Microsoft Power BI for Data Analytics

Amnuay M.

Agenda

About me
About you your goals
Get to know DATA
Data analytics
MSoft Power BI Desktop Demo
Analytics more on theory
Dashboard
Q&A

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X-MBA, Rangsit U. (2010)
B. Eng, Thammasat U (2000)

Head of Back-end Solutions
Technology function
FWD Insurance Plc.

23 yrs of experience from
Technical engineer –> IT Practical
strategic management

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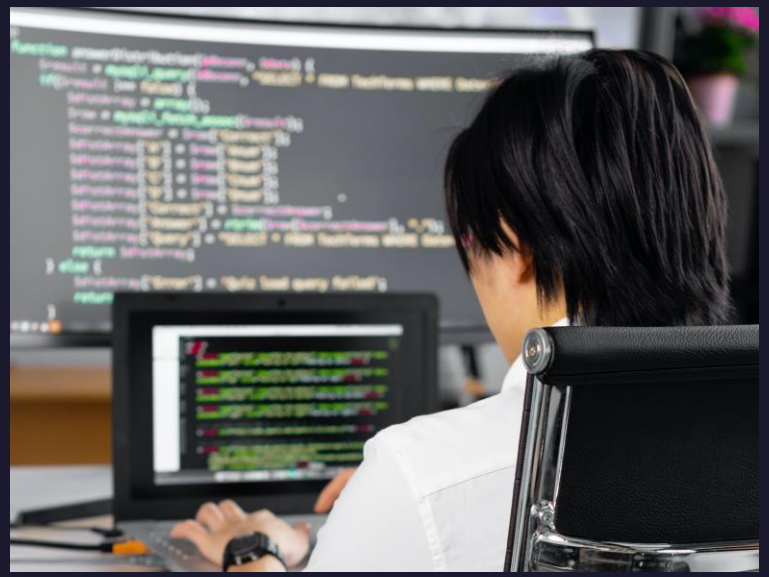
About you
About goals,

SHORT TERM GOALS

- What to complete within 1-2 years

MID TERM GOALS

- What to complete within 5-10 years



LONG TERM GOALS

- What to achieve in life

Get to know DATA

Type of data

ข้อมูลเชิงคุณภาพ

Qualitative

Nominal data

ข้อมูลประเภทนามบัญญัติ

สถิติ
- ความถี่
- อัตราส่วน ร้อยละ

Ordinal data

ข้อมูลประเภทมาตรบัญญัติ

สถิติ
- ความถี่
- อัตราส่วน ร้อยละ
- เปอร์เซ็นไทล์

ข้อมูลเชิงปริมาณ

Quantitative

Discrete data

ข้อมูลแบบไม่ต่อเนื่อง

Continuous data

ข้อมูลแบบต่อเนื่อง

Structure data

Unstructured data

Transactional data

Master data

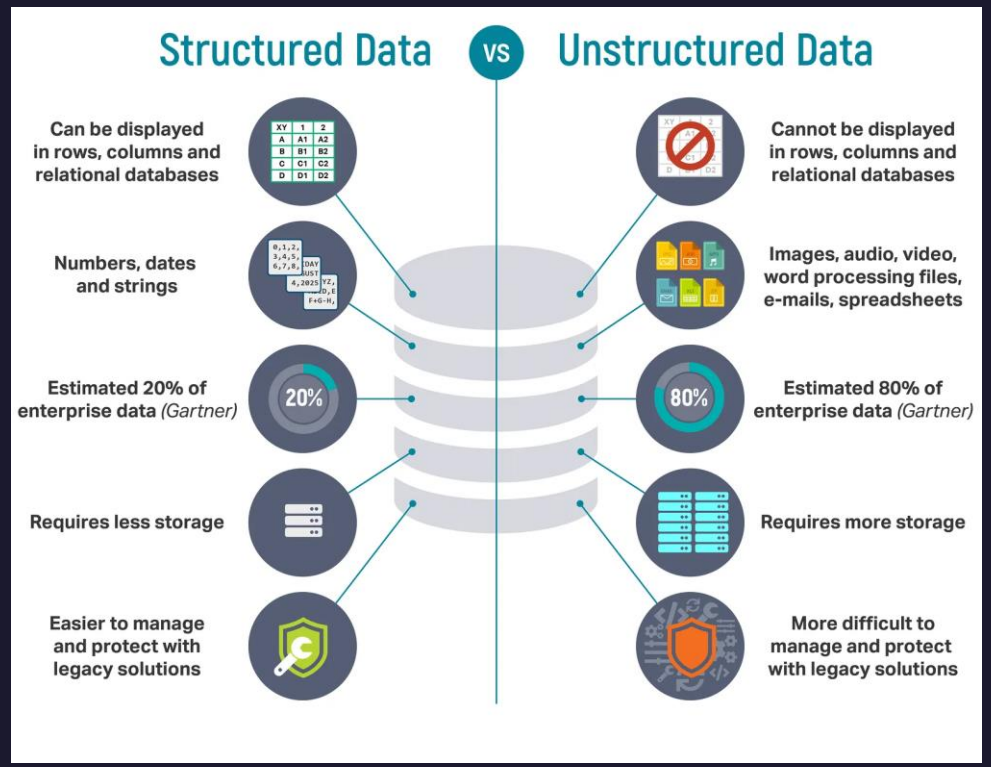
Reference data

Meta data

Type of data

Structure data

Unstructured data



Reference data

Master data

Transactional data

Report data

Meta data

More resources
Semarchy.com
Unstructure data on Wikipedia
Bigdata on Wikipedia

More resources
Lawtomated.com

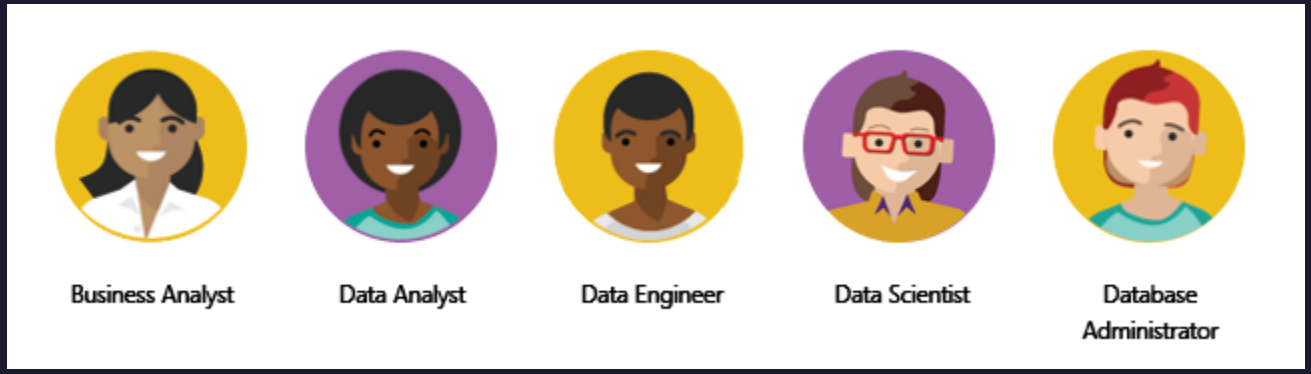
Data and Information

Data analytics

Data analytics

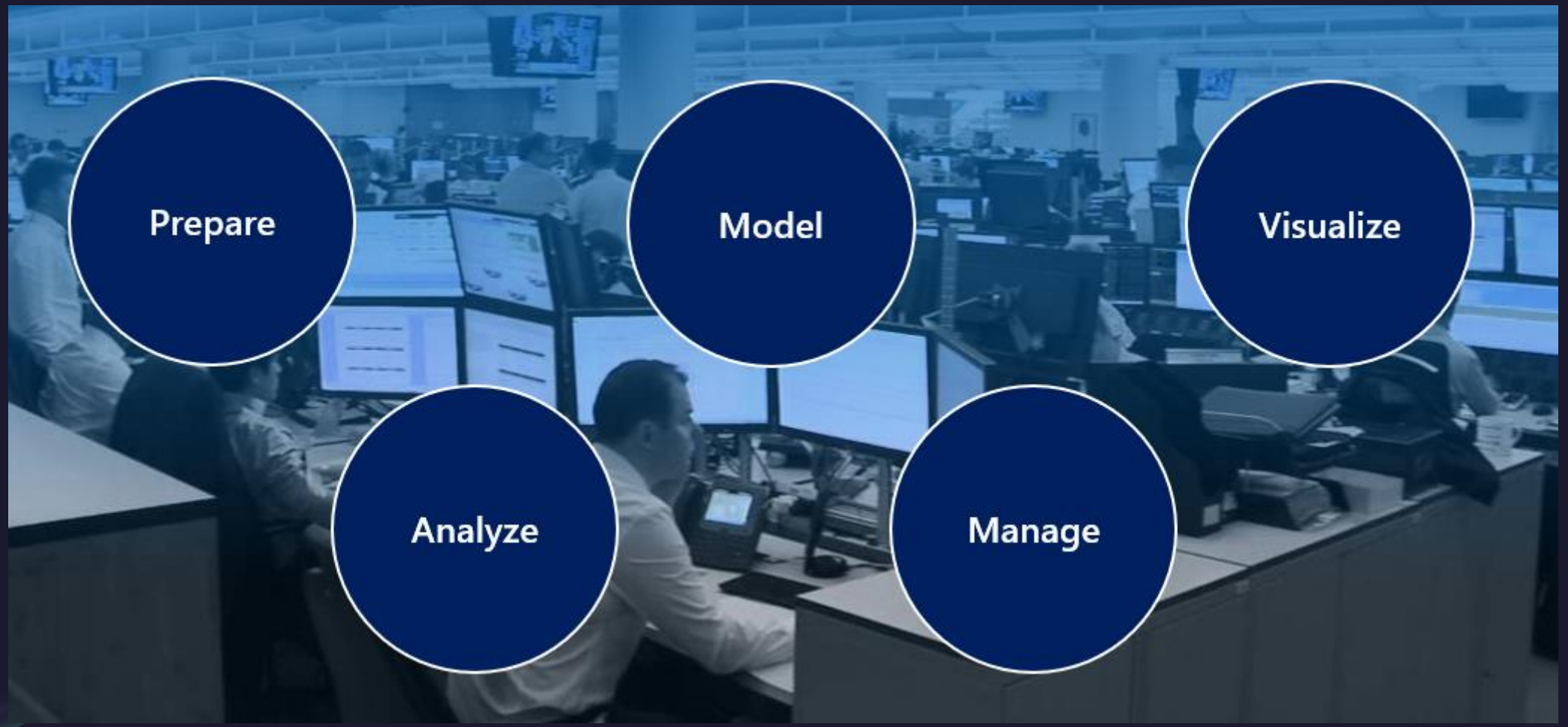
While the process of data analysis focuses on the tasks of cleaning, modeling, and visualizing data, the concept of data analysis and its importance to business should not be understated. To analyze data, core components of analytics are divided into the following categories:

- Descriptive analytics – Describe and summary data suite for KPI, reports, summary
- Diagnostic analytics – Identify anomalies in the data, Collect data that's related to these anomalies and explain trends
- Predictive analytics – Predict future from historical data to determine the likelyhood.
- Prescriptive analytics – Help answer questions about which actions should be taken to achieve a goal or target
- Cognitive analytics – Attempt to draw inferences from existing data and pattern. Predict future inference with self-learning feedback

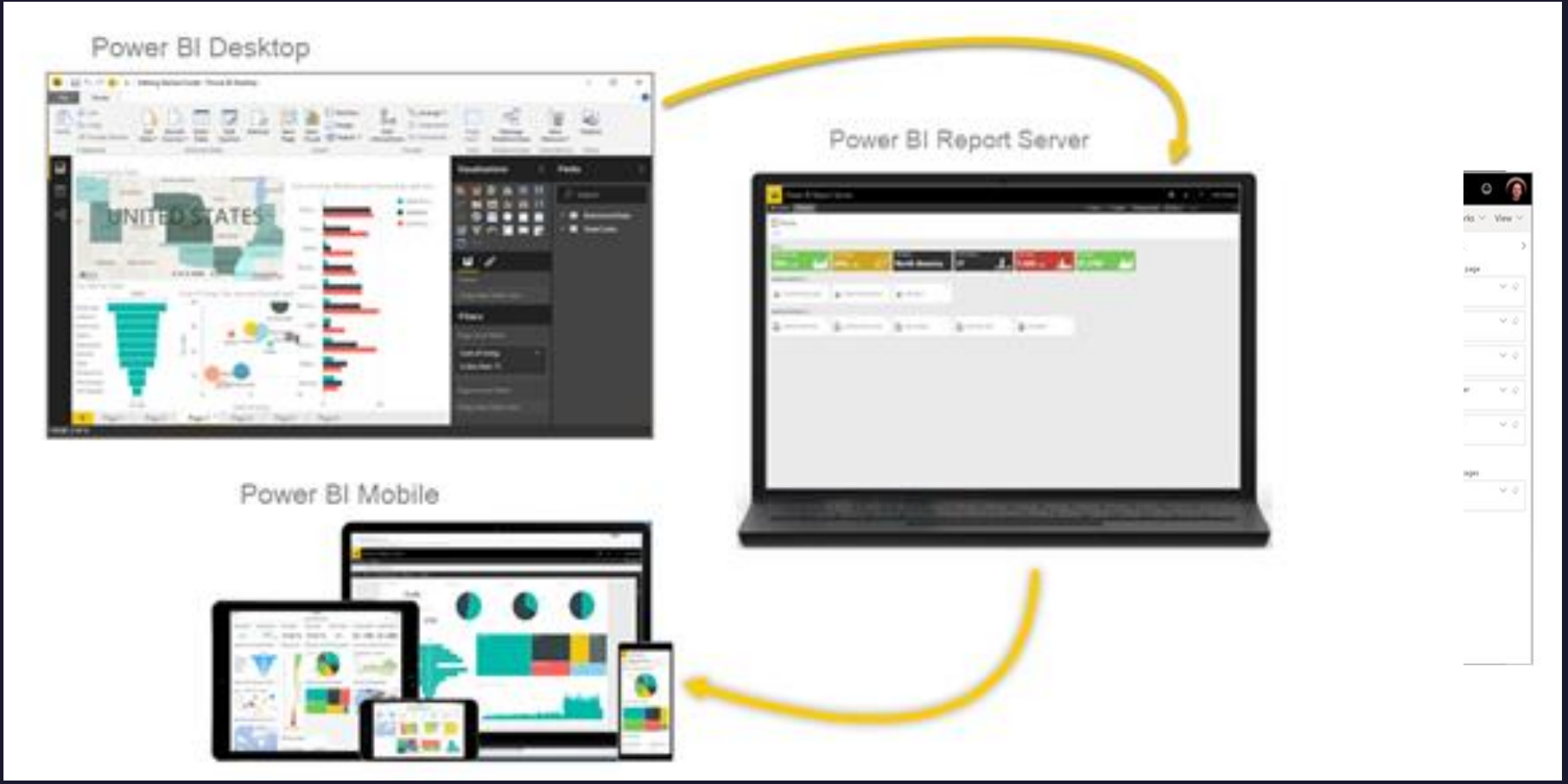


- Source: [DataHub Facebook]

Tasks of Data analyst



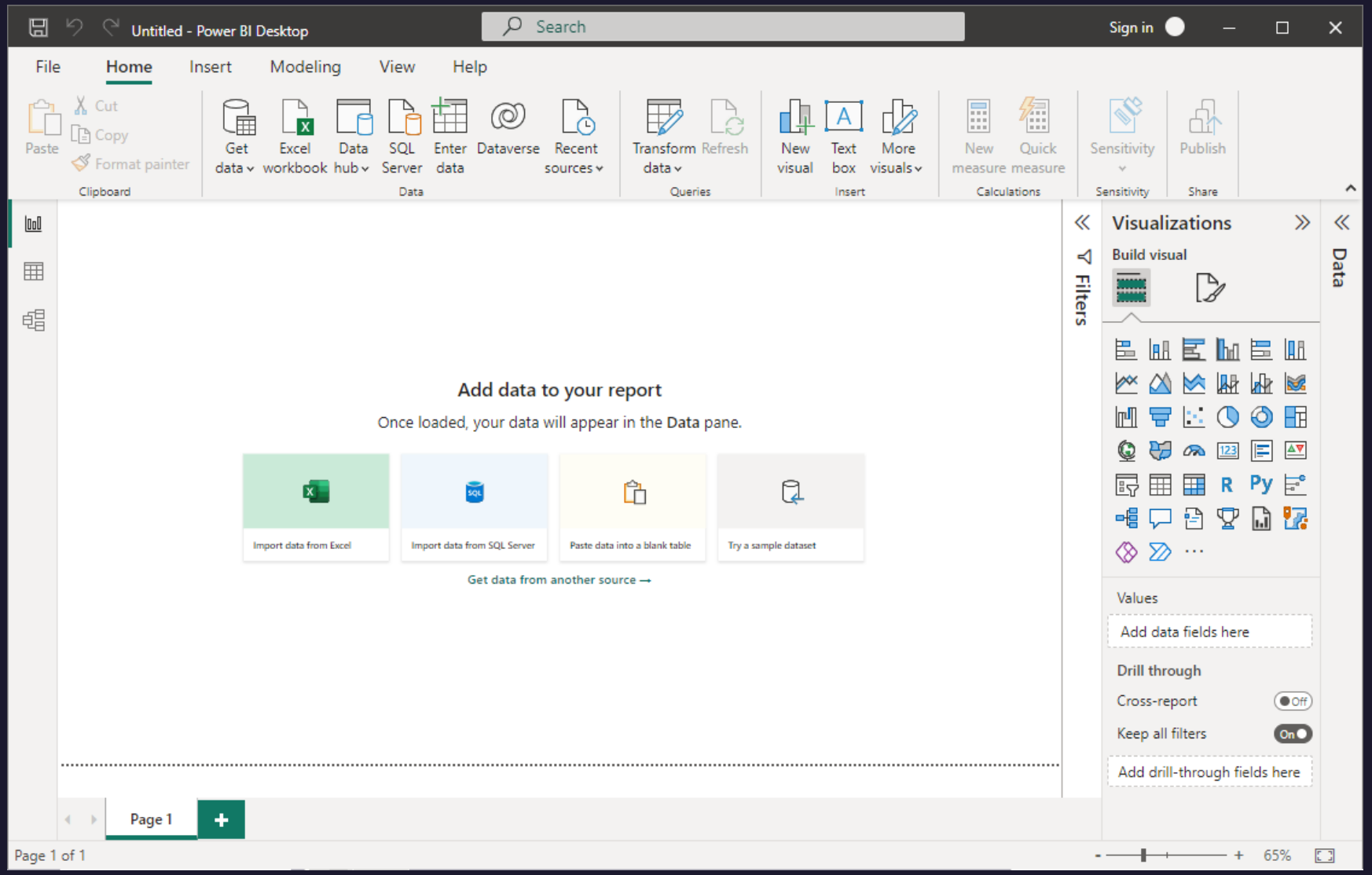
Power BI Components



On-premise

On-cloud

Power BI Desktop

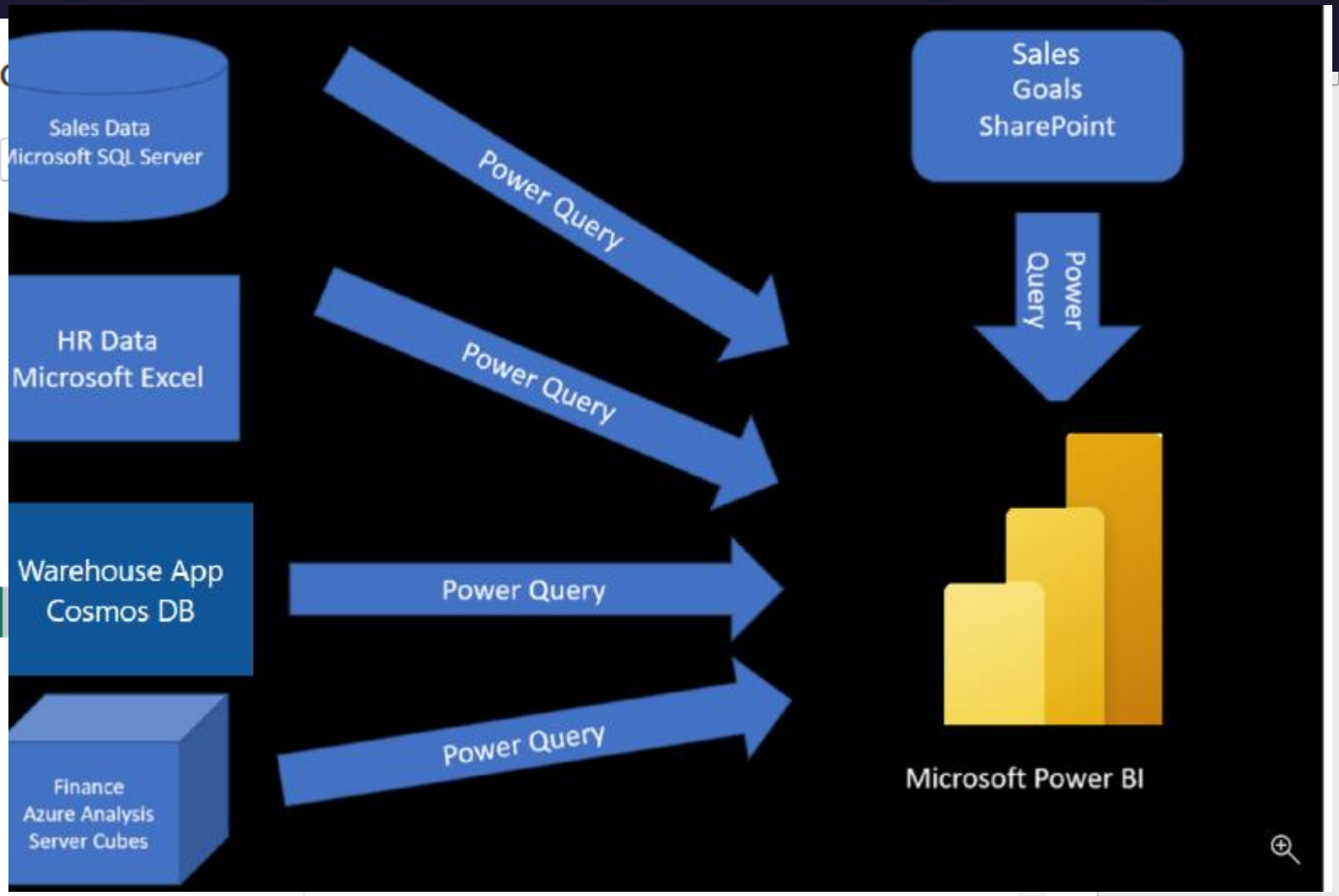


Datasets

C2132 | 2

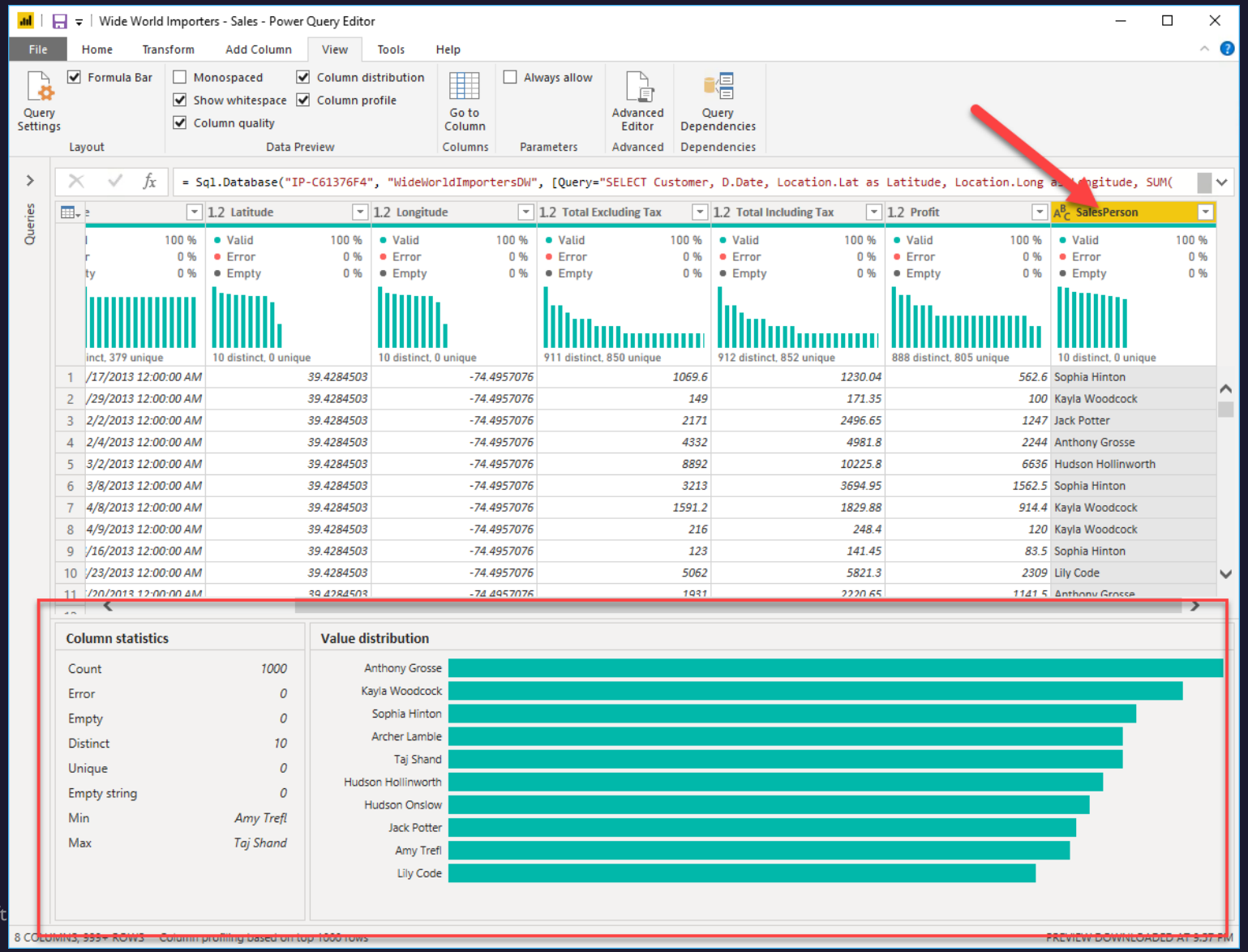
	B	C	D	E	F	G	H
1	Year	Month	Month Name	Calendar Month	Births	Births Per Day	Births (Normalized)
2119	2004	1	January	1/1/2004	2,937	94.7	2842
2120	2004	2	February	2/1/2004	2,824	97.4	2921
2121	2004	3	March	3/1/2004	3,128	100.9	3027
2122	2004	4	April	4/1/2004	2,896	96.5	2896
2123	2004	5	May	5/1/2004	3,008	97.0	2911
2124	2004	6	June	6/1/2004	3,047	101.6	3047
2125	2004	7	July	7/1/2004	2,981	96.2	2885
2126	2004	8	August	8/1/2004	3,079	99.3	2980
2127	2004	9	September	9/1/2004	3,219	107.3	3219
2128	2004	10	October	10/1/2004	3,547	114.4	3433
2129	2004	11	November	11/1/2004	3,365	112.2	3365
2130	2004	12	December	12/1/2004	3,143	101.4	3042
2131	2005	1	January	1/1/2005	2,921	94.2	2827
2132	2005	2	February	2/1/2005	2,699	96.4	2892
2133	2005	3	March	3/1/2005	3,024	97.5	2926
2134	2005	4	April	4/1/2005	3,037	101.2	3037
2135	2005	5	May	5/1/2005	3,231	104.2	3127
2136	2005	6	June	6/1/2005	3,163	105.4	3163
2137	2005	7	July	7/1/2005	3,119	100.6	3018
2138	2005	8	August	8/1/2005	3,156	101.8	3054
2139	2005	9	September	9/1/2005	3,439	114.6	3439

Get Data

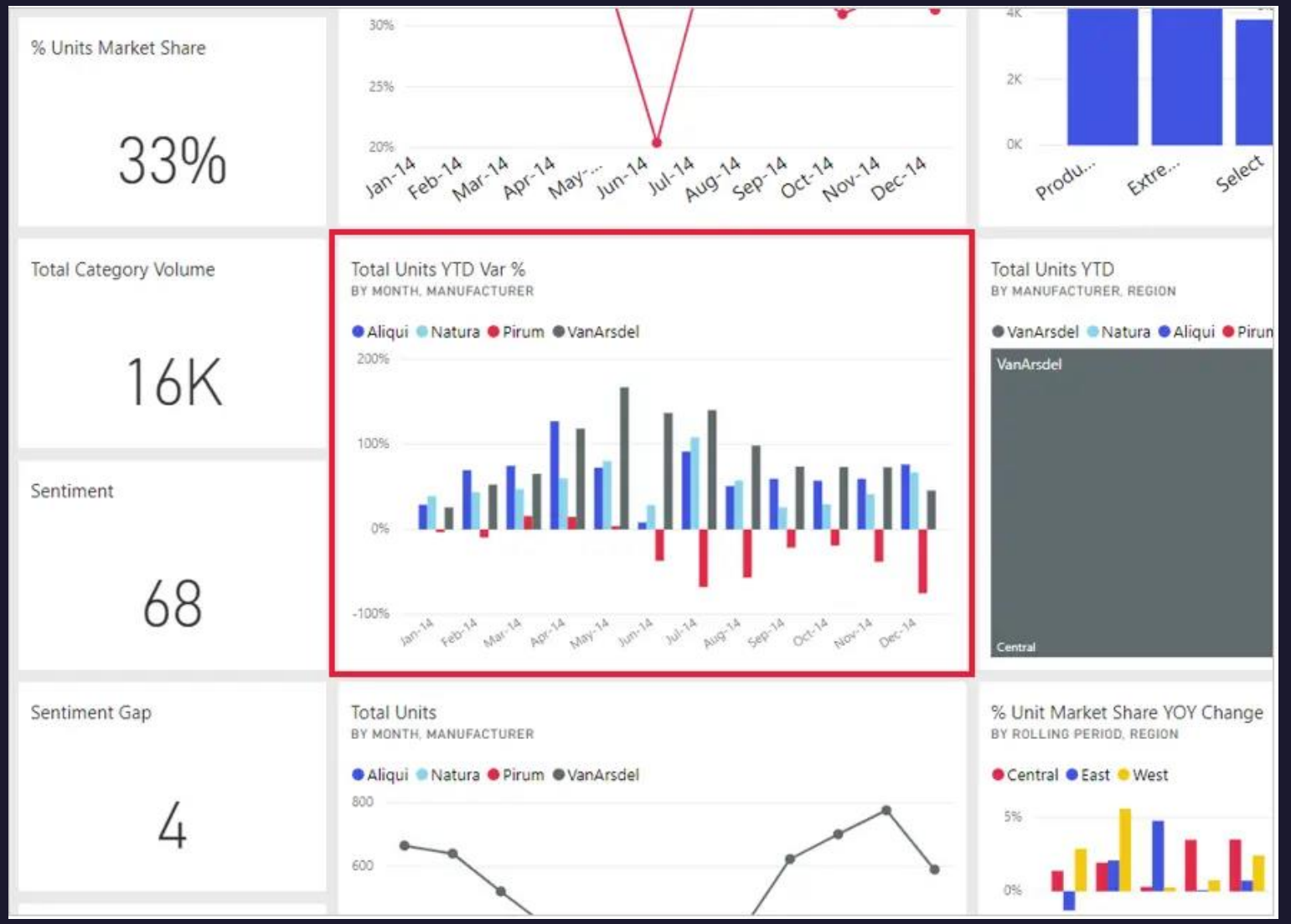

Sales Data
Microsoft SQL Server
HR Data
Microsoft Excel
Warehouse App
Cosmos DB
Finance
Azure Analysis
Server Cubes
Power Query
Power Query
Power Query
Power Query
Sales
Goals
SharePoint
Power
Query
Microsoft Power BI

Data preparation

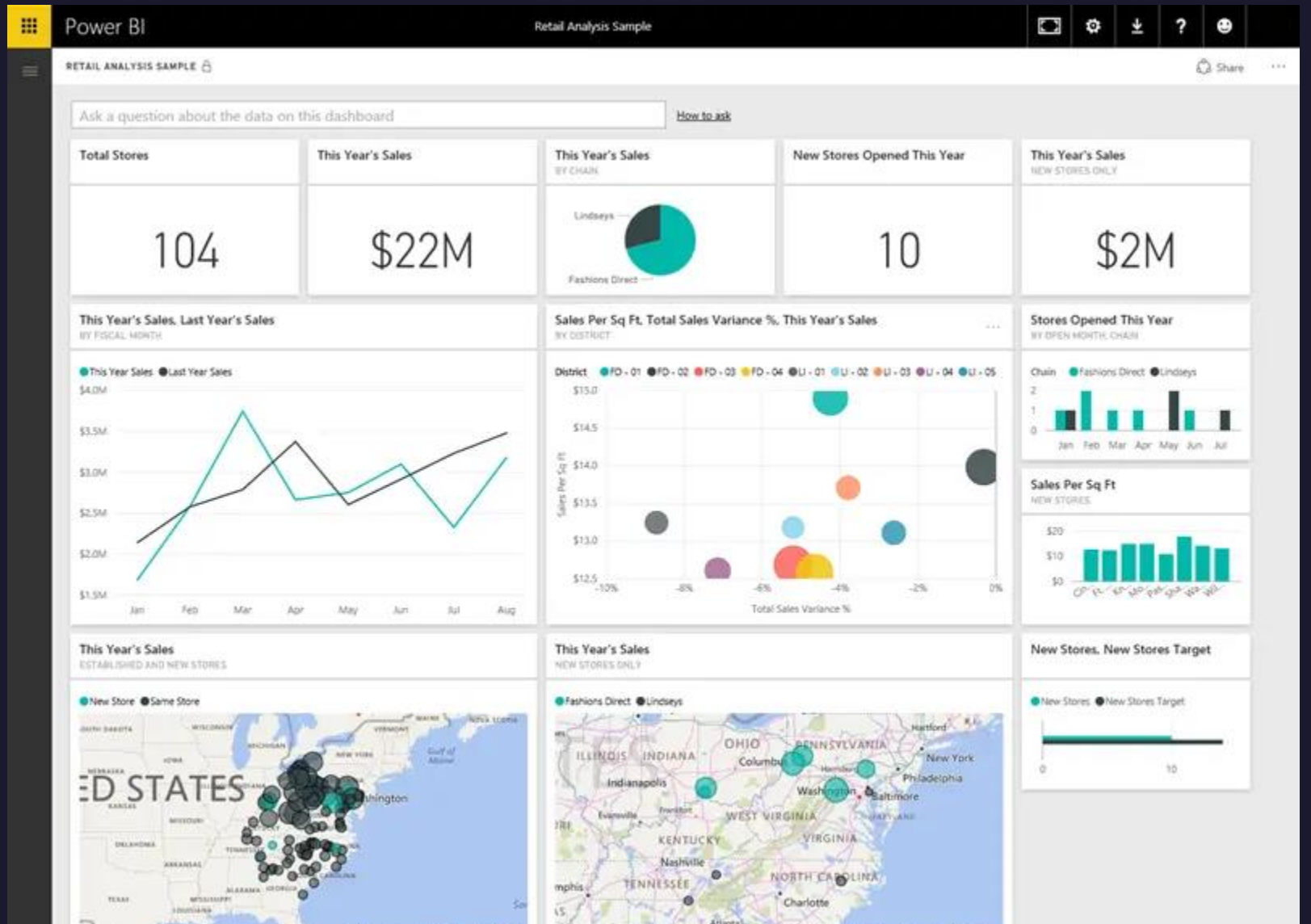
- Merge data
- Data quality
- Data cleansing



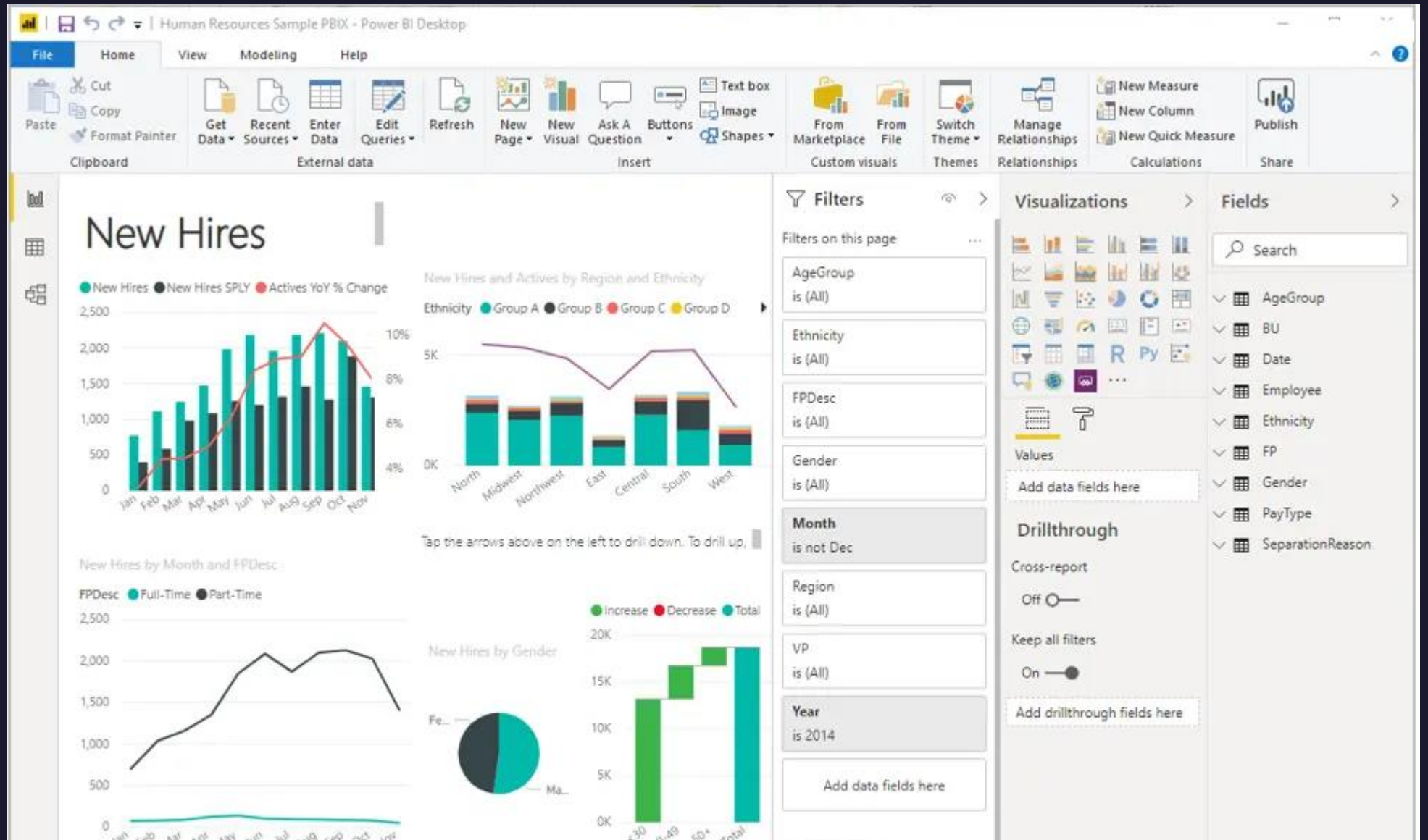
Tiles


% Units Market Share
33%
Total Category Volume
16K
Sentiment
68
Sentiment Gap
4
Total Units YTD Var %
BY MONTH, MANUFACTURER
Aliqui Natura Pirum VanArsdel
Total Units YTD
BY MANUFACTURER, REGION
VanArsdel Natura Aliqui Pirun
VanArsdel
Central
Total Units
BY MONTH, MANUFACTURER
Aliqui Natura Pirum VanArsdel
% Unit Market Share YOY Change
BY ROLLING PERIOD, REGION
Central East West

Visualizations



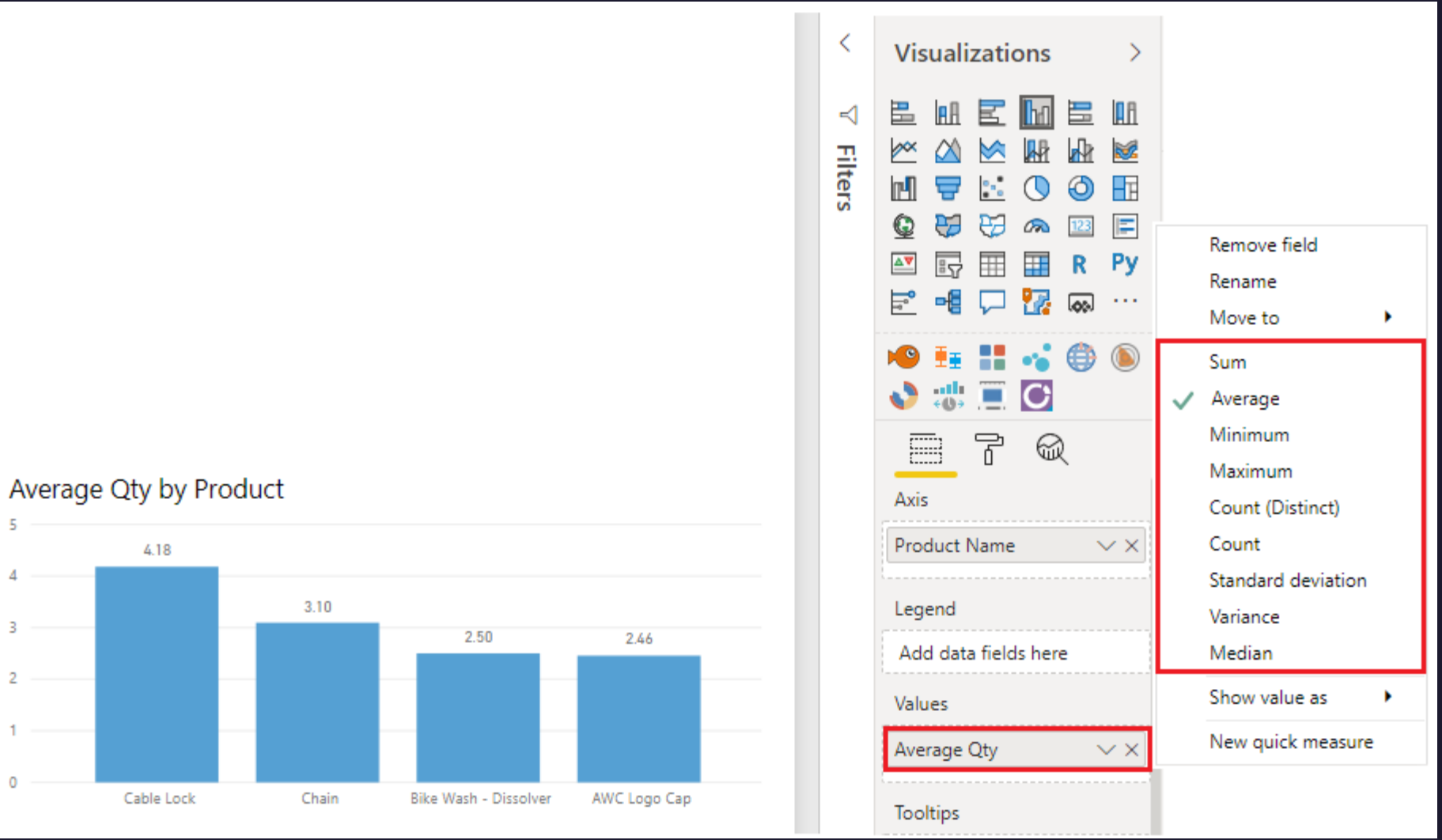
Reports & Dashboard



Demo time

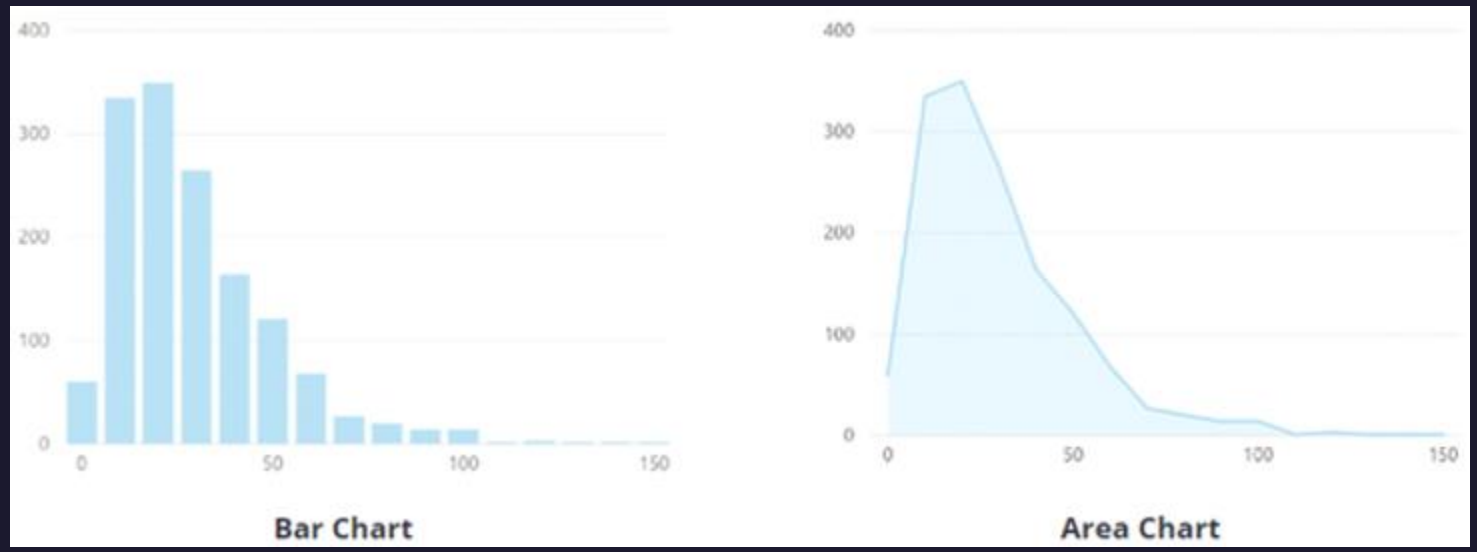
Analytics more on theory

Analytics – Statistics and DAX



Analytics - Histogram

- Histograms and bell curves are the most common way to display statistics about your datasets. In Power BI terms, you can represent a histogram with one of the bar or column chart visuals and represent a bell curve with an area chart visual, as illustrated in the following image. You can also use the Q&A visual to ask a direct question about the top or bottom items in a list.
-



Analytics – Top N analysis

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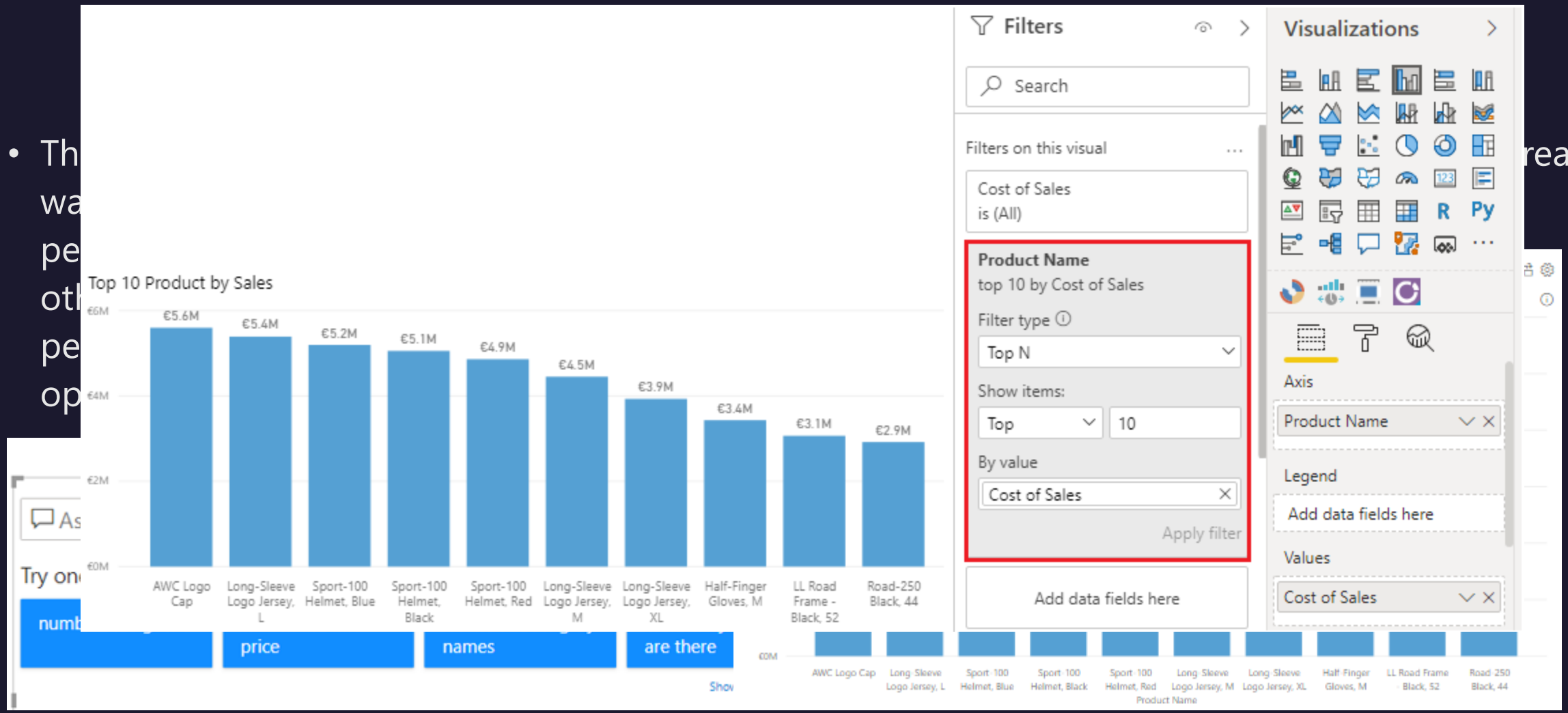
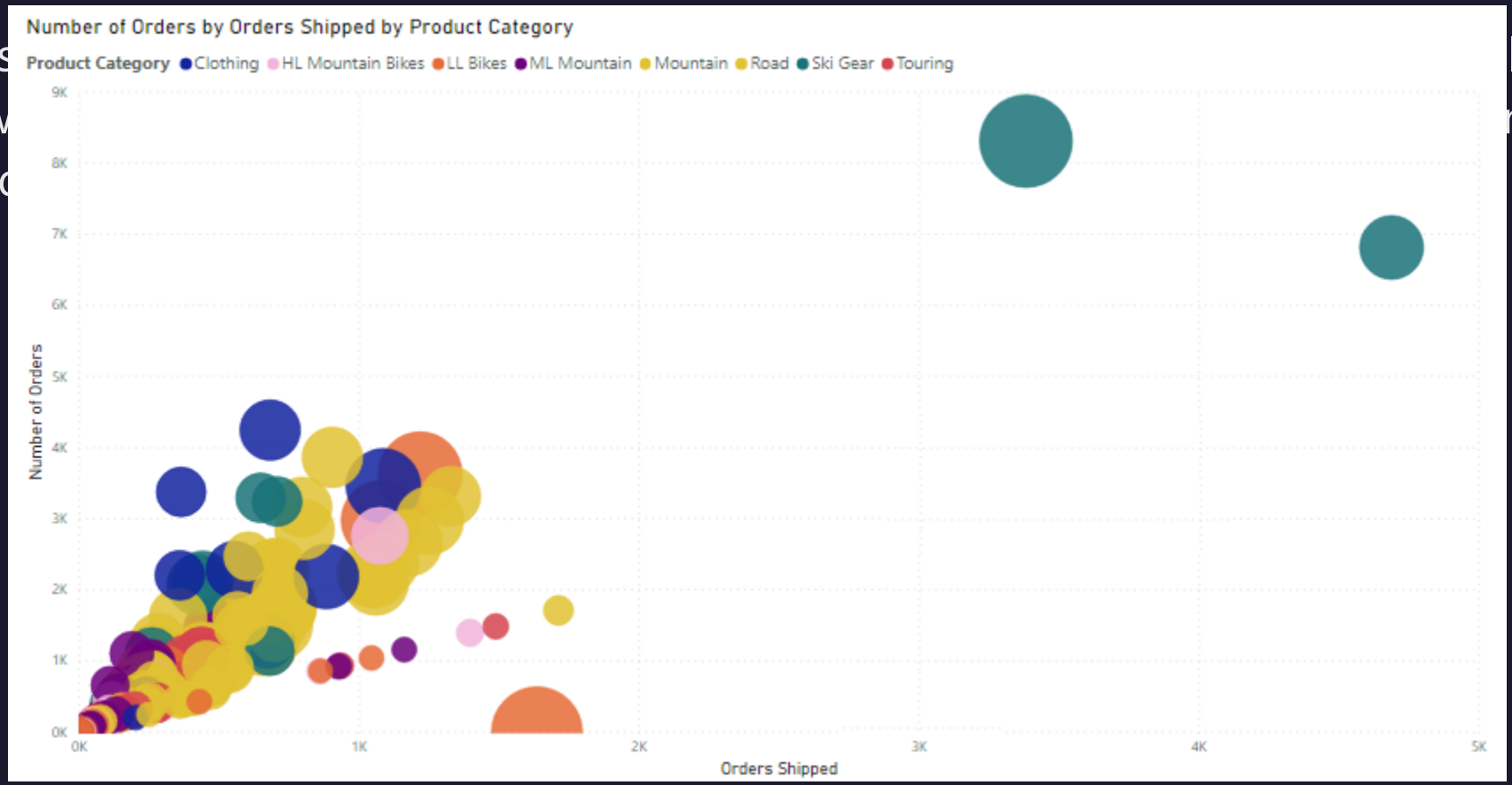
reat

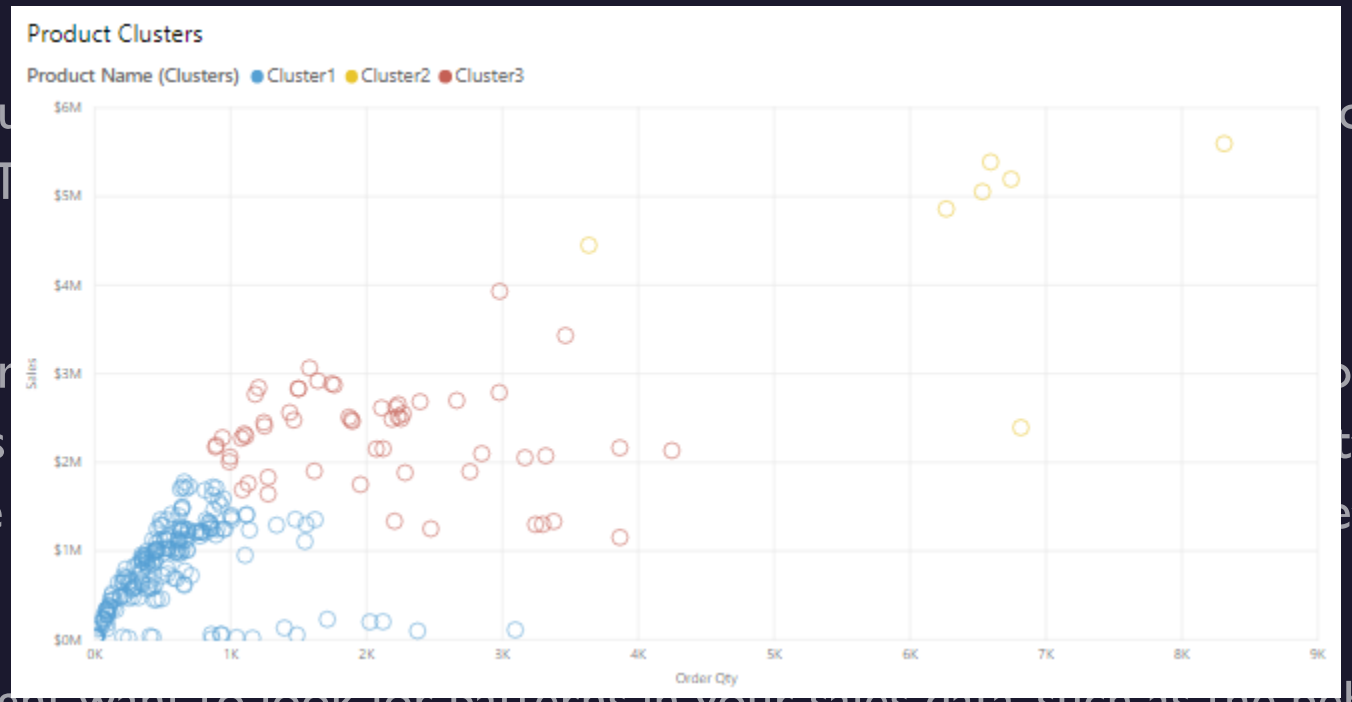


Analytics – Outliers identification

- The best vis lationship between tw nd are, therefore, i



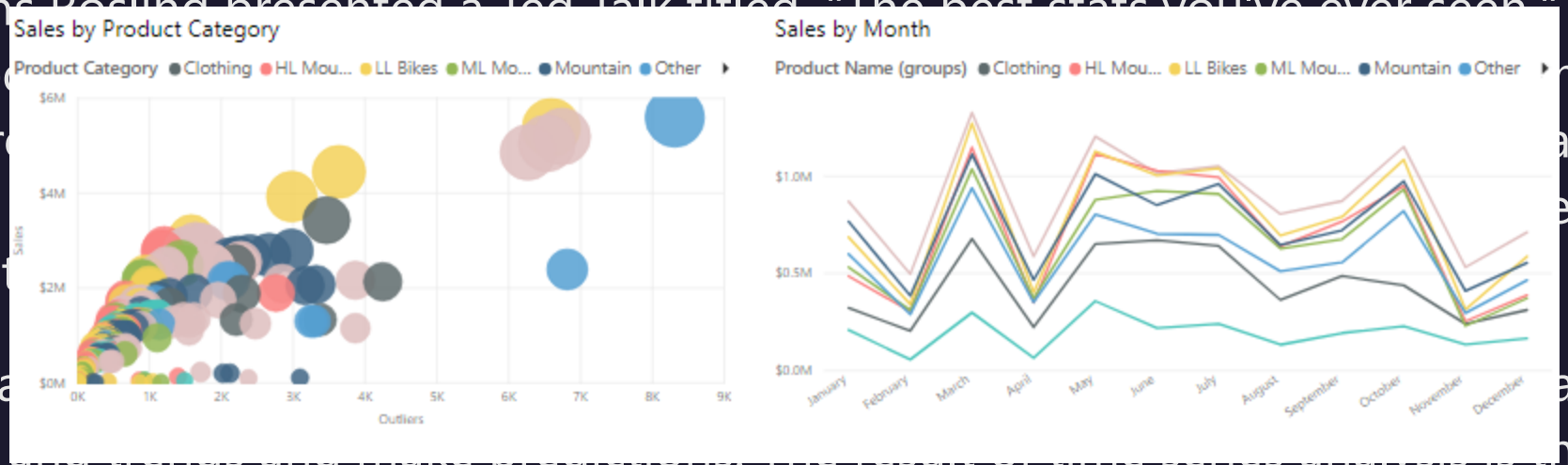
Analytics – Clustering technique



- Clustering allows you … other but dissimilar to the rest of the data. T … you accomplished previously.
- The Power BI cluster … oints in a subset of your data. It analyzes … ttribute values, and then it separates the … ets of data are referred to as clusters.
- For example, you might want to look for patterns in your sales data, such as the behavior of customers overall. You can segment the customers into clusters according to their similarities, such as age or location.

Analytics – Time series analysis

- In 2004, Han In that talk, Hans showe mated chart. The chart pr and family size moved over est in the power of dat
- Time series a aningful information ne best data that you can use for forecasting activities.



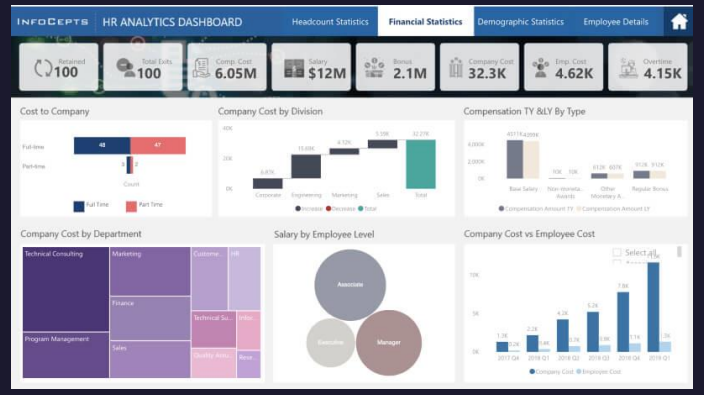
More?

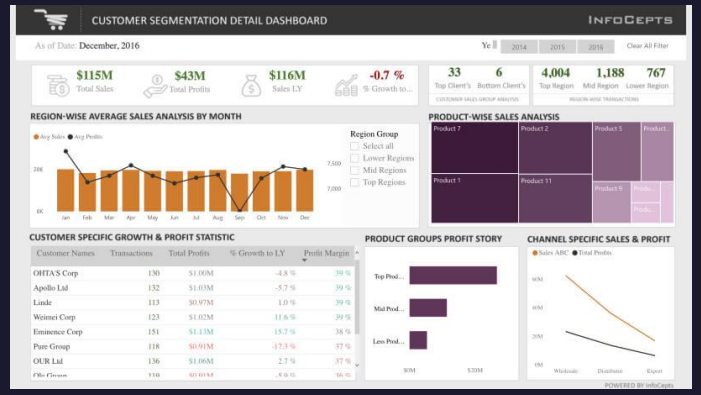
- Data Science Courses: R & Python Analysis Tutorials | DataCamp
- https://www.kaggle.com/search?q=Analytics

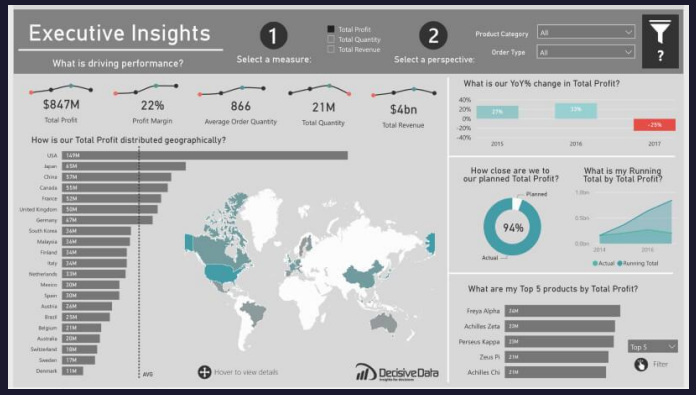
Dashboard

Introduction to Dashboard

- Business dashboard / Management Dashboard is a type of graphical user interface which often provides at-a-glance views of key performance indicators (KPIs) relevant to a particular objective or business process. (Wikipedia)
- Data dashboard (Power BI)







Employee dashboards

- Customer support or IT tickets closed per hour
- Billable project hours per teammate
- Hours a team took to complete a given project

Sales dashboards

- Sales funnel compared to previous year
- Total sales pipeline dollars
- Average time it takes to make a sale

Financial dashboards

- Earnings before interest, tax, depreciation, or amortization
- Operating cash flow
- Net profit margin

More resources
Tableau

How to create a data dashboard

Define your audience and goals:
Ask who you are building this dashboard for and what do they need to understand? Once you know that, you can answer their questions more easily with selected visualizations and data.

Choose your data:
Most businesses have an abundance of data from different sources. Choose only what's relevant to your audience and goal to avoid overwhelming your audience with information.

Double-check your data:
Always make sure your data is clean and correct before building a dashboard. The last thing you want is to realize in several months that your data was wrong the entire time.

Choose your visualizations:
There are many different types of visualizations to use, such as charts, graphs, maps, etc. Choose the best one to represent your data. For example, bar and pie charts can quickly become overwhelming when they include too much information.

Use a template:
When building a dashboard for the first time, use a template or intuitive software to save time and headaches. Carefully choose the best one for your project and don't try to shoehorn data into a template that doesn't work.

Keep it simple:
Use similar colors and styles so your dashboard doesn't become cluttered and overwhelming.

Iterate and improve:
Once your dashboard is in a good place, ask for feedback from a specific person in your core audience. Find out if it makes sense to them and answers their questions. Take that feedback to heart and make improvements for better adoption and understanding.

Dashboard sample

COVID-19 Data Stories Gallery - Microsoft Power BI Community

#COVID-19 Dashboard - From Data to Insights - Microsoft Power BI Community

Supermarket Sales Report - Microsoft Fabric Community

Sales & revenue Dashboard - Microsoft Fabric Community

Cost Monitoring Report - Microsoft Fabric Community

Restaurant Food Delivery Analysis - Microsoft Fabric Community

Q&A

Last but not least

Where to find all resources?
https://github.com/amnuaym/MsoftPowerBI

Keep on working
https://learn.microsoft.com/en-us/certifications/power-bi-data-analyst-associate/

https://learn.microsoft.com/en-us/training/browse/?filter-products=power%20BI&products=power-bi

What else?
https://www.tableau.com/learn
https://www.qlik.com/us/services/training
https://learning.sap.com/search?page=1&query=Businenssobject
https://www.gartner.com/reviews/market/analytics-business-intelligence-platforms

Nerdy enough?
Kaggle: Your Machine Learning and Data Science Community
https://www.datacamp.com

Thank you.

Amnuay M.