Power BI

Dashboard in an Hour

by Power BI Team, Microsoft

Contents

Problem Statement

The dataset provided focuses on sales and market share analysis. This type of analysis is very common for the office of a Chief Marketing Officer (CMO). Unlike the office of the Chief Financial Officer (CFO), a CMO is focused not only on company's performance internally (how well do our products sell) but also externally (how well do we do against the competing products).

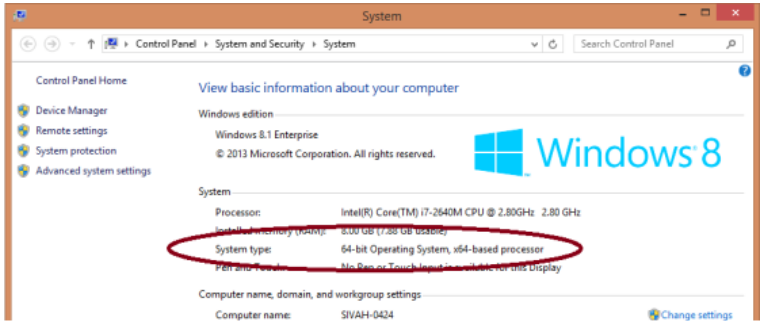
Our company, VanArsdel, manufactures expensive electronic products that could be used for fun as well as work and it sells them directly to consumers in three major markets. VanArsdel and its competitors have retained a 3rd party marketing company to collect and anonymize industry sales so that all participants can benchmark themselves.

Sales data along with details of Product, Date and Geography are available in an Excel workbook. Data from these sources need to be brought together to analyze and report on.

Prerequisites

Following prerequisites and setup has to be complete for successful completion of the exercise:

- You must be connected to the internet
- **Signup for Power BI:** Go to http://aka.ms/diahtraining and sign up for Power BI with a business email address. If you cannot sign up for Power BI, let the instructor know
- Please go to http://app.powerbi,com and **Sign in** using your **Power BI account**
- At minimum, a computer with 2-cores and 4GB RAM running one of the following version of Windows: Windows 7, Windows 8, (64-bit preferred), Windows 8.1 or Windows 10 or Windows Server 2008 R2 or Windows Server 2012 or Windows Server 2012 R2
- Microsoft Power BI Desktop requires Internet Explorer 10 or greater
- Verify if you have 32-bit or 64-bit operating system to decide if you need to install the 32-bit or 64-bit applications
    - Search for computer on your PC, right click properties for your computer
    - You will be able to identify if your operating system is 64 or 32 bit based on "system type" as shown below



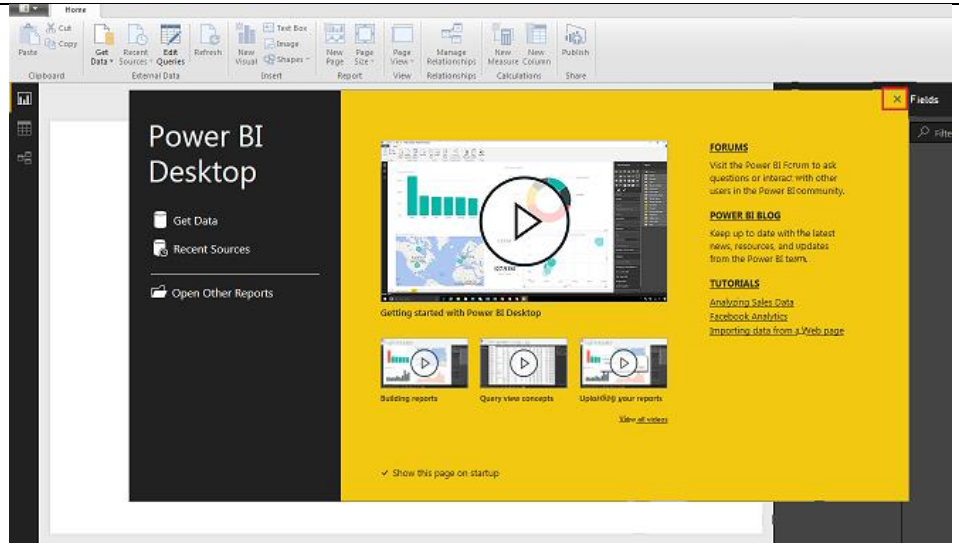
- **Download the Power BI Content**: Create a folder called **DIAH** on an appropriate drive on your local machine. Copy all contents from the folder called **Dashboard in an Hour Assets** on the flash drive to the **DIAH** folder on your local drive. E.g. C:\DIAH
- **Download and install Power BI Desktop:** Download and install Microsoft Power BI Desktop from http://www.microsoft.com/en-us/download/details.aspx?id=45331. Optionally, you can also install the Power BI Desktop tool from the **Power BI Desktop Install** folder on the flash drive. Please choose appropriate 64-bit or 32-bit version depending on your platform. Microsoft Power BI Desktop is available for 32-bit (x86) and 64-bit (x64) platforms

NOTE: This lab is using real anonymized data and is provided by ObviEnce LLC. Visit their site to learn about their services: www.obvience.com . This data is property of ObviEnce LLC and has been shared for the purpose of demonstrating PowerBI functionality with industry sample data. Any uses of this data must include this attribution to ObviEnce LLC.

Power BI Desktop - Get Data

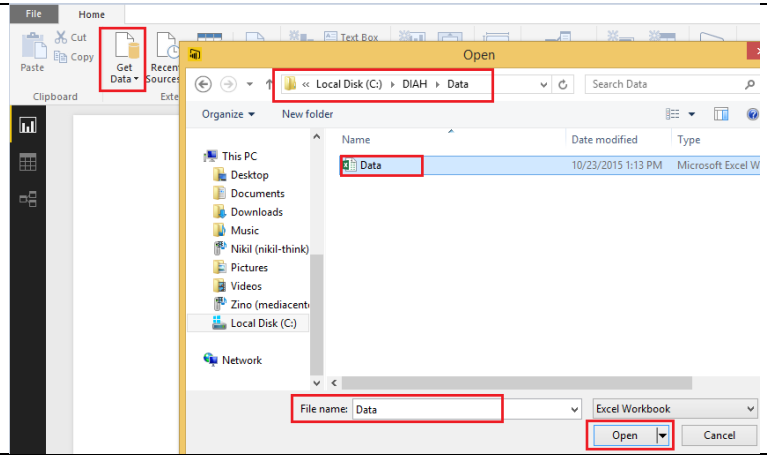
1. If you have not already done this, on your local machine, create a folder called DIAH
2. Copy contents provided to DIAH folder
3. Launch Power BI Desktop
4. Once Power BI Desktop opens, startup screen opens as well
5. Close startup screen by clicking on “x” on the top right corner

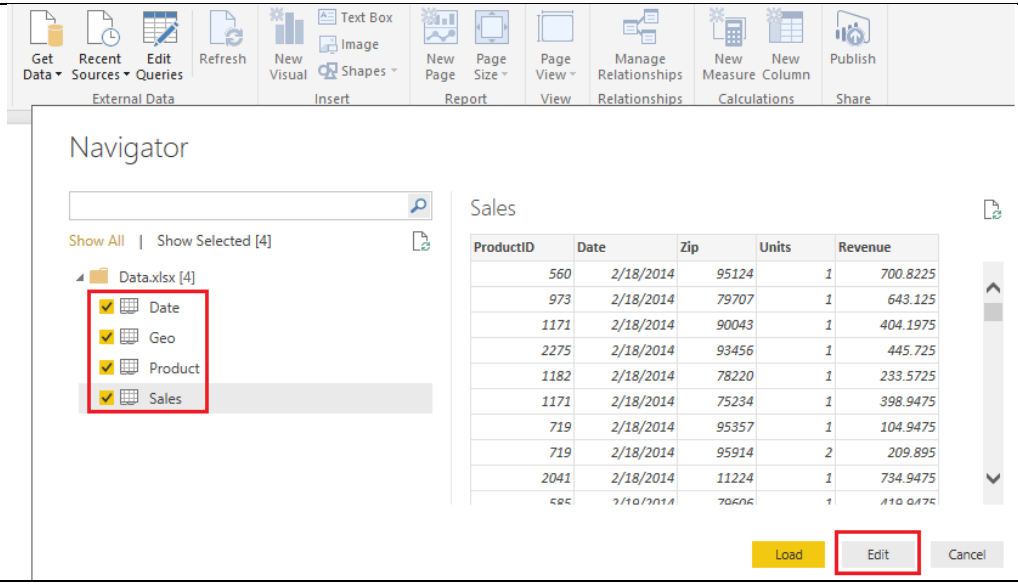
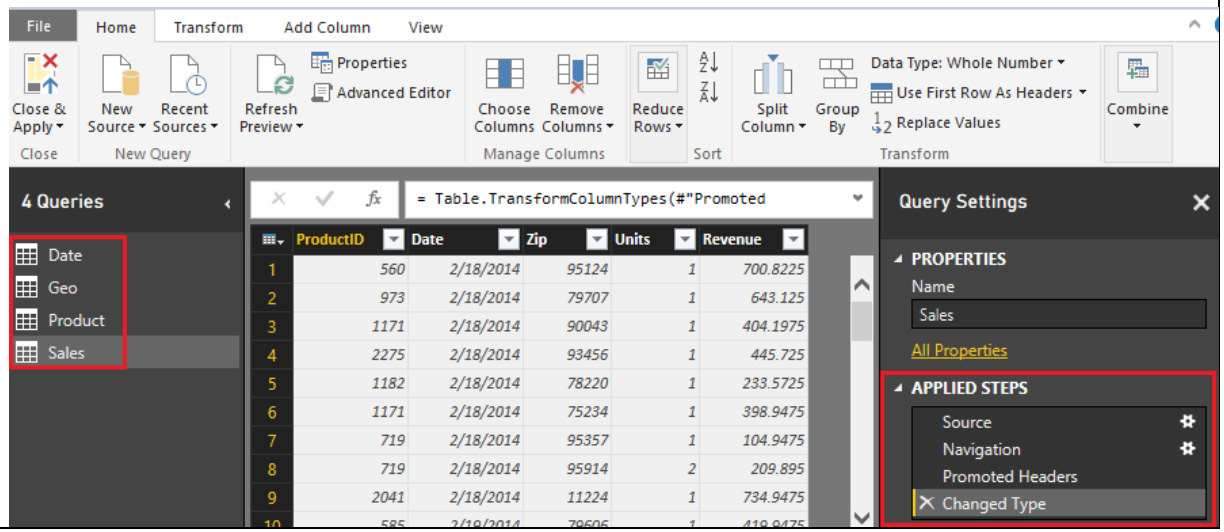
Note: You can click the play button at a later time to get an overview of Power BI Desktop

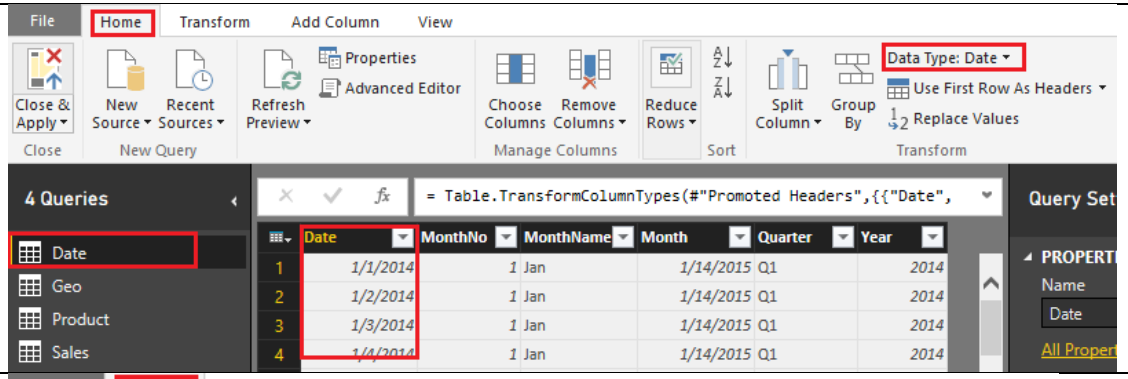
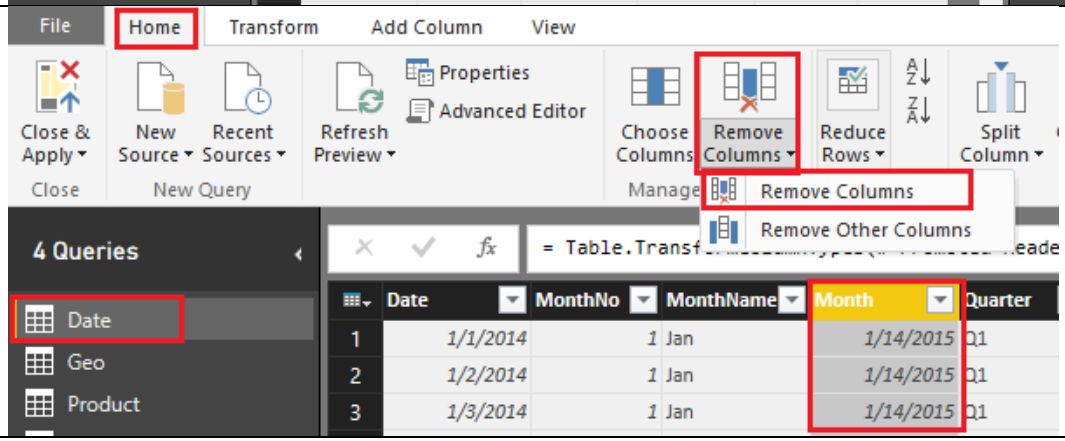


First step is to load data

6. Data is available in Excel workbook. To import data, select Get Data -> Excel from the ribbon
7. Browse to DIAH/Data folder and select Data.xlsx
8. Click Open

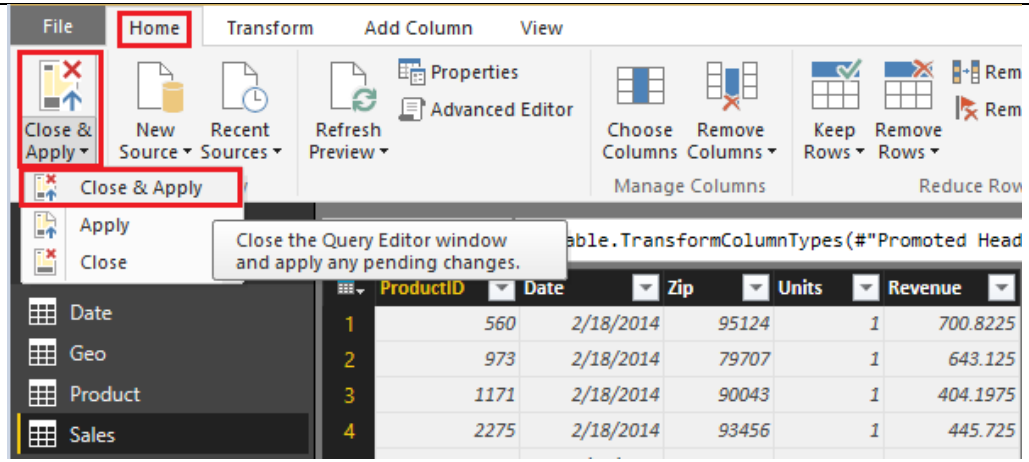


Navigator dialogue opens listing four sheets that are available in the workbook 9. Select all the sheets by clicking on the checkbox next to each sheet As you select each worksheet, notice a preview of the data is loaded in the right panel Notice there are 2 buttons Clicking on Load will load the data to the data model Clicking on Edit will open Query Editor. This will give us an opportunity to transform data 10. Click on Edit	
Query editor opens Notice each worksheet is loaded as a query Also notice, on the Query Settings panel on the right under APPLIED STEPS section each step is recorded Steps include Source, promoting first row to a header (since first row is a header)	

11. Highlight Date query in the left panel 12. Select Date field and make sure it of Data Type Date. Data type is located on the ribbon Home -> Data Type	
13. For our purposes, we do not need Month column, so highlight Month column 14. From the ribbon select Home -> Remove Columns - > Remove Columns Notice this removes Month Column and the step is added to APPLIED STEPS section	

Now we have all the data in the query editor, let's load to Power BI Desktop

15. From the ribbon, select Home -> Close & Apply. There are 3 options
    - Close & Apply: This closes Query Editor and loads the data to Power BI Desktop
    - Apply: This loads data to Power BI Desktop without closing Query Editor
    - Close: This closes Query Editor without loading data
16. Select Close & Apply



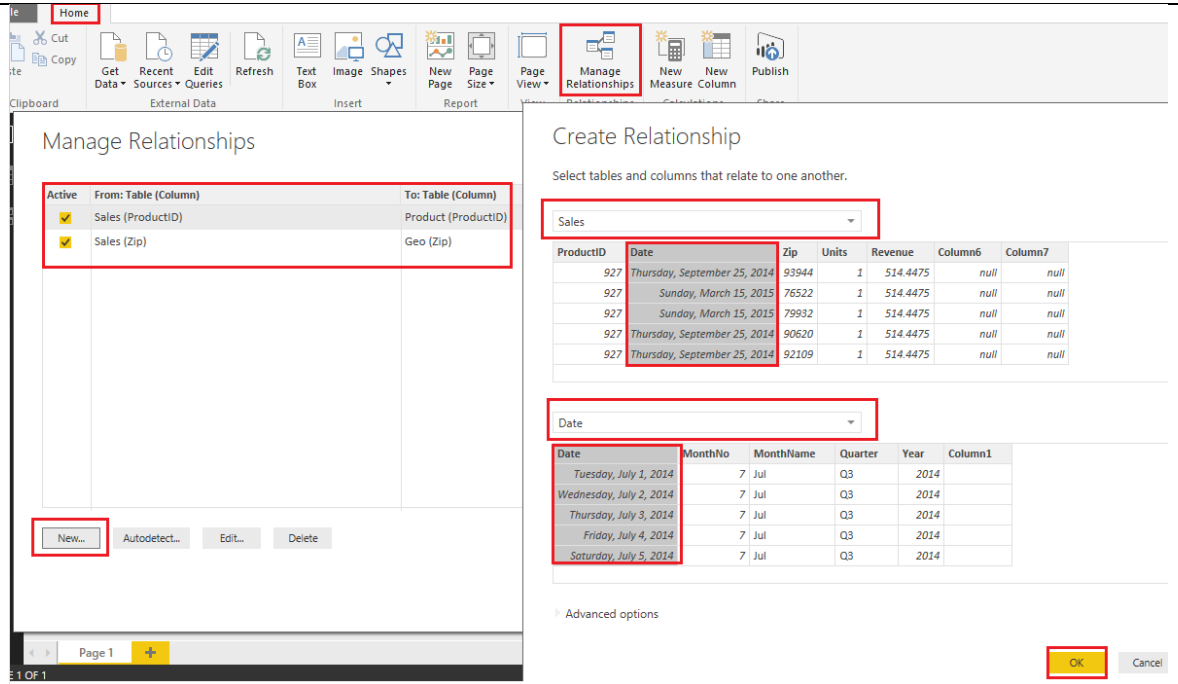
Power BI Desktop - Manage Relationship

Notice Apply Query Changes dialogue appears which shows the status of the load. Once load is complete, this dialogue closes

Now that we have loaded data from 4 tables, we need to ensure the model identifies relationship between these tables

1. From the ribbon, select Home -> Manage Relationships
   Manage Relationships dialogue opens
2. Notice Power BI Desktop is able to identify and create relations between some of the tables we loaded
   - Relation is created between Sales and Product
   - Relation is created between Sales and Geo

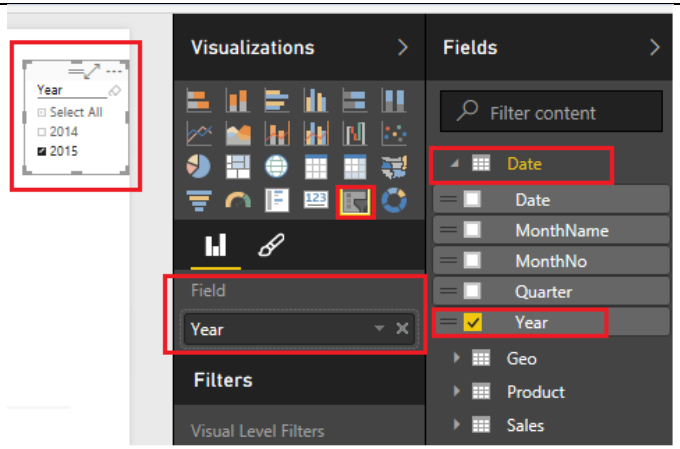
   However, there is no relationship between Sales and Date
3. Click on New button
4. Create Relationship dialogue opens
5. Select Sales from the first drop down
6. Select Date from the second drop down
7. Notice Date fields in both the tables get highlighted
8. Click OK
9. Notice now a relationship is created between Sales and Date. Click on Close to close the dialogue



Power BI Desktop - Create Report

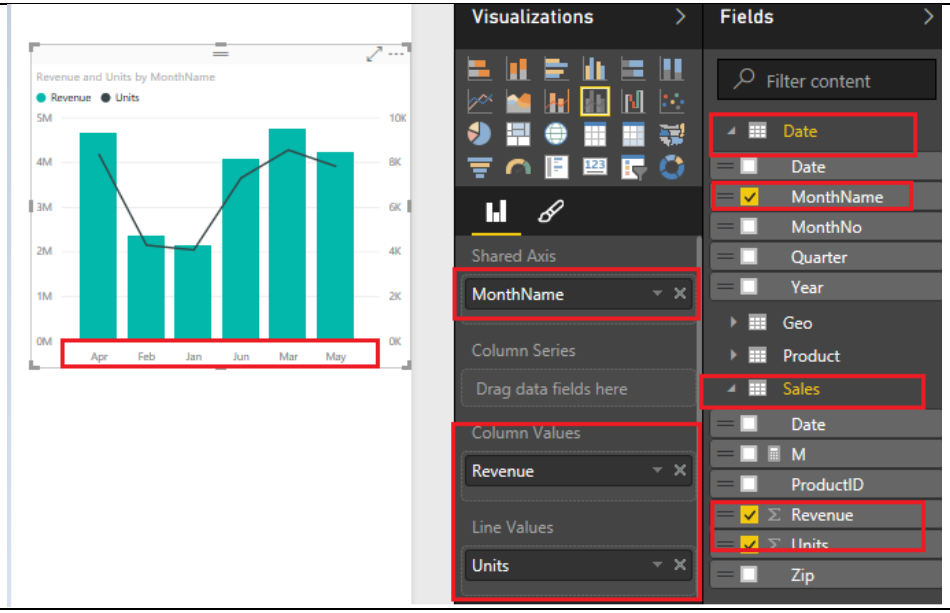
CMO wants to analyze Sales Revenue across all manufacturers for the year 2015. Let's start by creating a year slicer

1. If you are already not there, click on the visual icon on the left panel
2. In the Fields section, expand Date and select Year field
3. From the Visualization section select slicer
4. This will make Year a slicer
5. Select 2015 from the slicer. This will filter to display results for year 2015
6. Resize the slicer as needed



Now let's analyze the Sales by month for 2015

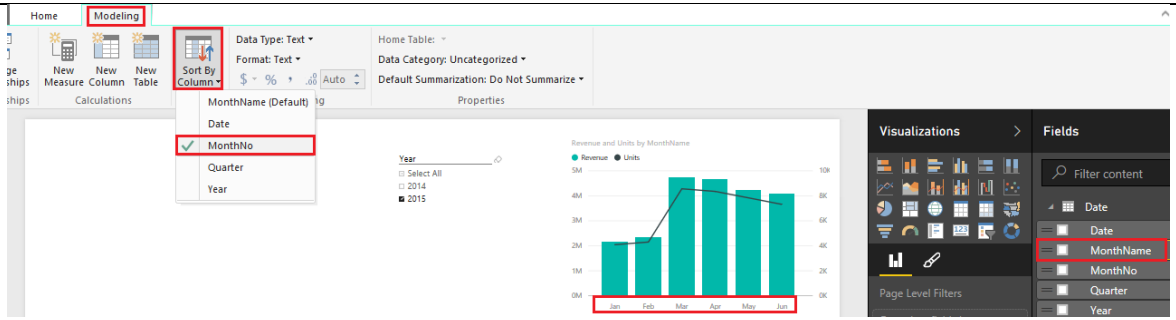
7. Click on blank section in the report pane
8. From the Fields section, expand Date table
9. Select MonthName field
10. Expand Sales table and select Revenue field
11. From the Visualization section select Line and Clustered Column chart
12. Expand Sales table and drag Units field to Line Values
13. Resize the chart as needed



Notice the month names are sorted alphabetically. Let's update MonthName field to be sorted by calendar month

14. From the Fields section expand Date table
15. Highlight MonthName field in Fields section
16. From the ribbon select Modeling -> Sort by Column -> MonthNo

Notice now MonthName in the report pane is sorted as expected

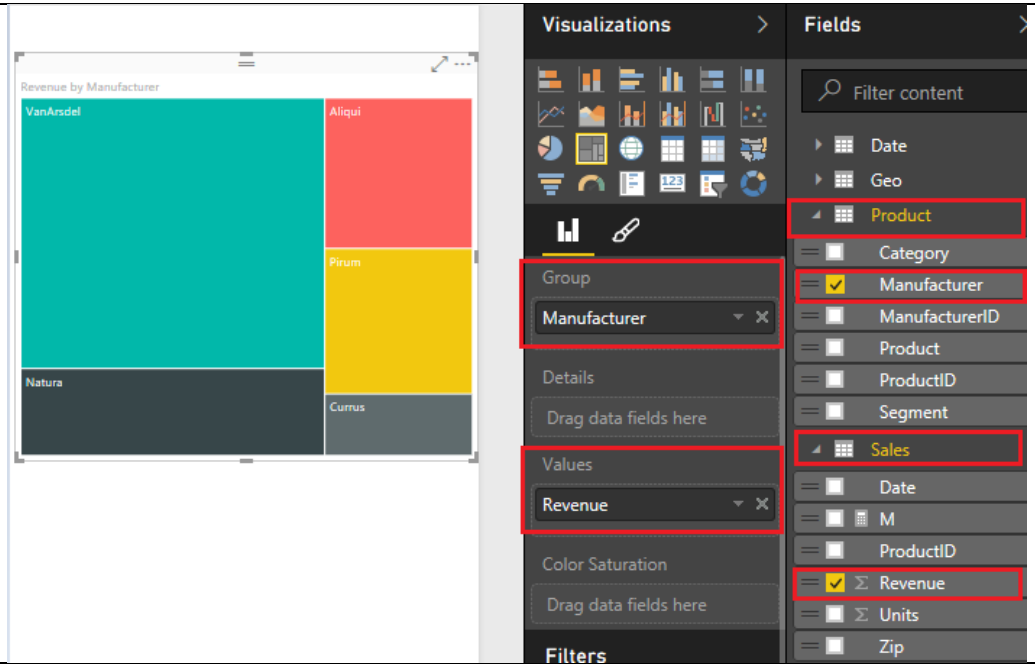


Let's create visual to represent the sales by manufacturer

17. Click on the white space in the report pane
18. From the Fields section expand Product table and select Manufacturer field
19. From the Fields section expand Sales table and select Revenue field
20. From the Visualization section select Treemap chart

Notice this creates a Treemap visual that breaks down sales by manufacturer for the year 2015

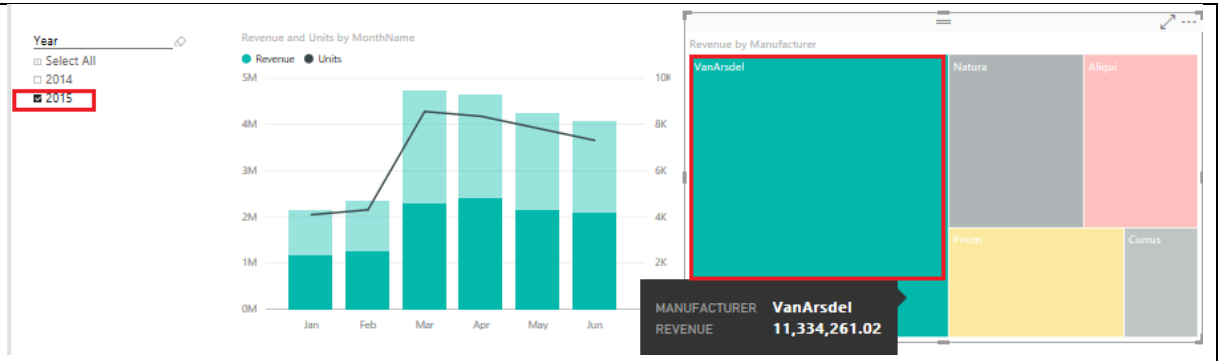
21. Resize and rearrange the chart as needed



22. Click on VanArsdel in Treemap chart and notice the Line and Clustered Column chart updates to reflect your selection

Now data is filtered for the year 2015 and the highlighted portion of Line and Clustered Column chart shows Sales for manufacturer VanArsdel

23. Click on VanArsdel in Treemap chart again to remove VanArsdel filter

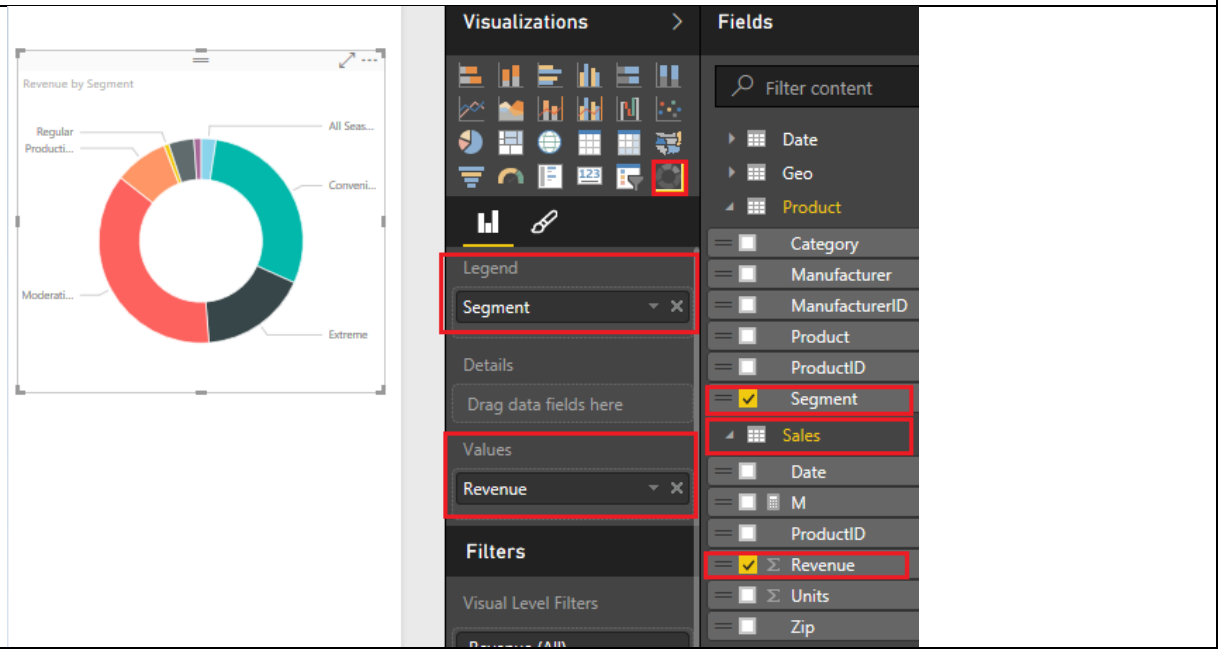


Let's create visual that will represent the sales by Segment

24. Click on the white space in the report pane
25. From the Fields section expand Product table and select Segment field
26. From the Fields section expand Sales table and select Revenue field
27. From the Visualization section select Donut chart

Notice this creates a Donut visual that breaks down sales by segment for the year 2015

28. Resize and rearrange the chart as needed

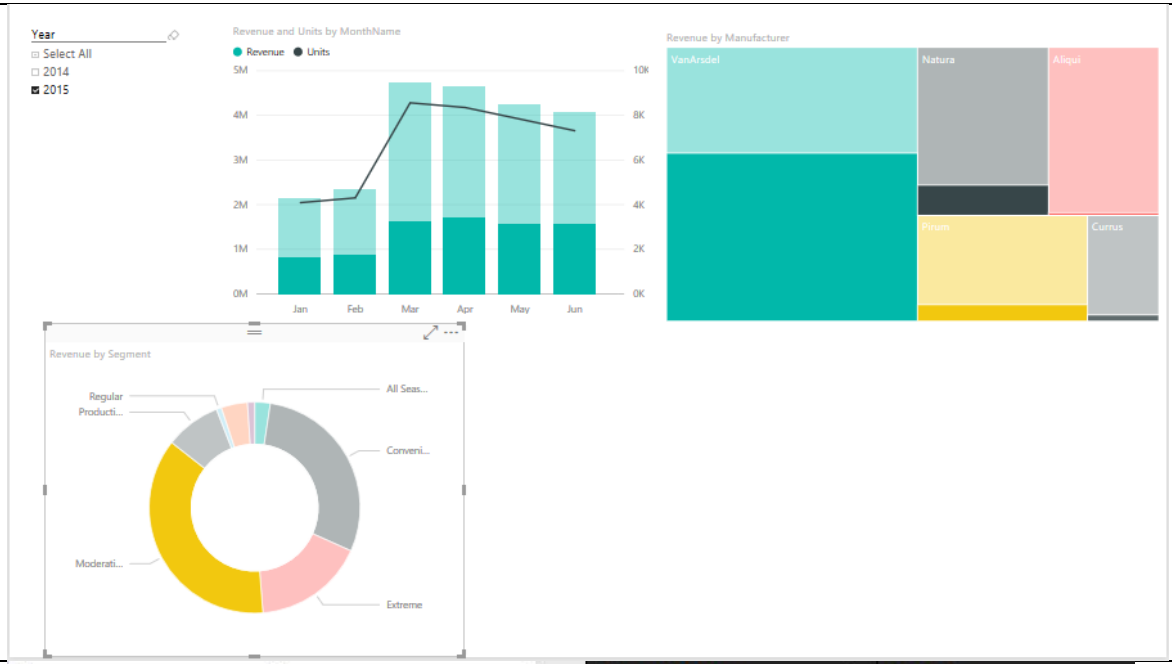


29. Click on Moderation in Donut chart and notice other charts updates to reflect your selection

In Treemap notice that Moderation segment forms a big percent of VanArsdel's sales whereas it's a very small percent of Aliqui's sales

In Line and Clustered Column chart notice that Moderation forms a big percent of Sales each month

30. Click on Moderation in Donut chart again to remove Moderation filter

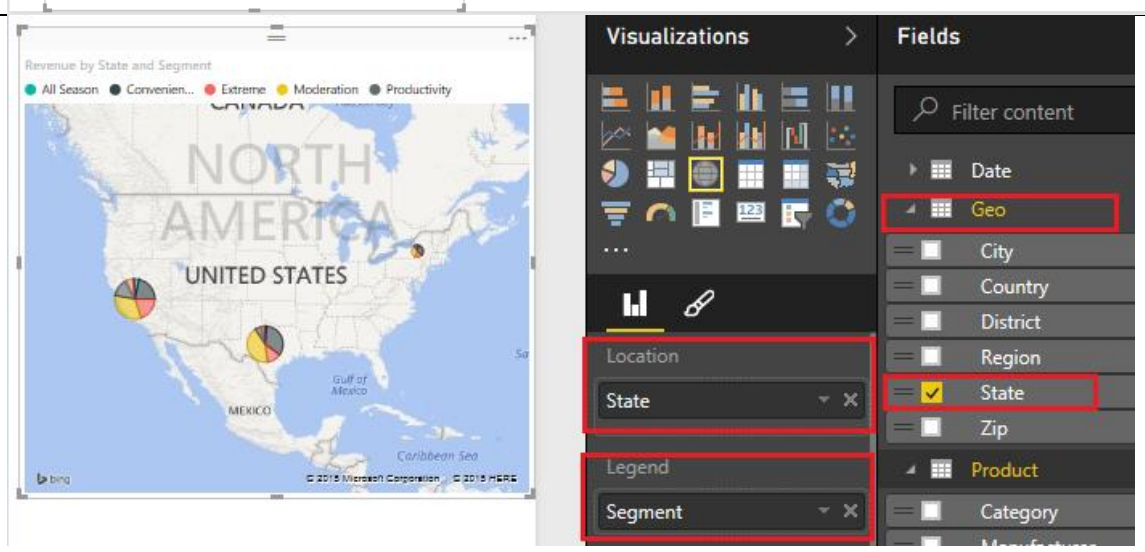


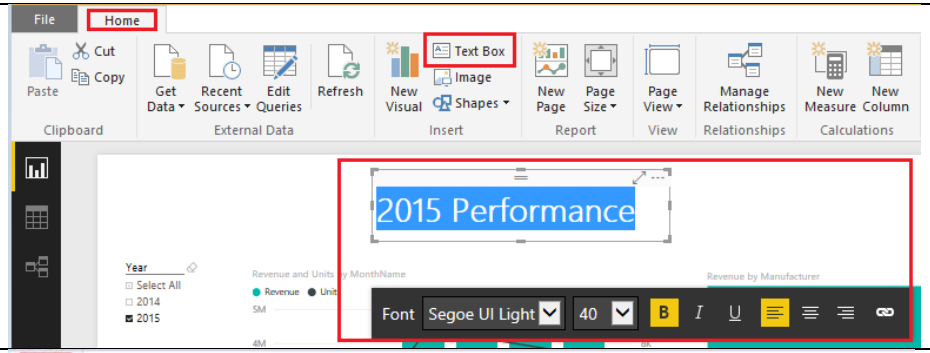
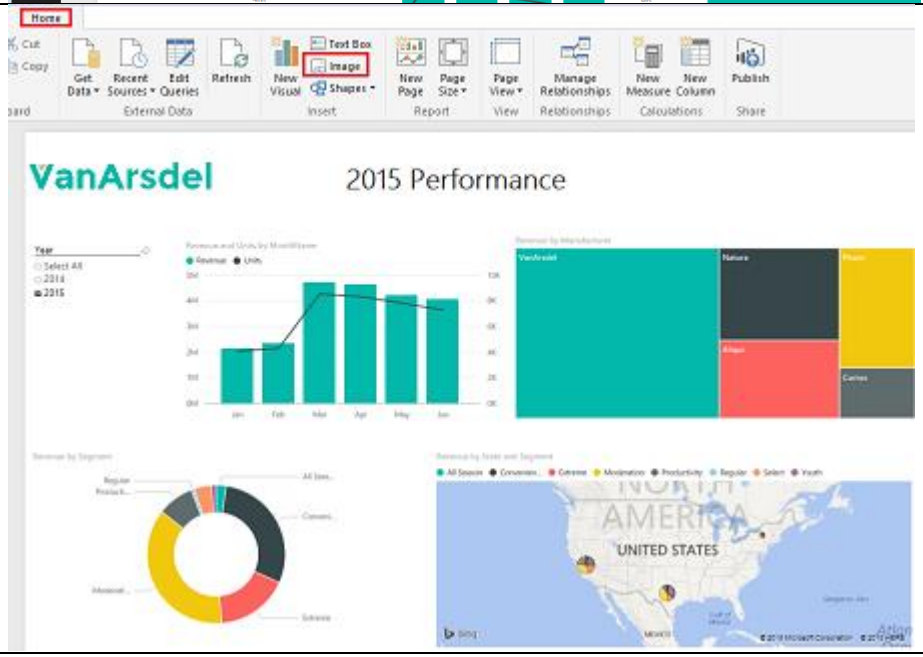
CMO also wants to analyze Sales by State

31. Click on the white space in the report pane
32. From the Fields section expand Geo table and select State field

Notice a map visual is created by default, with three dots representing the three states

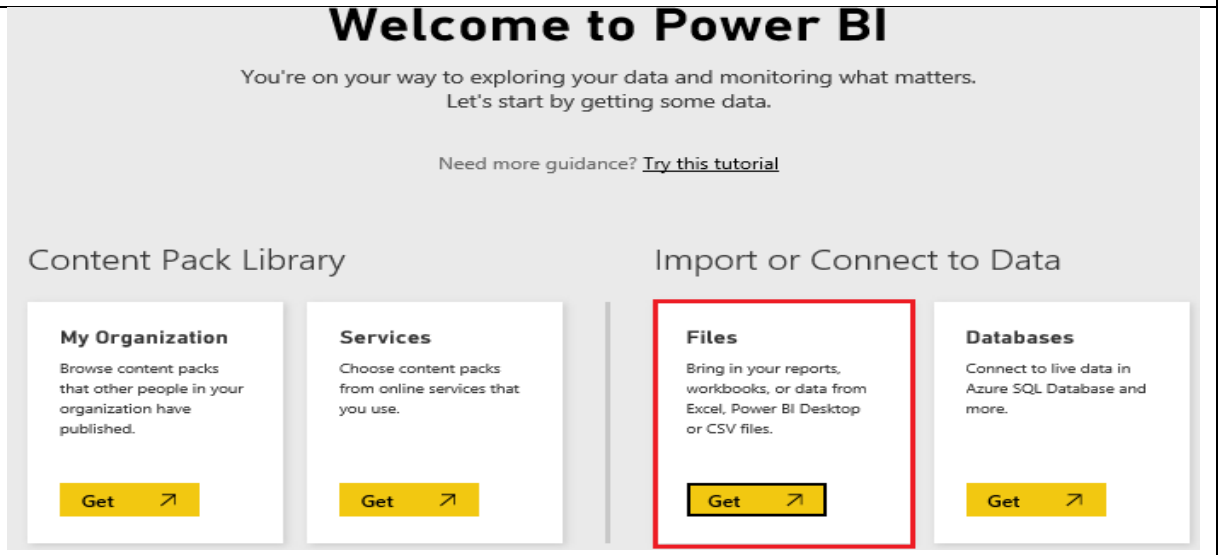
33. From the Fields section expand Sales table and select Revenue field
34. From the Fields section expand Product table and select Segment field
    Notice the dots are updated to pie charts for each state



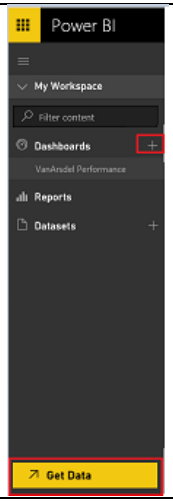
35. Clicking on a cell in a pie chart, updates the other visuals on the page	
36. From the ribbon, select Home -> Text Box 37. Enter 2015 Performance in the text box 38. Highlight 2015 Performance and change font size to 40 and change font type to bold 39. Resize the text box and place it on the top of the page	
40. From the ribbon, select Home -> Image 41. Browse to the DIAH/Data folder created earlier in the lab 42. Select Logo.gif 43. Resize the image and position it on the top left of the page 44. Resize the report elements as desired Page 1 should look something like this	
45. Save the file in DIAH folder by clicking on File -> Save and name it as DIAH	

Power BI Service – Import Report

1. If you have not signed up for a Power BI account go to http://aka.ms/diahtraining and sign up for Power BI with a business email address
2. If you have not already opened the app.powerbi.com page, please open the browser and navigate to http://app.powerbi.com
3. Sign in to Power BI using your user account. Once logged in, you will see Welcome to Power BI page
   Note: If you have already signed into Power BI previously, your screen will look different. Jump to Step 6
4. Click on Get under Files and jump to Step 10

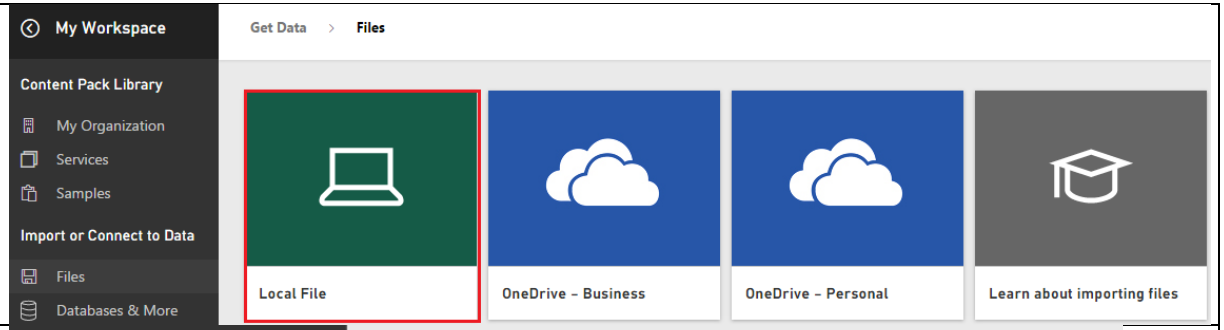


5. You need to create a Dashboard before importing data. Click on the "+" sign next to Dashboards in the left panel
6. Notice a textbox appears. Enter VanArsdel Performance in the textbox and click Enter. This creates a new dashboard
7. Now let's connect and import data from the Power BI Desktop filer. Click on Get Data on bottom left hand side of the screen. You will be navigated to a Get Data page which looks similar to Welcome page
8. Click on Get under Files



You will be navigated to Get Data > Files page

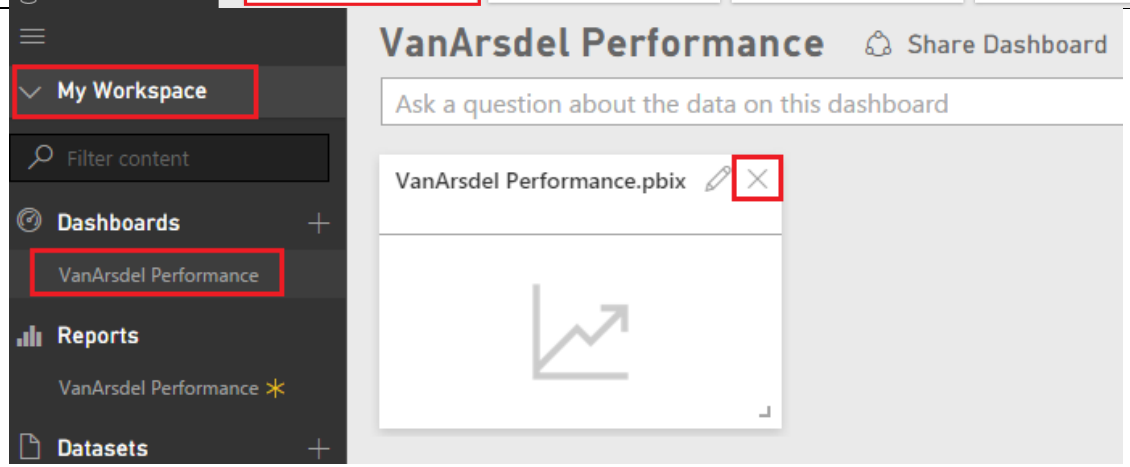
9. Select Local File
10. Browse to DIAH folder that was created earlier and select VanArsdel Performance.pbix file (this is the solution file created using Power BI Desktop)



Note: Step 13 and 14 applies if you are a new user who is signing into http://app.powerbi.com for the first time and did not create a dashboard manually (Steps 6 through 9).

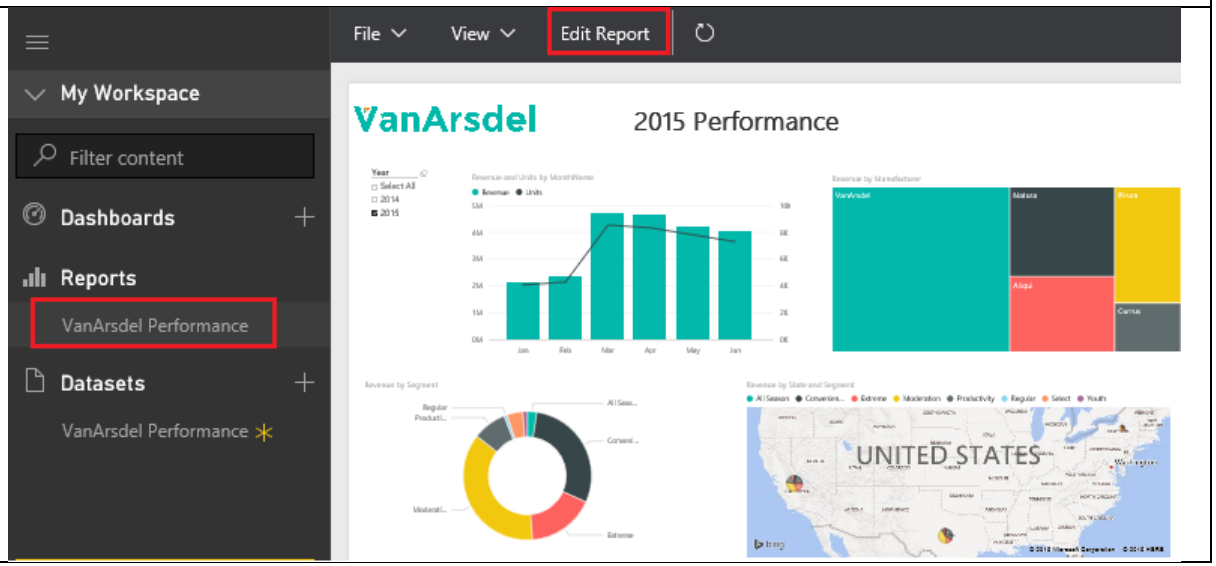
Notice that you are now navigated to My Workspace page and Dashboard called VanArsdel Performance.pbix

11. In the left panel, hover over VanArsdel Performance.pbix and click on the ellipsis
12. Select Rename to rename the dashboard as VanArsdel Performance
13. The dashboard will show a tile for the imported Power BI Desktop file, linked to its reports. Please wait for the file to be fully loaded into the Dashboard.
14. We do not need the default tile. Hover over the tile and click on the "X" to delete it



Power BI Service – Create Dashboard

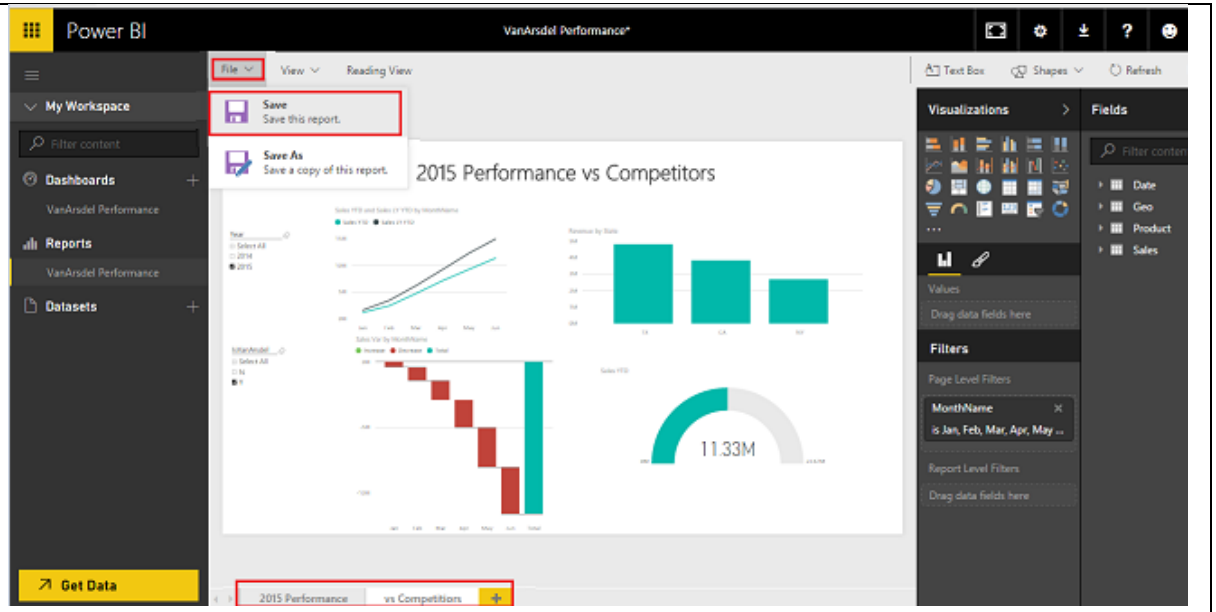
1. Expand Reports section and click on VanArsdel Performance
   Notice the report created in Power BI Desktop is displayed with the two pages
2. Click on different chart elements and notice the charts are interactive (similar to Power BI Desktop)
3. On the top menu click on EDIT REPORT



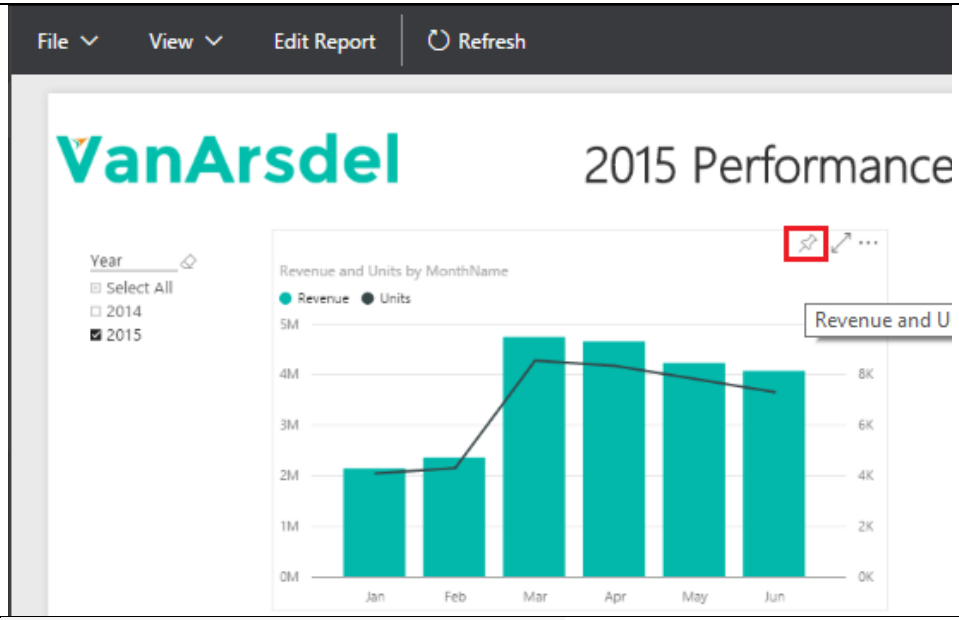
This will open the report in Edit mode
Notice the layout is similar to that of Power BI Desktop

Report can be edited or new pages added in this view

4. Page 1 of the report is similar to the report you built earlier in the lab. Let's rename it by double clicking on Page 1 on the bottom of the screen
5. Rename page to 2015 Performance
6. Navigate to Page 2 of the report by clicking on Page 2 on the bottom of the screen
7. Page 2 of the report compares VanArsdel's performance with the competitors for the year 2015
8. Rename the page to vs Competitors
9. From the top menu, click on File -> Save to save the changes

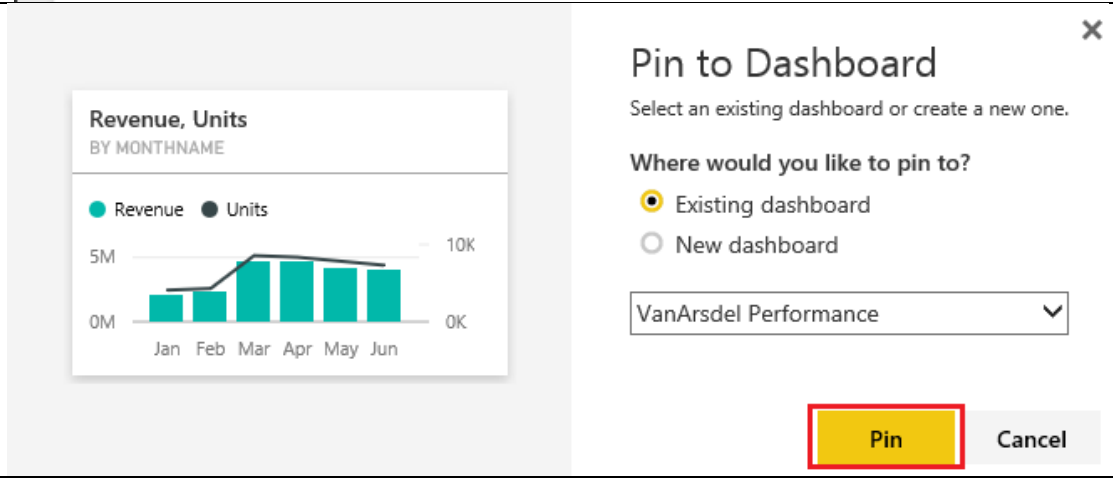


10. On the top menu click on Reading View to get back to View only mode
11. Click on 2015 Performance page at the bottom of the screen to navigate to 2015 Performance report
12. Hover over Revenue and Units by MonthName chart and notice a Push Pin appears on the top right corner
13. Click on the Pin



Pin to Dashboard dialogue appears

14. There is an option to create a New dashboard. Since we already have a dashboard, let's select Existing dashboard and VanArsdel Dashboard from the drop down
15. Click Pin button
16. This will pin the visual as a tile in the dashboard

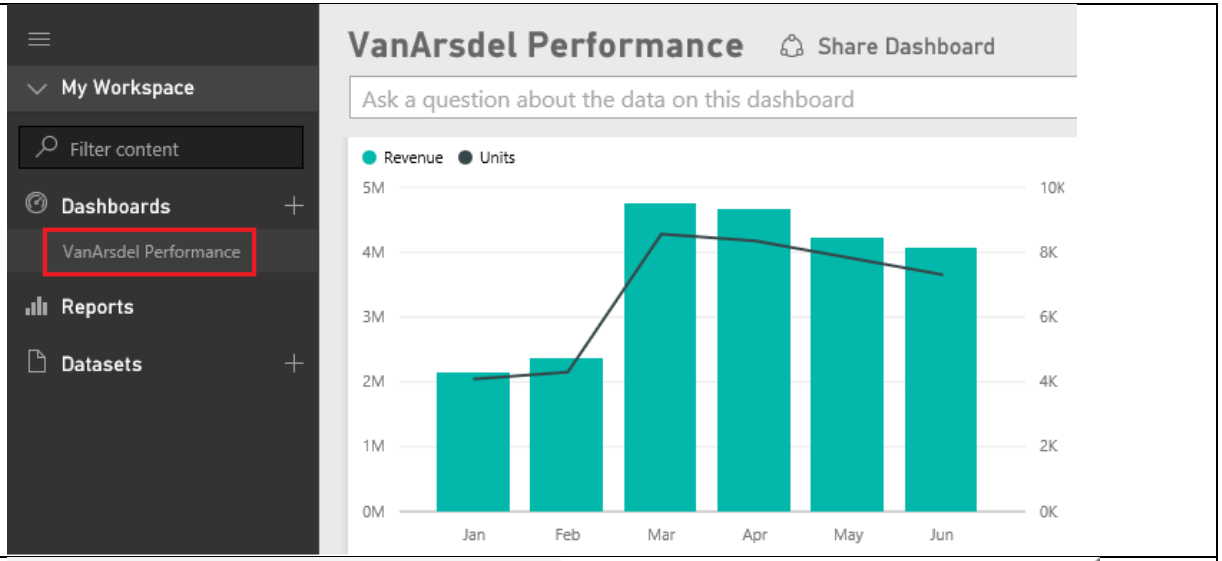


17. Click on VanArsdel Dashboard in Dashboards section

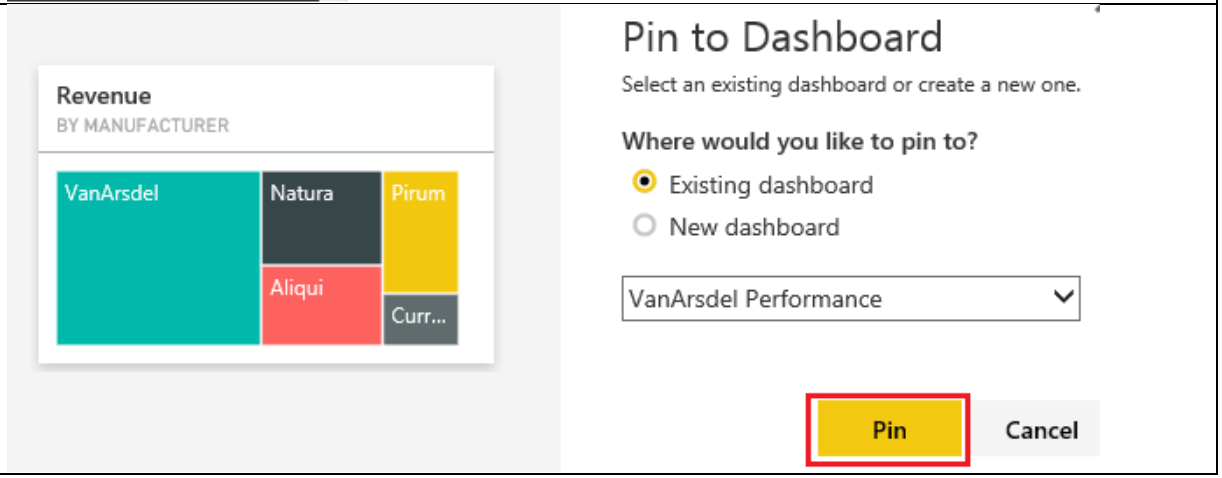
Notice Revenue and Units by MonthName chart element is available in the dashboard

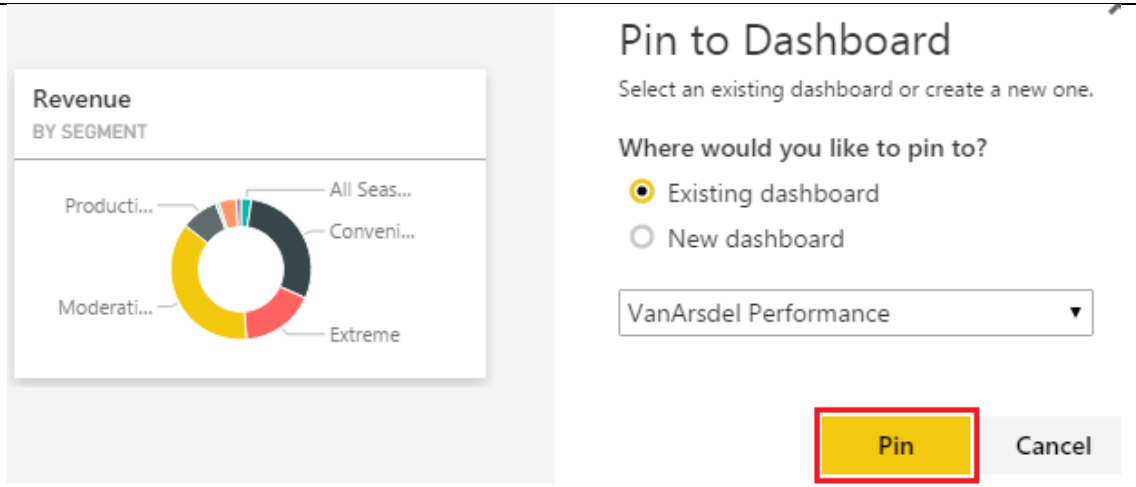
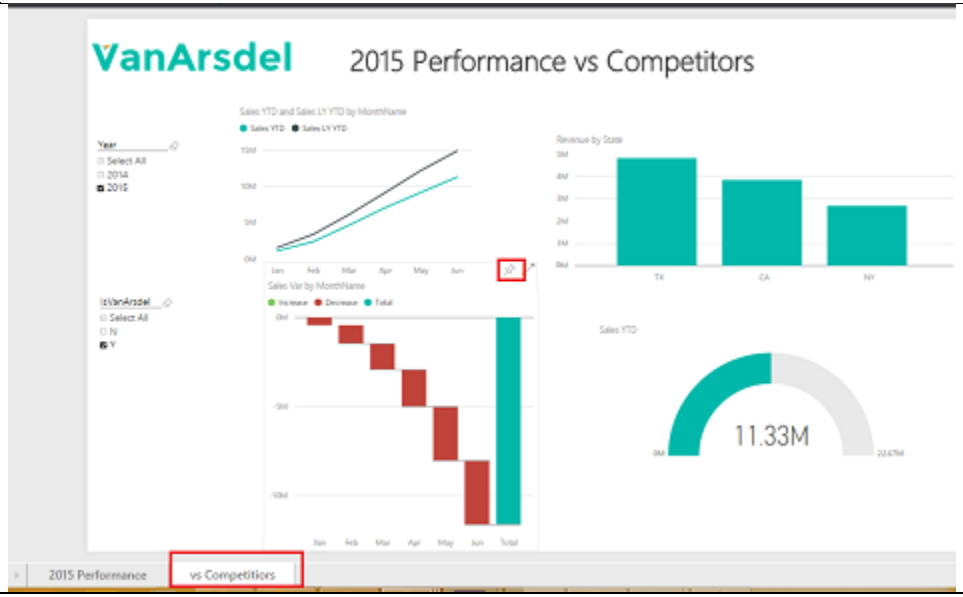
18. Click on one of the month columns in the dashboard

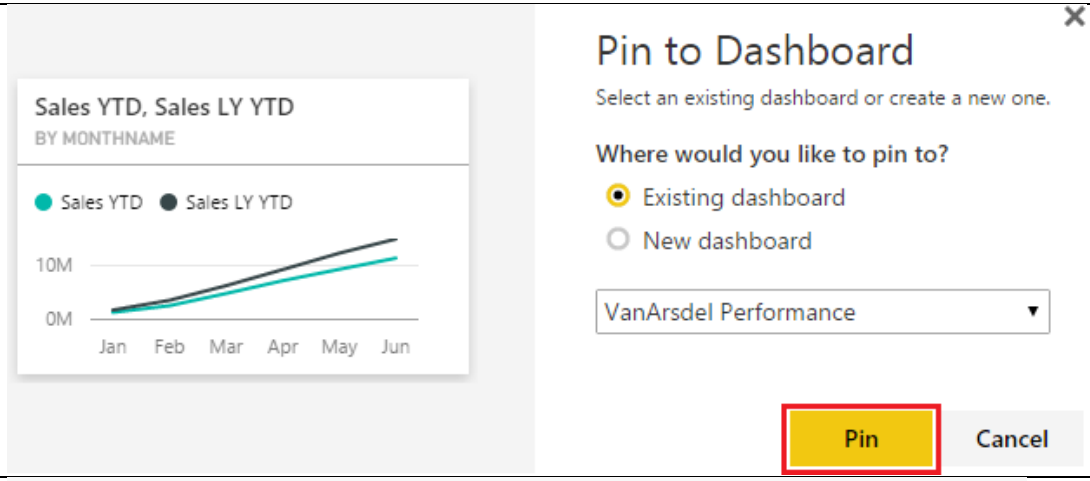
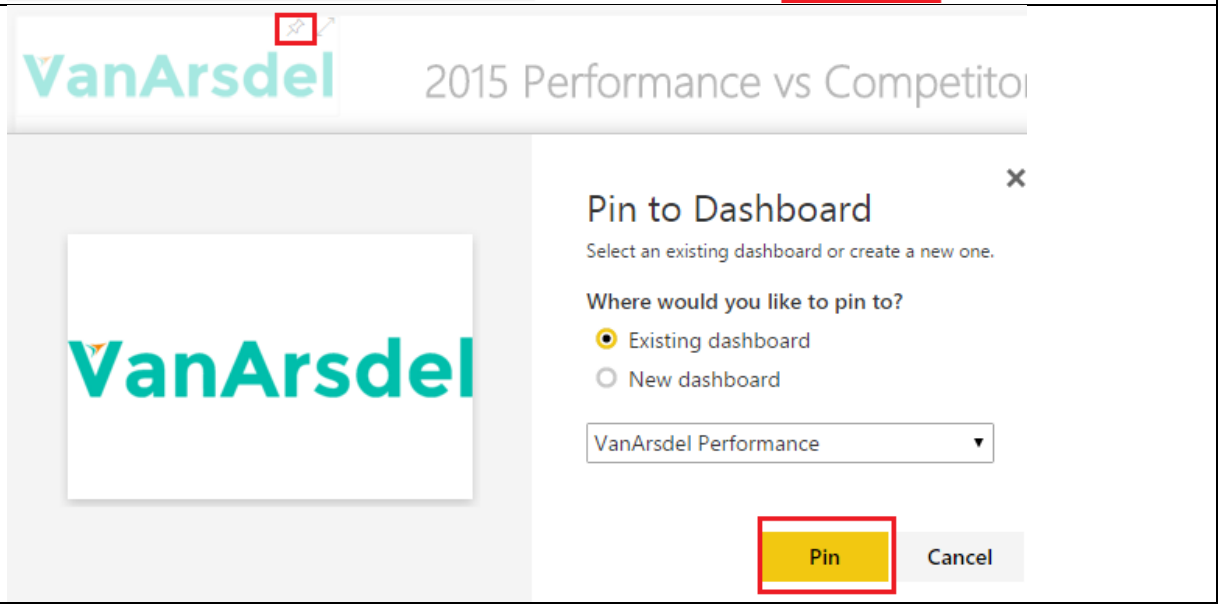
Notice the dashboard is not interactive, instead it navigates back to the report



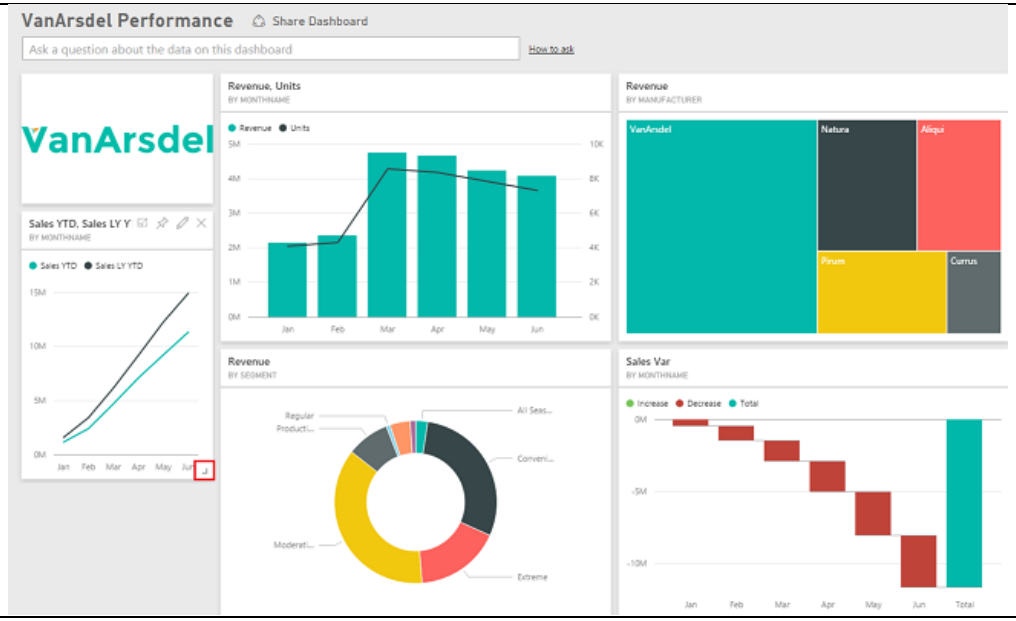
19. Hover over the Treemap chart and pin it to the VanArsdel Performance dashboard



20. Hover over the Donut chart and pin it to the VanArsdel Performance dashboard	
21. Navigate to vs Competitors page of the report CMO wants to compare VanArsdel's performance with that of the competitors for the year 2015 Notice there is a slicer called IsVanArsdel, if this slicer has a value "Y", it indicates that manufacturer is VanArsdel and "N" indicates competitors Key indicators the CMO wants to see on the dashboard is VanArsdel's performance this year and comparison of sales this year vs last year 22. Hover over Waterfall chart and pin the chart to existing VanArsdel Performance dashboard	

23. Hover over Line chart and pin the chart to the existing VanArsdel Performance dashboard	
24. Hover over VanArsdel logo and notice you have the ability to pin the logo as well 25. Click on the push pin and pin the logo to the existing VanArsdel Performance dashboard	

26. Navigate back to VanArsdel Dashboard
    Notice the newly added chart elements are available in the dashboard
27. Resize the dashboard elements by dragging the element in or out from the bottom right corner (as shown in the figure for the Sales YTD, Sales LY YTD tile)

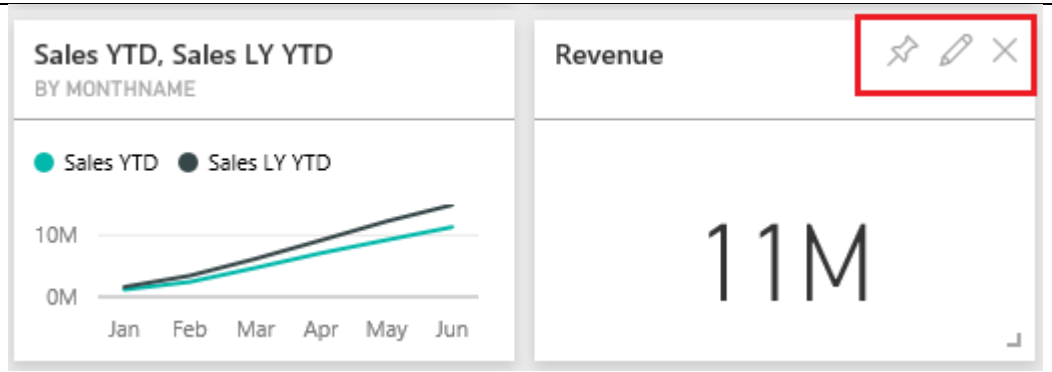


Power BI Service – Power Q & A

Notice on the top of the dashboard there is a text box which says "Ask a question about the data on this dashboard"

1. Enter VanArsdel Revenue for 2015 in the text box
   Notice Power BI Service is able to answer adhoc queries
2. Click on the Pin button on the top right corner, next to the text box
3. Pin it to existing VanArsdel Performance dashboard

4. Navigate back to VanArsdel Dashboard and notice the newly created ad hoc card chart element is available on the dashboard
   Hover over SalesRevenue chart element and notice on the top right corner there are options to delete, edit the chart element
   There is also an option to pin the chart element to another dashboard
5. Click on the Revenue chart element
   Notice it navigates back to the Q&A page
6. Navigate back to the dashboard by clicking on VanArsdel Performance under Dashboard section in the left panel

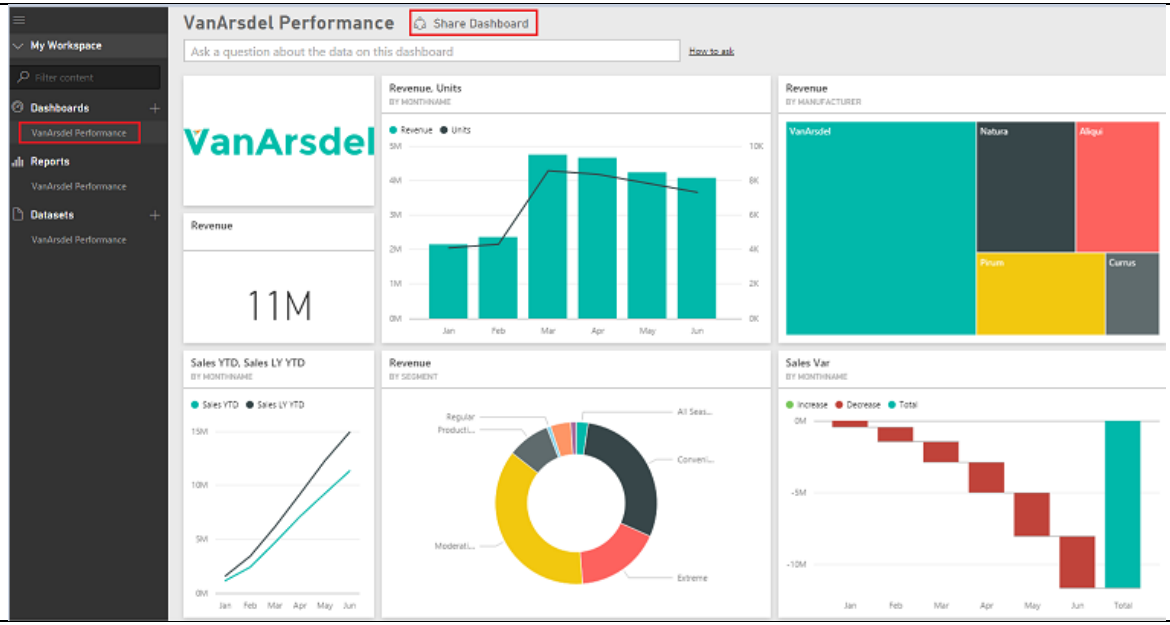


Power BI Service – Share Dashboard

1. Navigate back to VanArsdel Dashboard
2. Resize the tiles as desired. Notice the dashboard provides various sizing options
   The dashboard should look something like this

With this dashboard, CMO can compare VanArsdel's performance with the competitors, figure out VanArsdel's revenue and performance compared to last year in a glance

3. Notice on the top of the screen, above Q&A text box there is Share Dashboard option
4. This can be used to share the dashboard with individuals within your organization



References

Getting started: http://powerbi.com

Power BI Desktop: https://powerbi.microsoft.com/desktop

Power BI Mobile: https://powerbi.microsoft.com/en-us/mobile

Community site https://community.powerbi.com/

Power BI Getting started support page: https://support.powerbi.com/knowledgebase/articles/430814-get-started-with-power-bi

Support site https://support.powerbi.com/

Feature requests https://support.powerbi.com/forums/265200-power-bi

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