



Reports

Agenda

- Interactive Reports
 - ❑ Bookmarks, Drilldown & Drillthrough
 - ❑ Themes
 - ❑ Custom visuals
 - ❑ Mobile Devices Reports
 - ❑ Publishing Reports

Reports

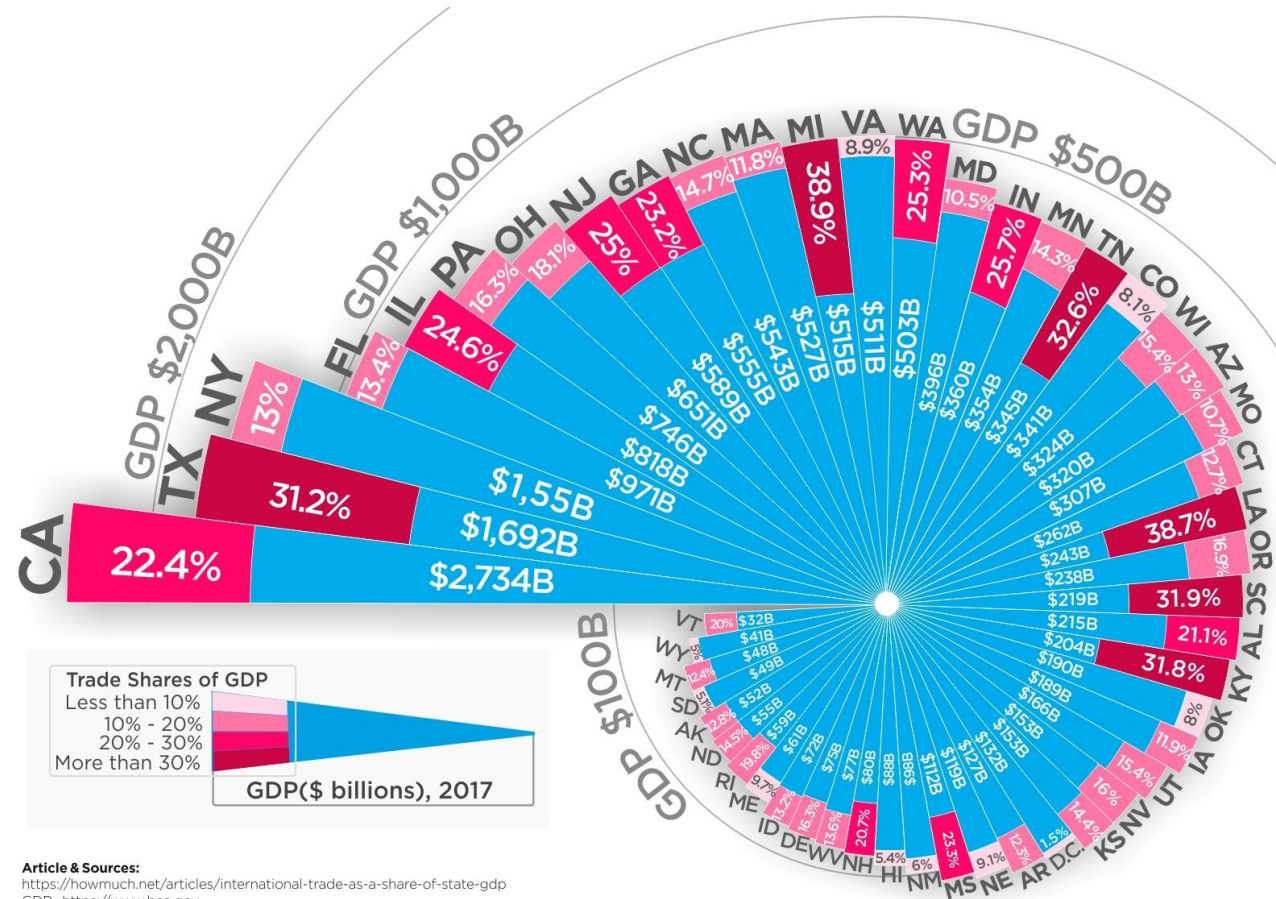
- Power BI Desktop contains one report
 - Report can contain multiple pages
 - Report pages contain visuals
 - Report can contain data from multiple sources (Except for SSAS Model)
 - Power BI allows only 1 SQL Server Analysis Services (SSAS) connection



Your data has to tell a story and visuals have to be attractive

Building Reports

International Trade as a Share of State GDP (2017)



- Title doesn't correspond with data
- Legend doesn't match the data
- Different color shades

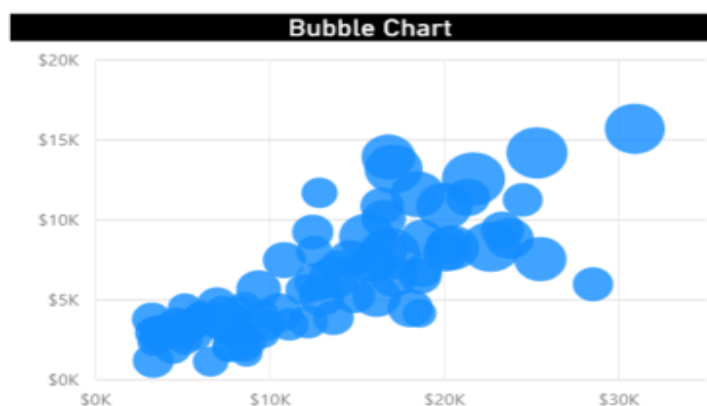
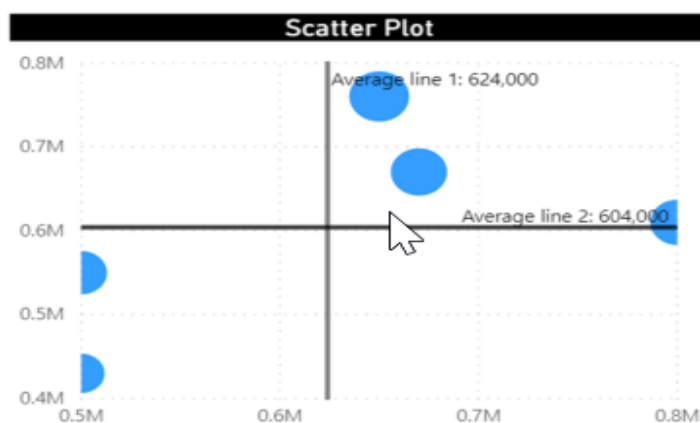
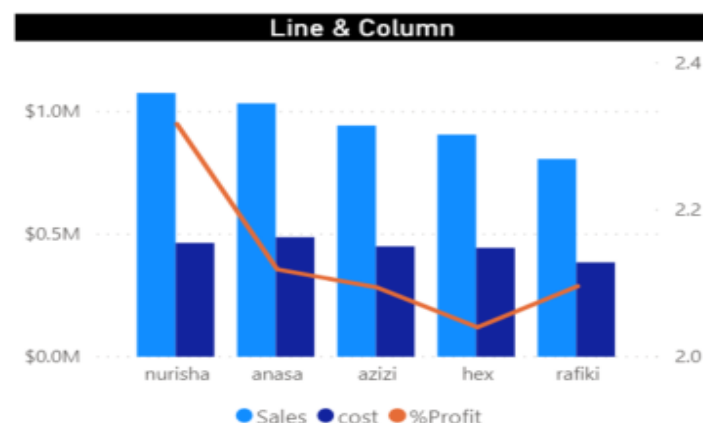
Common Visuals

Ranking – use where an item's position in an ordered list is important



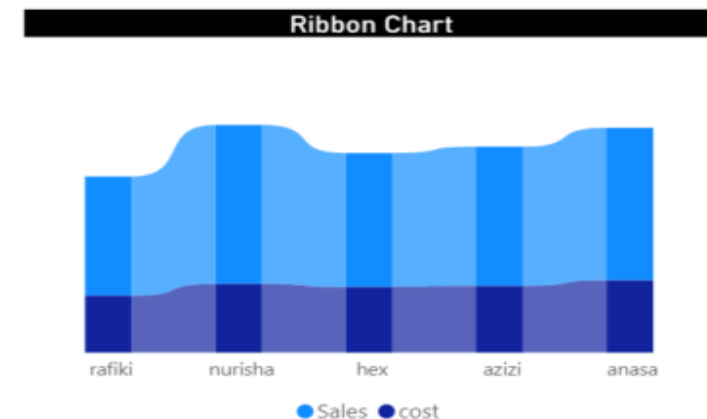
Common Visuals

Correlation – relationship between two or more variables



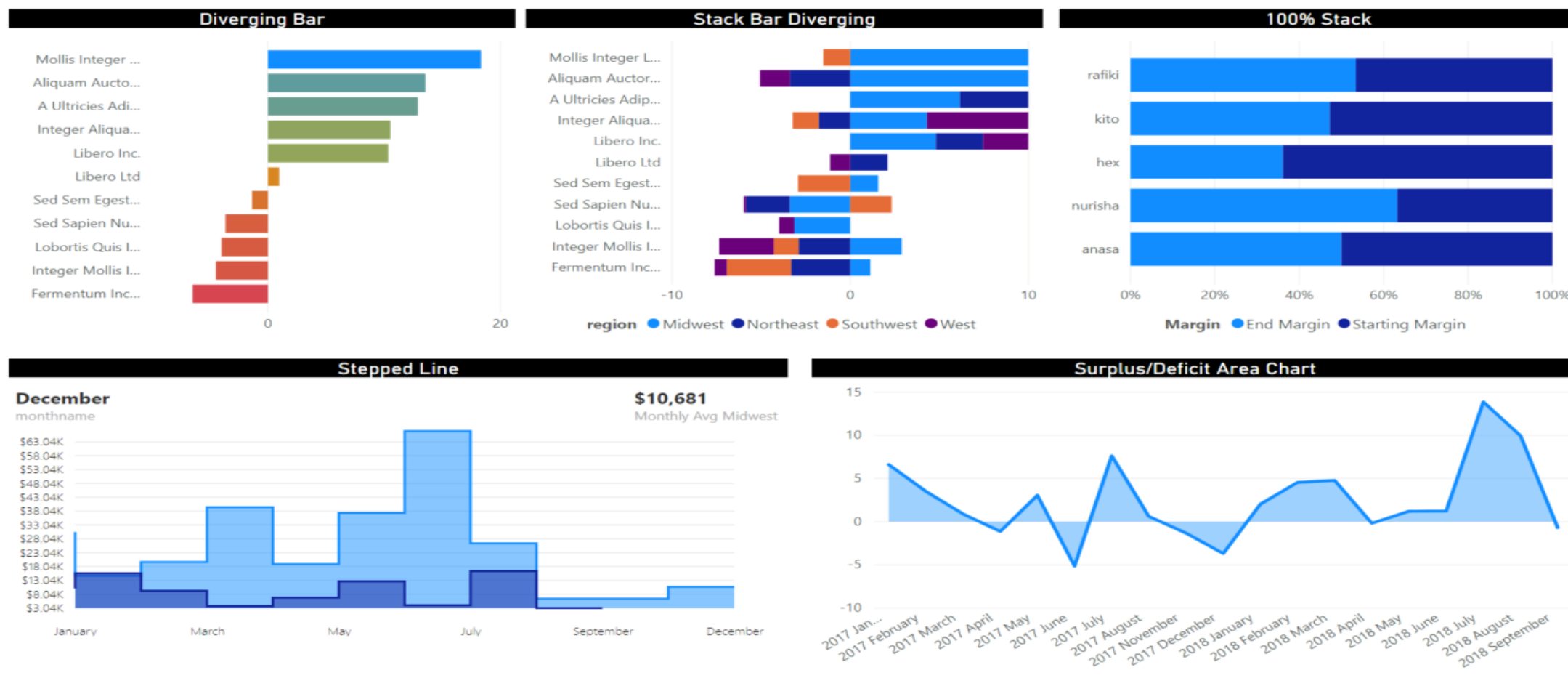
Matrix Table

Product	Highly Satisfied	Satisfied	Some What Satisfied	Would Recommend	Unsatisfied	Would not Recommend	No Response
rafiki	22.80%	28.40%	8.40%	10.70%	8.00%	4.80%	16.80%
hex	21.60%	30.80%	7.70%	10.90%	7.50%	5.20%	16.20%
azizi	18.90%	31.60%	6.60%	11.60%	9.80%	5.60%	16.00%
nurisha	18.00%	26.30%	10.60%	15.20%	12.50%	5.40%	12.10%
anasa	22.40%	21.80%	9.70%	19.10%	14.70%	4.70%	7.50%
Overall	21.00%	28.00%	9.00%	13.00%	10.00%	5.00%	14.00%



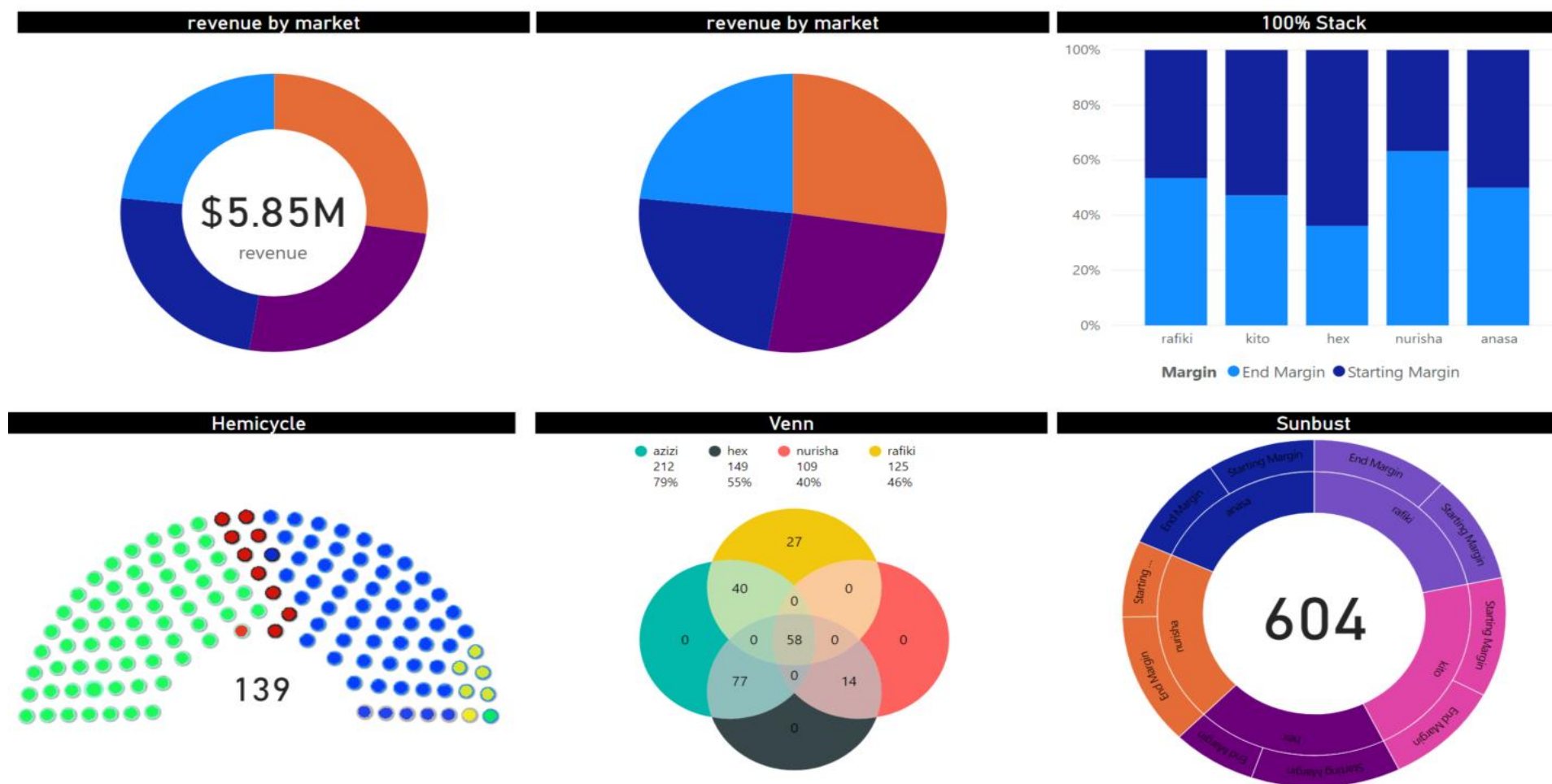
Common Visuals

Deviation – Has emphasis on variation (+/-) from a fixed point



Common Visuals

Part of Whole – Single entry that can be broken into elements

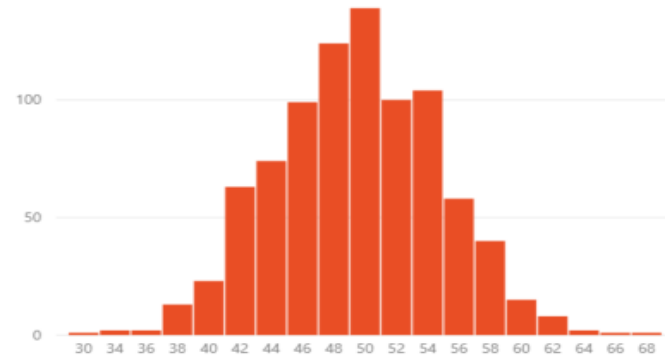


Common Visuals

Distribution – Distribution of Uniform data

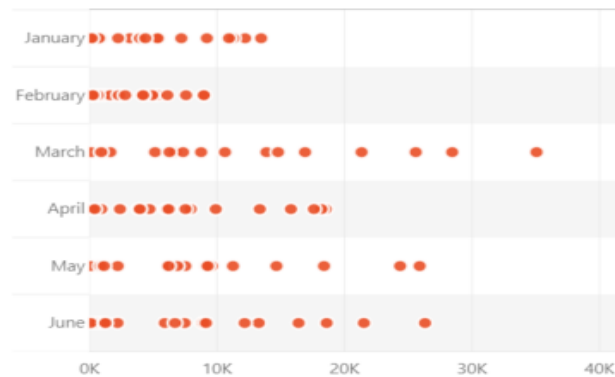
Histogram

The standard way to show a statistical distribution - keep the gaps between columns small to highlight the 'shape' of the data.



Dot Strip Plot

Good for showing individual values in a distribution, can be a problem when too many dots have the same value.



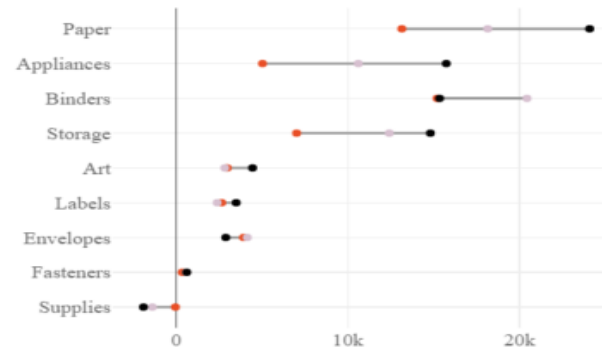
Boxplot

Summarise multiple distributions by showing the median (centre) and range of the data.



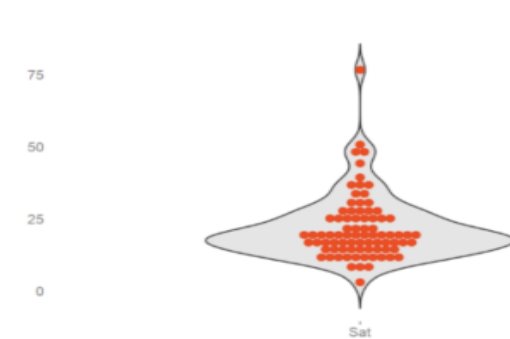
Dot Plot

A simple way of showing the change or range (min/max) of data across multiple categories.



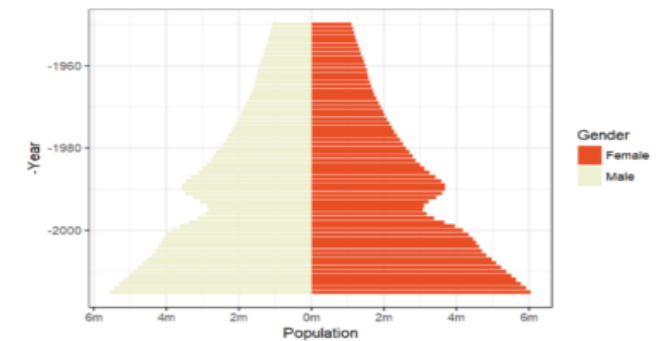
Violin Plot

Similar to a box plot but more effective with complex distributions (data that cannot be summarised with simple average).



Population Pyramid

A standard way for showing the age and sex breakdown of a population distribution; effectively, back to back histograms.



Common Visuals

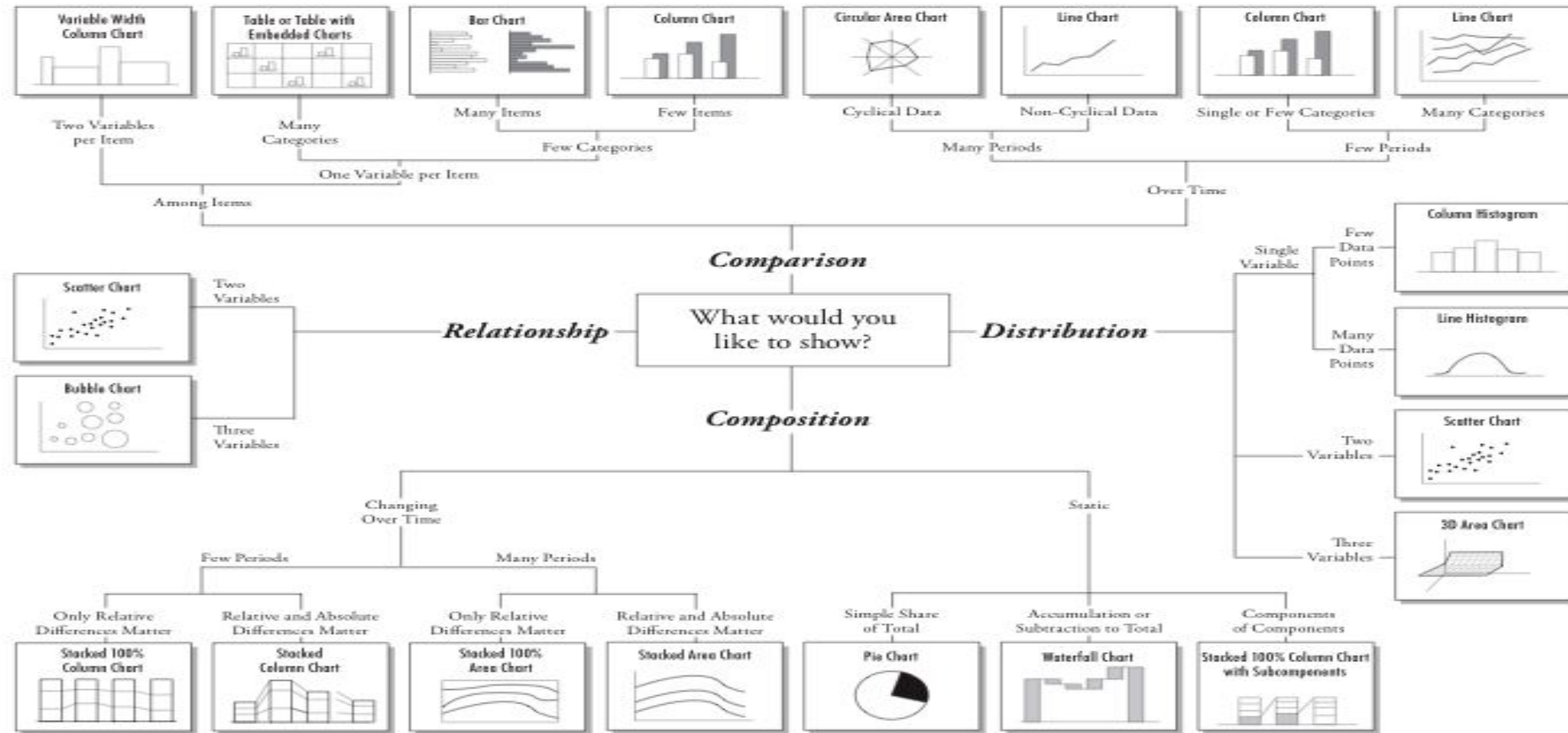
Spatial – Usable for geographical patterns, precise location makes it user friendly. (ArcGIS, Mapbox)

Change over time – relationship between two or more variables and how they relate to each other over time (Candlesticks, Line+Column, Column Chart)

Flow – movement between two or more variables and or conditions (Chord, Network Map, Sankey)

Chart Suggestion

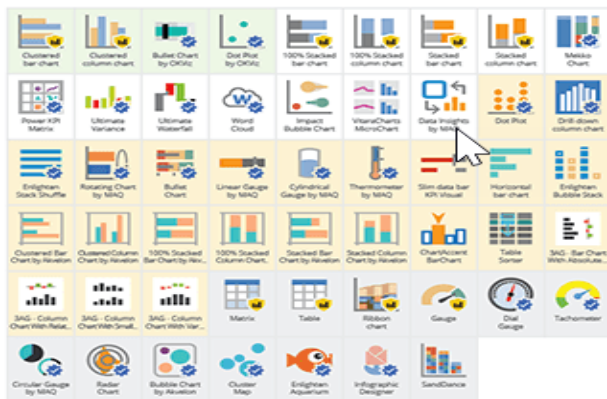
Chart Suggestions—A Thought-Starter



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COMPARISON

Display measures compared by their magnitude



CHANGE OVER TIME

Display the changing trend of measures



RANKING

Display measures by their rank order



SPATIAL

Display measures over spatial maps



FLOW

Display a flow or dynamic relations



PART-TO-WHOLE

Display the parts of a measure



DISTRIBUTION

Display the distribution of a measure



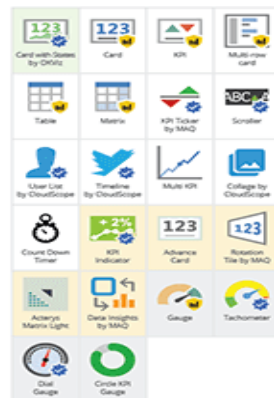
CORRELATION

Display relations between measures



SINGLE

Display single values



FILTER

Control report filters



NARRATIVE

Tell a story with data



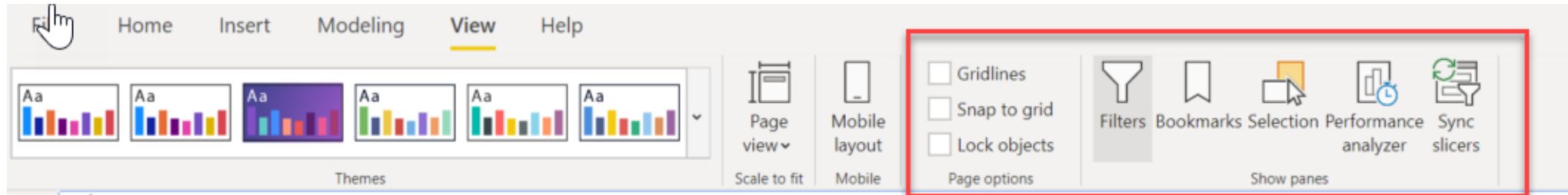
MISCELLANEOUS



Recommended There is a better alternative Don't use in the category Built-in visual Certified visual R required

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Panes



- **Show Gridlines** – adds visual guides to report
- **Snap Objects to grid** – object placement on canvas
- **Lock objects** - prevents accidental move
- **Bookmarks Pane** – create and manage bookmarks
- **Selection Pane** – used to select, order, hide and show visuals
- **Sync Slicer** – used for advanced slicer control
- **Field Properties** - used to add descriptions to visuals



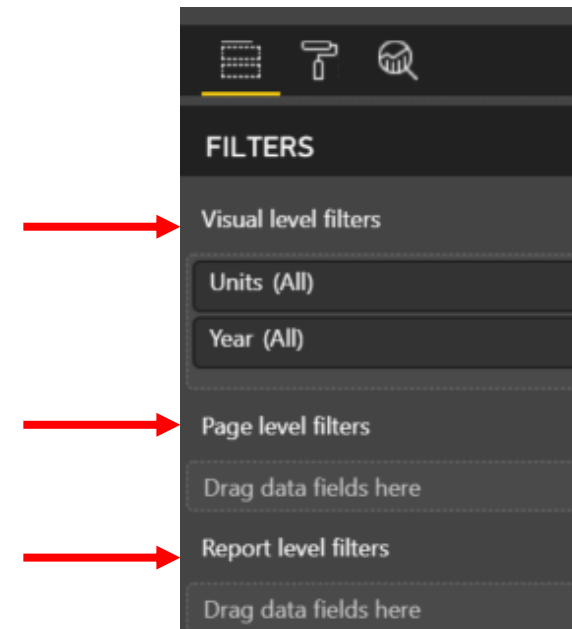
Panes DEMO

Filters & Highlighting

- Filters and Highlighting are two ways to bring focus on data
 - Filters – removes all data but the data you want to focus on
 - Highlighting – does not remove data but highlights a subset of visible data. Unhighlighted data remains visible.
- Filters can further be split into
 - Interactive filters – allowing consumers to change what they see
 - Slicers
 - Drilldowns
 - Drillthroughs
 - Filters – preset during report design but can be changed.

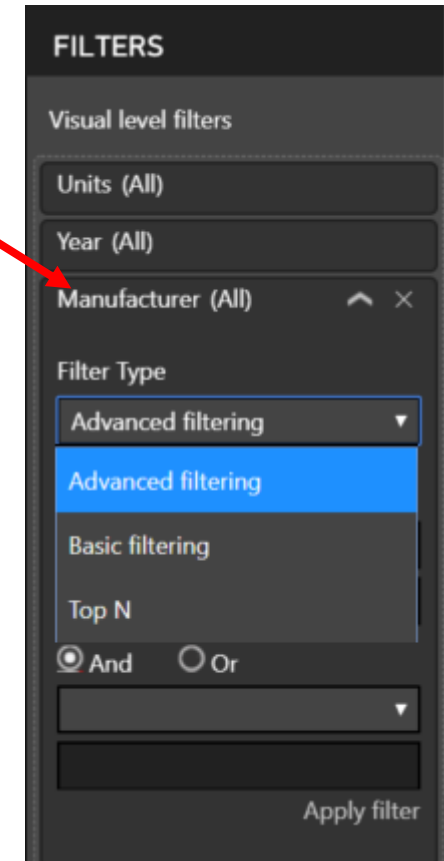
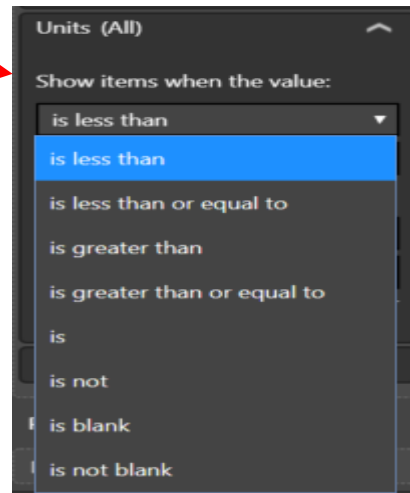
Filters

- Reports filters allows the reports designer to filter data displayed on canvas
- Once the report is published users have to be in EDIT mode to change values for these filters
- They filter data based on columns in dataset
- They are applicable to
 - Visuals – current selected visuals
 - Page level – all data in current page
 - Report – all data in the report



Filters Cont.

- List data allows 3 levels of filtering
 - Basic filtering – basic list selection
 - Advanced filtering – value with certain characteristics
 - Top N filtering – top 5, 10 etc
- Numeric data allows
 - Within range
 - Available or not



Slicers

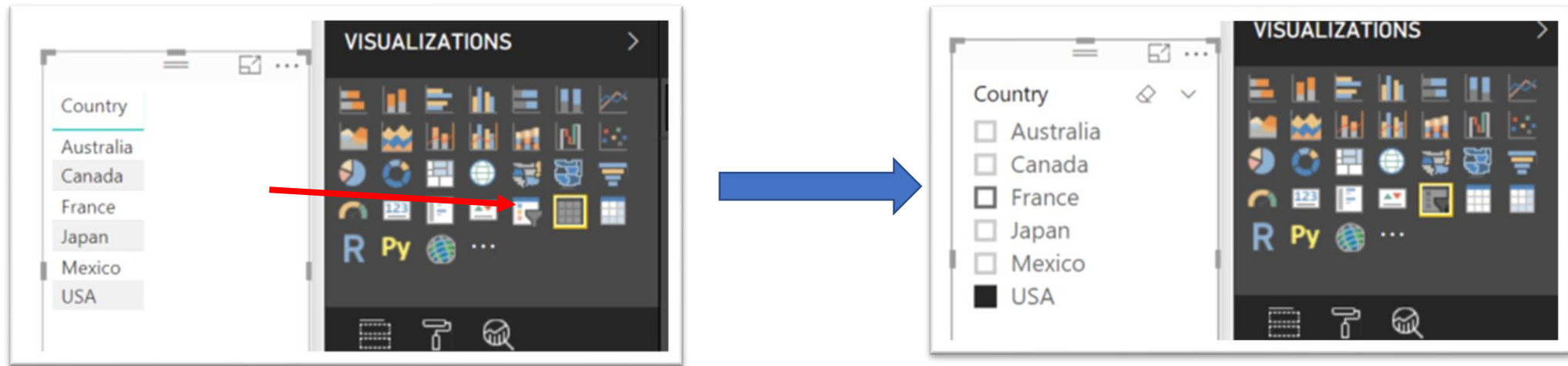
On canvas visual filter allowing consumers to segment the data by a particular value

- Use slicers when
 - Displaying commonly used or important filter on the report for easier access
 - Filter by columns that are unneeded and hidden in the data table

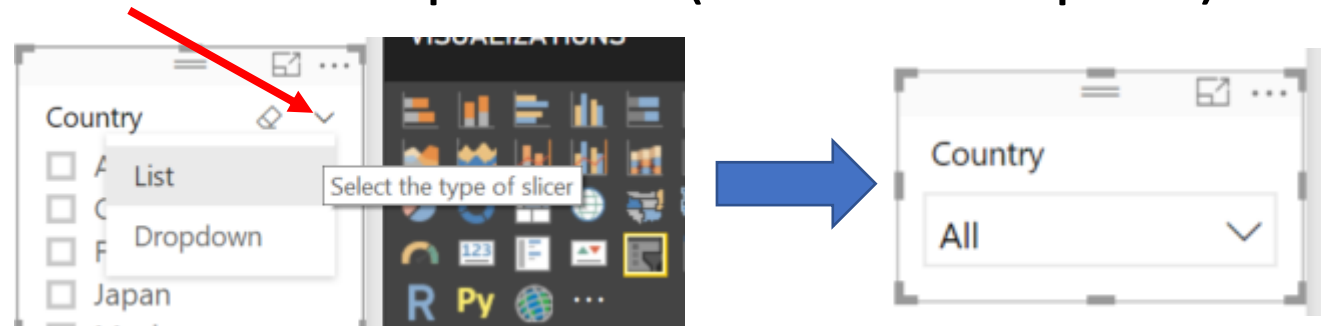
Slicers limitations

- Do not allow data input
- Cannot be pinned to dashboards
- Do not support visual level filters

Adding Slicers

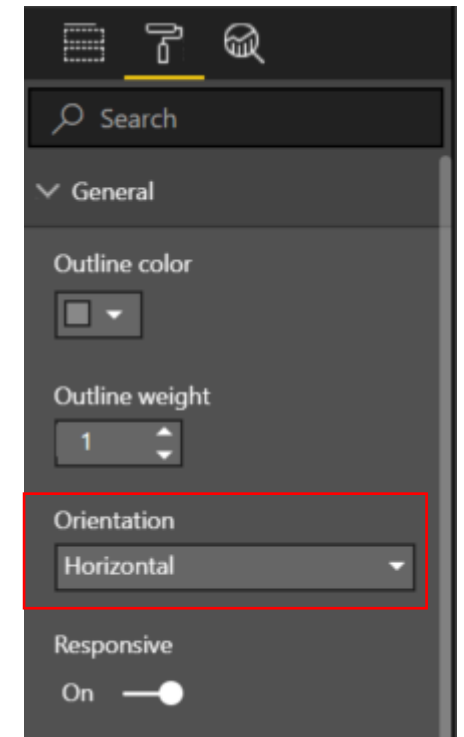
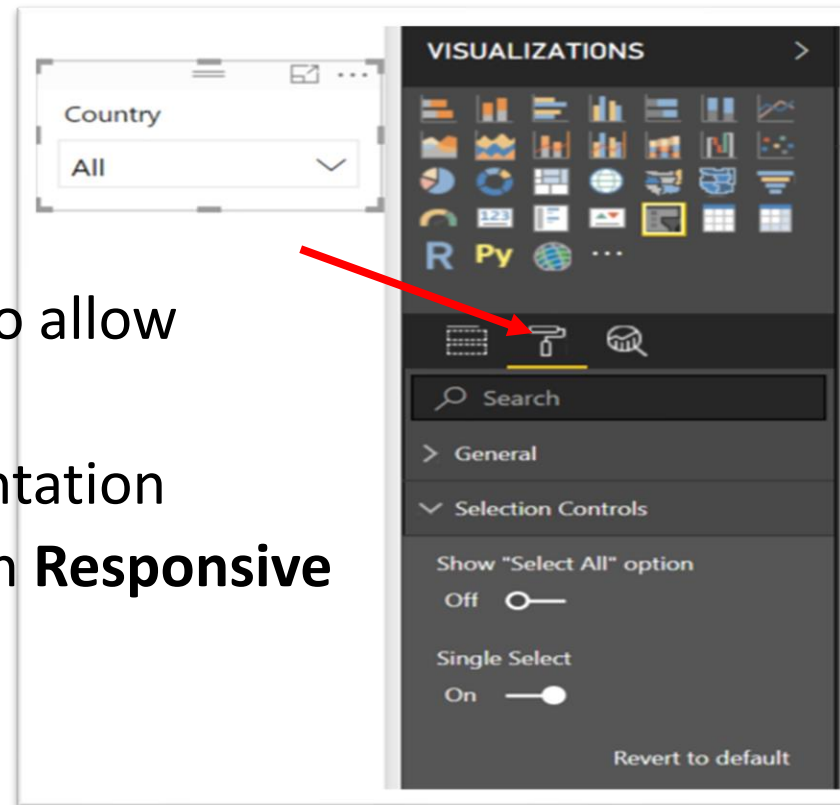


- Slicers can be switch between lists and dropdowns (conserves space)
- Has erase to clear selection



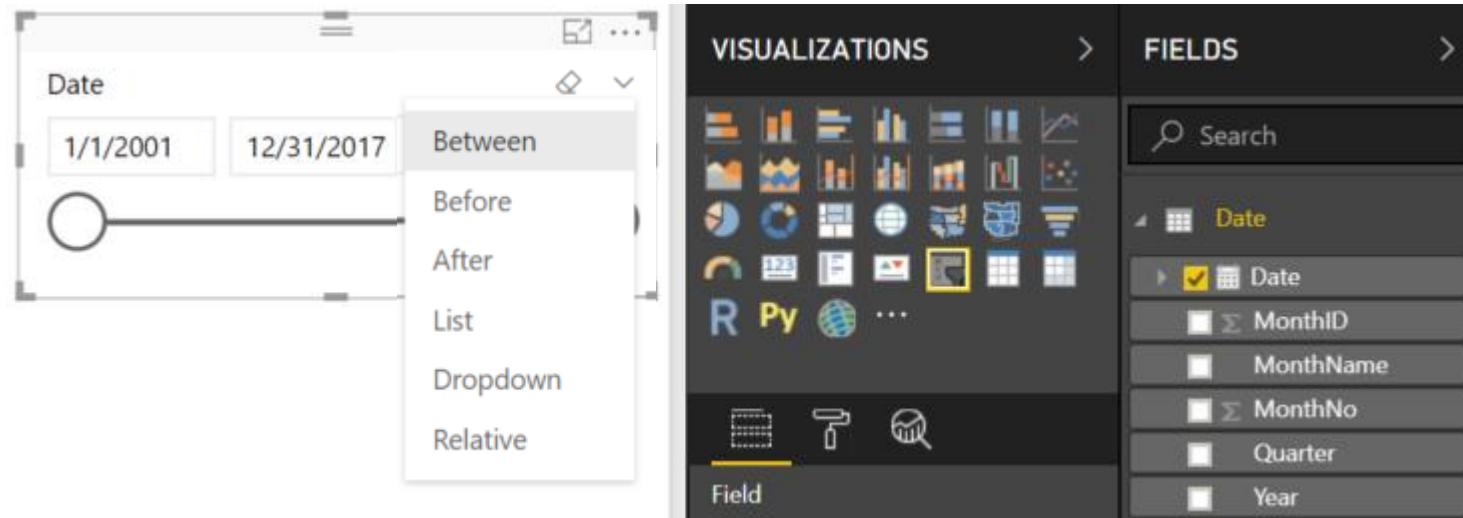
Slicers Formatting

- Selection control allows the report designer to define how the users interact with the slicers
- Accessed from format
 - Can turn on “Select All”
 - Can turn off “Single Select” to allow Multiple picks.
 - In list mode, can change orientation to vertical or horizontal with **Responsive**



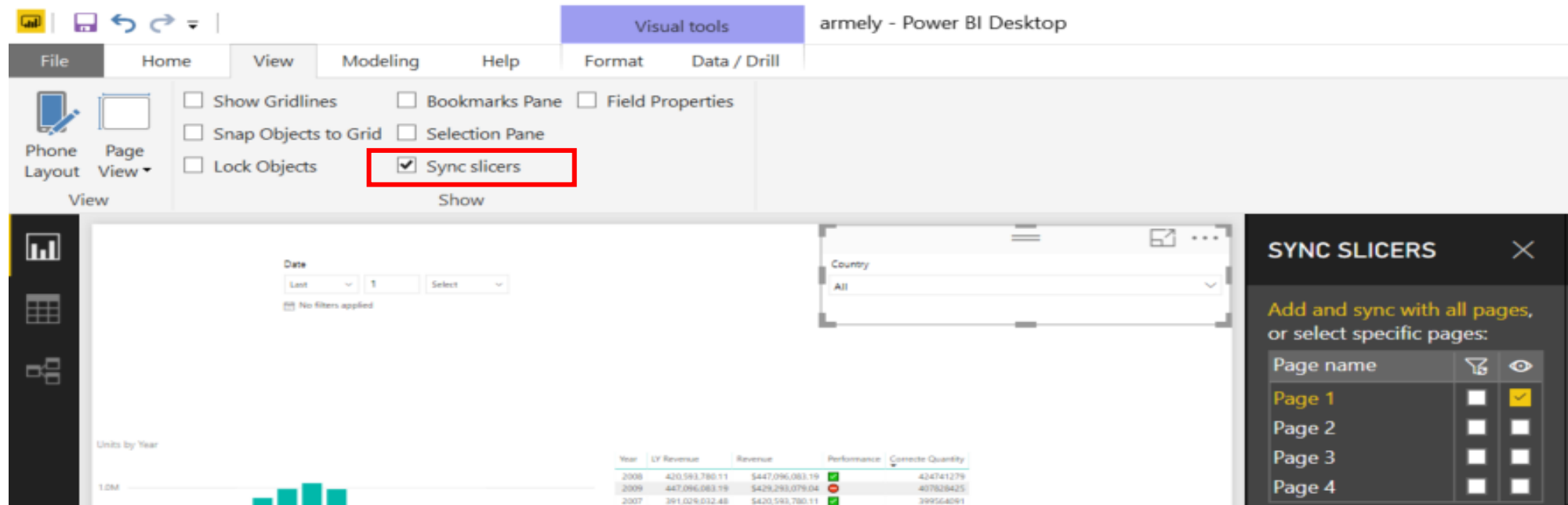
Date Slicer

- Date fields turned to slicers behave different from list fields
- Date fields offers 7 different modes



Slicer Sync

- Slicer Sync allow the current selection to be replicated across pages in order to give consumer the oneness report experience.
- Option to make the filters visible or hidden in subsequent pages.



The screenshot shows the Power BI Desktop interface with the 'Visual tools' ribbon selected. The 'Sync slicers' checkbox is checked and highlighted with a red box. The 'SYNC SLICERS' pane on the right shows a list of pages with checkboxes for selection and visibility. The 'Page 1' checkbox is checked.

Visual tools | armely - Power BI Desktop

File | Home | View | Modeling | Help | Format | Data / Drill

Phone Layout | Page View | View

☐ Show Gridlines | ☐ Bookmarks Pane | ☐ Field Properties

☐ Snap Objects to Grid | ☐ Selection Pane

☐ Lock Objects | ☒ Sync slicers

Country: All

SYNC SLICERS

Add and sync with all pages, or select specific pages:

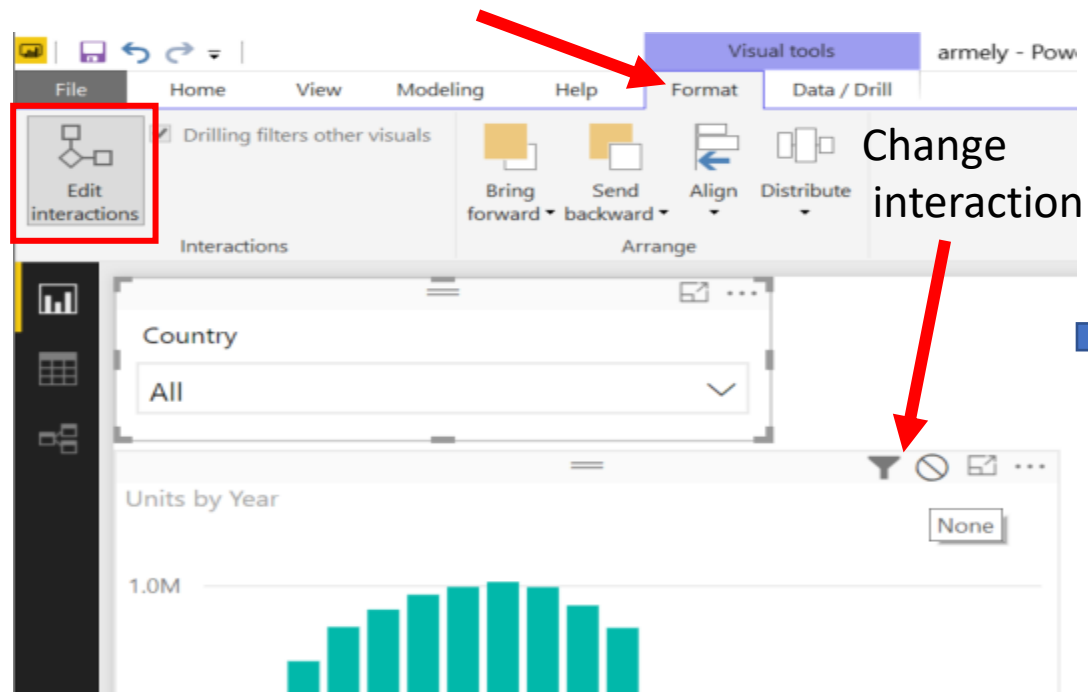
Page name		
Page 1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Page 2	<input type="checkbox"/>	<input type="checkbox"/>
Page 3	<input type="checkbox"/>	<input type="checkbox"/>
Page 4	<input type="checkbox"/>	<input type="checkbox"/>

Units by Year

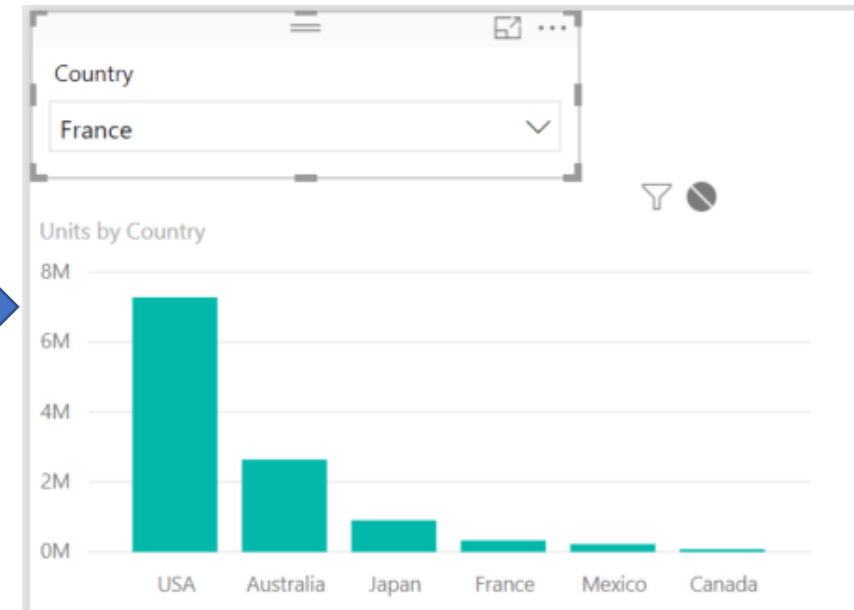
Year	LY Revenue	Revenue	Performance	Connecte Quantity
2008	420,593,780.11	\$447,096,083.19	424741279	
2009	447,096,083.19	\$429,293,079.04	407628425	
2007	391,029,032.48	\$420,593,780.11	399564091	

Interaction with filter

- Filter not to act on visualization – Edit the interaction piece of the visual

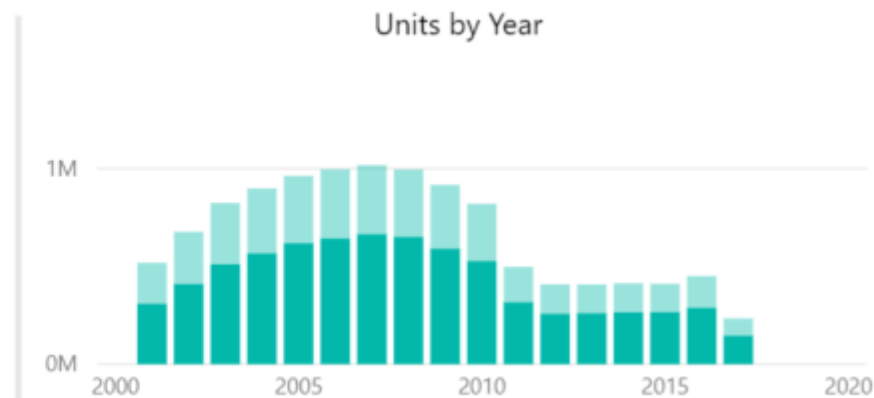
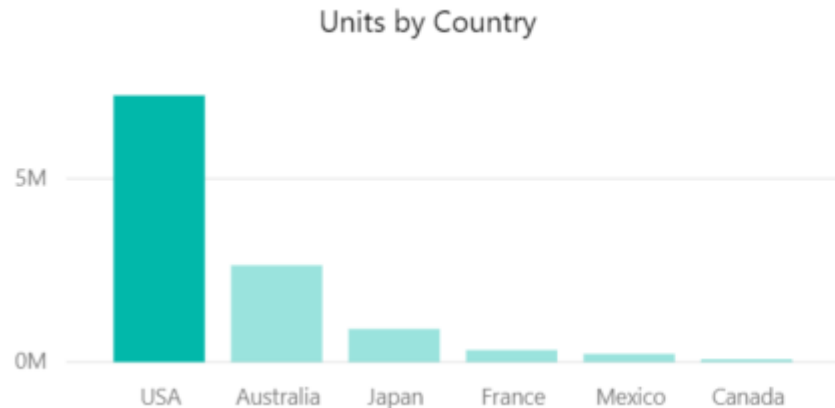


Selected filter has no effect to visual



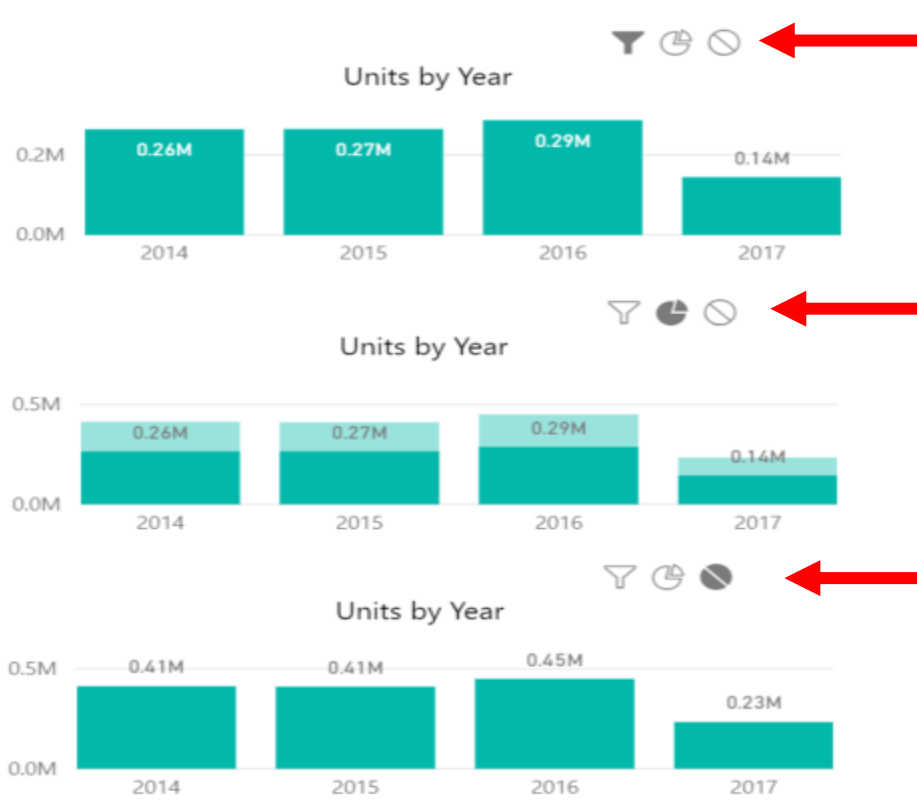
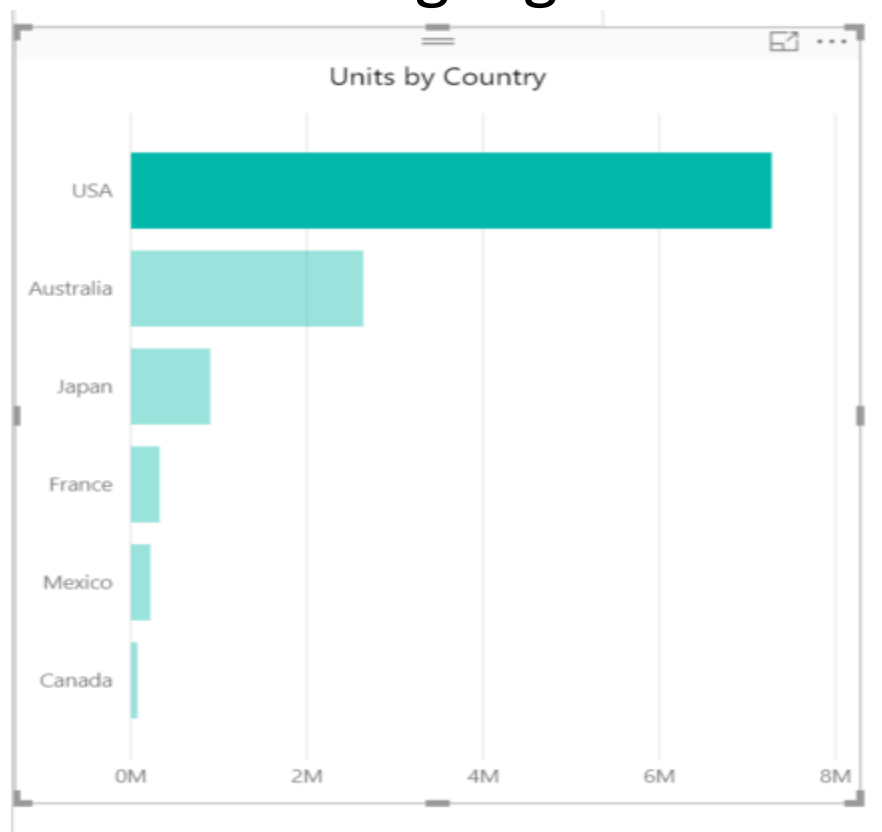
Highlighting

- Highlighting a visual section in reports, brings focus to specific data
- Highlighting is achieved by clicking part of the visual
 - Clicking on USA below filters Units by year
 - Highlighting is extended to all visuals on a page unless disable interaction (shown previously) is enabled.



Interaction Cont.

- Levels of highlight interaction



Filter data
based on
selection

Filter data
based on
selection

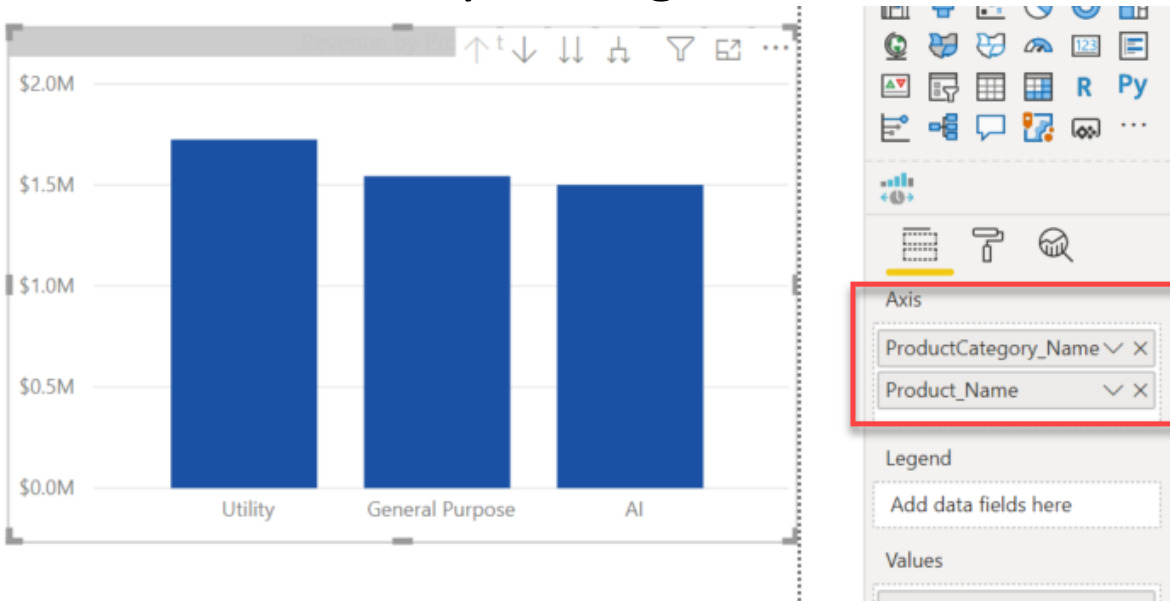
Do nothing
when highlight
happens

Agenda

- ✓ Interactive Reports
 - Bookmarks, Drilldown & Drillthrough
- ☐ Themes
- ☐ Custom visuals
- ☐ Mobile Devices Reports
- ☐ Publishing Reports

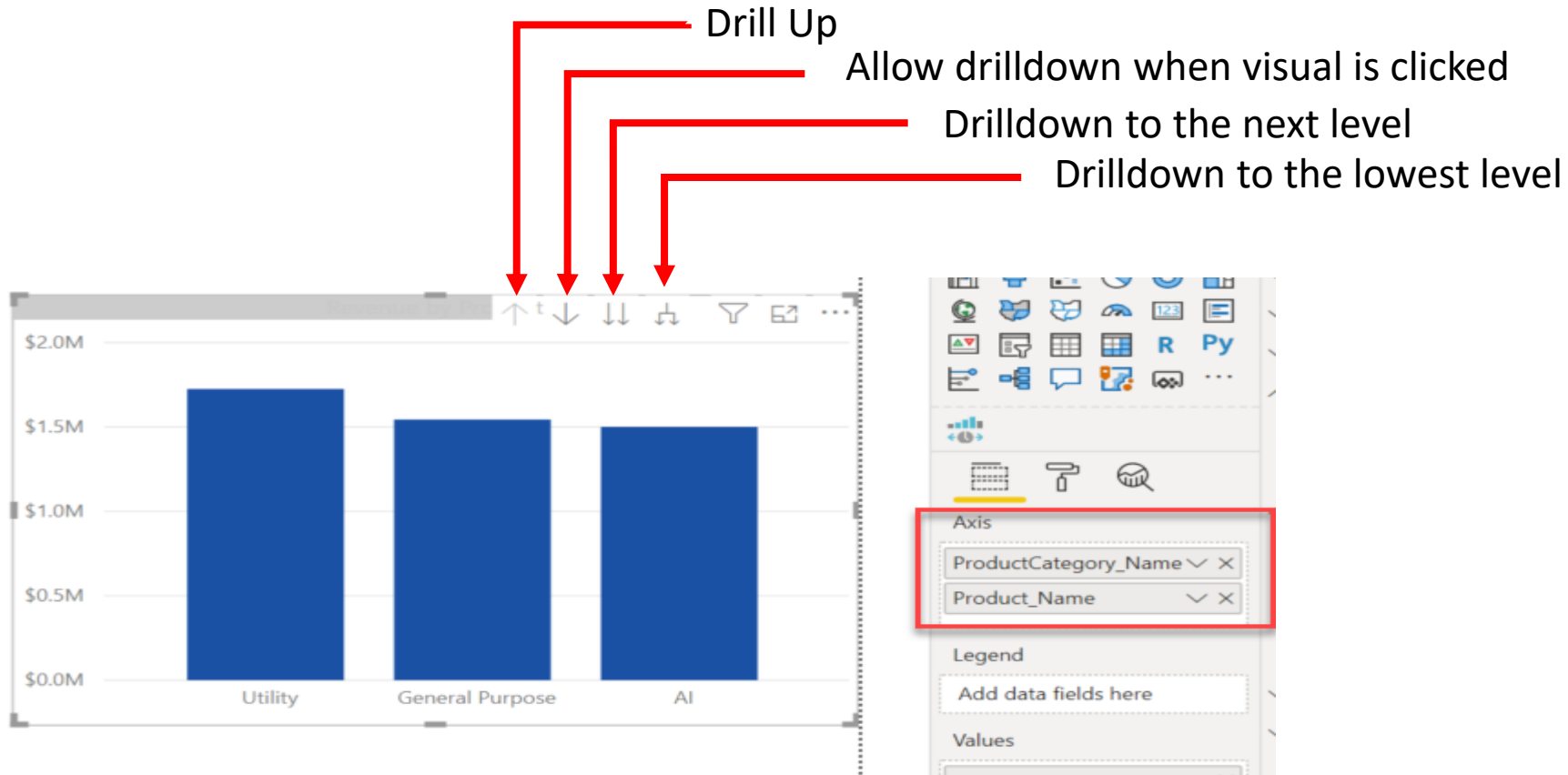
Drill Action

- Drilldown and Drill throughs are supported where hierarchy exists.
- Drill Action hierarchy doesn't have to follow the rules of parent-child norm.
 - Can be created by adding values to Axis



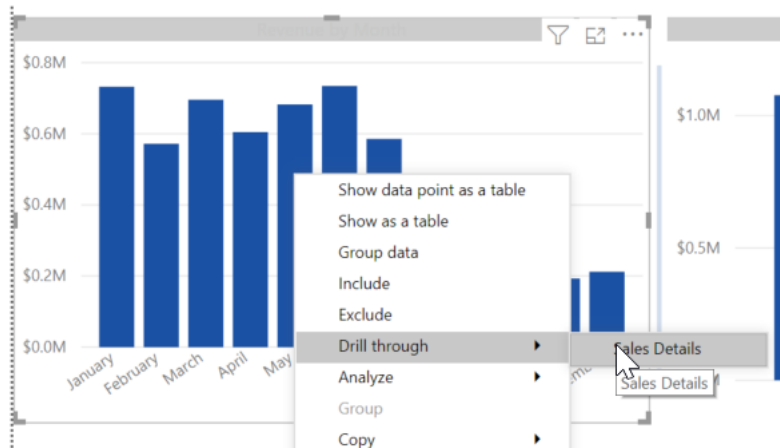
Drill Mode

Visible when you mouse over a visual that has hierarchy



Drillthrough

- Create a focus page on a specific entity within a report.
 - Example a specific Country data details
- Drillthrough allows users to navigate to the focus page to get details based on their selection

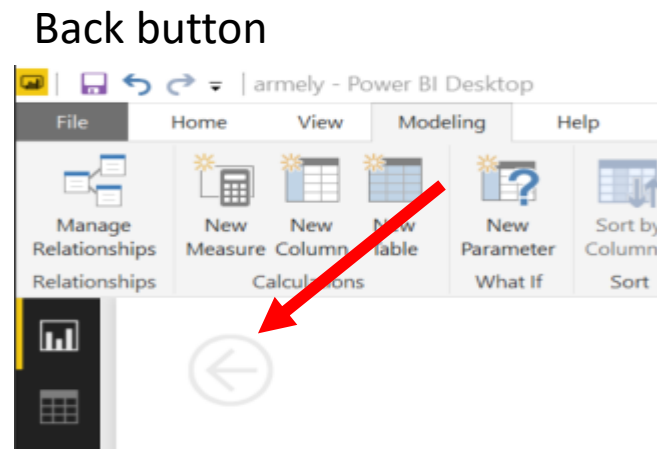
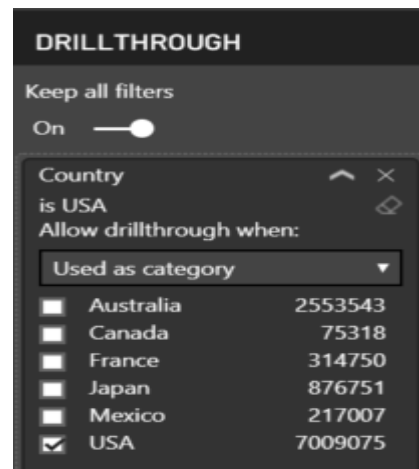


The drillthrough view displays a table of data for the City of Denton. The table has columns for monthname, revenue, units_sold, cost, market, and name. The data is filtered for the month of May. The total revenue is \$682.55K and the total cost is \$0.33M. The table shows 13 rows of data for May, including details for Enterprise, Government, Mid Market, and Small Business markets. A bottom navigation bar shows 'Sales' and 'Sales Details' tabs, with 'Sales Details' being the active tab.

monthname	revenue	units_sold	cost	market	name
May	\$73,811	17097	\$40,914	Enterprise	AI
May	\$62,213	1904	\$29,213	Enterprise	General Purpose
May	\$59,493	8348	\$29,820	Enterprise	Utility
May	\$33,480	4764	\$15,977	Government	AI
May	\$59,754	8275	\$23,676	Government	General Purpose
May	\$42,810	6360	\$19,668	Government	Utility
May	\$47,226	6765	\$23,913	Mid Market	AI
May	\$48,754	8218	\$30,591	Mid Market	General Purpose
May	\$57,721	11087	\$33,475	Mid Market	Utility
May	\$67,391	9102	\$32,085	Small Business	AI
May	\$50,966	5153	\$22,048	Small Business	General Purpose
May	\$78,855	13211	\$30,438	Small Business	Utility
Total	\$682,546	110284	\$331,818		

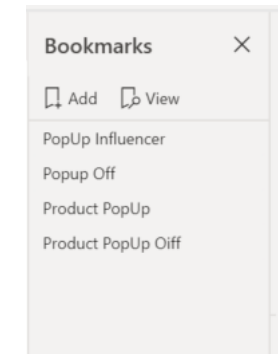
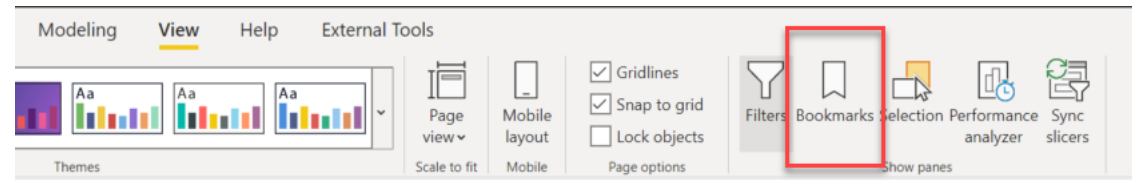
Drillthrough Cont.

- Added to destination page on
- Has to have common column with Origin
 - Country was common for mine
- A back button is added to the destination page
 - In design mode use “CTRL+Click” to navigate back



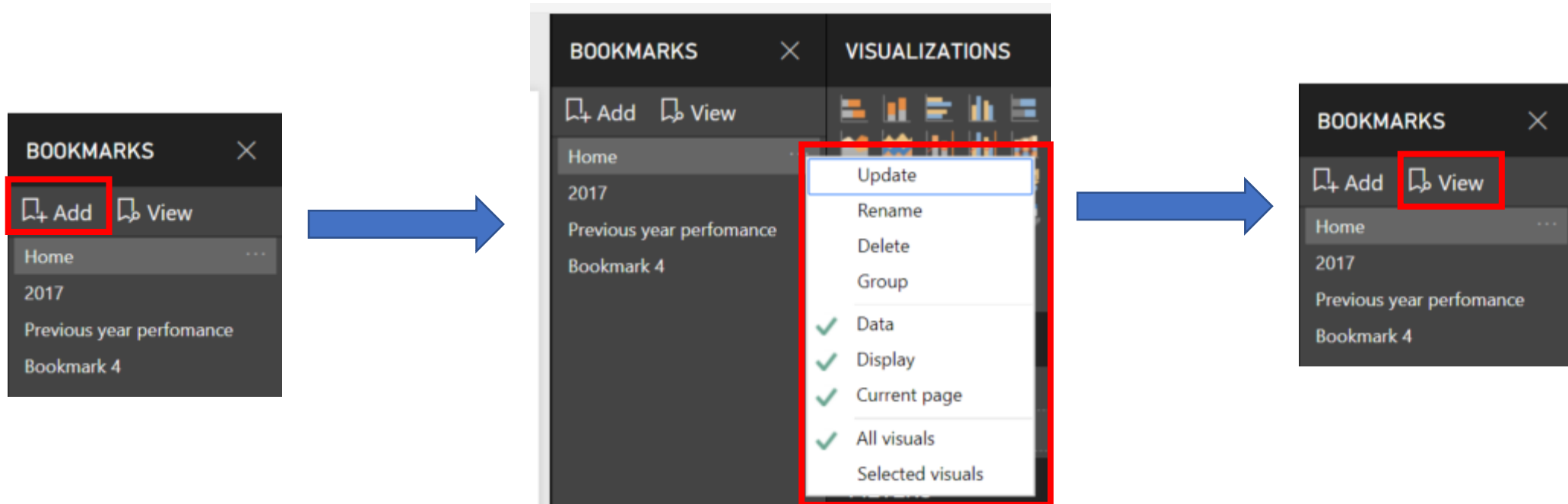
Bookmarks

- Bookmarks provide story telling foundation
 - Shows data progression on a timeline
- Supported in reports Only
- NOT Supported in Dashboards
- Can include
 - Current Page
 - Filters
 - Slicers
 - Sort Order
 - Drill Location
 - Spotlight
 - Visibility



Create Bookmarks

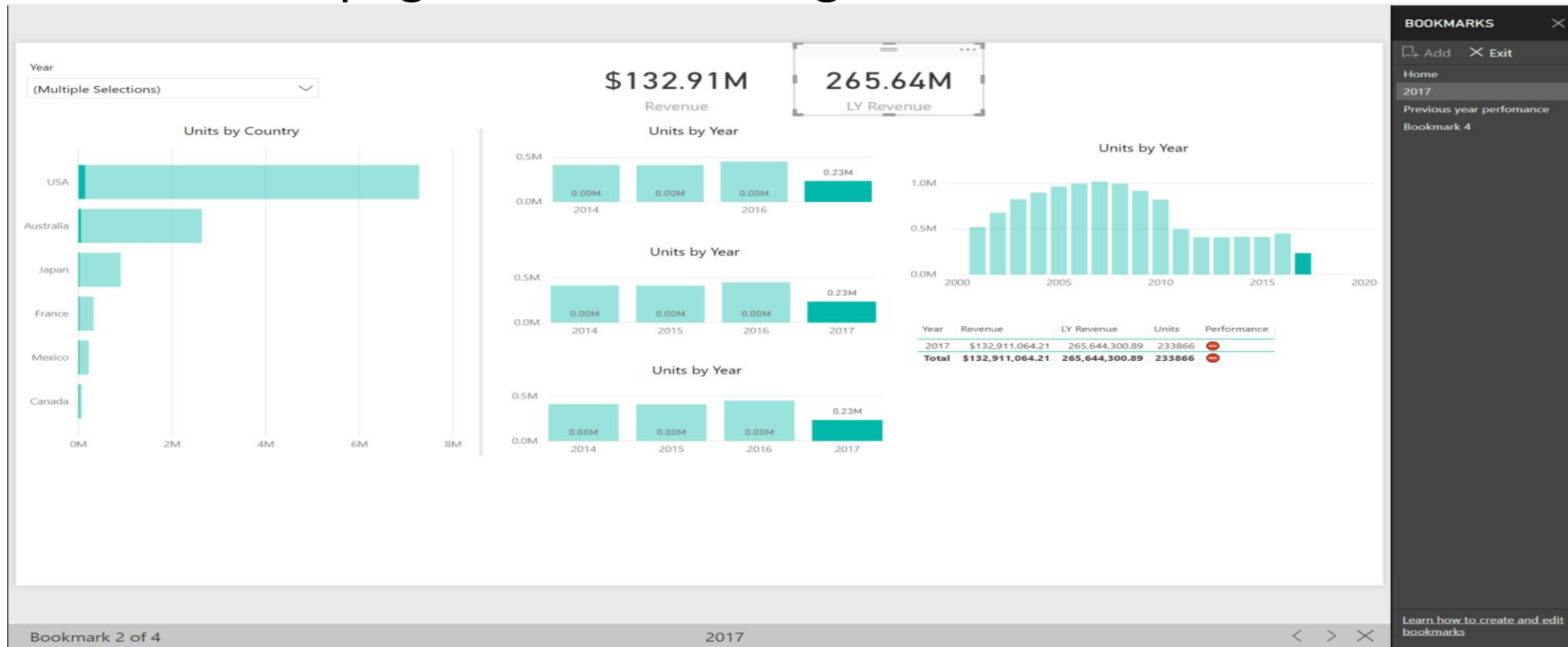
- Using Add create bookmark for the current page
- Create a second bookmark with story that you want to highlight
- Update/Rename/Group as necessary



Bookmarks Slide Show

Start Slide show by clicking view

Use bottom page arrows to navigate.



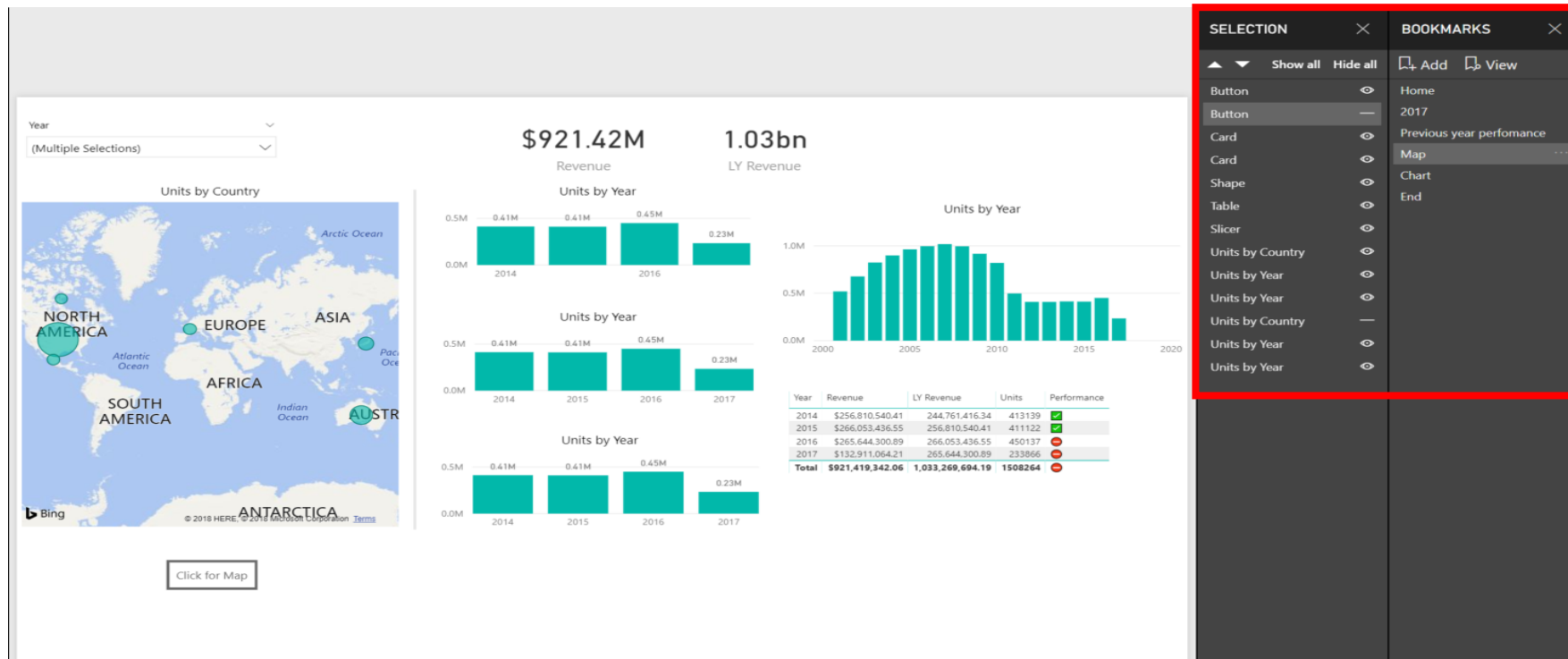
Bookmark for Shapes & Images

- Action Button or an image can apply a set bookmark



Visibility & Bookmarks

- Using Selection pane with bookmarks is powerful
- Can hide some visuals in order to tell a story or enhance a report.





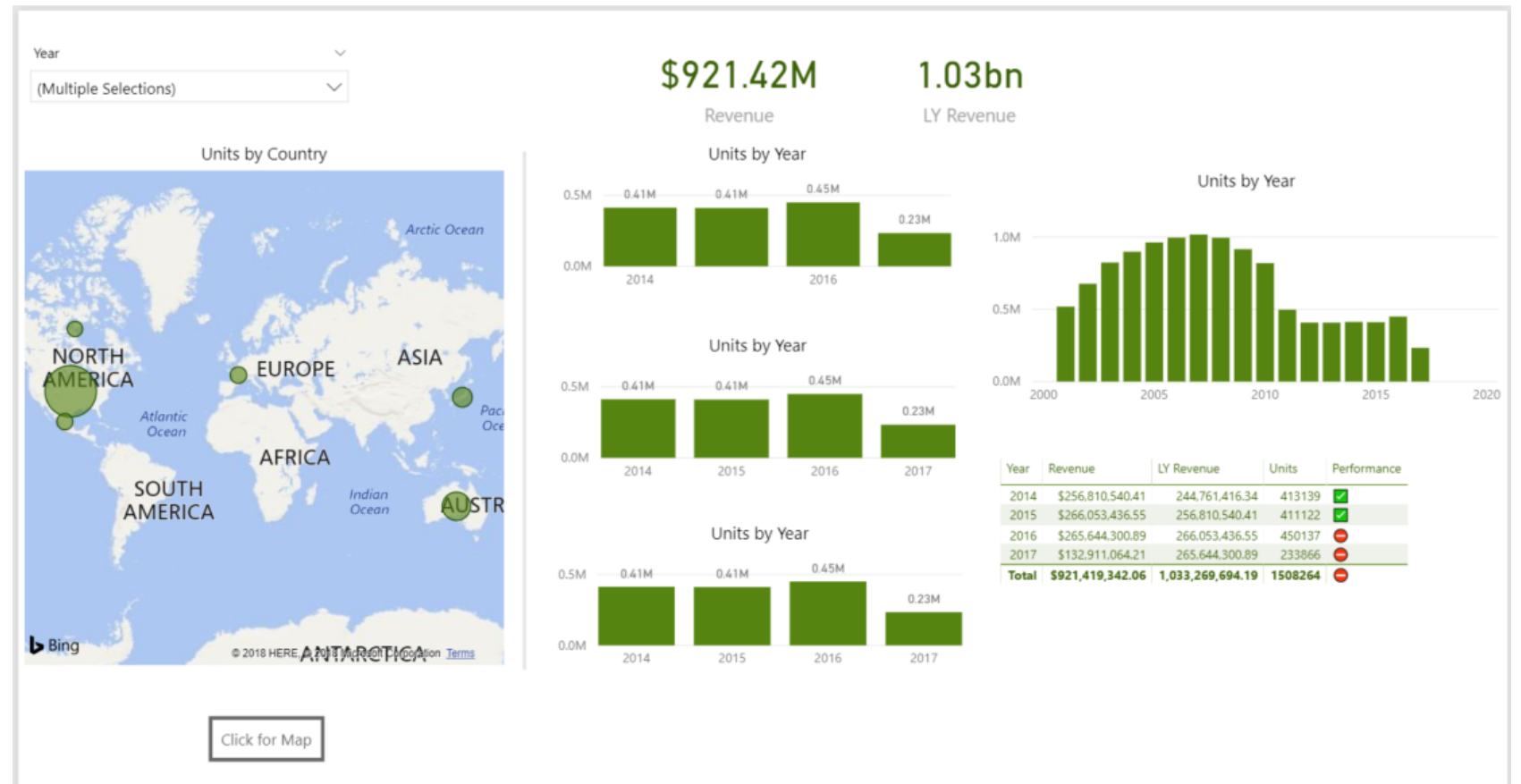
Bookmarks DEMO

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Report Themes

- Reports can be styled to use a color scheme that's applied to the entire report
 - Corporate Colors
 - Season coloring



Reports Themes Cont.

- Reports Theme requires a JSON file which can be imported into Power BI Desktop
 - Name
 - DataColors
 - Background
 - Foreground
 - tableAccent

```
1 {  
2   "name": "St Patricks Day",  
3   "dataColors": ["#568410", "#3A6108", "#70A322", "#915203", "#D79A12", "#bb7711", "#114400", "#aacc66"],  
4   "background": "#FFFFFF",  
5   "foreground": "#3A6108",  
6   "tableAccent": "#568410"  
7 }
```

- Provides consistency across reports



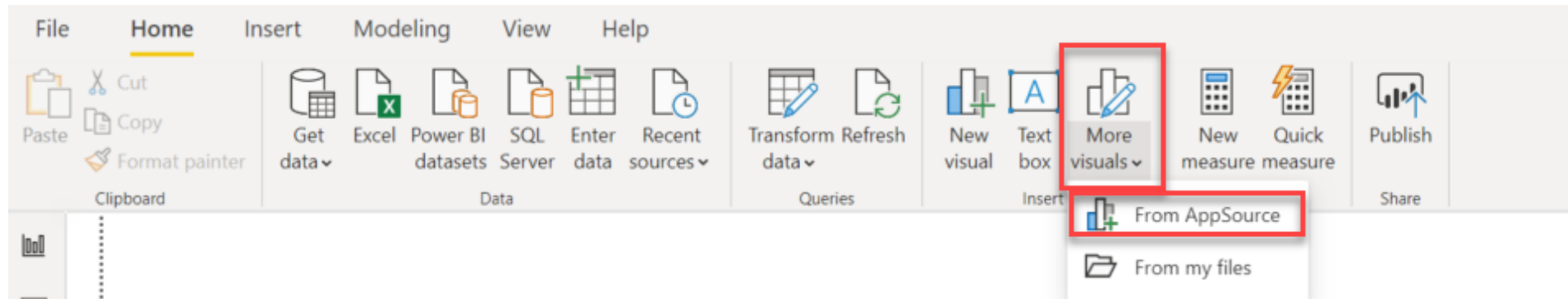
Themes DEMO

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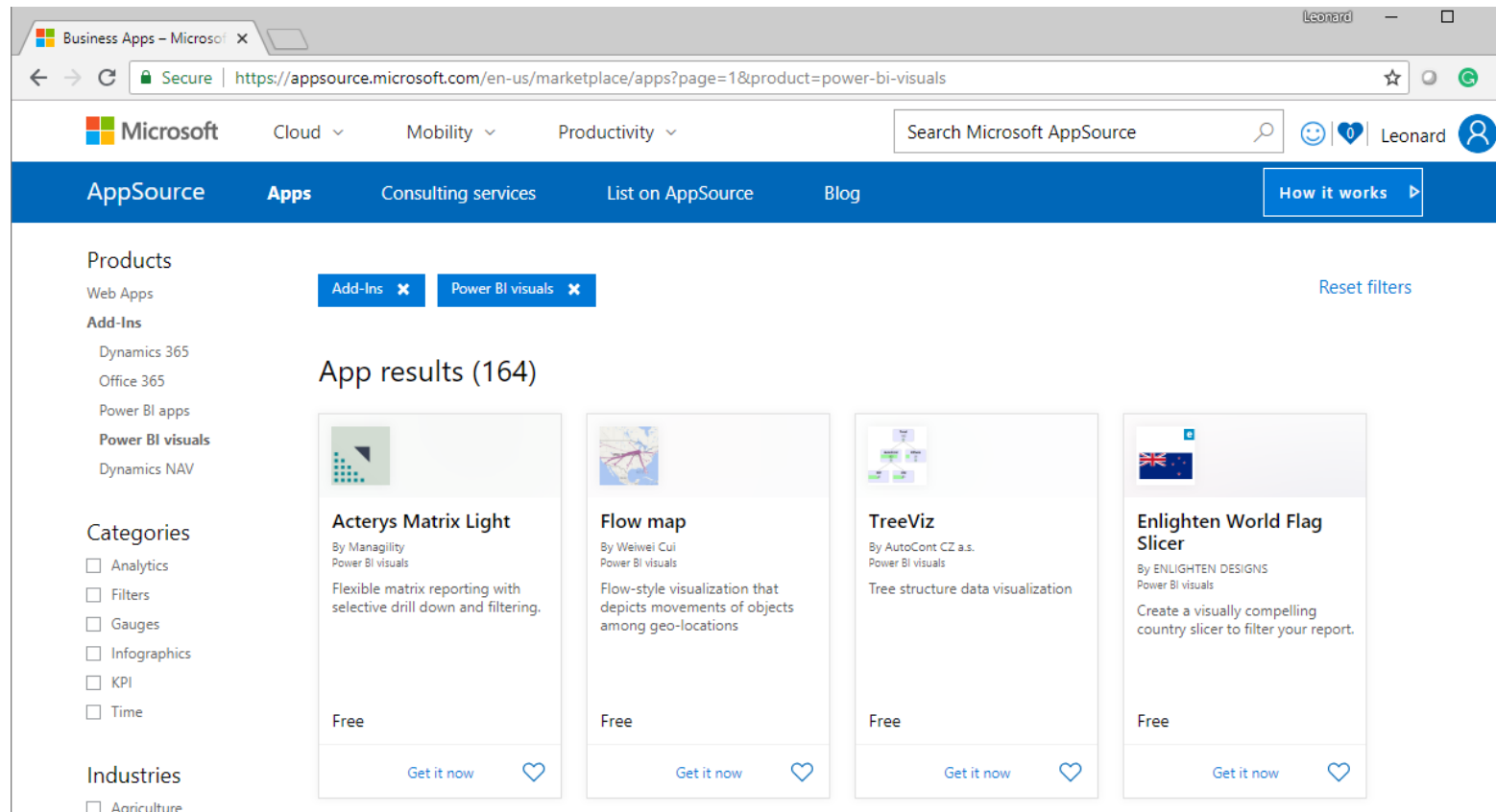
Custom Visuals

- Power BI Custom visuals are extensive
- They extend the built-in visuals allowing deeper story telling capabilities.
- In Power BI Desktop

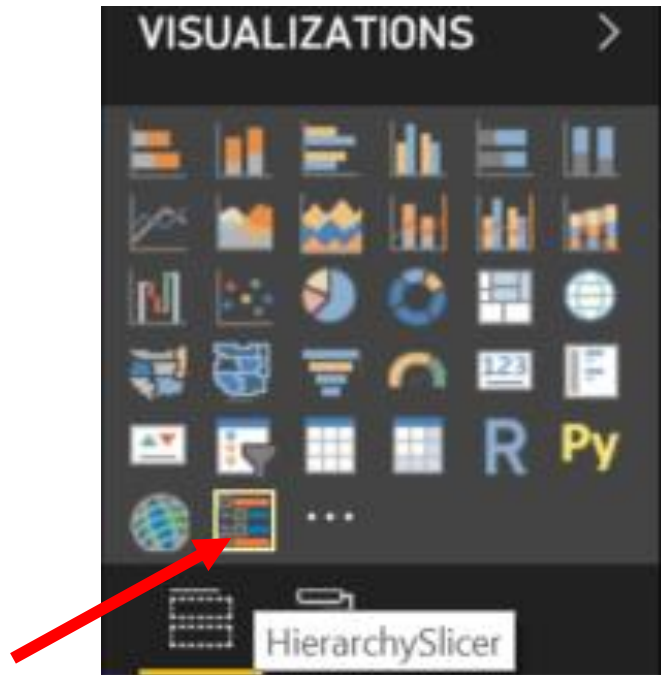


Custom Visuals

- Alternatively by going to <https://appsource.microsoft.com>

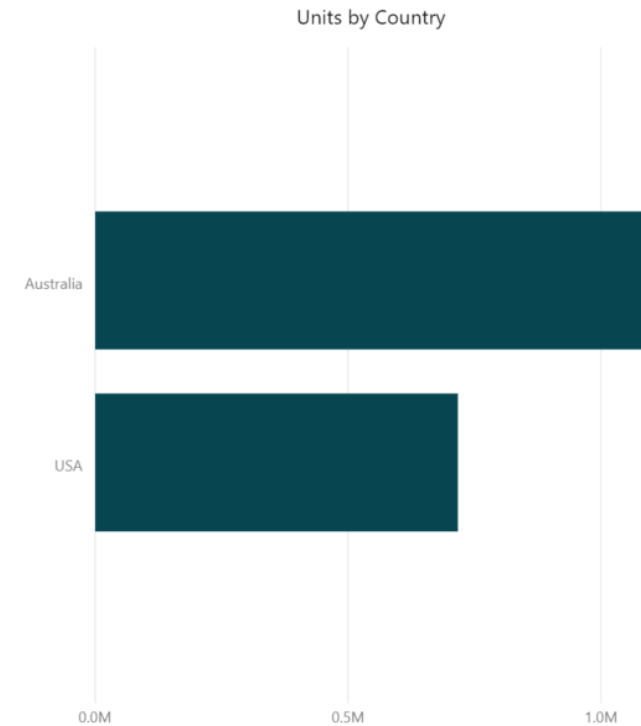


Custom Visual



Country

- ☒ Select All
- ☒ USA
 - ☐ Natura
 - ☐ VanArsdel
 - ☐ Aliqui
 - ☐ Pirum
 - ☒ Currus
- ☒ Australia
 - ☐ Natura
 - ☒ VanArsdel
 - ☒ Aliqui
 - ☐ Pirum
 - ☐ Currus
- ☐ Japan
 - ☐ Quibus
 - ☐ Abbas
- ☒ France
 - ☐ Natura
 - ☐ Pomum
 - ☐ VanArsdel
 - ☐ Quibus
 - ☐ Victoria
- ☐ Mexico
 - ☐ Aliqui
 - ☐ Fama
 - ☐ Leo
 - ☐ Abbas
 - ☐ Pomum
 - ☐ Pirum
 - ☐ Currus
 - ☐ Victoria





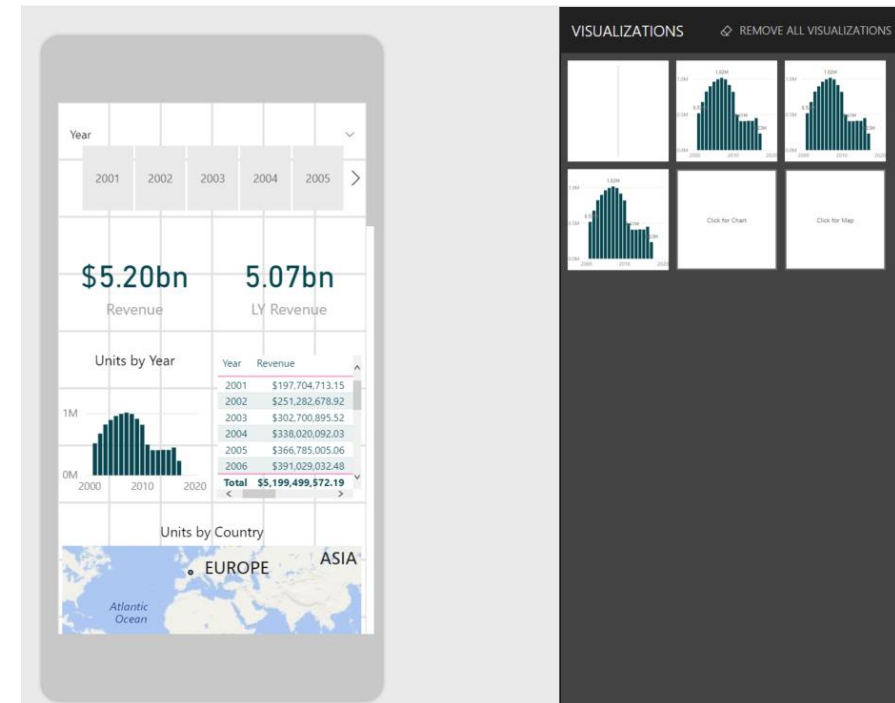
Custom Visuals DEMO

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Mobile Devices Reports

- Reports may not be viewable on mobile device
- Phone layout – used to create a separate version of report for mobile devices

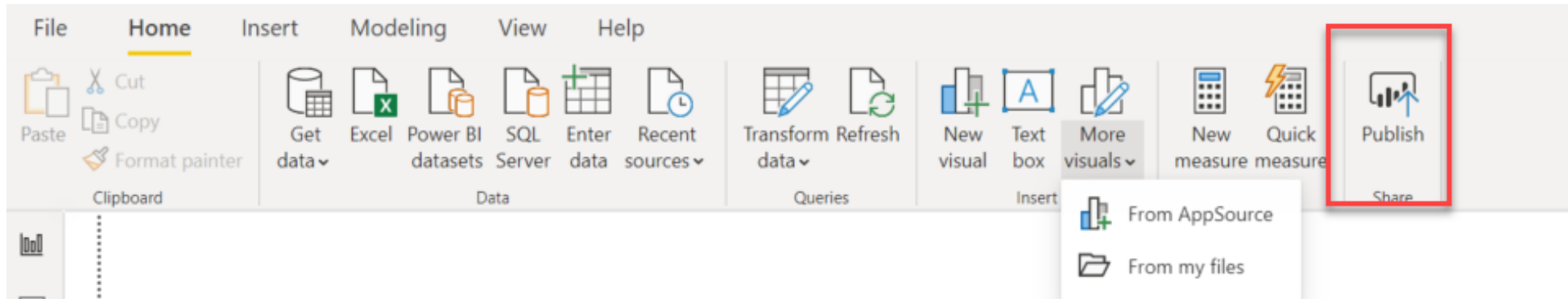


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Publishing Reports

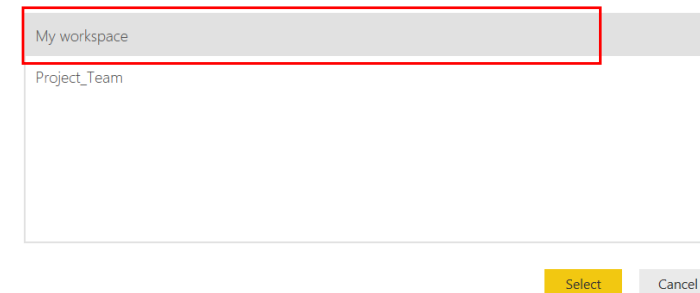
- After completing reports design, its time to publish your report



- Authenticate to Power BI
- Publish in Personal workspace

Publish to Power BI

Select a destination



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