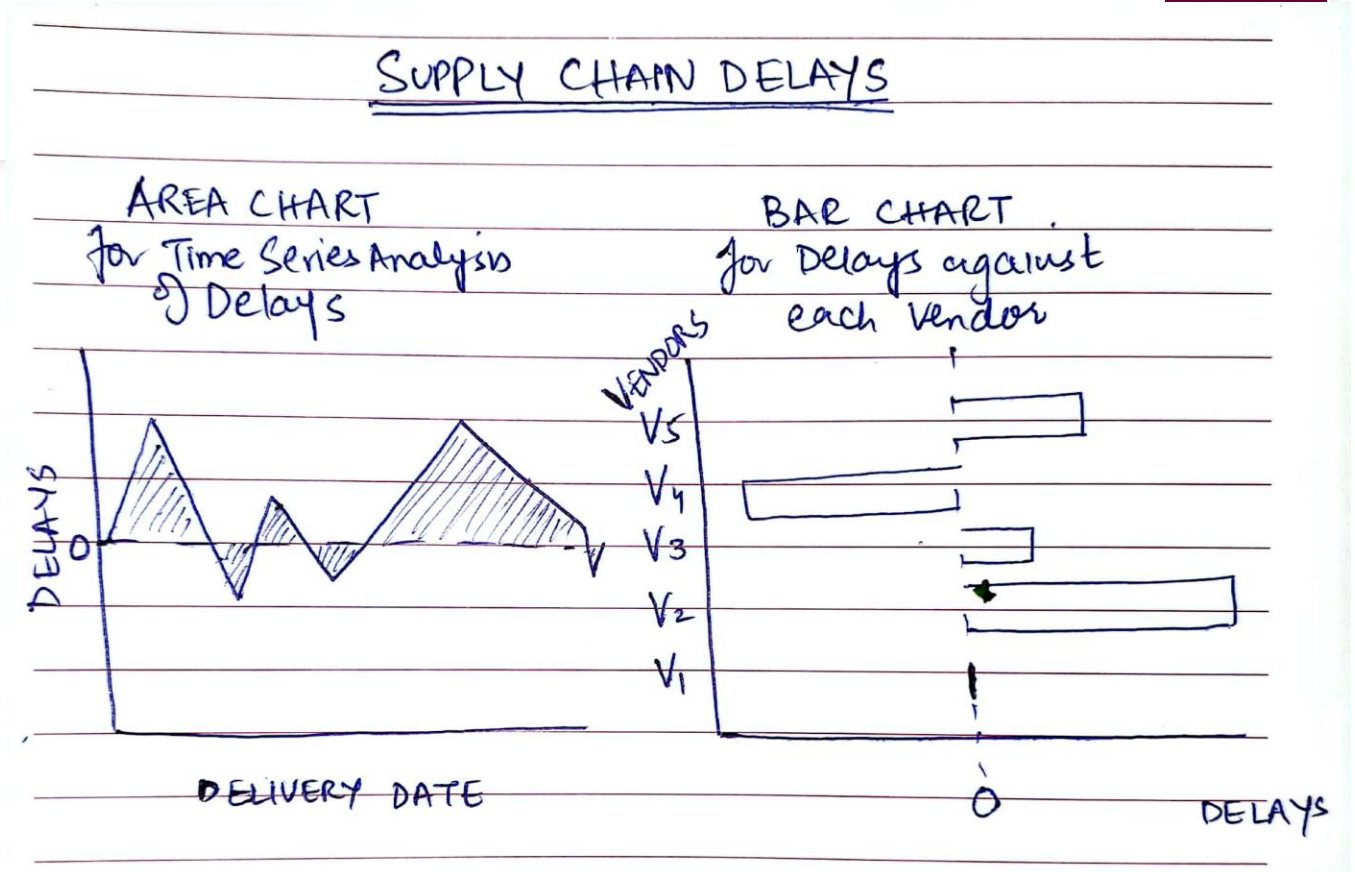


# Intro to PowerBI

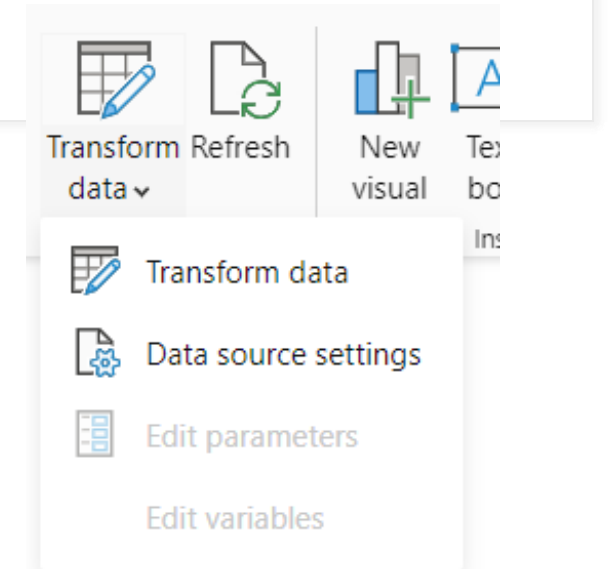
CS 459 Business Intelligence

# Storytelling on Paper



# Transformations made

- Deleted useless columns 1,2,3
- Rename columns:
  - Delivered to Client Date → Delivery Date
  - Item Description → Item Desc
  - Others as required
- Full Via Replace "From RDC" to "RDC"
- Trimmed the text in Manuf. Country column



# Create Hierarchies

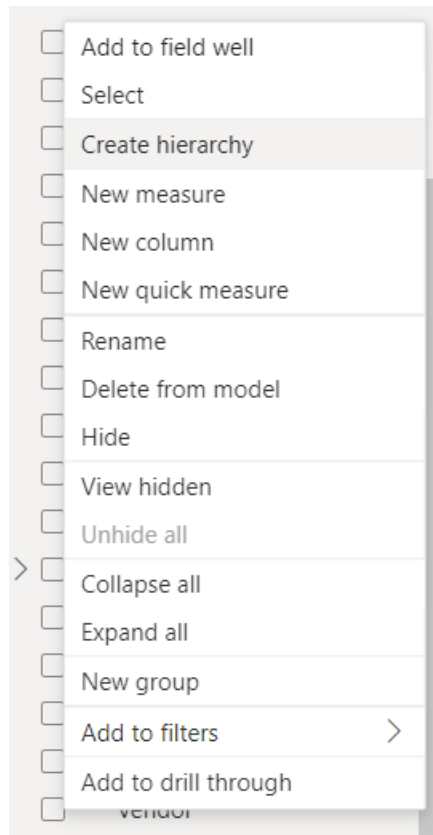
- Right click on the starting point of the hierarchy → Create Hierarchy
- Continue to add the required variables in the hierarchy.

# Identified Hierarchies

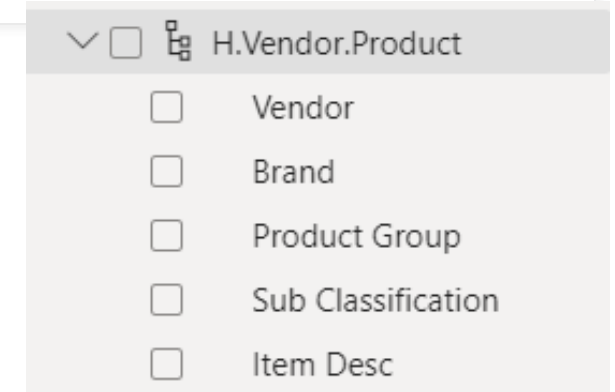
Create hierarchies in Power BI for easier accessibility in analysis.

H1	H2	H3	H4
H.Project	H.Vendor.Country	H.Vendor.Product	H.Dosage
Project code PQ# PO/SO#	Vendor Delivery Country Manuf. Country	Vendor Brand Product Group Sub classification Item Description	Dosage Form Dosage Molecule Test Type

# Creating H.Vendor.Product



- Right click on Vendor
- Create Hierarchy
- Name it as "H.Vendor.Product"
- Go to the next level, add it to this hierarchy.



Note: You can name it as you like, this naming convention allows for better readability and ease of access.

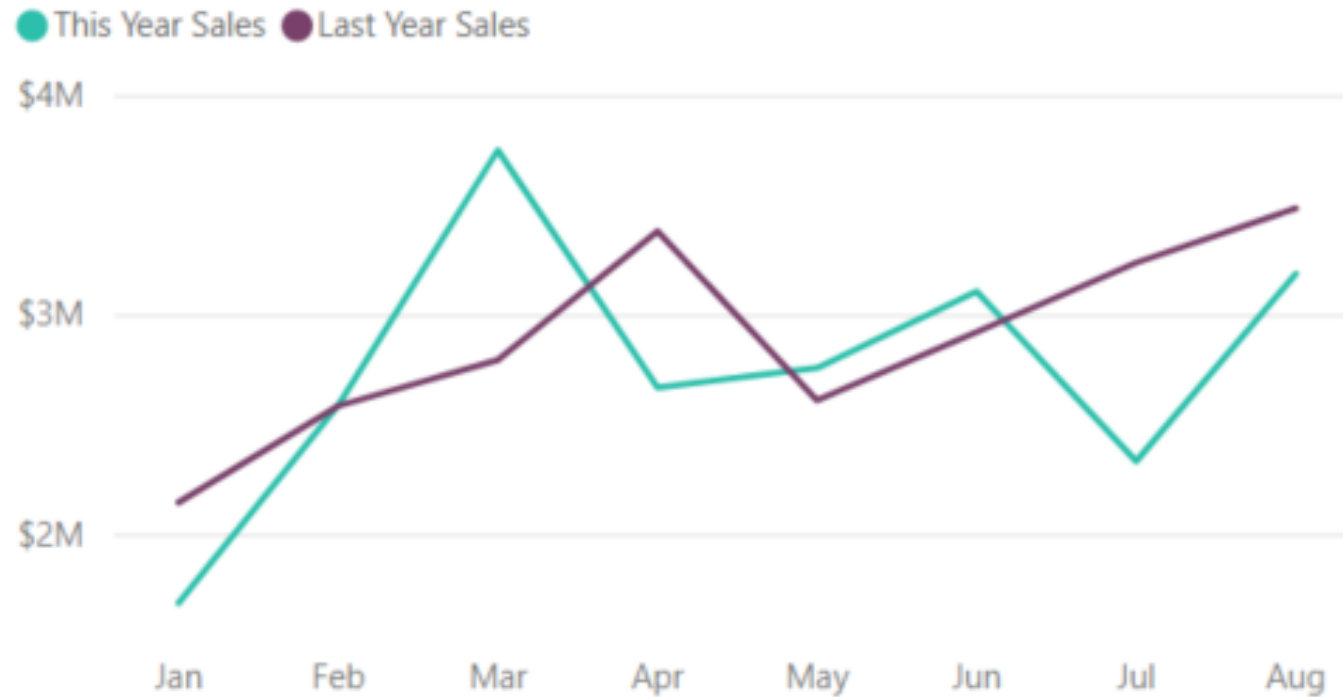
# Create Hierarchies

Proceed to create the other 3 hierarchies

H1	H2	H3	H4
H.Project	H.Vendor.Country	H.Vendor.Product	H.Dosage
Project code PQ# PO/SO#	Vendor Delivery Country Manuf. Country	Vendor Brand Product Group Sub classification Item Description	Dosage Form Dosage Molecule Test Type

# Line charts

This Year Sales and Last Year Sales by FiscalMonth



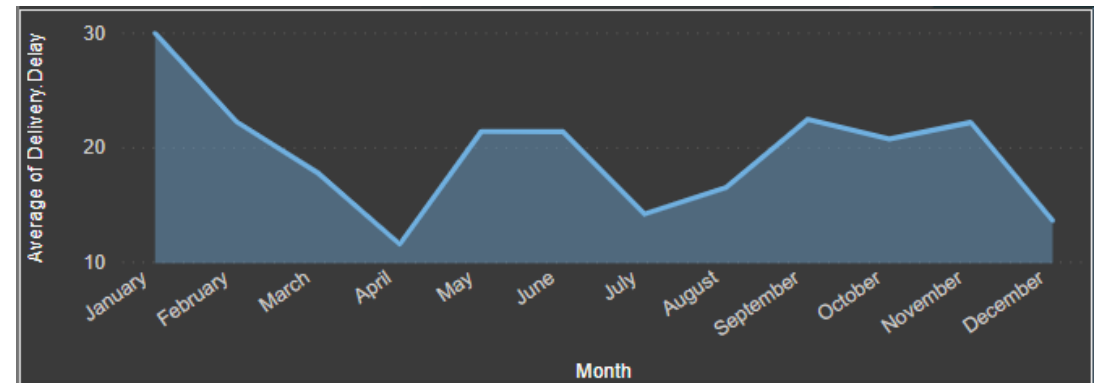
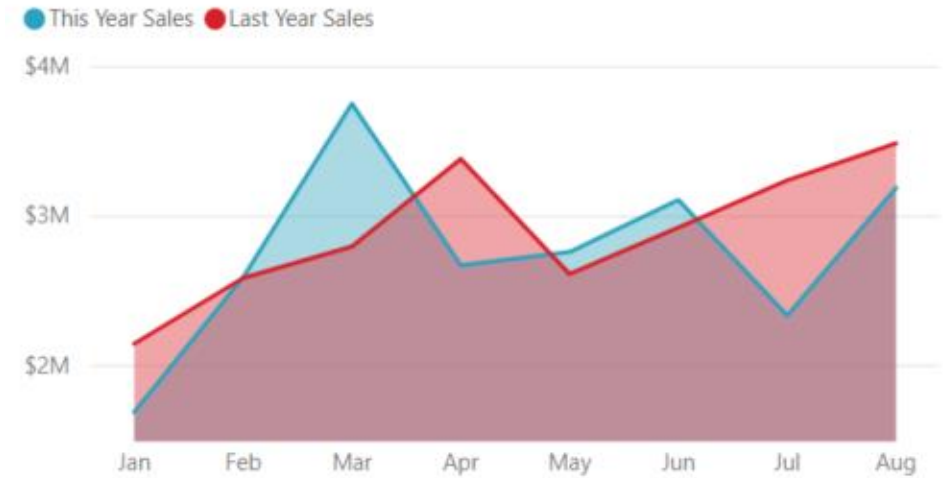
- Line charts emphasize the overall shape of an entire series of values, usually over time.



# Area charts: Basic (Layered) and Stacked

- The basic area chart is based on the line chart with the area between the axis and line filled in.
- Area charts emphasize the magnitude of change over time, and can be used to draw attention to the total value across a trend.
- For example, data that represents profit over time can be plotted in an area chart to emphasize the total profit.

This Year Sales and Last Year Sales by FiscalMonth

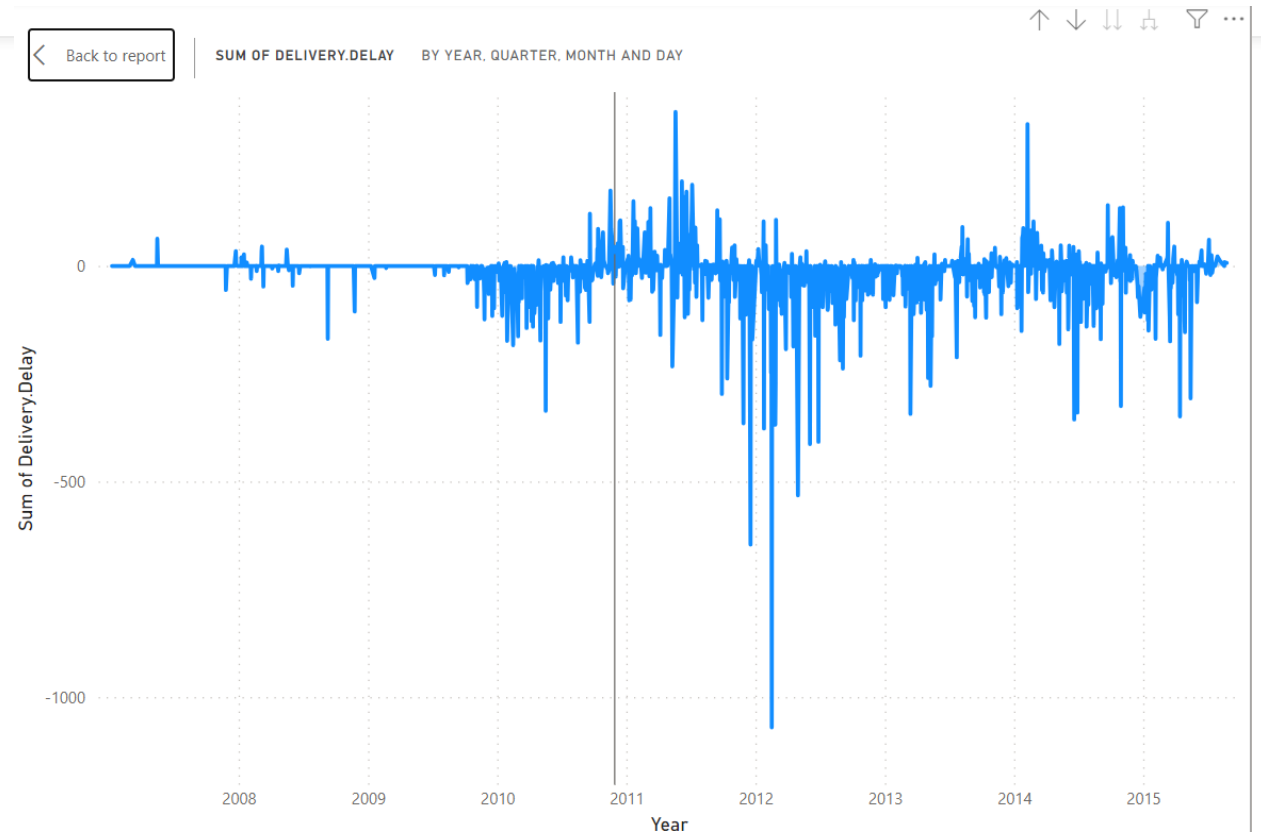


# Area / Line - Example

## Time Series Trends of Delivery Delay

Y- axis: Sum of Delivery Delay  
X-axis: Delivery Date

**Sum** or **Average** or **Count**?

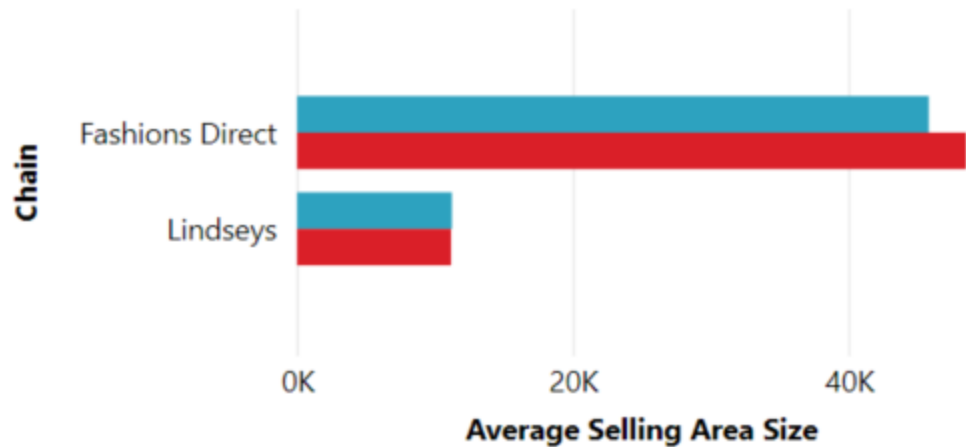


# Bar and column charts

- Bar charts are the standard for looking at a specific value across different categories.

Average Selling Area Size by Store Type, Chain

Store Type ● New Store ● Same Store



Total Sales Variance % by FiscalMonth



# Bar / Column - Example

## Delays against Vendor

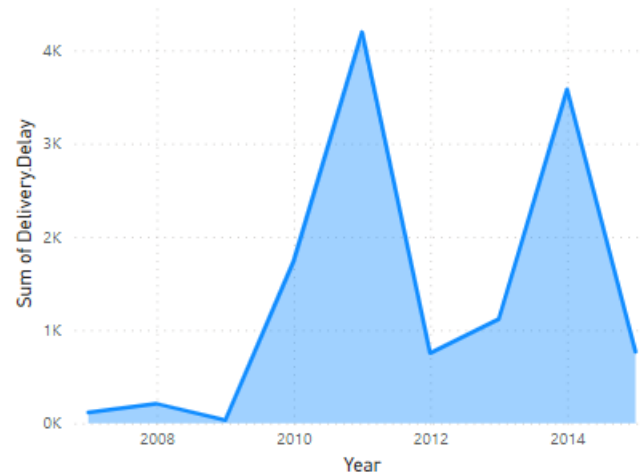
Y- axis: H.Vendor.Product

X-axis: Sum of Delivery Delay

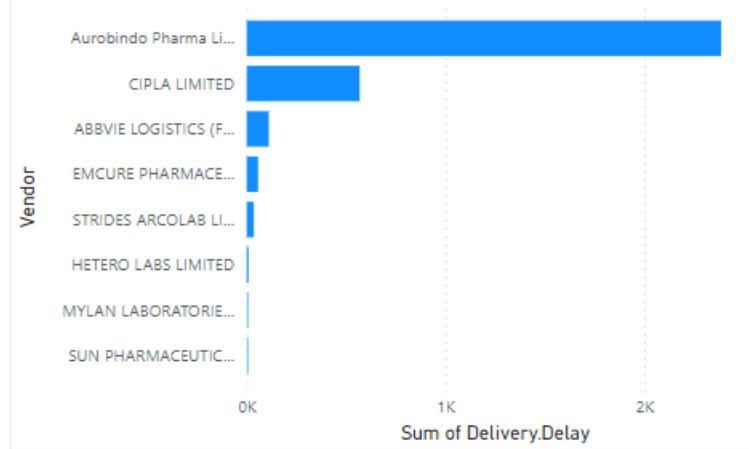


# Page level filter for Delivery Delay

Sum of Delivery.Delay by Year



Sum of Delivery.Delay by Vendor



**Filters**

Search

Filters on this page

**Delivery.Delay**  
is greater than 0

Filter type ⓘ  
Advanced filtering

Show items when the value  
is greater than

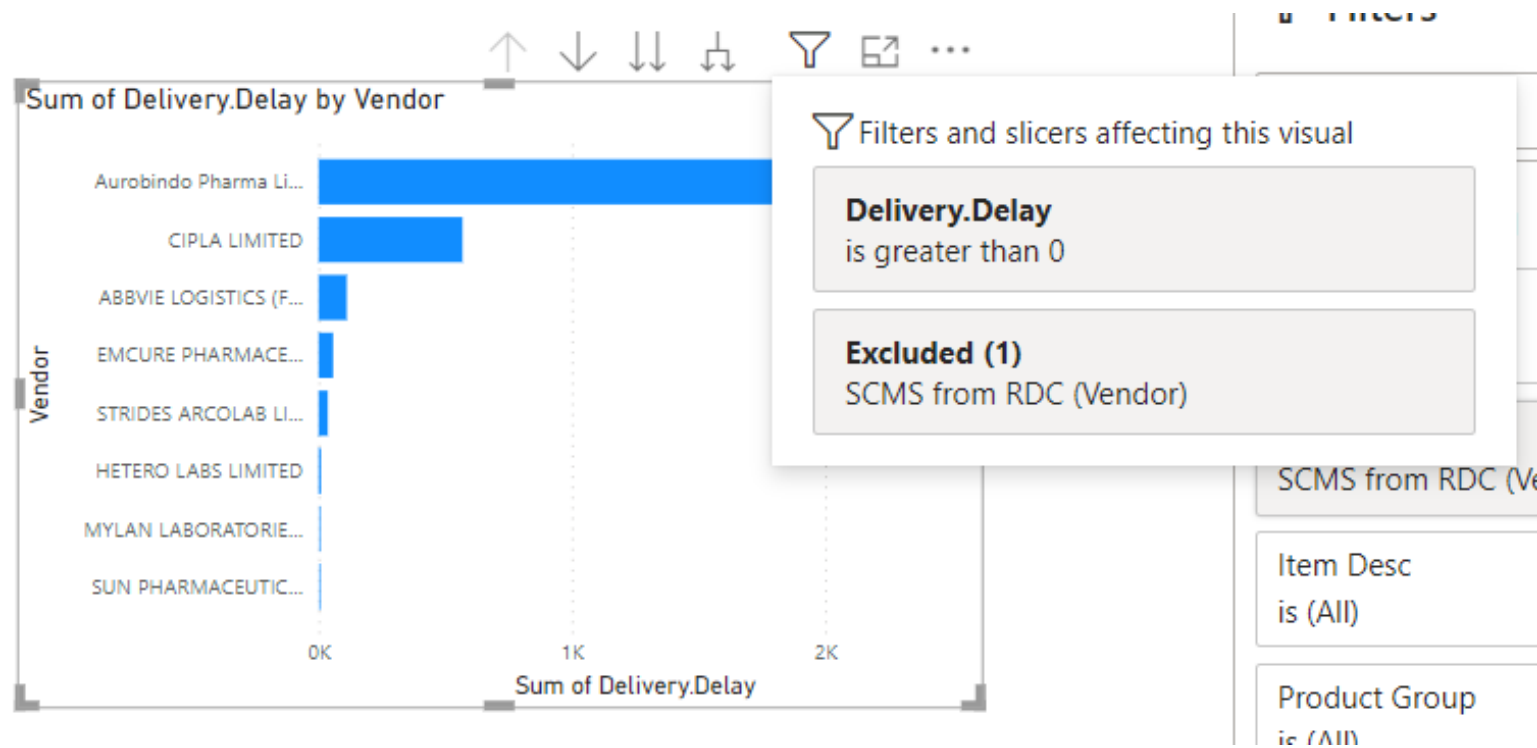
0

☒ And ☐ Or

Apply filter

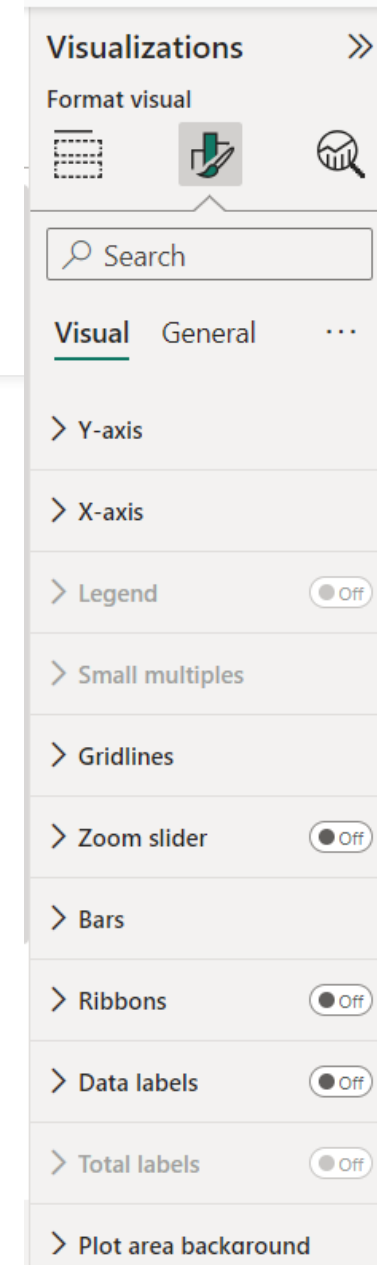
Add data fields here

# View filters on a specific chart



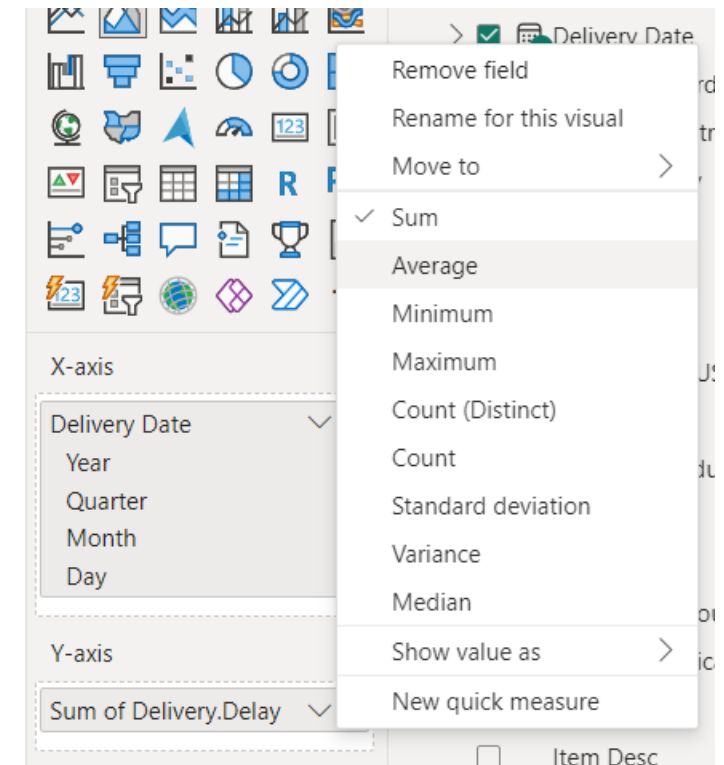
# Format Tools Overview

- Explore different options to change the design and color of your chosen visual.



# Other Aggregates

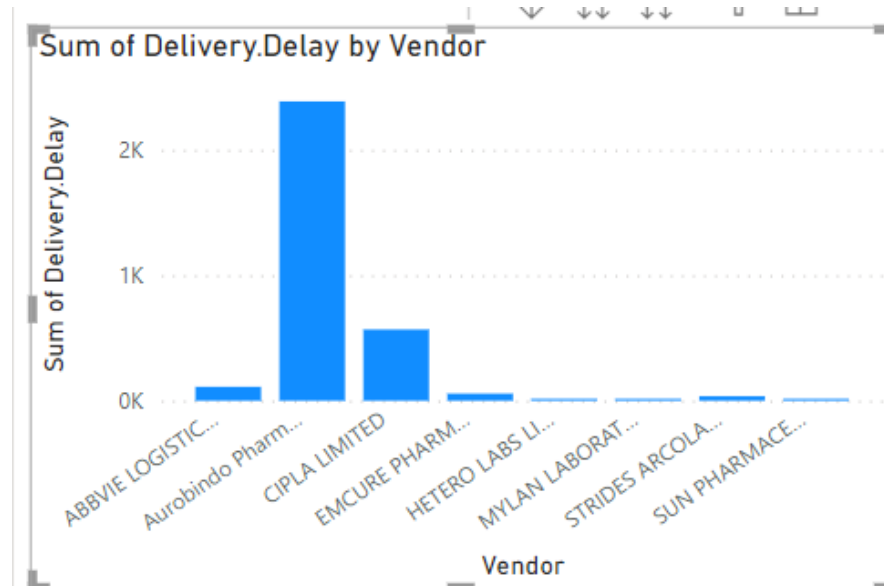
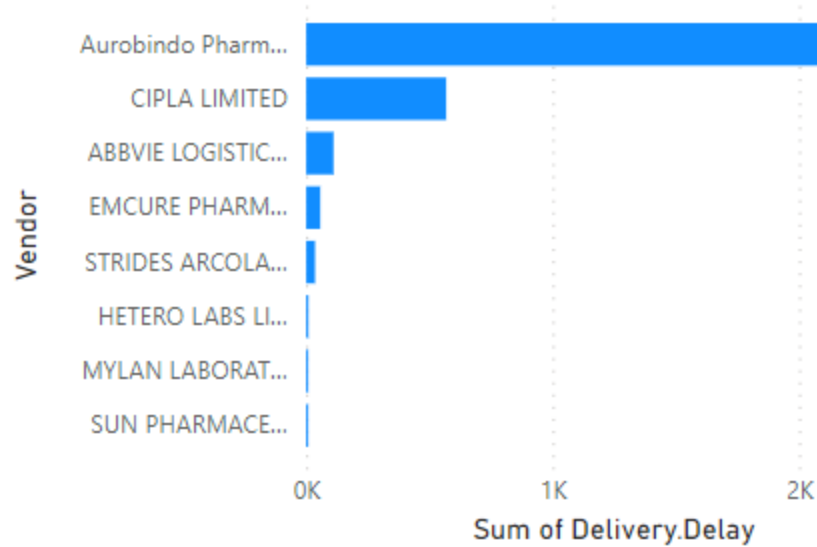
- View Average delays and Count of delays





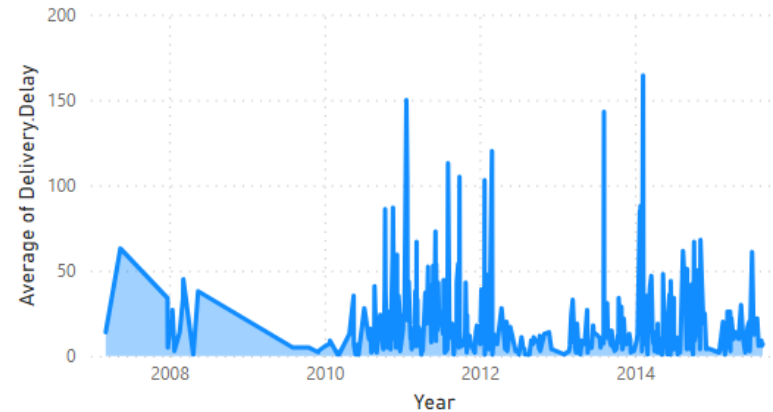
# Bar Vs Column

Sum of Delivery.Delay by Vendor

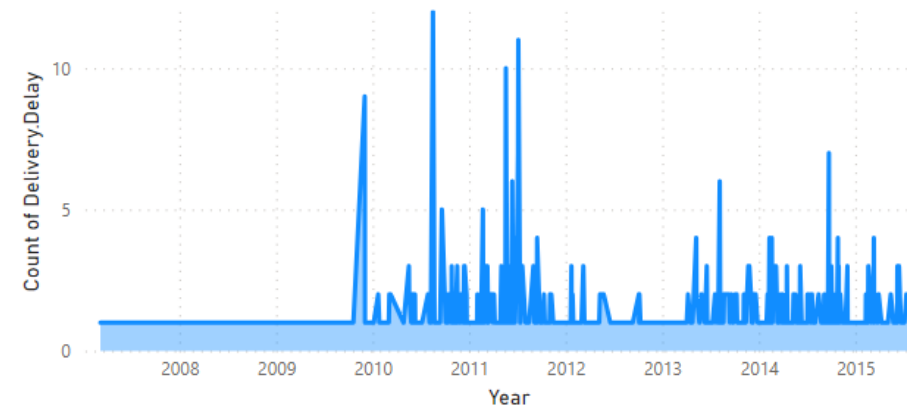


# Average and Counts

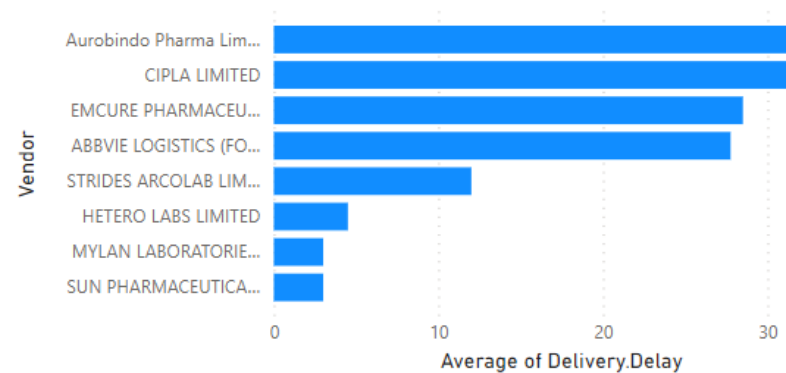
Average of Delivery.Delay by Year, Quarter, Month and Day



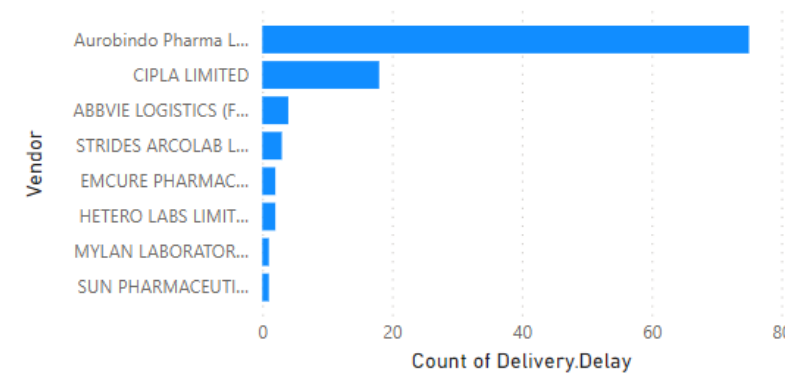
Count of Delivery.Delay by Year, Quarter, Month and Day



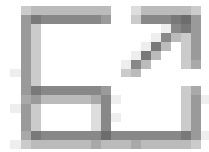
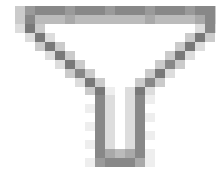
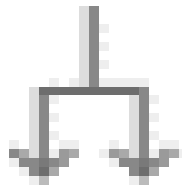
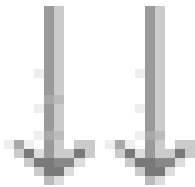
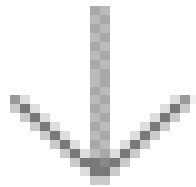
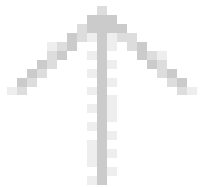
Average of Delivery.Delay by Vendor












Count of Delivery.Delay by Vendor



# Drill down features



<b>Drill Up</b>	<b>Click to Turn On Drill Down</b>	<b>Next Level in Hierarchy</b>	<b>Expand all down one level in hierarchy</b>	<b>Filters and slicers</b>	<b>Focus Mode</b>
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Drill on Rows         

Region	Central		East		West		Total	
Sales Stage	Opportunity Count	Revenue	Opportunity Count	Revenue	Opportunity Count	Revenue	Opportunity Count	Revenue
Lead	102	\$507,574,417	114	\$473,887,837	52	\$256,159,114	268	\$1,237,621,368
Qualify	29	\$111,715,461	50	\$195,692,154	15	\$52,442,363	94	\$359,849,978
Solution	29	\$100,743,789	30	\$134,347,170	15	\$53,441,501	74	\$288,532,460
Proposal	14	\$46,722,869	13	\$59,970,924	10	\$43,032,669	37	\$149,726,462
Finalize	5	\$23,302,246	5	\$30,696,428	4	\$21,176,185	14	\$75,174,859
<b>Total</b>	<b>179</b>	<b>\$790,058,782</b>	<b>212</b>	<b>\$894,594,513</b>	<b>96</b>	<b>\$426,251,832</b>	<b>487</b>	<b>\$2,110,905,127</b>

## Matrix and Tables

- The matrix visual is a type of table visual that supports a stepped layout. A table supports two dimensions, but a matrix makes it easier to display data meaningfully across multiple dimensions. Often, report designers include matrixes in reports and dashboards to allow users to select one or more element (rows, columns, cells) in the matrix to cross-highlight other visuals on a report page.

# Cards

030-Kids

\$5.30

Average Unit Price

- Multi row cards display one or more data points, one per row.

104

Total Stores

- Single number cards display a single fact, a single data point.

# Create some cards

645	7.66M	156.60M	21M	5.08K
Count of Delivery.Delay	Sum of Freight Cost (USD)	Sum of Sales	Sum of Line Item Quantity	Average of Weight (Kilograms)

## View some KPIs

Count of Delivery Delay

Sum of Freight Cost

Sum of Sales

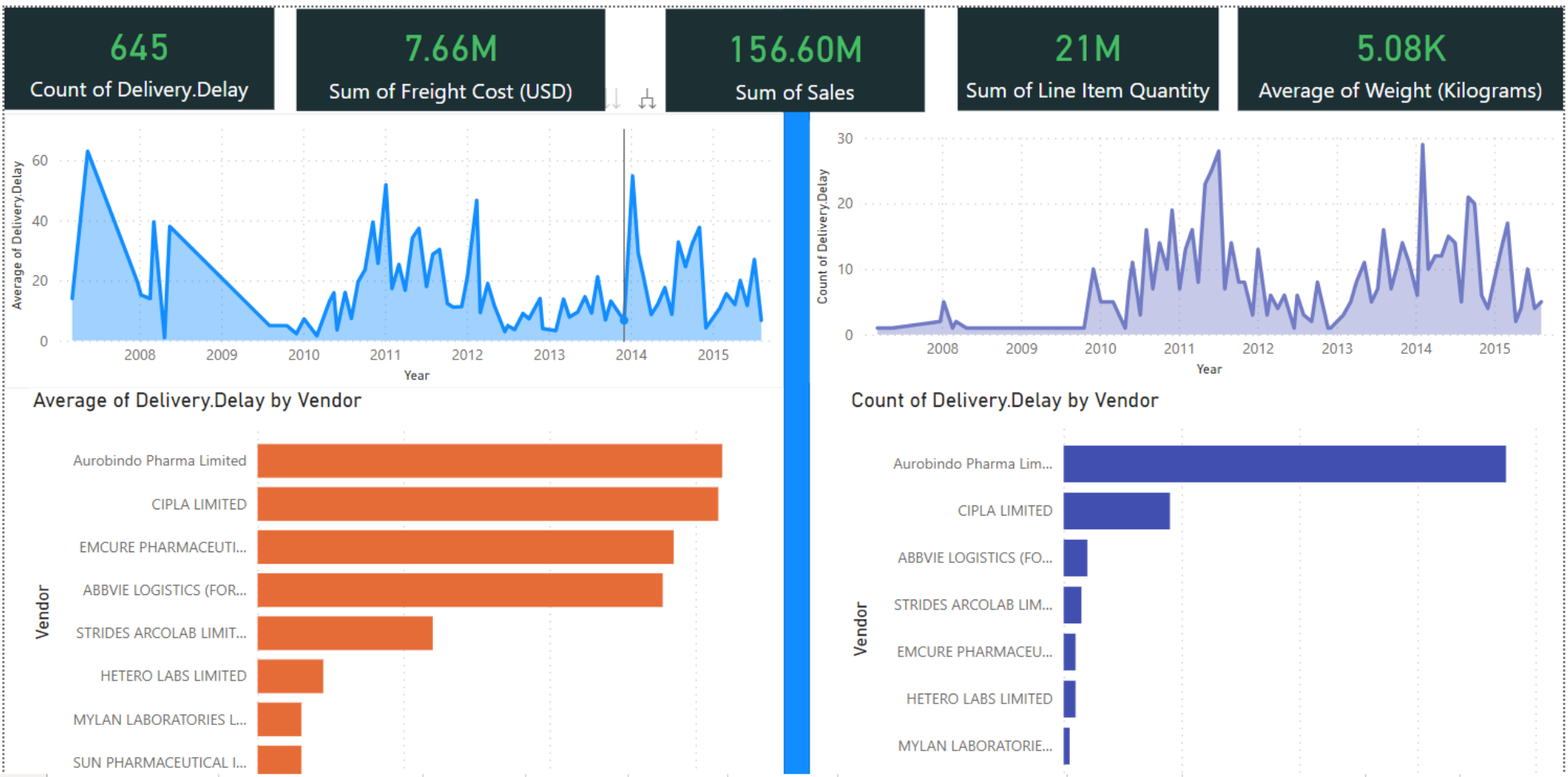
Sum of Line Item Quantity

Average Weight

# Setup a Dashboard

Give a single perspective into the problem

# Dashboard





# Add another page...

Multiple pages  
turns this into a  
report.

Create a story!



# Scatter plot

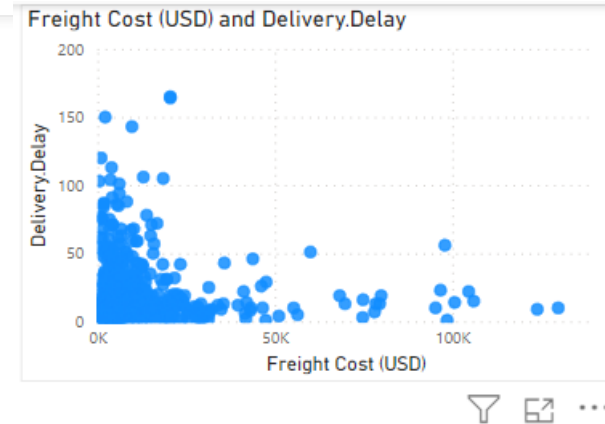
- A scatter chart shows the relationship between two numerical values.
- A bubble chart replaces data points with bubbles, with the bubble size representing a third data dimension.

# Scatter - Example

- Ensure filter on page.
- Our analysis is looking at delays which are values greater than 0.

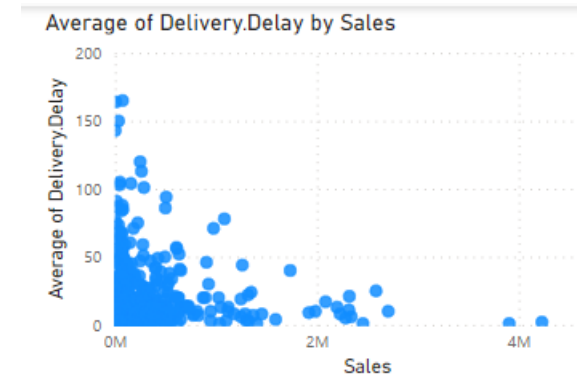
## Freight Cost Vs Delay

Y- axis: Delivery Delay  
X-axis: Freight Cost  
Right click - Don't summarize



## Sales Vs Average Delay

Y- axis: Average Delivery Delay  
X-axis: Sales



# Treemap

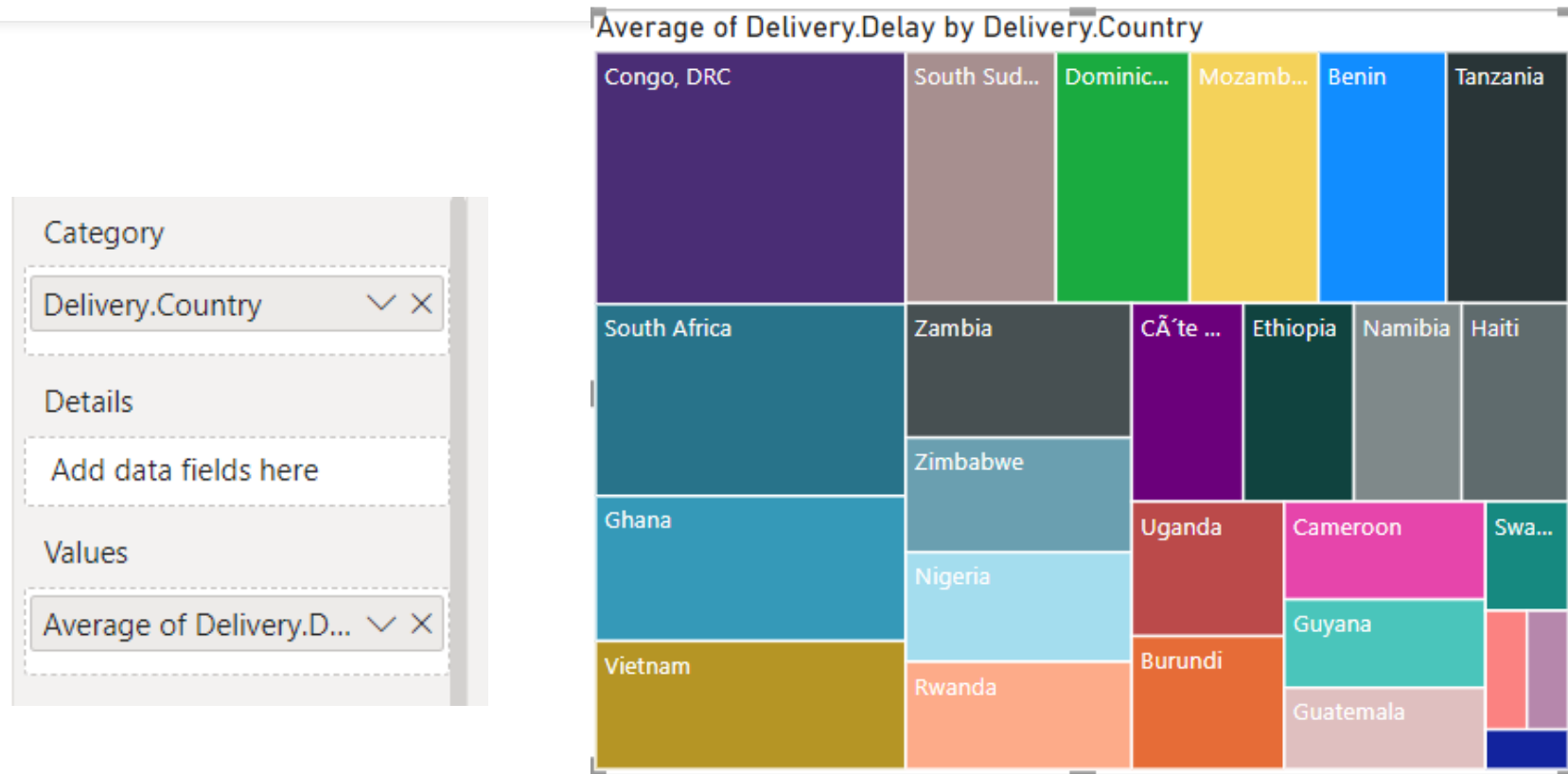


- Treemaps display hierarchical data as a set of nested rectangles. Each level of the hierarchy is represented by a colored rectangle called a branch node. Each branch contains smaller rectangles called leaf nodes.
- Power BI uses the measure value to determine the rectangle size for branches and leaves.
- The rectangles are arranged by size with the largest branch node at the top left and the smallest branch at the bottom right. The arrangement of the leaf nodes within each branch follows the same order.

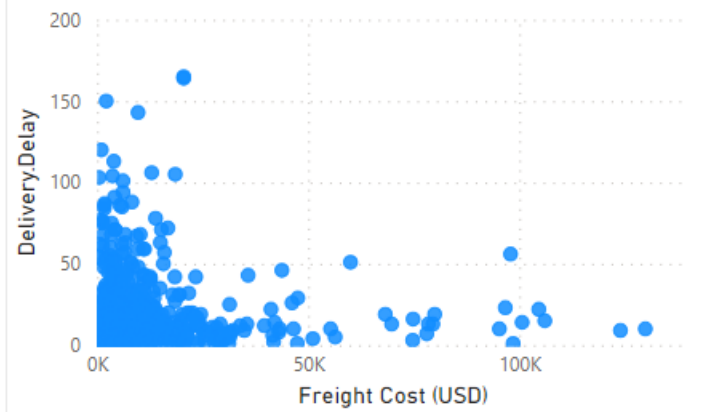
— The treemap represents the product sales hierarchy by clothing type and then by manufacturer.



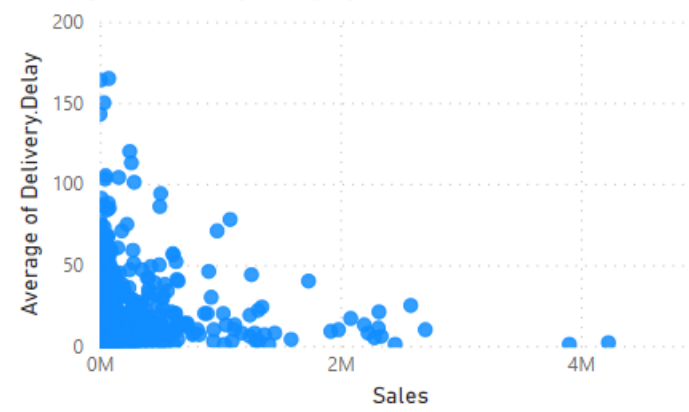
# Test out on Country Data



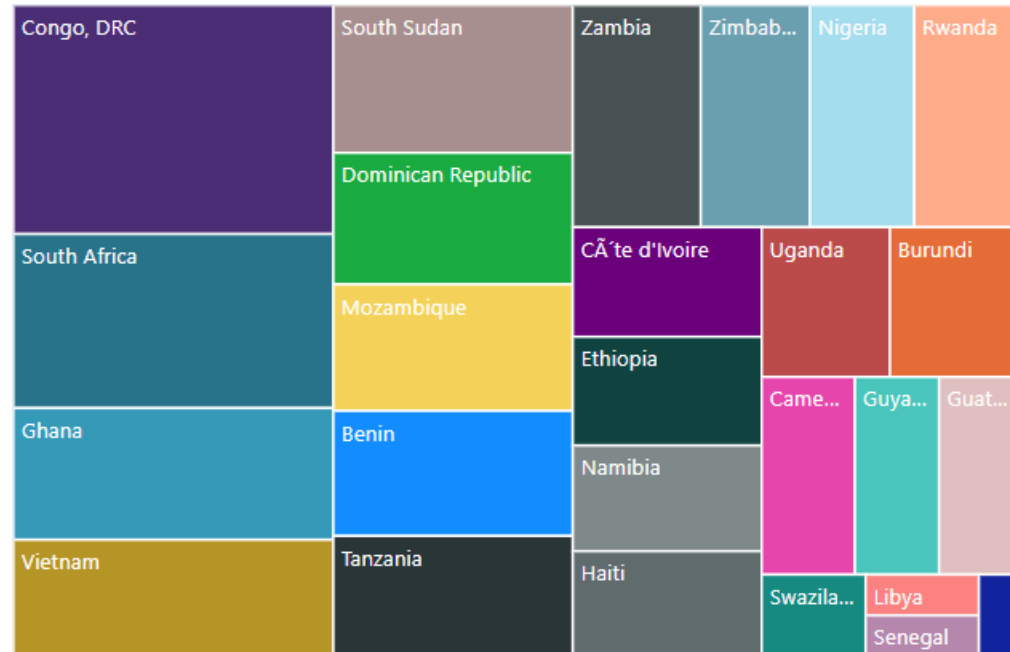
### Freight Cost (USD) and Delivery.Delay



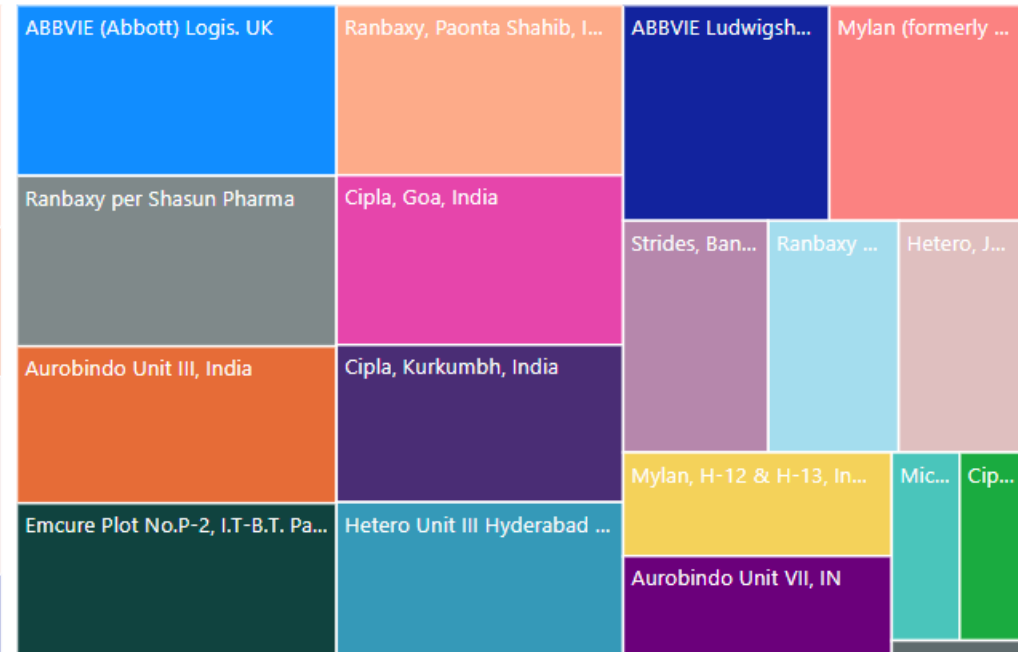
### Average of Delivery.Delay by Sales



### Average of Delivery.Delay by Delivery.Country



### Average of Delivery.Delay by Manuf.Country



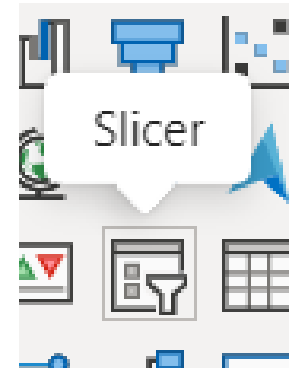
# Slicers

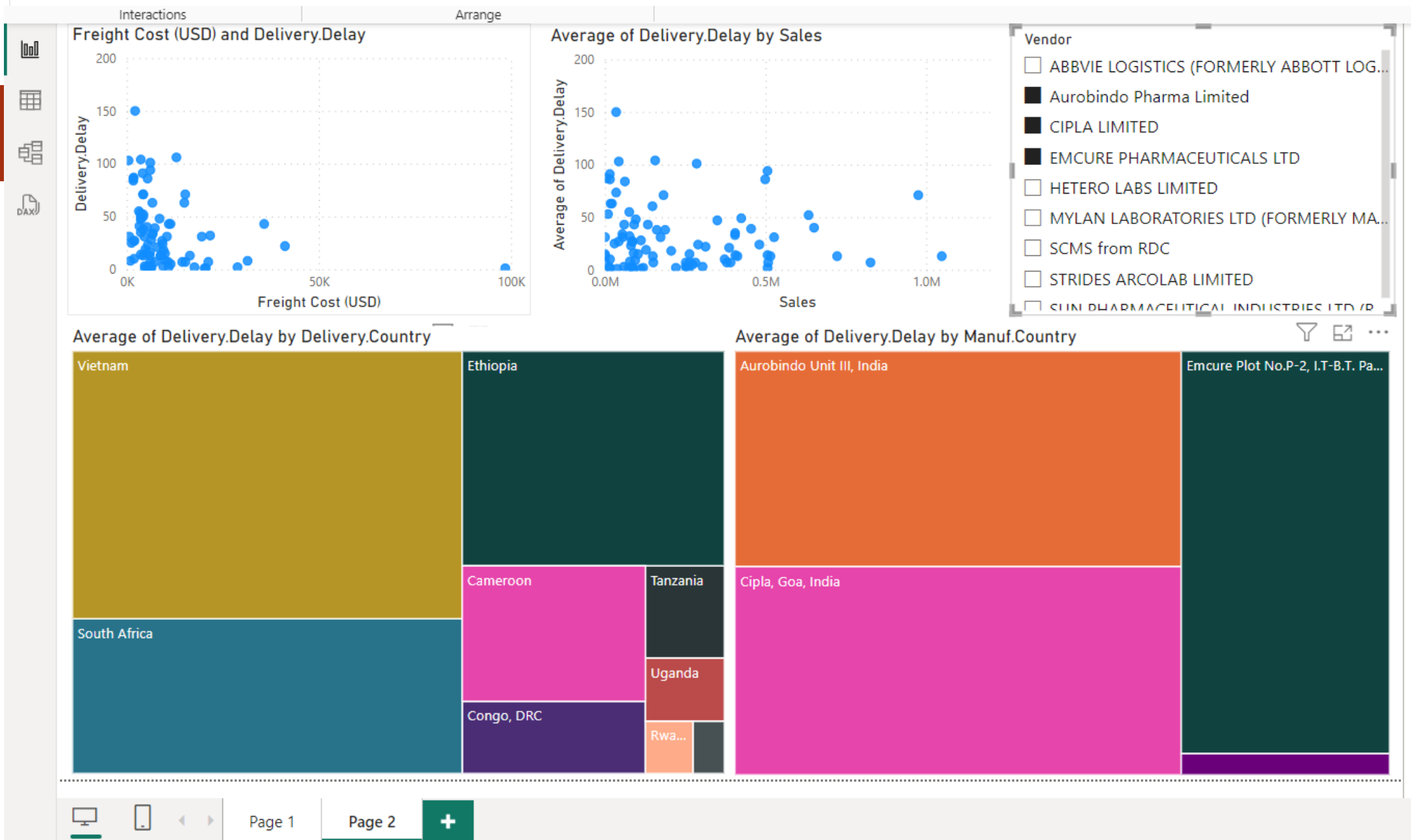
## Slicer

Vendor

We have established some vendors of interest from the previous page. We can select those to gain a better picture.

Press Ctrl Key and click to select multiple options.







# Create a Title Page

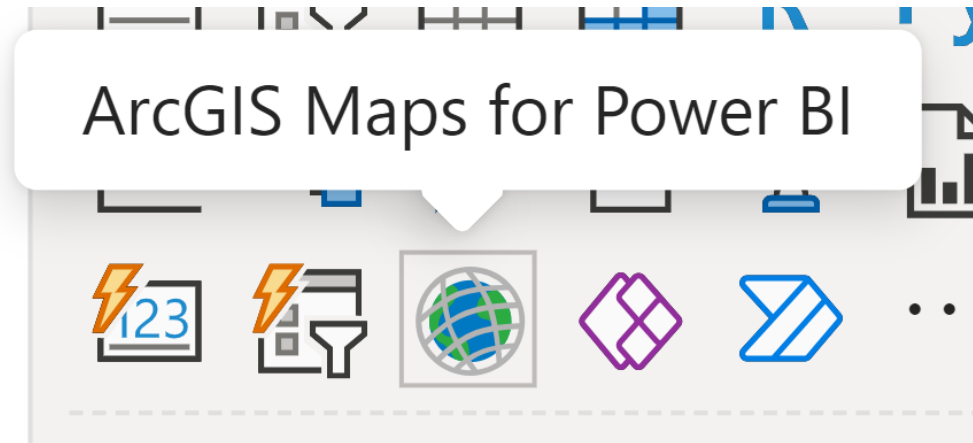
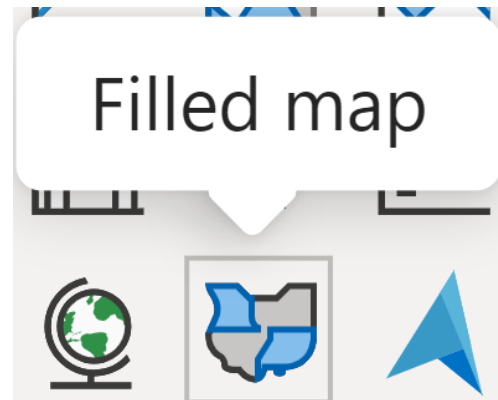
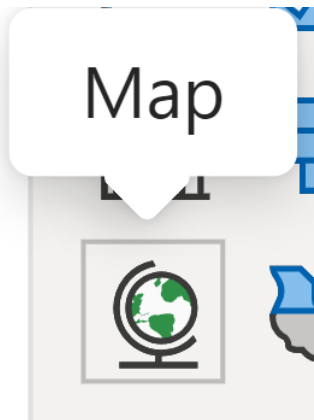
- Add buttons, text boxes, shapes and images.
- Add actions to form an interactive report



The screenshot displays the IBA report editor interface. The main workspace shows a title page design with a background image of a hand holding a white pill next to a glowing green network sphere. The title 'Supply Chain Case Study' is prominently displayed in a large, white, sans-serif font. Below the title, a 'Problem Statement' box contains the text: 'Analysis of the Efficiency of Supply chain of a Pharmaceutical Company'. The interface includes a left sidebar with icons for various report elements, a top navigation bar with page tabs (Page 3, Page 1, Page 2, and a '+' button), and a right sidebar with a 'Format button' and a 'Filters' panel. The 'Format button' panel is open, showing settings for a button, including 'Type' (Page navigation), 'Bookmark' (None), 'Destination' (Page 1), 'Web URL', and 'Tooltip' (On). A 'Reset to default' button is also visible at the bottom of the format panel.

# Try it Yourself

# A geographical perspective - Maps



Map



Filled map



ArcGIS Maps for Power BI



## Map

Location:  
Delivery  
Country

Bubbles:  
Delay

## Filled Map

Location:  
Delivery Country

Legend:  
Delay

## ArcGIS

Location:  
Delivery Country

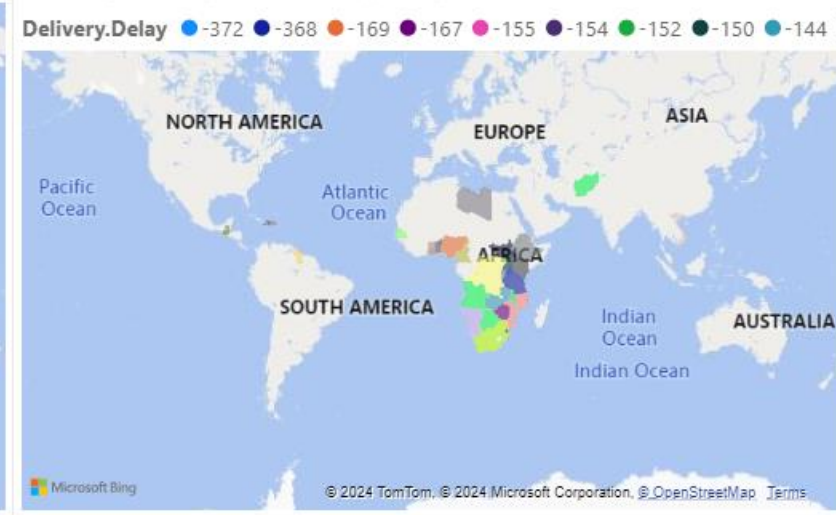
Color or Size: (Try both)  
Delay

Enable ArcGIS from:  
Options and Settings → Options →  
Global → Security → Check the 2 maps  
related boxes

Sum of Delivery.Delay by Delivery.Country



Delivery.Country and Delivery.Delay



Delivery.Country and Delivery.Delay

