



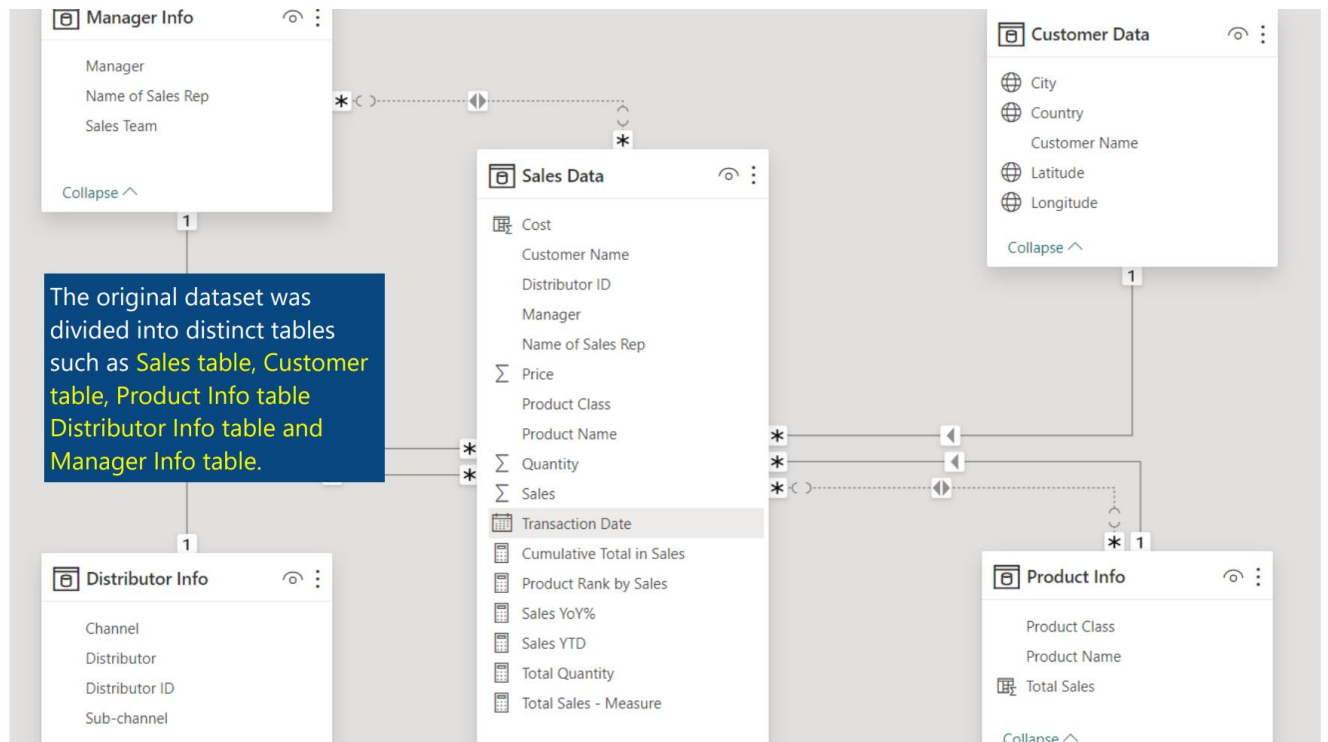
PSYLIQ

Pharma Data Analysis

In the ever-evolving pharmaceutical landscape, leveraging data analytics has become instrumental in driving critical insights for informed decision-making and optimizing operational efficiencies. This project seeks to harness the potential of Power BI as a robust tool for in-depth analysis and visualization of pharmaceutical data. By combining diverse datasets and using powerful analytical features, the initiative aims to derive actionable insights that can transform strategic planning and operational effectiveness in the pharmaceutical domain.

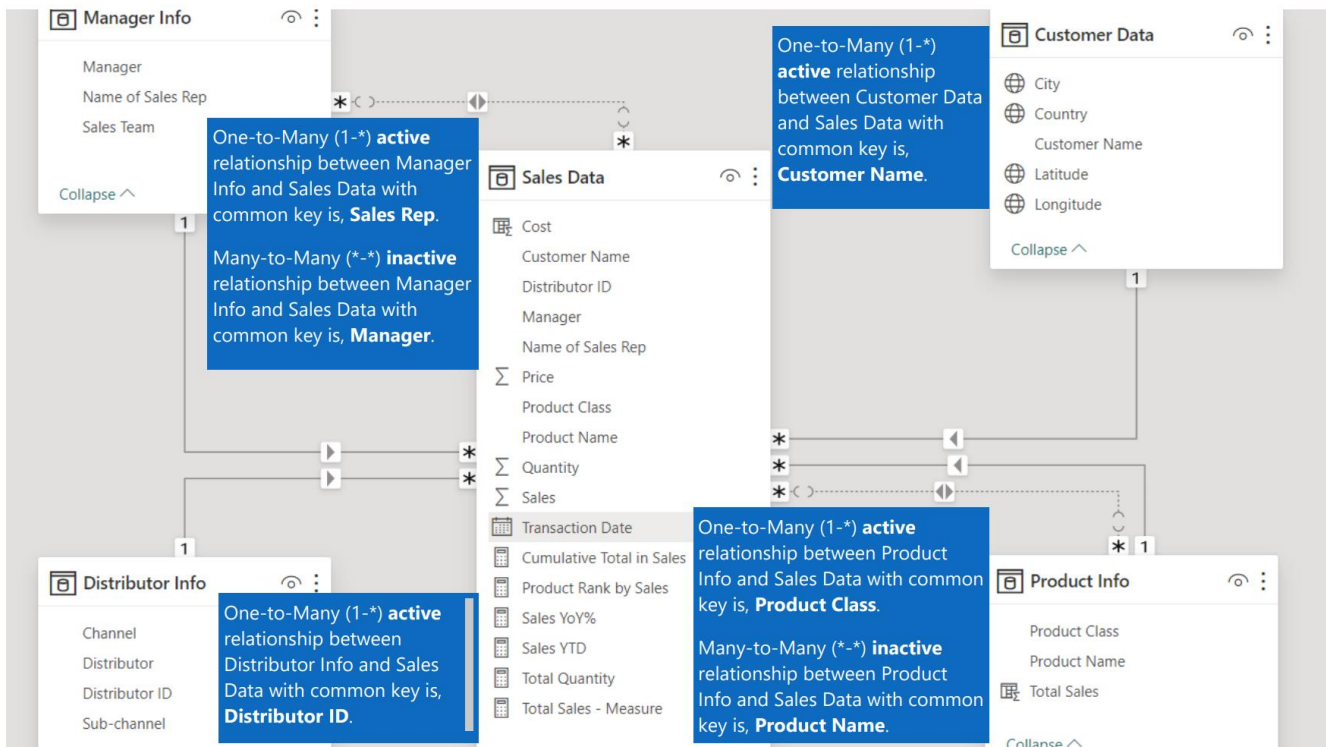
Presented By:
Vikram Satale

Que: [Schema Design] Given the provided dataset, create a Power BI data model with appropriate tables and relationships, considering the Distributor, Customer Name, City, and other relevant columns.



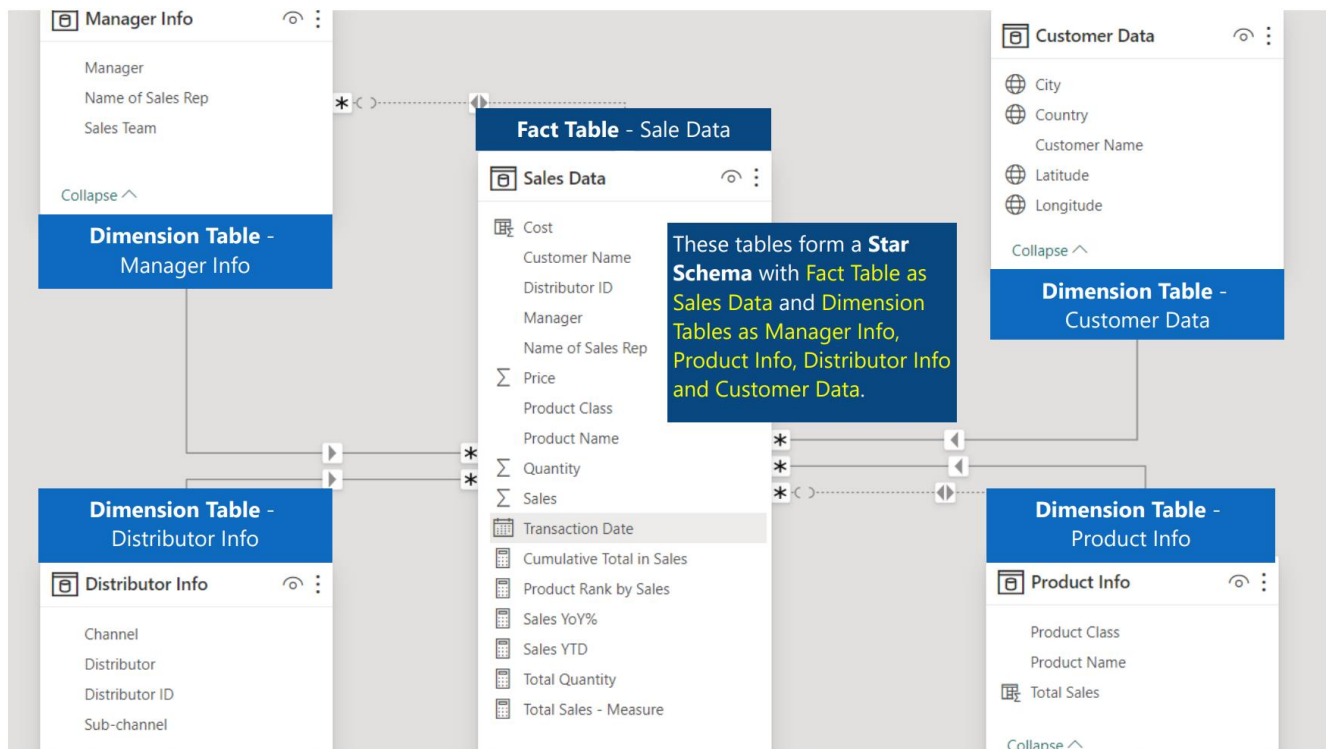
Sometimes it is very hard to deal with a dataset which contains all the business information. For example, Sales data and Customer data in a single sheet is an inefficient task to handle. So, we split the data into different tables for various purposes.

Que: [Relationships] Establish the necessary relationships between the tables in your data model. For instance, connect the "Sales" table to the "Customers" table.



The model contains one-to-one as well as one-to-many relationships. One-to-many relationships indicates that unique observation in the dimension table maps with multiple observations in fact table.

Que: [Schemas] Build a star schema based on the data and explain how your schema design helps optimize report performance.



Fact table usually contains measures and other continuous variables with at least one foreign key, while dimension table contains unique records with at least one primary key.

Que: [Row-Level Security] Set up row-level security in your data model, restricting access for a specific sales team. Show which measures are affected.

Below tables shows the Cumulative Total, Sales YoY%, Sales YTD, Total Quantity and Total Sales, etc. measures for top 15 products considering data from **all the sales teams**.

Row-Level Security: Restricting Access for Sales Team

Product Name	Cumulative Total in Sales	Sales YoY%	Sales YTD	Total Quantity	Total Sales - Measure
Abobozolid	\$76,80,900.00	37.12%	\$20,79,375	102412	\$76,80,900.00
Acantaine	\$72,73,464.00	31.59%	\$17,46,030	110204	\$72,73,464.00
Adrecetam Barazoxane	\$28,47,264.00	22.40%	\$5,21,112	118636	\$28,47,264.00
Aggrakine	\$58,78,666.00	37.11%	\$15,91,185	125078	\$58,78,666.00
Aldevac	\$38,58,140.00	13.84%	\$4,69,066	148390	\$38,58,140.00
Alisteride Pemidizem	\$42,61,775.00	21.56%	\$7,55,965	121765	\$42,61,775.00
Amphesirox	\$26,34,850.00	26.61%	\$5,53,750	105394	\$26,34,850.00
Claricriptine Adaferol	\$40,34,151.00	28.13%	\$8,85,720	122247	\$40,34,151.00
Cricane Acamsumab	\$27,15,715.20	46.25%	\$8,58,770	123442	\$27,15,715.20
Enzastryl	\$29,61,218.00	26.15%	\$6,13,860	113893	\$29,61,218.00
Interfedox Pilobamol	\$44,14,605.12	44.01%	\$13,49,146	107674	\$44,14,605.12
Interfestar	\$60,59,198.00	29.49%	\$13,79,748	97729	\$60,59,198.00
Pitodomide	\$33,69,048.00	36.84%	\$9,06,936	140377	\$33,69,048.00
Proderal	\$45,90,584.80	55.07%	\$16,30,266	135017	\$45,90,584.80
Sodinel Olofibrate	\$45,61,750.00	21.92%	\$8,20,150	91235	\$45,61,750.00
Total	\$6,71,41,329.12	31.70%	\$1,61,61,079	1763493	\$6,71,41,329.12

Below tables shows the Cumulative Total, Sales YoY%, Sales YTD, Total Quantity and Total Sales, etc. measures for top 15 products considering the Sales Team – **Alfa**.

Now viewing as: Sales Team RLS - Alfa

Stop viewing

Row-Level Security: Restricting Access for Sales Team

Product Name	Cumulative Total in Sales	Sales YoY%	Sales YTD	Total Quantity	Total Sales - Measure
Adrecetam Barazoxane	\$9,79,296.00	9.52%	\$85,152	40804	\$9,79,296.00
Aggrakine	\$11,10,422.00	54.83%	\$3,93,249	23626	\$11,10,422.00
Aldevac	\$6,27,952.00	42.76%	\$1,88,084	24152	\$6,27,952.00
Alisteride Pemidizem	\$10,74,430.00	18.48%	\$1,67,615	30698	\$10,74,430.00
Amphesirox	\$8,21,500.00	52.37%	\$2,82,350	32860	\$8,21,500.00
Claricriptine Adaferol	\$7,55,931.00	45.37%	\$2,35,917	22907	\$7,55,931.00
Cricane Acamsumab	\$6,06,773.20	21.85%	\$1,08,812	27581	\$6,06,773.20
Enzastryl	\$8,08,184.00	19.05%	\$1,29,350	31084	\$8,08,184.00
Ibruferon	\$14,08,678.00	69.22%	\$5,76,214	17179	\$14,08,678.00
Interfedox Pilobamol	\$7,41,116.00	17.49%	\$1,10,331	18076	\$7,41,116.00
Interfestar	\$9,36,696.00	48.74%	\$3,06,962	15108	\$9,36,696.00
Pitodomide	\$9,05,112.00	37.03%	\$2,44,584	37713	\$9,05,112.00
Proderal	\$11,58,652.00	21.92%	\$2,08,318	34078	\$11,58,652.00
Proprabax	\$13,81,312.00	21.74%	\$2,46,656	21583	\$13,81,312.00
Sodinel Olofibrate	\$9,92,850.00	24.26%	\$1,93,850	19857	\$9,92,850.00
Total	\$1,43,08,904.20	32.11%	\$34,77,444	397306	\$1,43,08,904.20

Filters

Below tables shows the Cumulative Total, Sales YoY%, Sales YTD, Total Quantity and Total Sales, etc. measures for top 15 products considering the Sales Team – **Bravo**.

Now viewing as: Sales Team RLS - Bravo Stop viewing

Row-Level Security: Restricting Access for Sales Team

Product Name	Cumulative Total in Sales	Sales YoY%	Sales YTD	Total Quantity	Total Sales - Measure
Abobozolid	\$14,39,325.00	45.88%	\$4,52,700	19191	\$14,39,325.00
Adreacetam Barazoxane	\$4,96,296.00	31.09%	\$1,17,696	20679	\$4,96,296.00
Agalsiline	\$13,08,672.00	69.29%	\$5,35,616	20448	\$13,08,672.00
Aggrakine	\$14,40,691.00	42.67%	\$4,30,896	30653	\$14,40,691.00
Aldevac	\$5,39,942.00	18.82%	\$85,514	20767	\$5,39,942.00
Alisteride Pemidizem	\$10,15,490.00	28.01%	\$2,22,180	29014	\$10,15,490.00
Amphesirox	\$4,69,550.00	29.46%	\$1,06,850	18782	\$4,69,550.00
Claricriptine Adaferol	\$8,85,423.00	42.79%	\$2,65,353	26831	\$8,85,423.00
Cricane Acamsumab	\$6,77,776.00	67.80%	\$2,73,856	30808	\$6,77,776.00
Enzastryl	\$6,92,224.00	29.75%	\$1,58,730	26624	\$6,92,224.00
Interfedox Pilobamol	\$7,97,194.11	15.67%	\$1,07,994	19444	\$7,97,194.11
Interfestar	\$11,91,640.00	22.99%	\$2,22,766	19220	\$11,91,640.00
Pitodomide	\$9,78,432.00	22.22%	\$1,77,888	40768	\$9,78,432.00
Proderal	\$14,29,298.80	95.41%	\$6,97,850	42038	\$14,29,298.80
Sodinel Olofibrate	\$13,20,050.00	18.44%	\$2,05,500	26401	\$13,20,050.00
Total	\$1,46,82,003.91	38.24%	\$40,61,389	391668	\$1,46,82,003.91

Filters

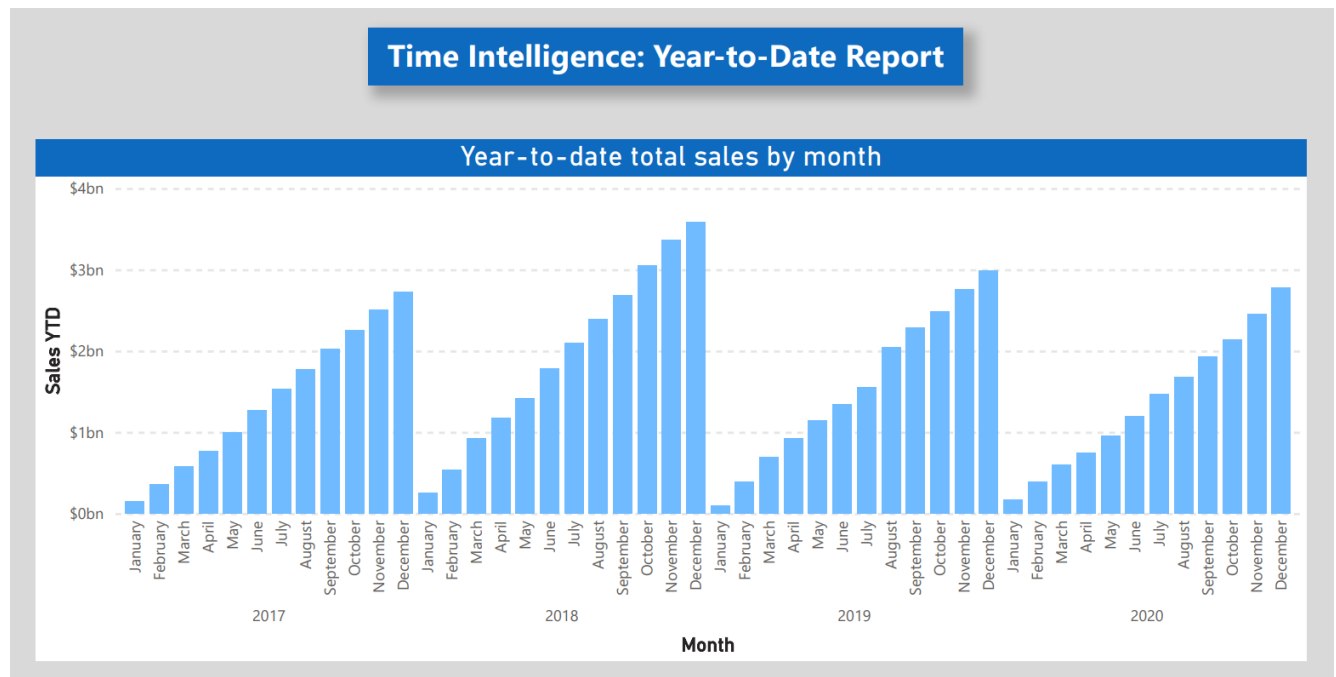
This suggest that all the measures mentioned in the above table Cumulative Total, Sales YoY%, Sales YTD, Total Quantity and Total Sales are affected by adding row-level security on Sales Team.

Que: [Calculated Columns vs. Measures] Calculate the total sales for each product both as a calculated column and a measure. Compare the results and explain the differences.

Total Sales by Calculated Column			Total Sales by Measure		
Product Class	Product Name	Total Sales	Product Class	Product Name	Total Sales - Measure
Analgesics	lonclotide	\$17,15,84,675	Analgesics	lonclotide	\$17,15,84,675
Antimalarial	Tetratanyl	\$12,72,33,890	Antimalarial	Tetratanyl	\$12,72,33,890
Analgesics	Sumanazole	\$11,39,54,535	Analgesics	Sumanazole	\$11,39,54,535
Analgesics	Betanem	\$10,80,09,525	Analgesics	Betanem	\$10,80,09,525
Antiseptics	Docstryl Rivacin	\$10,67,09,094	Antiseptics	Docstryl Rivacin	\$10,67,09,094
Antiseptics	Travoloride	\$10,39,68,540	Antiseptics	Travoloride	\$10,39,68,540
Antimalarial	Propratecan	\$10,15,83,900	Antimalarial	Propratecan	\$10,15,83,900
Antibiotics	Cephozumab Synmethate	\$10,02,89,280	Antibiotics	Cephozumab Synmethate	\$10,02,89,280
Analgesics	Ketastadil	\$9,79,85,223	Analgesics	Ketastadil	\$9,79,85,223
Antibiotics	Nevanide Actozide	\$9,73,77,902	Antibiotics	Nevanide Actozide	\$9,73,77,902

Calculated column adds a new column to the existing data, while measures get added to the model only and not visible in the existing data. Both the methods, Calculated Columna and Measure for Total Sales gives the same results.

Que: [Time Intelligence] Using DAX, create a measure that calculates the year-to-date (YTD) sales for each month.



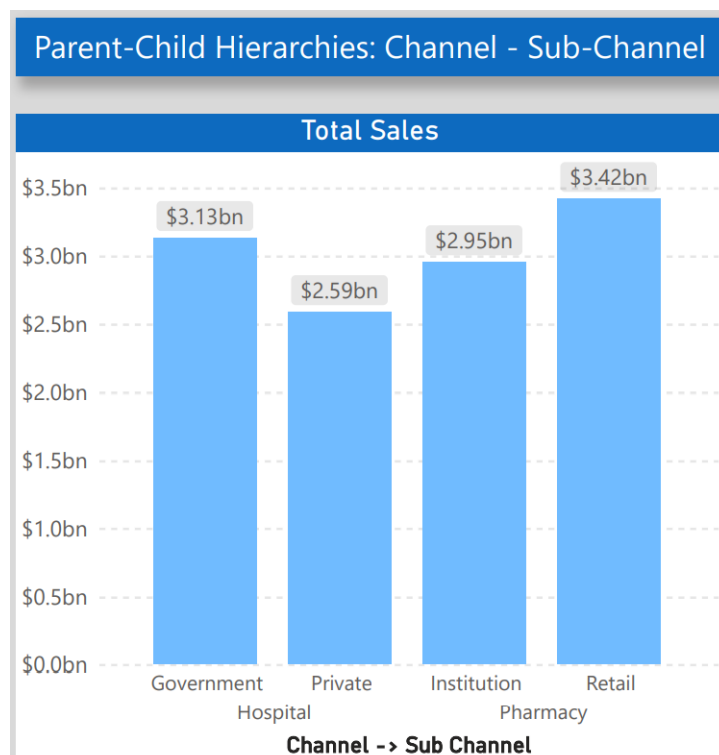
Years-to-date measure calculated the cumulative sales total for each individual year from 2017 to 2020.

Que: [Ranking] Create a DAX measure that ranks products by sales. Display the top 5 products by rank in a visual.

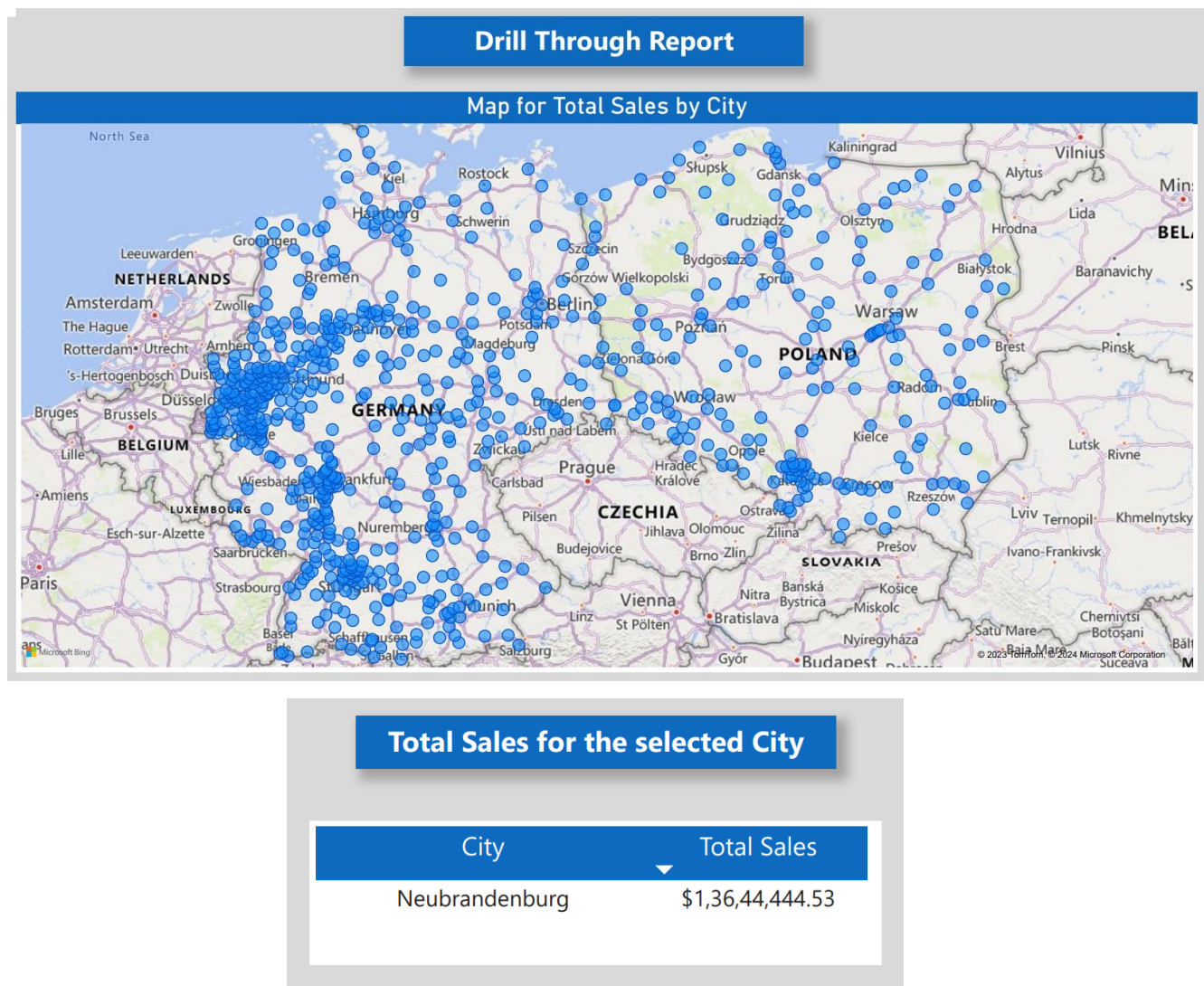


lonclotide is the top most selling product followed by Tetratanyl and Sumanazole.

Que: [Parent-Child Hierarchies] If there's a hierarchy in your data, such as categories and subcategories, create a DAX measure to summarize sales at the subcategory level.



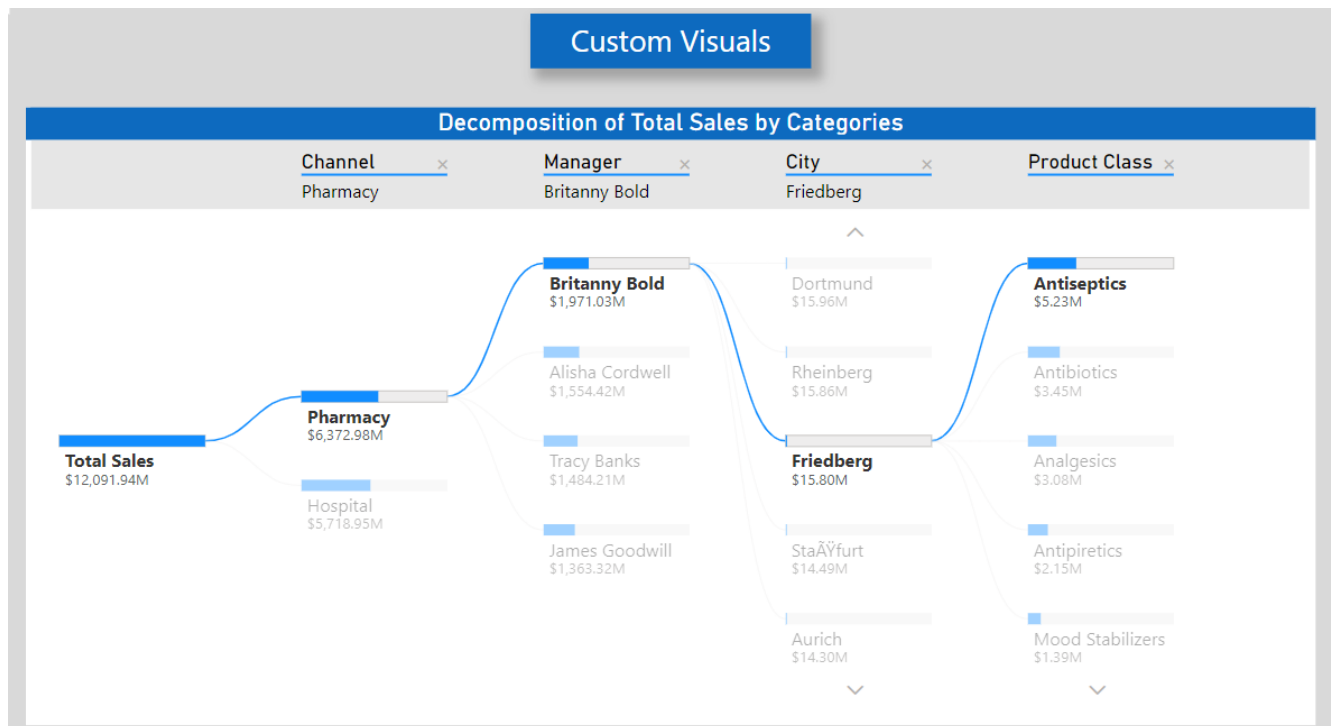
Que: [Drill-Through] Build a report where users can drill through from a summary to detailed data. For example, starting from a map, drill through to a table of individual sales for a specific city.



One can right-click on any one of the dots for a specific city to go see more details about the city using drill through tool in PowerBI. For example, after right-clicking on Neubrandenburg city one can see table for total sales for the city in another page (drill-through page) created in PowerBI.

The total sales for Neubrandenburg are \$ 1,36,44,444.53.

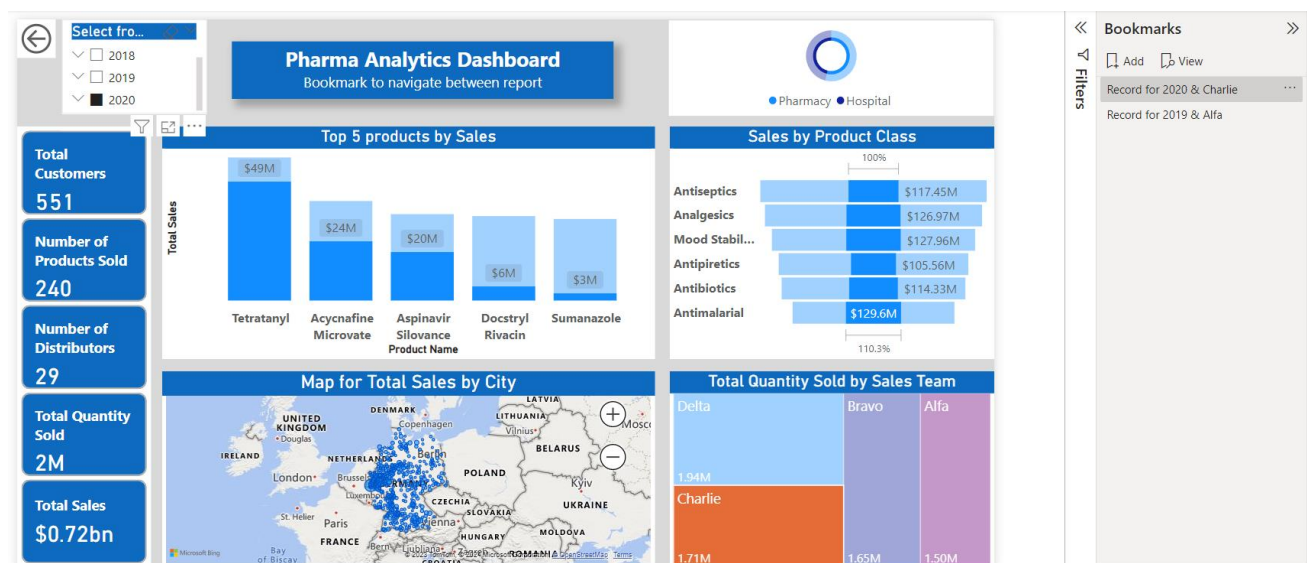
Que: [Custom Visuals] Use a custom visual in your report to visualize sales data in a unique way. Explain why you chose this custom visual.

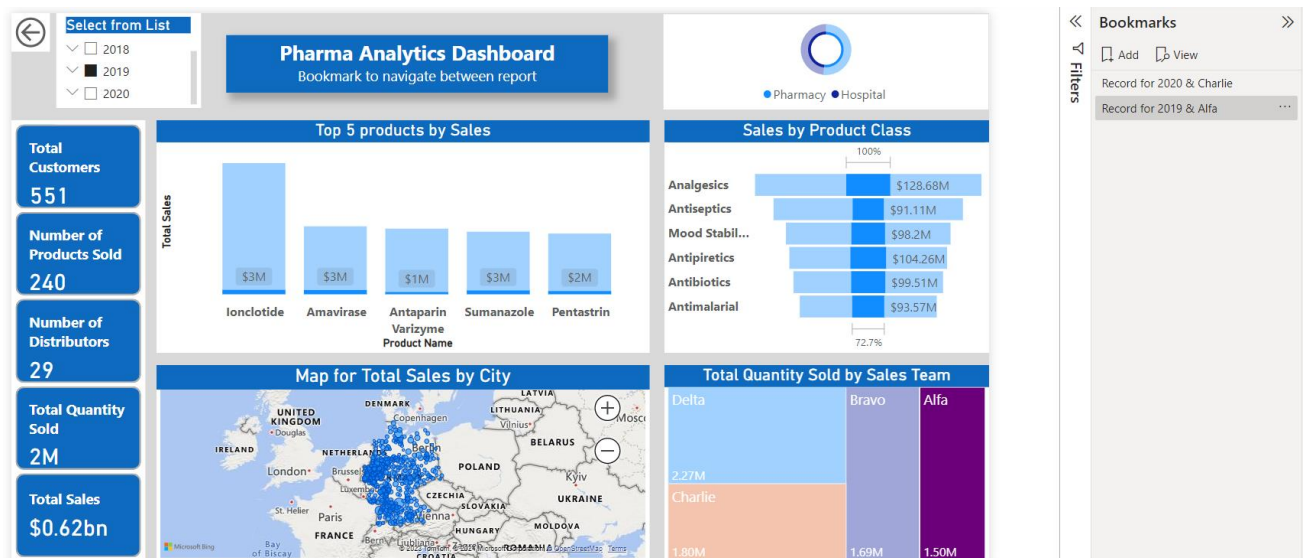


The above graph shows the decomposition of total sales by channel, manager, city and product class, etc. One can navigate through a desired combination of channel, manager, city and product class. For example, the total sales from channel “pharmacy” by manager “Britanny Bold” in city “Friedberg” from product class “Antiseptics” is \$5.23 million.

Que: [Bookmarks and Buttons] Create a report with bookmarks and buttons that allow users to navigate between different pages or states within the report.

By creating Bookmarks in PowerBI, one can access desired results which were fixed while creating bookmarks. While buttons help user to navigate from one page (/state) to another.



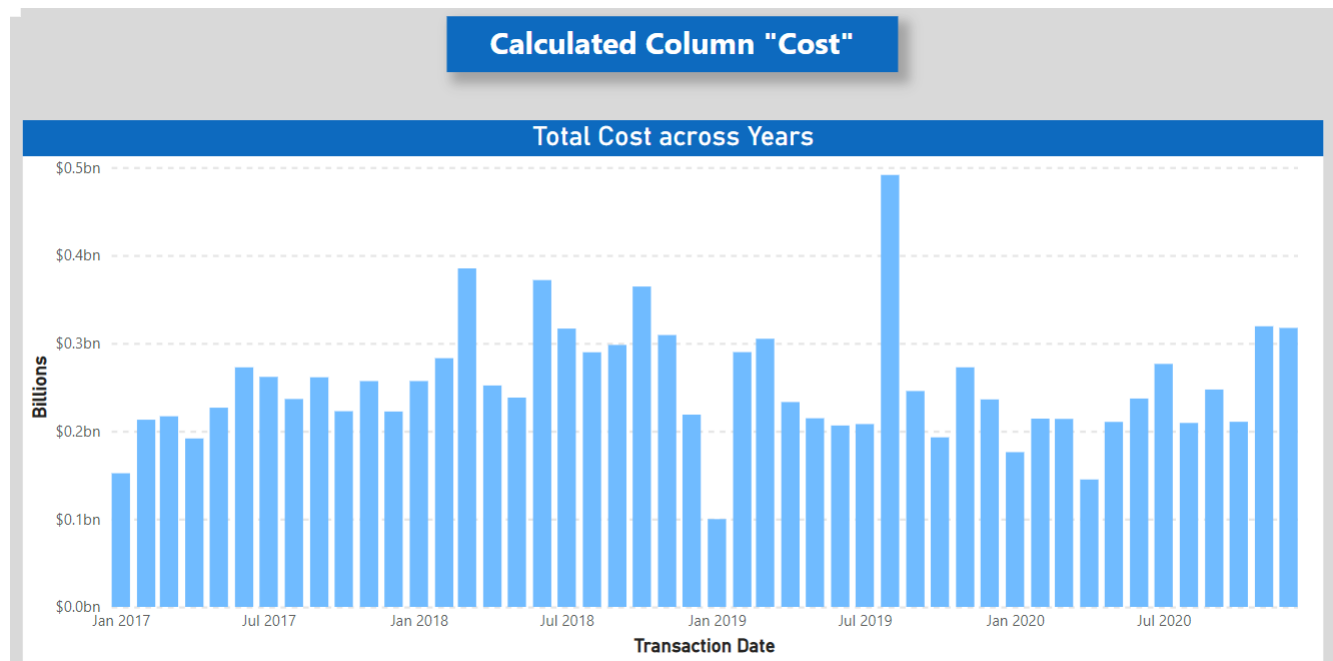


Que: [Conditional Formatting] Apply conditional formatting to a measure so that it changes colour when sales exceed a certain target value.

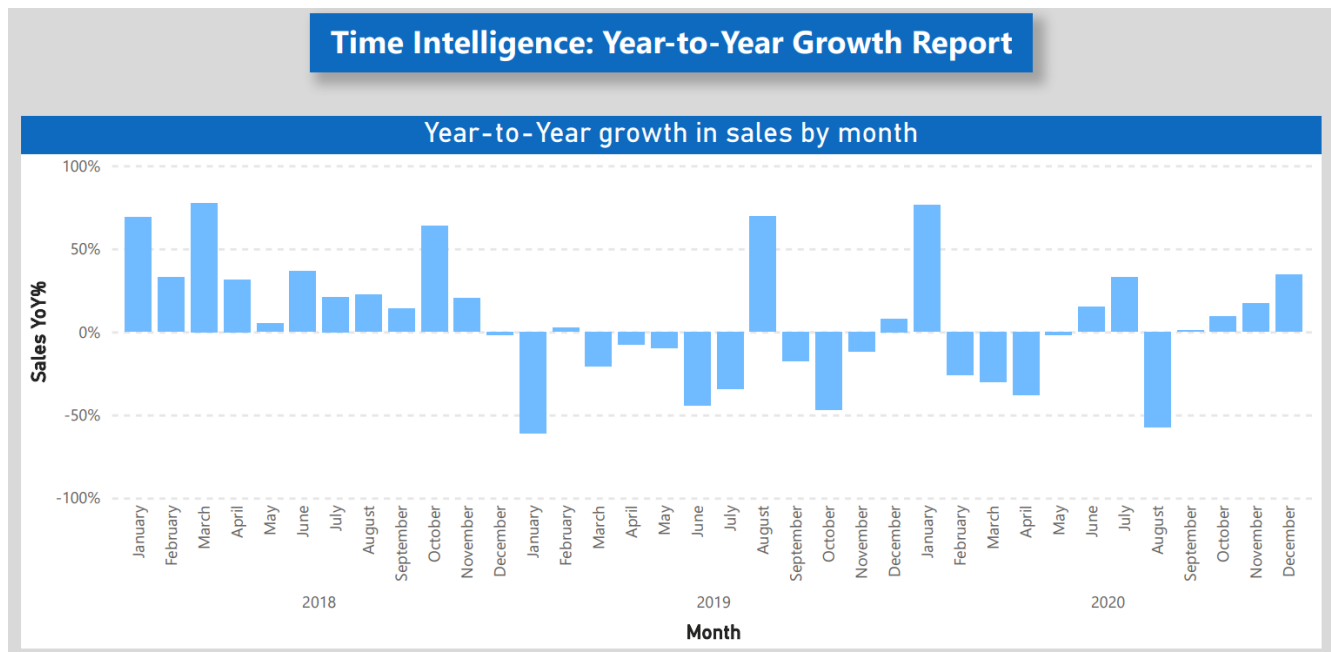
Conditional Formatting		
Product Name	Total Quantity	Total Sales - Measure
Abatatriptan	107806	\$7,99,92,052
Abilovir Aprotasol	133078	\$3,57,98,089.6
Abobozolid	102412	\$76,80,900
Abranatal Lysoprosate	127662	\$8,69,37,822
Abtasol	118893	\$8,96,45,322
Acantaine	110204	\$72,73,464
Acelimus	116535	\$8,69,35,110
Aciprex	122397	\$5,15,29,137
Aclonuma	103284	\$4,89,56,616
Acubulin	123643	\$6,05,85,070
Acycnafine Microvate	144543	\$9,51,09,294
Acycpex	89243	\$4,55,13,930
Adalatamine	84248	\$6,68,92,912
Adideine	102658	\$6,96,02,124
Adrecetam Barazoxane	118636	\$28,47,264
Adriacaine	93542	\$3,37,68,662
Adriafinil Ehtymara	126688	\$6,77,78,080
Total	29393602	\$12,09,19,36,836.1953

Conditional formatting was set to distinguish the products names whose quantities were sold more than 100,000 units from the entire list of products.

Que: [Calculated Columns] Add a calculated column to your data model that calculates the total cost of each product (Quantity x Price).

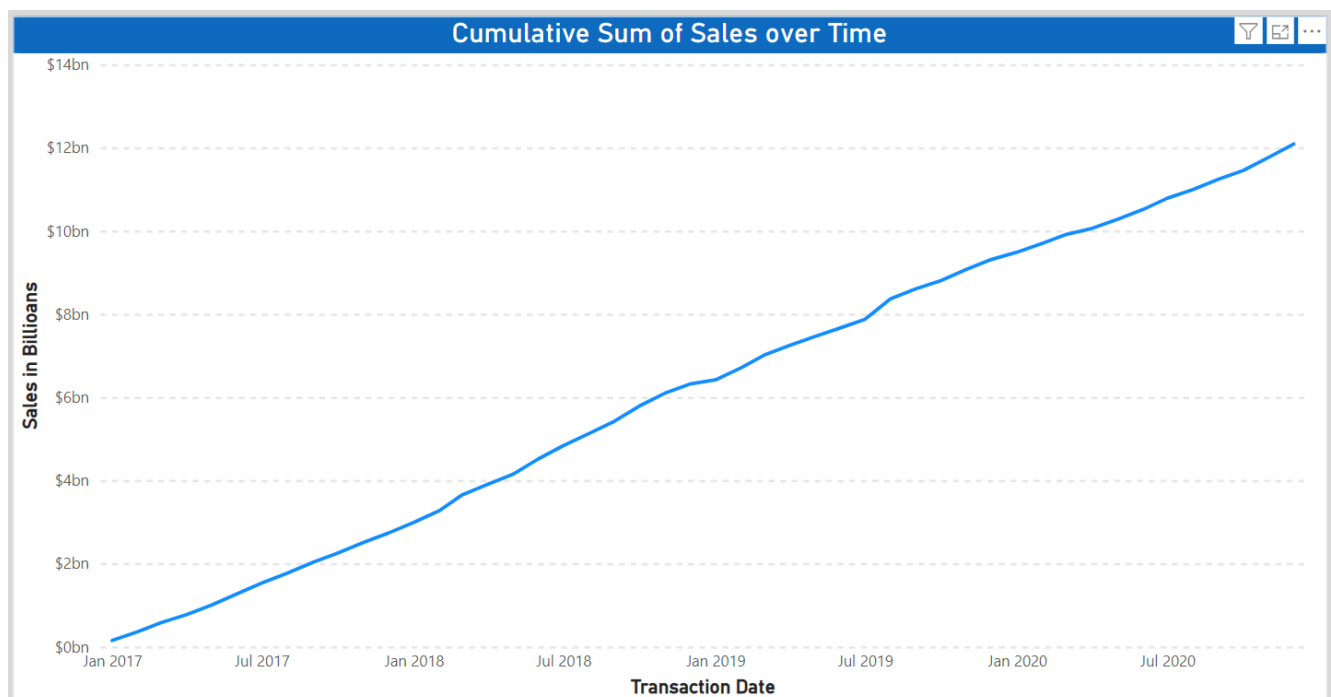


Que: [Time-Based Calculations] Create a measure that calculates the year-over-year (YoY) growth in sales for each month.



Que: [Cumulative Total] Develop a measure to show the cumulative total of sales over time and visualize it in a line chart.

Cumulative total keeps on adding sales from all the previous dates till the current date.



Thank you!