designed by the User, through advanced visualizations which show patterns and allows Cognos Analytics forecasting capabilities. In the remaining exercises, you work with some of these AI features.

1. Click the Key Insights tab.
2. From the Navigation Panel, select Visualizations  to open the Visualizations library.
3. Select the Bubble chart  and drag it to panel 1 of the dashboard template, dropping it when the blue drop zone appears so it will auto-fill to the size of the panel.
4. Since you started by selecting a visualization this time, rather than by selecting data, the bubble chart visualization opens the Fields panel for you to set up your data definitions. From the Data Source panel, drag data items into Fields Panel data slots as follows:




This visualization shows how the product lines are performing in comparison to one another.

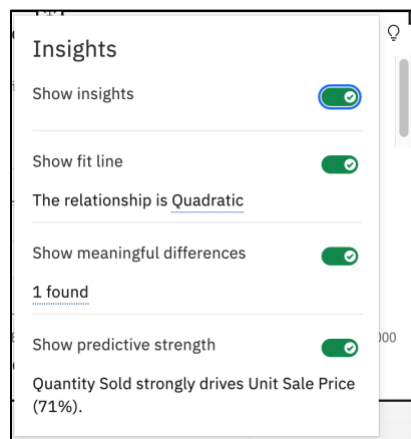
- To get additional detail for each product line, **hover** your mouse over the respective **bubble**. Details of the underlying data measures for Quantity Sold, Average Unit Sales Price and Revenue renders.
- Hover over the **largest bubble** and **smallest bubbles** to render the additional information.



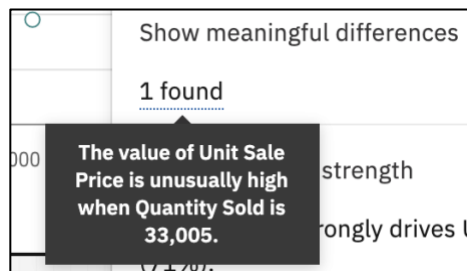
This visualization clearly indicates that Smart Electronics is the lowest performer of all product lines. And, even though Smart Electronics and Kitchen Appliances have a similar amount of Quantity sold, Smart Electronics average sales price is significantly lower, generating less revenue contribution to the company.

The **Quantity Sold by Average Sales** includes insights from Cognos Analytics' AI.

1. Click on the Insights Icon  on the Quantity Sold by Average Sale Price chart.
2. Click the Toggle Insights On switch to Turn on insights for this visualization.



3. Clicking each of the **Insights** will render explanations of the findings. Hover over the **1 found** under **Show Meaningful differences** to view the findings.




4. **Save** the dashboard.

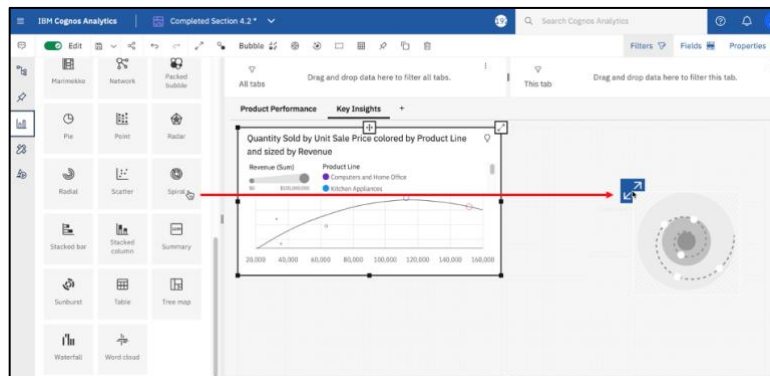
7 Pattern and Relationship Detection



Cognos Analytics has a wide variety of AI capabilities which include several new visualizations for advanced analysis that were introduced in version 11.1 and 11.2. These include the spiral analysis, which provides users with statistical pattern and relationship detection, sunburst, box plot, radar, and decision trees.

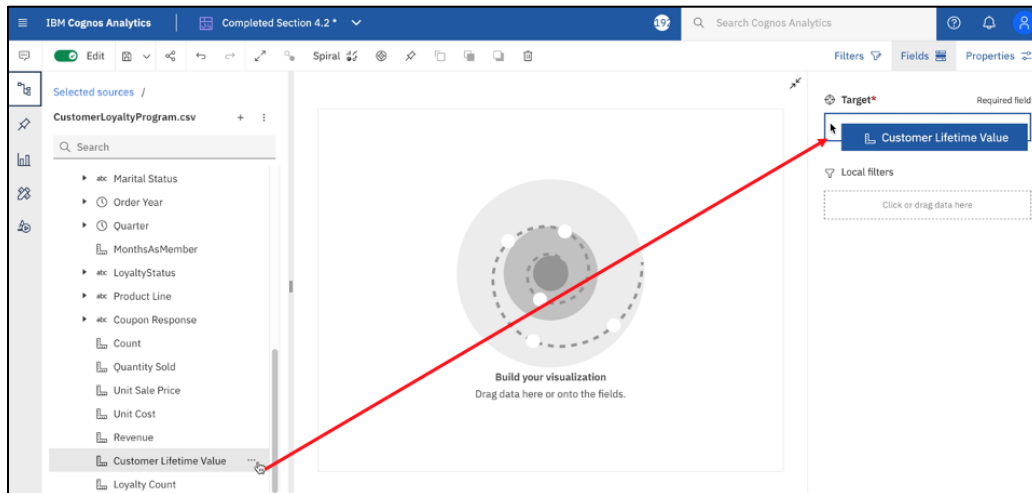
Continuing with your analysis of smart electronics, you can use your customer loyalty program data to understand what patterns exist that indicate key drivers of customer lifetime value.

This information can be used to develop marketing programs to increase sales. You can easily identify key drivers by adding a spiral visualization to the dashboard to surface data relationships. You select your target, in this case your Customer Lifetime Value field, to uncover insights regarding potential drivers for Customer Lifetime Value.

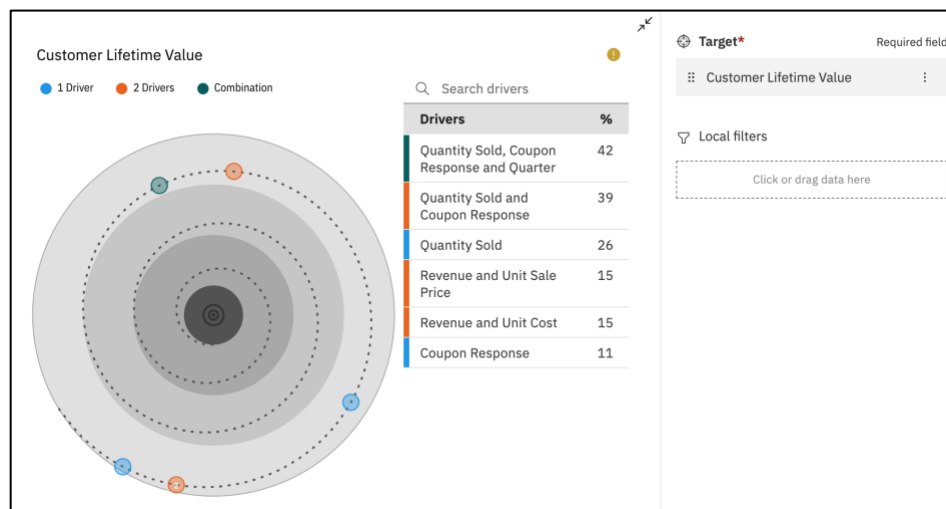
1. From the Navigation bar, select **Visualizations**. 
2. Drag the **Spiral Chart** to the drop zone of **Panel 2**.



3. Use the Expand button to bring it into full view.
4. From the Navigation bar, select **Sources** .
5. Drag "Customer Lifetime Value" to the Target data slot .




Cognos Analytics runs a number of algorithms to determine the drivers of Customer Lifetime Value. Once complete, the visualization renders.

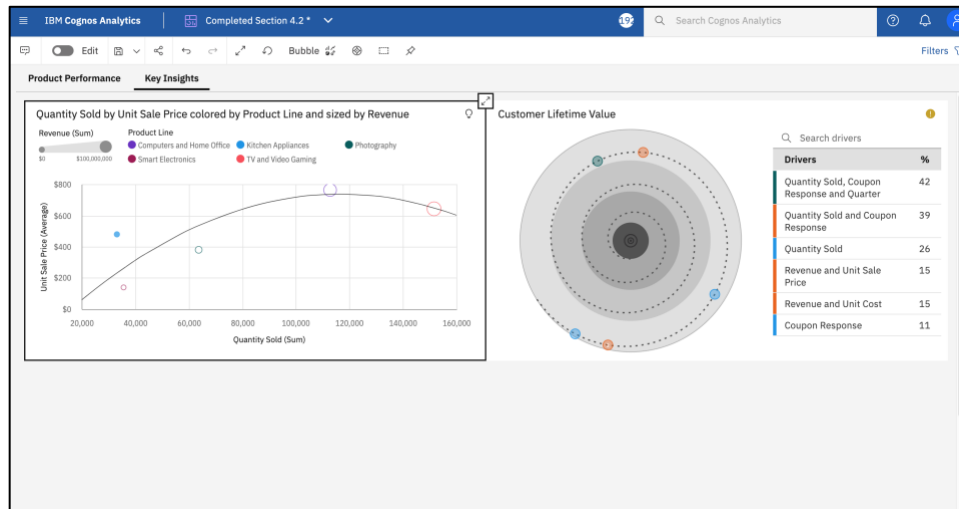


The target, in this case Customer Lifetime Value, is at the center of the spiral. The points that surround the spiral chart represent those data items found to have statistically significant

relationships to Customer Lifetime Value. The Quantity Sold is intuitive, but it's interesting to see that there's a significant relationship with your coupon campaign. It's encouraging to

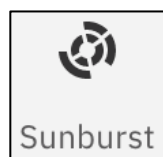
know the campaign had an impact, and that's something you can now explore further.



6. Click the **Collapse button** on the upper right of the widget to return the widget to the dashboard.
7. Close the Fields panel.
8. Click on the Edit button to toggle it off.  Edit
9. Your dashboard should now look similar to the following:



Next, you would like to understand the underlying drivers related to product line. You are interested in finding patterns in the buyer's attributes so that you can better target buyers with a high propensity to buy.

10. Click on the Edit button to toggle it back on into edit mode.
11. From the Navigation bar, select **Visualizations**.
12. Drag the Sunburst to the drop zone of Panel 3.



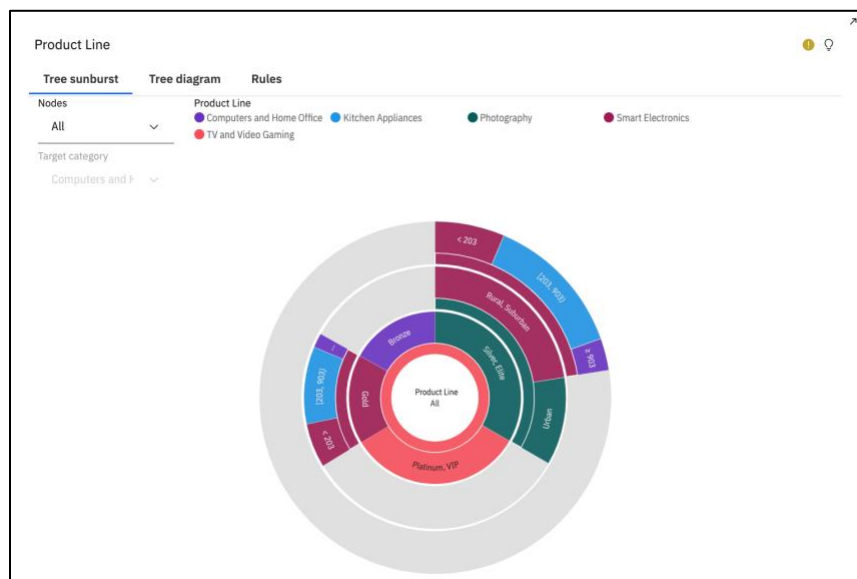
13. Use the **Expand button**  in the upper right corner to **maximize the widget**.
14. Open the data sources panel. 

15. Drag “Product Line” as the Target.

The screenshot shows a configuration panel for a visualization. At the top, there are three icons: a funnel, a table, and a settings icon. Below these, the word "Target" is followed by a red asterisk and the text "Required field". A dropdown menu is open, showing "Product Line" with a three-dot menu icon to its right. Below this, there is a section titled "Local filters" with a funnel icon. Underneath, there is a dashed rectangular box containing the text "Click or drag data here".

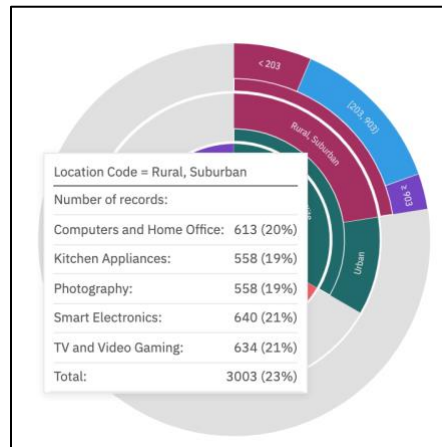
Here, you can see all the data items from your data source. You can select which drivers to use for the analysis. Since you are now interested in patterns and drivers based on buyer attributes, you remove some measures from the analysis.

16. Close the Fields panel.

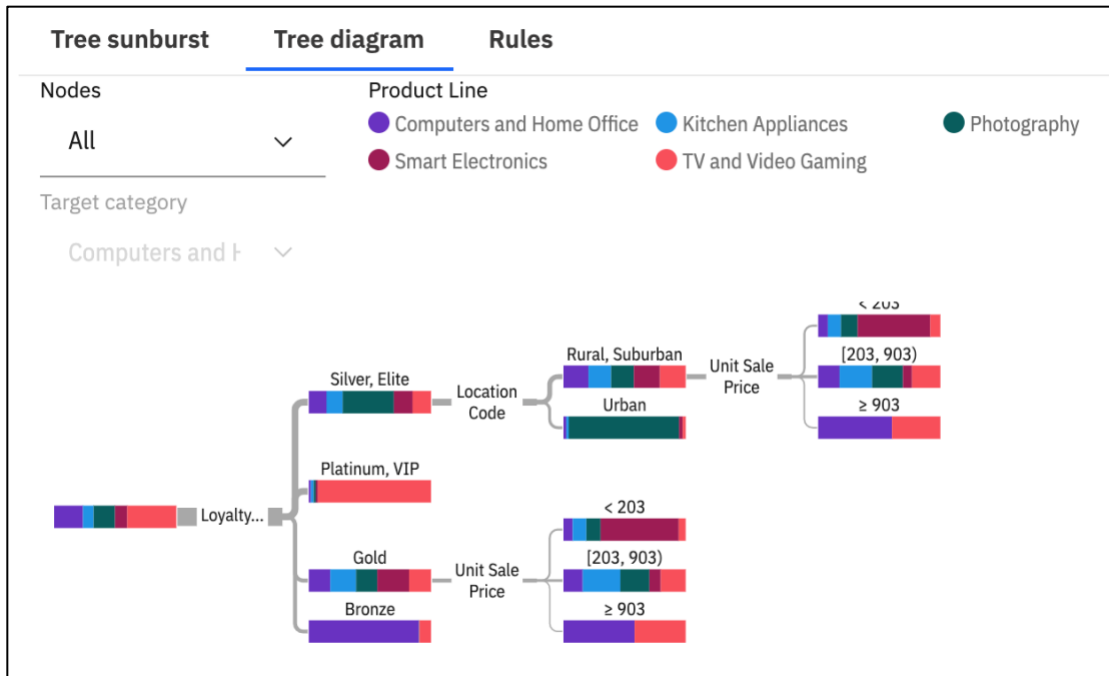


The Sunburst updates showing the various patterns found in the data. Each set of rings of the sunburst represents an attribute (data column), with each section representing the attributes with a statistically significant driver/set of drivers. Hovering over a section shows the percentage breakdown by product line (your target) for that section.

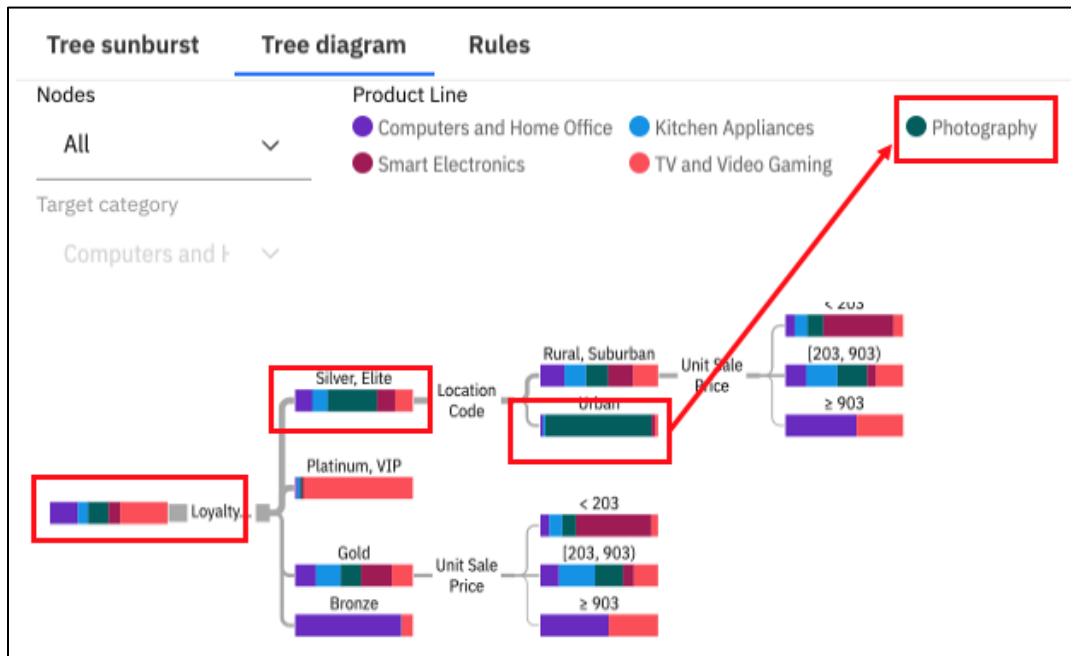
17. Hover over the section showing “**Rural, Suburban**”. The details show the percentage breakdown by product line for buyers in rural and suburban areas.



18. Click the **Tree Diagram tab**. The Tree diagram provides a Decision Tree view of the results. In reading left to right, you can see the relationships patterns between Loyalty Status and Location codes.



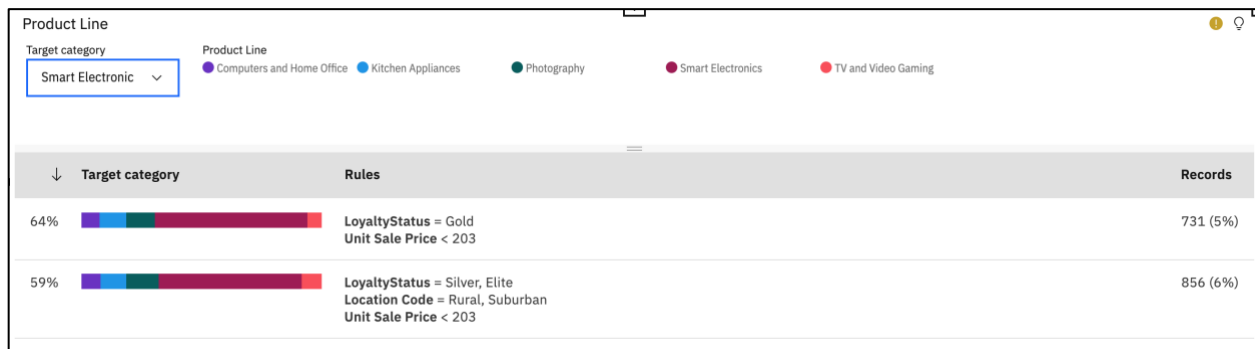
19. In following the flow of the diagram from left to right, you see the largest segment of customers within the Loyalty tier of Silver Elite are from Urban areas, purchasing Photography. This information would provide support for Marketing campaigns for this product line, targeting Urban areas, such as Billboards, and signage at bus/train terminals.



20. Click the **Rules** tab. Decision rules provide plain language explanations of the individuals who are buying your product lines.
21. Collapse the **widget** to return the Decision rules to the dashboard.
22. Resize the **widget** using the sizing button on the right center, drag the right edge of the widget to the right to cover both **panels 3** and **4**.
23. Close the Filters panel on the right and close the navigation panel on the left.

Next, you want to see the decision rules that drive the product line sales, specifically those for Smart Electronics.

24. For Target category, use the down arrow and select Smart Electronics.

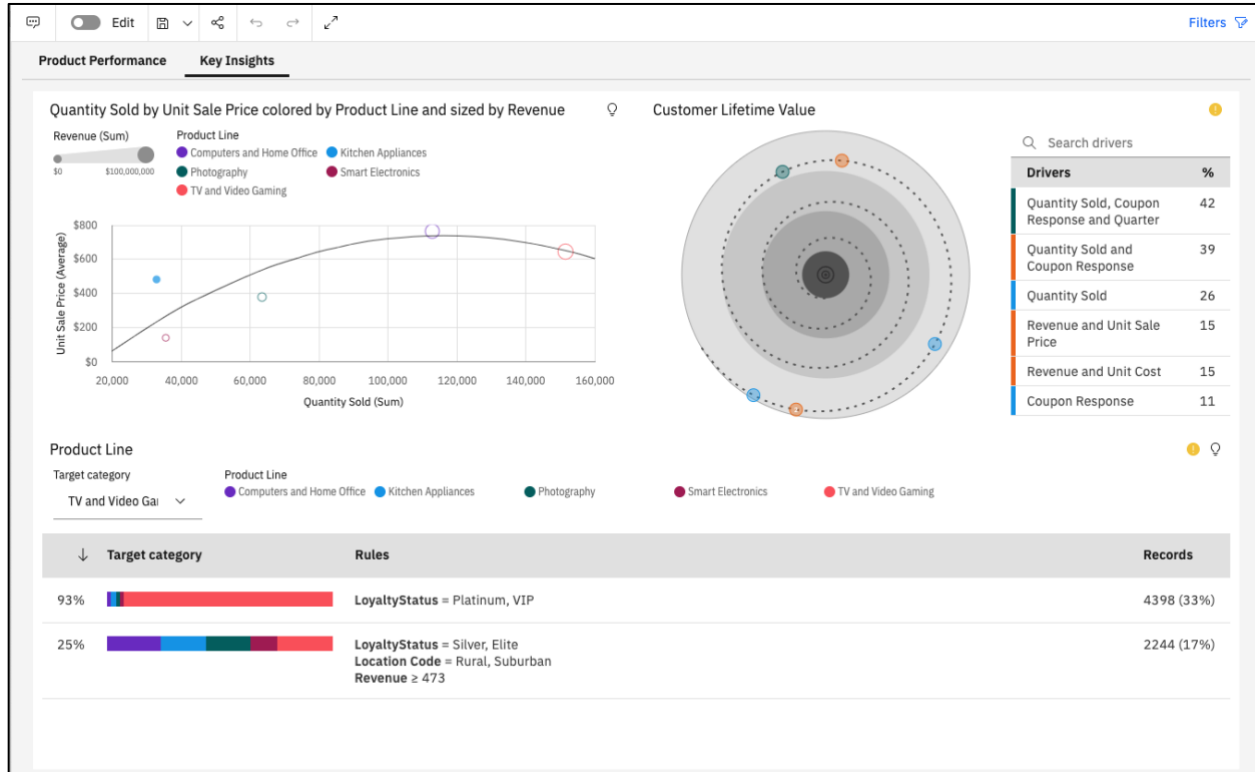


This provides a valuable insight: Buyers in your loyalty program who have a gold, silver or elite status, and those who live in the suburbs are more likely to purchase from Smart Electronics product line

25. Change the **Target category** to **TV and Video Gaming**. What insight does this give you?

Another great insight: Buyers in your loyalty program who have a VIP or Platinum status, make up the vast majority of customers purchasing from the TV and Video Gaming product line.

Your dashboard should now look similar to the following:



26. **Save** the dashboard.

Congratulations, you've completed your first set of dashboards including using Augmented Intelligence to uncover patterns, relationships, and new insights in your data!

What other insights did you find along the way?

What recommendations would you make for Marketing programs?

What recommendations would you make for inventory levels?

What would you do next to extend your analysis?