

Power BI: Logistics

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What data sets are needed to optimize 3rd party logistics & fulfillment?

1. CUSTOMER LOCATIONS

Looking across your entire customer base, in which areas or regions are the concentration of new orders most prominent? Alternatively, which regions are sparse?

คุณลักษณะของสินค้า

5. PRODUCT SPECIFICATIONS

What are the sizes (LxWxH) and weights of each of your SKUs? Are there any special requirements (i.e. refrigeration, hazardous materials handling, etc.) that would need to be addressed by your logistics and fulfillment partners?

4. ORDER SIZE & QUANTITY VARIATIONS

Are the majority of orders that you ship going to businesses or consumers? Are wholesalers and retailers buying in bulk, or do most sales consist of individual units? Are there any kitting or custom order workflows that need to be accommodated?



tools can optimize your business

เครื่องมือที่ใช้ในการบริหารธุรกิจให้มีประสิทธิภาพสูงสุด



DEMAND FORECASTING

Purpose: Combines macroeconomic factors with seasonal trends and historical sales data to more accurately project order volumes.



WAREHOUSE NETWORK OPTIMIZATION

Purpose: Identifies optimal warehouse placements based on historical and projected customer demand in order to improve shipping speeds while reducing transportation costs.



INVENTORY LEVEL OPTIMIZATION

Purpose: Prescribes inventory distribution across warehouse locations and sets optimal reorder points in order to minimize inventory costs and reduce stock-outs.

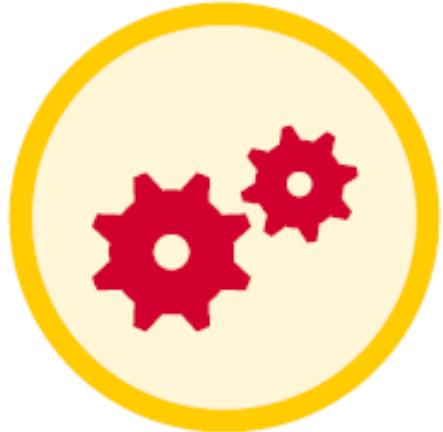


SERVICE-LEVEL PERFORMANCE INSIGHTS

Purpose: Improves decision making with easy access to critical info such as real-time inventory levels, SKU velocity, order trends, fulfillment accuracy and delivery speed.



Operational Efficiency



Use data to:

- Increase level of transparency
- Optimize resource consumption
- Improve process quality and performance

Customer Experience



Exploit data to:

- Increase customer loyalty and retention
- Perform precise customer segmentation and targeting
- Optimize customer interaction and service

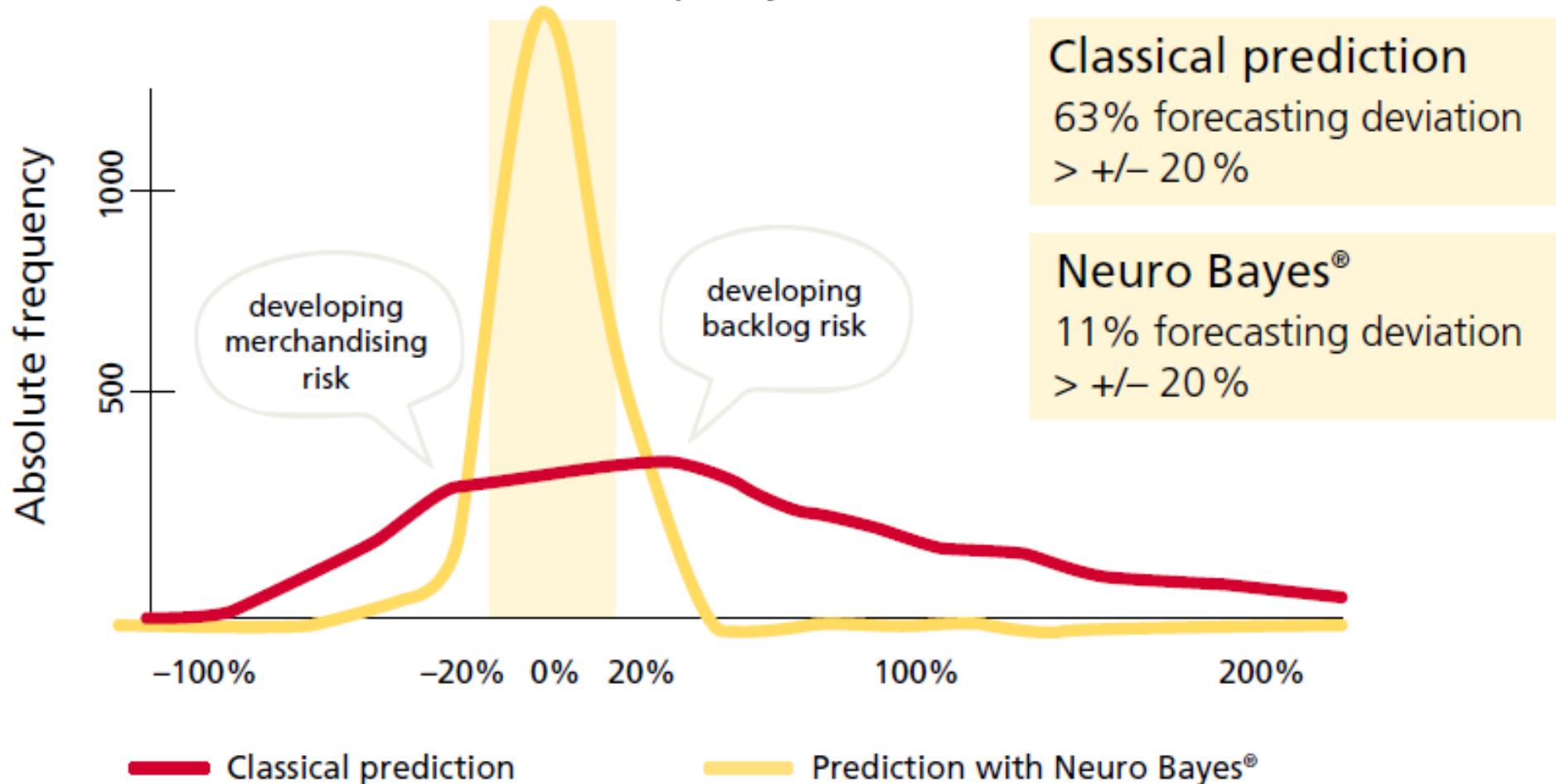
New Business Models

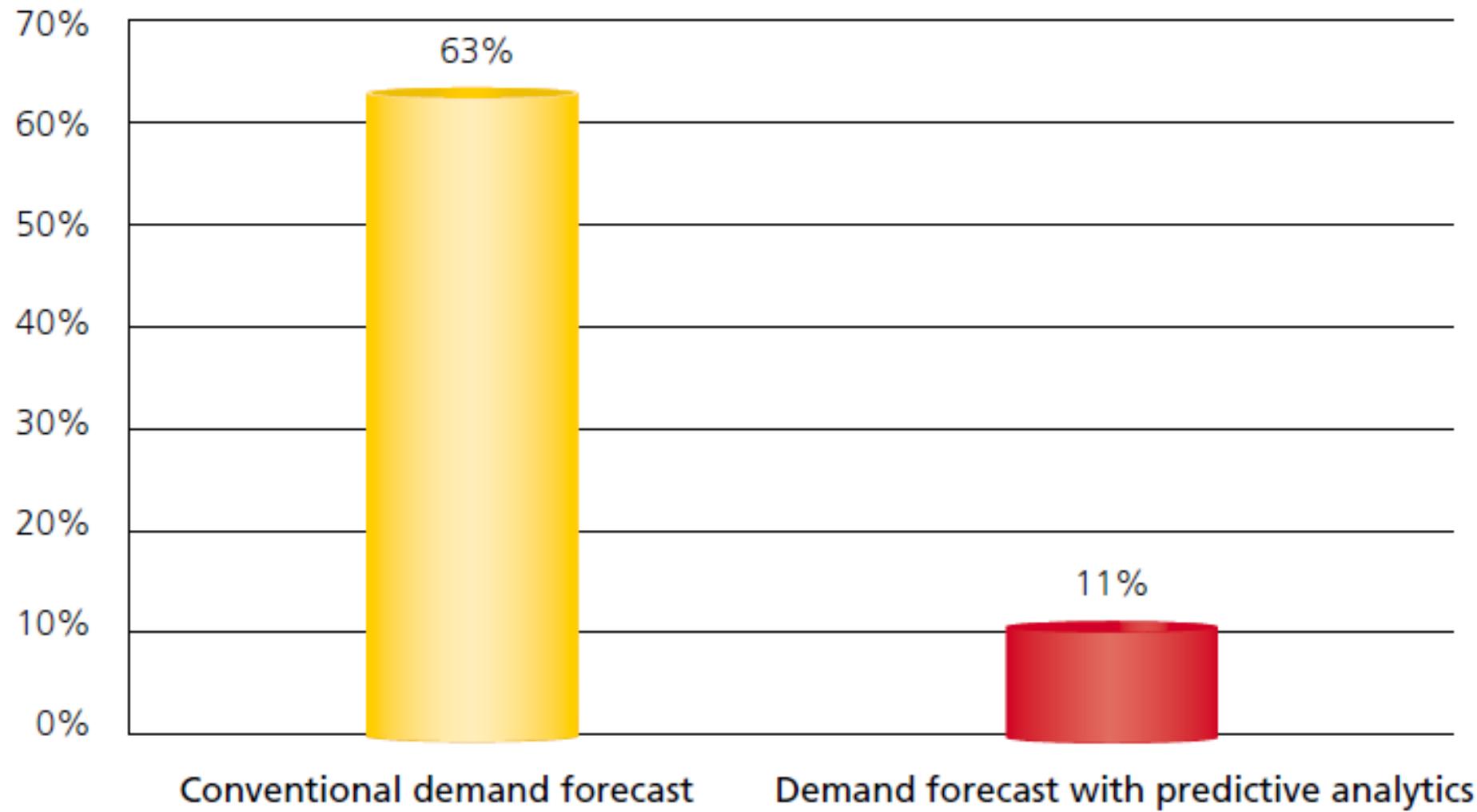


Capitalize on data by:

- Expanding revenue streams from existing products
- Creating new revenue streams from entirely new (data) products

Prediction discrepancy





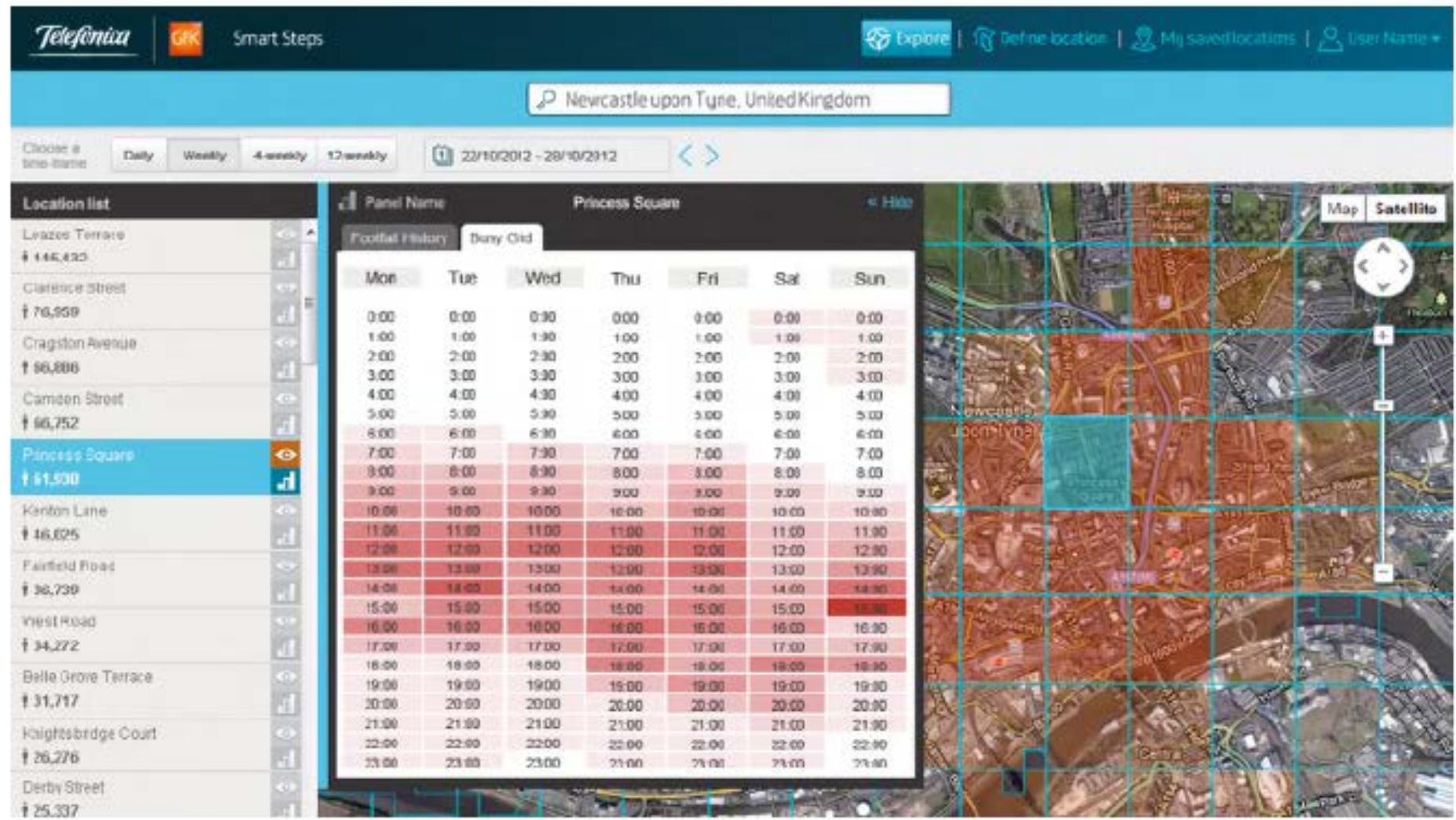


Figure 11: Analysis of customer footfall in a particular location based on mobile subscriber data, from blog.telefonica.com/?press-release=telefonica-dynamic-insights-launches-smart-steps-in-the-uk

3 BIG DATA IN LOGISTICS

3.1 Logistics as a Data-driven Business

	<p>1. Optimization to the core</p>	<ul style="list-style-type: none">Optimization of service properties like delivery time, resource utilization, and geographical coverage is an inherent challenge of logisticsLarge-scale logistics operations require data to run efficiently. The earlier this information is available and the more precise the information is, the better the optimization results will becomeAdvanced predictive techniques and real-time processing promise to provide a new quality in capacity forecast and resource control
	<p>2. Tangible goods, tangible customers</p>	<ul style="list-style-type: none">The delivery of tangible goods requires a direct customer interaction at pickup and deliveryOn a global scale, millions of customer touch points a day create an opportunity for market intelligence, product feedback or even demographicsBig Data concepts provide versatile analytic means in order to generate valuable insight on consumer sentiment and product quality
	<p>3. In sync with customer business</p>	<ul style="list-style-type: none">Modern logistics solutions seamlessly integrate into production and distribution processes in various industriesThe tight level of integration with customer operations let logistics providers feel the heartbeat of individual businesses, vertical markets, or regionsThe application of analytic methodology to this comprehensive knowledge reveals supply chain risks and provides resilience against disruptions



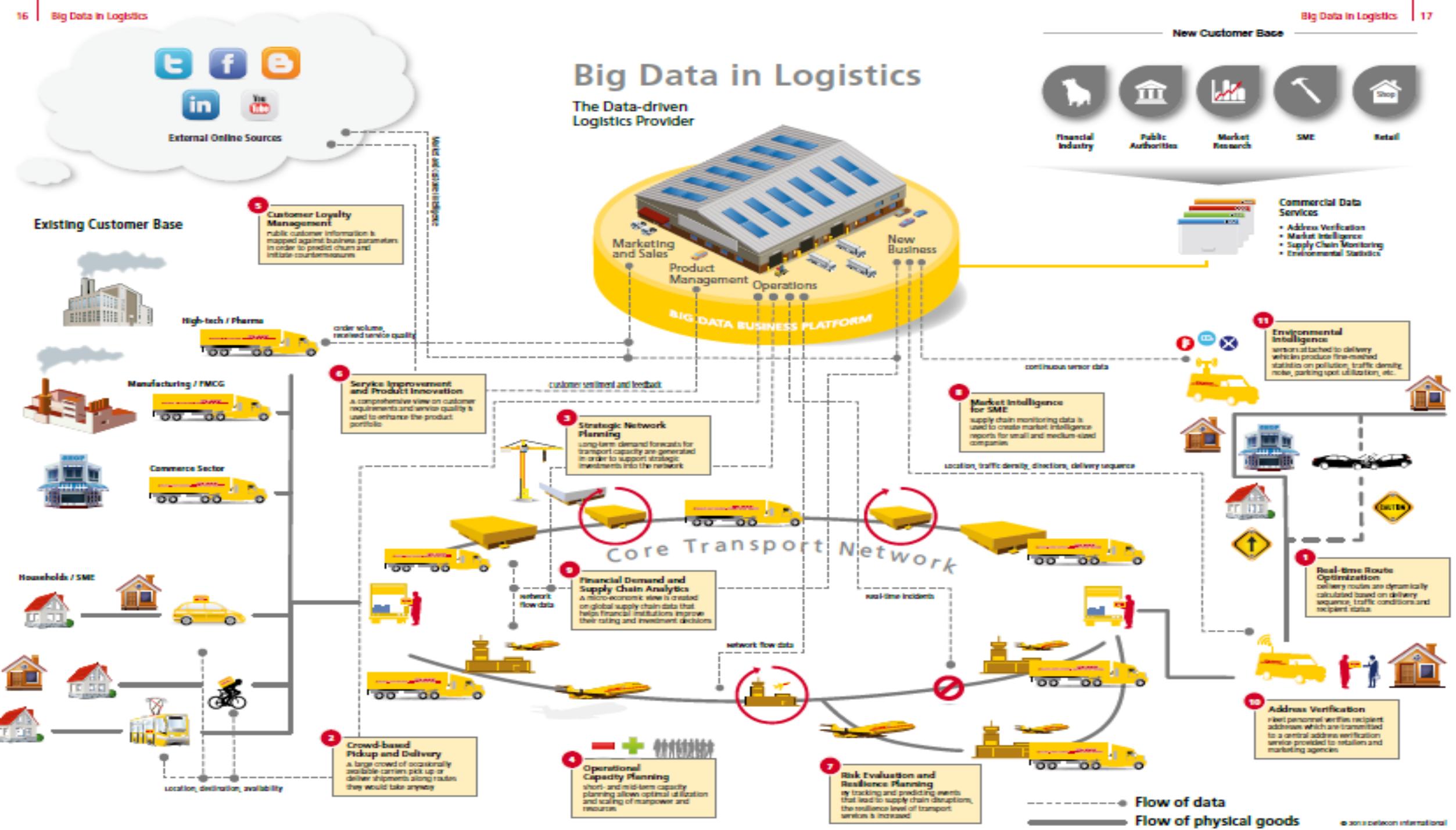
4. A network of information

- The transport and delivery network is a high-resolution data source
- Apart from using data for optimizing the network itself, network data may provide valuable insight on the global flow of goods
- The power and diversity of Big Data analytics moves the level of observation to a micro-economic viewpoint



5. Global coverage, local presence

- Local presence and decentralized operations is a necessity for logistics services
- A fleet of vehicles moving across the country to automatically collect local information along the transport routes
- Processing this huge stream of data originating from a large delivery fleet creates a valuable zoom display for demographic, environmental, and traffic statistics



1 Real-time route optimization

The “traveling salesmen problem” was formulated around eighty years ago, but still defines the core challenge for last-mile delivery. Route optimization on the last mile aims at saving time in the delivery process. Rapid processing of real-time information supports this goal in multiple ways. When the delivery vehicle is loaded and unloaded, a dynamic calculation of the optimal delivery sequence based on sensor-based detection of shipment items frees the staff from manual sequencing. On the road, telematics databases are tapped to automatically change delivery routes according to current traffic conditions. And routing intelligence considers the availability and location information posted by recipients in order to avoid unsuccessful delivery attempts.

DHL SmartTruck



- Daily optimized initial tour planning based on incoming shipment data
- Dynamic routing system, which recalculates the routes depending on the current order and traffic situation
- Cuts costs and improves CO₂ efficiency, for example by reducing mileage

2 Crowd-based pick-up and delivery

The wisdom and capacity of a crowd of people has become a strong lever for effectively solving business problems. Sourcing a workforce, funding a startup, or performing networked research are just a few examples of requisitioning resources from a crowd. Applied to a distribution network, a crowd-based approach may create substantial efficiency enhancements on the last mile. The idea is simple: Commuters, taxi drivers, or students can be paid to take over last-mile delivery on the routes that they are traveling anyway. Scaling up the number of these affiliates to a large crowd of occasional carriers effectively takes load off the delivery fleet.



3.2.2 Predictive network and capacity planning

Optimal utilization of resources is a key competitive advantage for logistics providers. Excess capacities lower profitability (which is critical for low-margin forwarding services), while capacity shortages impact service quality and put customer satisfaction at risk. Logistics providers must therefore perform thorough resource planning, both at strategic and operational levels. Strategic-level planning considers the long-term configuration of the distribution network, and operational-level planning scales capacities up or down on a daily or monthly basis. For both perspectives, Big Data techniques improve the reliability of planning and the level of detail achieved, enabling logistics providers to perfectly match demand and available resources.



4

Operational capacity planning

At operational level, transit points and transportation routes must be managed efficiently on a day-to-day basis. This involves capacity planning for trucks, trains, and aircraft as well as shift planning for personnel in distribution centers and warehouses. Often operational planning tasks are based on historical averages or even on personal experience, which typically results in resource inefficiency.



DHL Parcel Volume Prediction



- Analytic tool to measure influences of external factors on the expected volume of parcels
- Correlates external data with internal network data
- Results in a Big Data Prediction Model that significantly increases operational capacity planning

Ongoing research project by
DHL Solutions & Innovation

5

Customer loyalty management

For most business models, the cost of winning a new customer is far higher than the cost of retaining an existing customer. But it is increasingly difficult to trace and analyze individual customer satisfaction because there are more and more indirect customer touch points (e.g., portals, apps, and indirect sales channels). Because of this, many businesses are failing to establish effective customer retention programs.

Smart use of data enables the identification of valuable customers who are on the point of leaving to join the competition. Big Data analytics allow a comprehensive assessment of customer satisfaction by merging multiple extensive data sources.



6 Continuous service improvement and product innovation

Logistics providers collect customer feedback as this provides valuable insight into service quality and customer expectations and demands. This feedback is a major source of information for continuous improvement in service quality. It is also important input for the ideation of new service innovations.



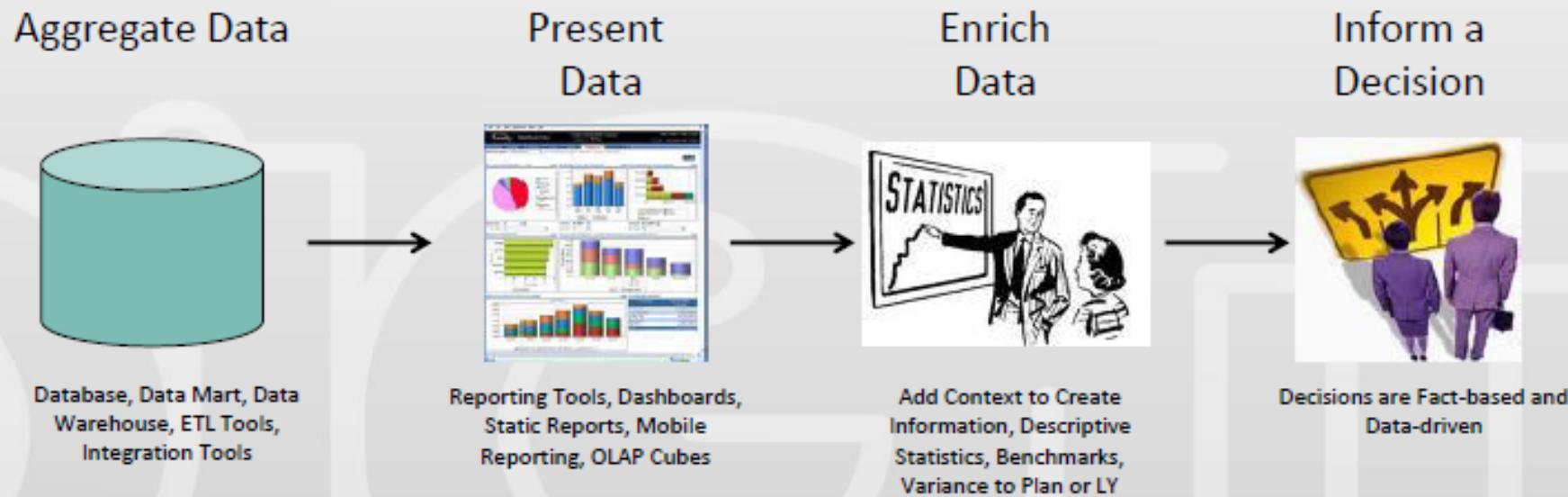
Power BI

Power Your Business



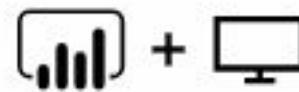
Business Intelligence (BI)

- Business Intelligence enables the business to make intelligent, fact-based decisions.

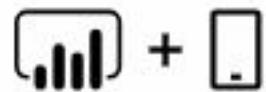




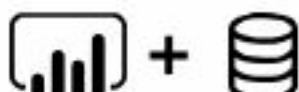
Power BI Product



Power BI Desktop - Design & Analyze

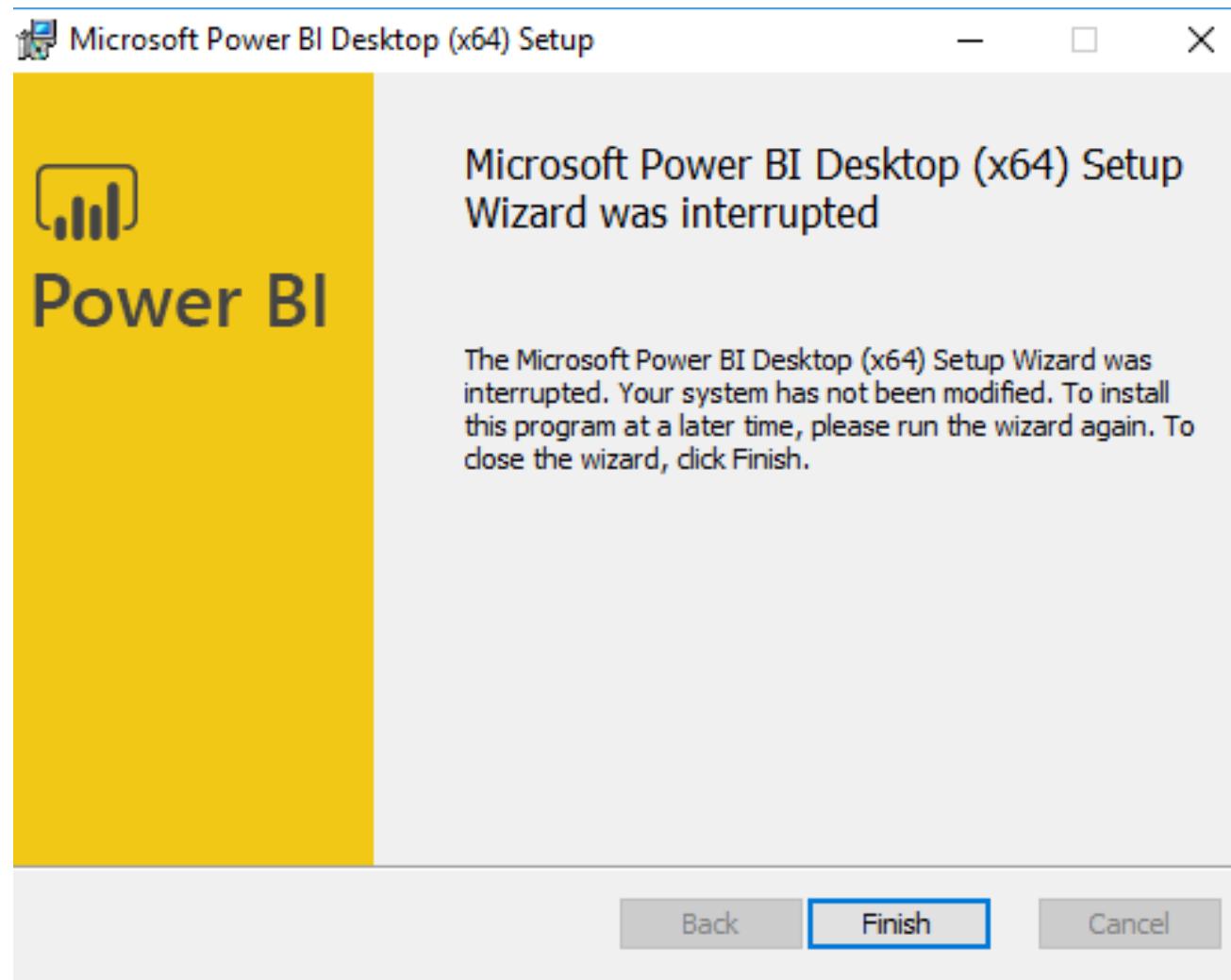


Power BI Mobile – View anywhere



Power BI Report Server - Share anywhere

Install Power BI Desktop



How does Power BI Desktop work ?

1. Getting data
2. Visualizations
3. Publishing and sharing



Icon for management

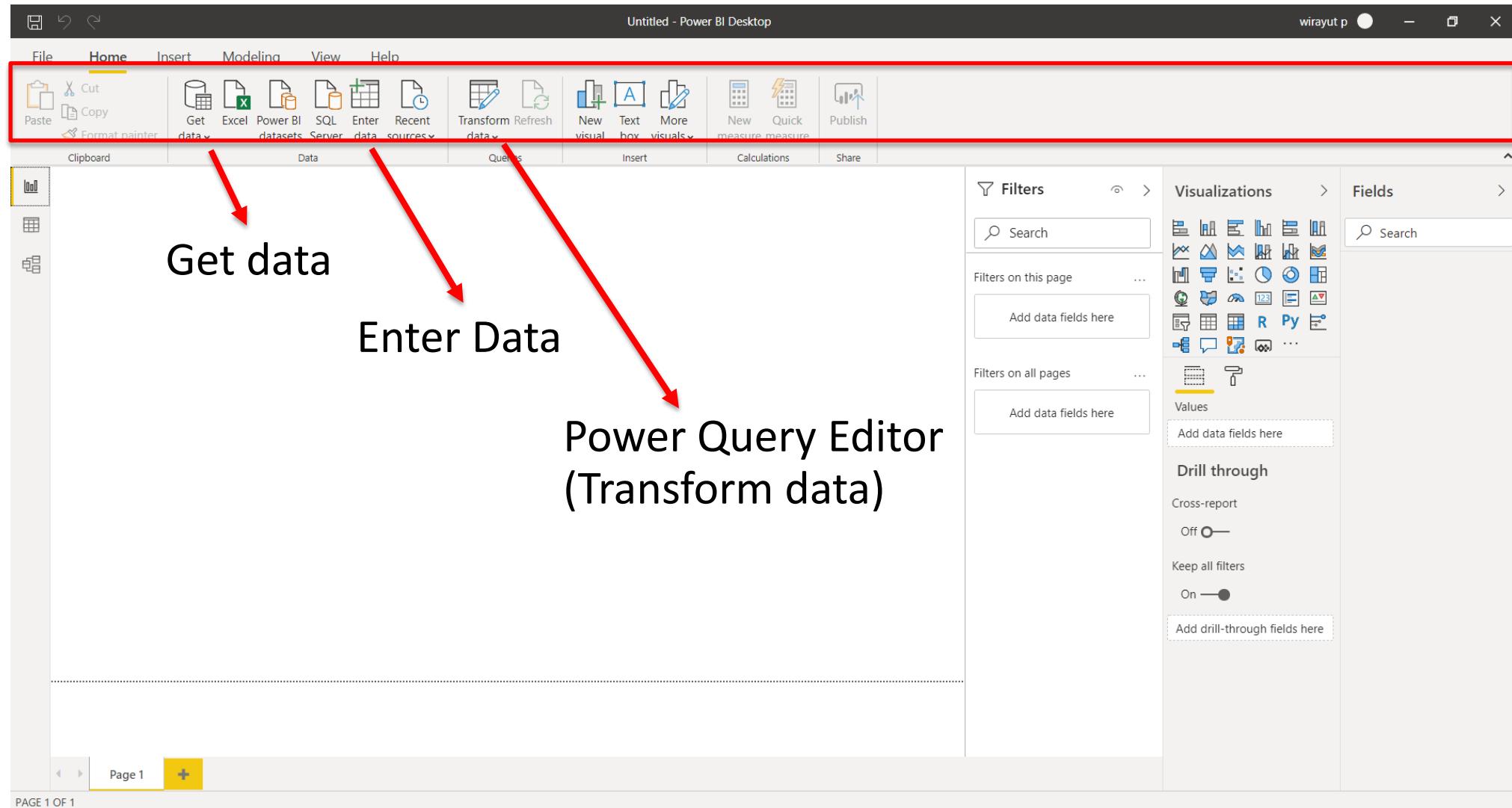
The screenshot shows the Microsoft Power BI Desktop application window titled "Untitled - Power BI Desktop". The ribbon is visible at the top, with the "Home" tab selected. The "Report" icon, which is a document with a grid, is highlighted with a red box and has three red arrows pointing down to the words "Report", "Data", and "Model". The "Data" and "Model" icons are also highlighted with red boxes. The "Visualizations" pane on the right side of the interface lists various visualization types like charts and maps. The "Fields" pane also contains a search bar and some settings.

Report

Data

Model

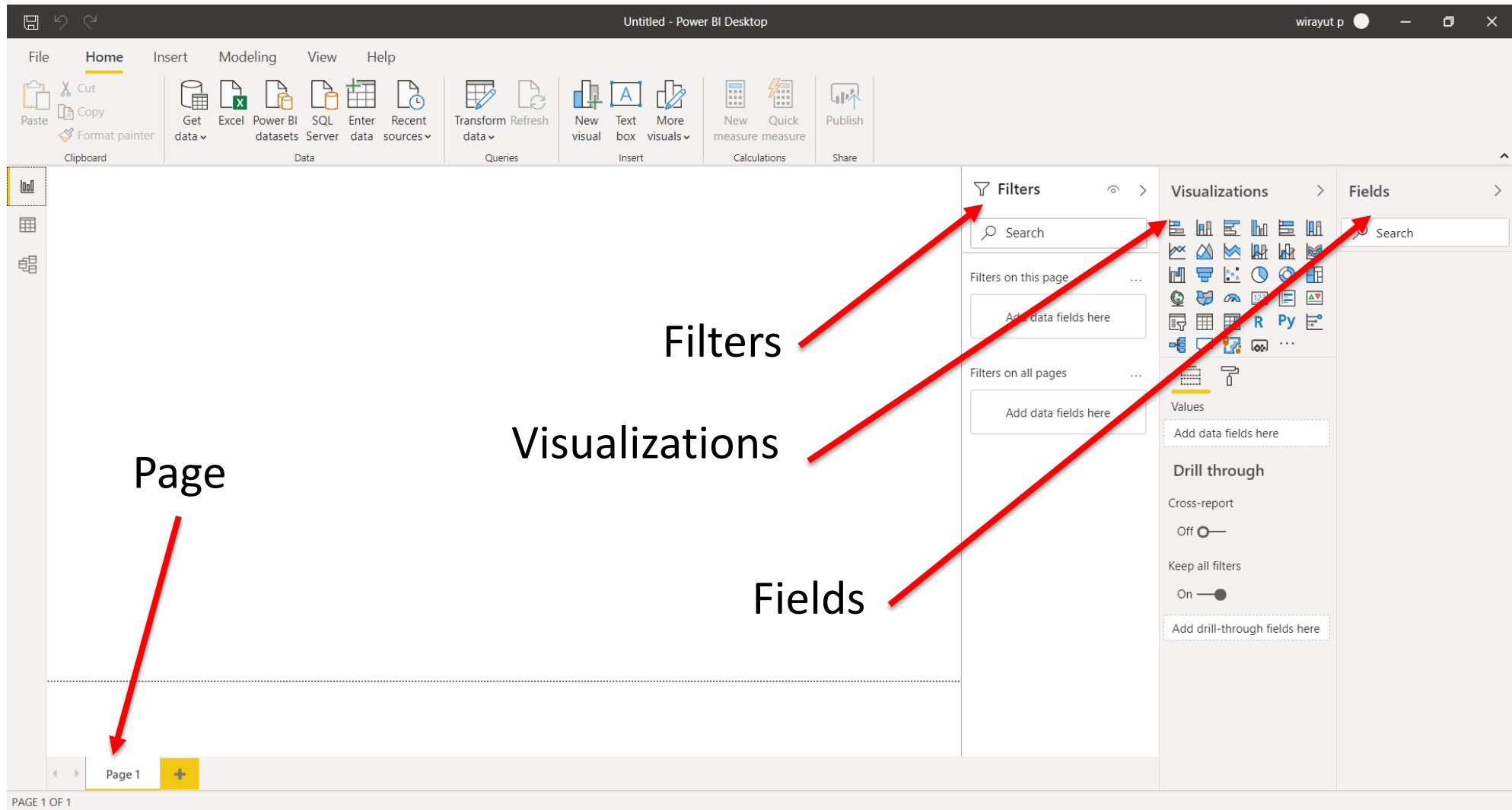
Home



Get data

Enter Data

Power Query Editor
(Transform data)



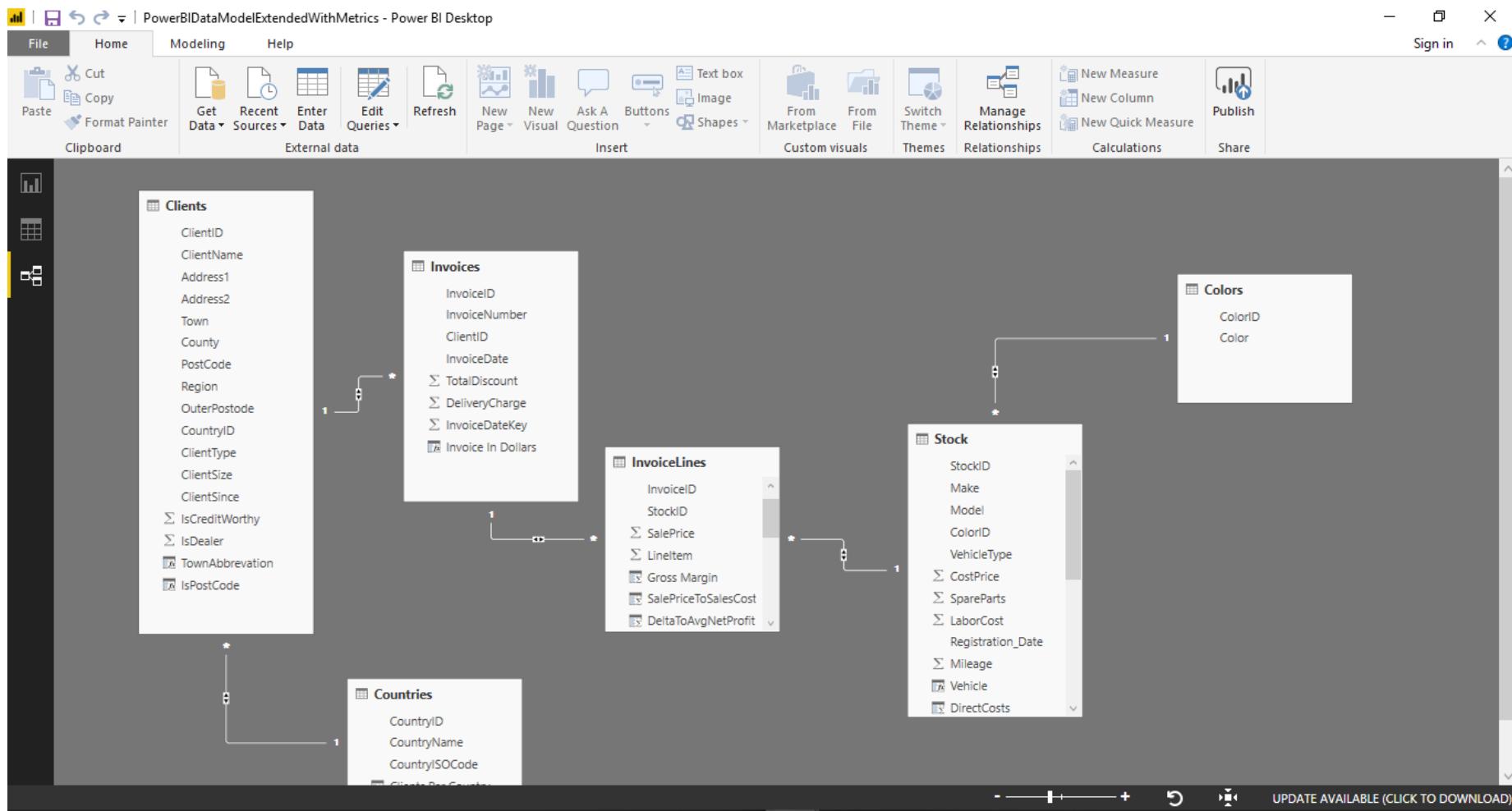
Data

File Home Help Table tools **Column tools**

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<td>China</td> <td>North Asia</td> <td>TEC-CO-10001410</td> <td>Technology</td> <td>Copiers</td> <td>Canon Personal Copier, High-Speed</td> <td>563.76</td> <td>4</td> <td>0</td> <td>16.8</td> </tr> <tr> <td>Kelly Andreada</td> <td>Consumer</td> <td>Guangzhou</td> <td>Guangdong</td> <td>China</td> <td>North Asia</td> <td>OFF-LA-10000879</td> <td>Office Supplies</td> <td>Labels</td> <td>Hon File Folder Labels, Alphabetical</td> <td>59.22</td> <td>7</td> <td>0</td> <td>27.09</td> </tr> </tbody> </table> <p>Fields</p> <p>Search</p> <p>Orders</p> <ul style="list-style-type: none"> Category City Country/Region Customer ID Customer Name Discount Order Date Order ID Product ID Product Name <p>Profit</p> <ul style="list-style-type: none"> Quantity Region Row ID Sales Segment Ship Date State Sub-Category <p>Parameter Test</p>												X	✓	<input type="button" value="Customer Name"/>	<input type="button" value="Segment"/>	<input type="button" value="City"/>	<input type="button" value="State"/>	<input type="button" value="Country/Region"/>	<input type="button" value="Region"/>	<input type="button" value="Product ID"/>	<input type="button" value="Category"/>	<input type="button" value="Sub-Category"/>	<input type="button" value="Product Name"/>	<input type="button" value="Sales"/>	<input type="button" value="Quantity"/>	<input type="button" value="Discount"/>	<input type="button" value="Profit"/>	Karen Carlisle	Corporate	Shenzhen	Guangdong	China	North Asia	TEC-CO-10003982	Technology	Copiers	HP Ink, High-Speed	634.5	5	0	272.7	Karen Carlisle	Corporate	Shenzhen	Guangdong	China	North Asia	OFF-AR-10004456	Office Supplies	Art	Binney & Smith Markers, Blue	96.36	4	0	12.48	Gary McGarr	Consumer	Guangzhou	Guangdong	China	North Asia	OFF-SU-10004177	Office Supplies	Supplies	Fiskars Box Cutter, Easy Grip	148.56	4	0	32.64	Gary McGarr	Consumer	Guangzhou	Guangdong	China	North Asia	OFF-AR-10001228	Office Supplies	Art	Binney & Smith Pens, Easy-Erase	36.63	3	0	12.78	Gary McGarr	Consumer	Guangzhou	Guangdong	China	North Asia	FUR-CH-10002213	Furniture	Chairs	Hon Executive Leather Armchair, Black	1371.42	3	0	137.07	Chuck Clark	Home Office	Jiangmen	Guangdong	China	North Asia	FUR-FU-10001129	Furniture	Furnishings	Deflect-O Stacking Tray, Black	101.4	4	0	15.12	Peter Bühler	Consumer	Jieyang	Guangdong	China	North Asia	OFF-BI-10001312	Office Supplies	Binders	Cardinal 3-Hole Punch, Clear	84.78	3	0	35.55	Peter Bühler	Consumer	Jieyang	Guangdong	China	North Asia	OFF-LA-10002364	Office Supplies	Labels	Smead Shipping Labels, Alphabetical	160.02	14	0	46.2	Maureen Gastineau	Home Office	Shantou	Guangdong	China	North Asia	TEC-AC-10003776	Technology	Accessories	Belkin Flash Drive, Programmable	86.88	2	0	14.76	Rob Dowd	Consumer	Zhuhai	Guangdong	China	North Asia	TEC-AC-10001348	Technology	Accessories	Logitech Router, Bluetooth	494.64	2	0	4.92	Rob Dowd	Consumer	Zhuhai	Guangdong	China	North Asia	OFF-AP-10002371	Office Supplies	Appliances	KitchenAid Blender, Silver	1285.05	13	0	552.24	Rob Dowd	Consumer	Zhuhai	Guangdong	China	North Asia	TEC-CO-10000825	Technology	Copiers	Brother Ink, Color	297.48	2	0	14.82	Lena Creighton	Consumer	Shantou	Guangdong	China	North Asia	OFF-BI-10004868	Office Supplies	Binders	Wilson Jones Hole Reinforcements, Durable	18.09	3	0	0.54	Lena Creighton	Consumer	Shantou	Guangdong	China	North Asia	OFF-AR-10002797	Office Supplies	Art	Sanford Highlighters, Blue	47.25	3	0	14.13	Toby Swindell	Consumer	Shantou	Guangdong	China	North Asia	OFF-ST-10002395	Office Supplies	Storage	Rogers Lockers, Single Width	634.95	3	0	279.36	Toby Swindell	Consumer	Shantou	Guangdong	China	North Asia	OFF-FA-10000038	Office Supplies	Fasteners	Stockwell Clamps, Assorted Sizes	16.68	1	0	7.5	Toby Swindell	Consumer	Shantou	Guangdong	China	North Asia	OFF-BI-10004334	Office Supplies	Binders	Avery Hole Reinforcements, Durable	41.37	7	0	6.93	Greg Maxwell	Corporate	Guangzhou	Guangdong	China	North Asia	TEC-AC-10001312	Technology	Accessories	Logitech Numeric Keypad, Ergonomic	88.26	2	0	28.2	Greg Maxwell	Corporate	Guangzhou	Guangdong	China	North Asia	OFF-EN-10000904	Office Supplies	Envelopes	Ames Mailers, with clear poly window	118.17	3	0	25.92	Greg Maxwell	Corporate	Guangzhou	Guangdong	China	North Asia	OFF-LA-10003141	Office Supplies	Labels	Hon Shipping Labels, Laser Printer Compatible	22.74	2	0	11.34	Greg Maxwell	Corporate	Guangzhou	Guangdong	China	North Asia	OFF-AP-10003917	Office Supplies	Appliances	KitchenAid Stove, Silver	1141.8	2	0	479.52	Neil Französisch	Home Office	Meizhou	Guangdong	China	North Asia	OFF-PA-10004756	Office Supplies	Paper	SanDisk Cards & Envelopes, Multicolor	348.81	7	0	24.36	Neil Französisch	Home Office	Meizhou	Guangdong	China	North Asia	OFF-ST-10000220	Office Supplies	Storage	Rogers Shelving, Industrial	125.22	2	0	22.5	Neil Französisch	Home Office	Meizhou	Guangdong	China	North Asia	OFF-PA-10003139	Office Supplies	Paper	SanDisk Parchment Paper, Recycled	33.24	2	0	12.24	Neil Französisch	Home Office	Meizhou	Guangdong	China	North Asia	OFF-BI-10002287	Office Supplies	Binders	Acco Index Tab, Clear	8.04	1	0	2.88	Jason Klamczynski	Corporate	Shenzhen	Guangdong	China	North Asia	TEC-CO-10001410	Technology	Copiers	Canon Personal Copier, High-Speed	563.76	4	0	16.8	Kelly Andreada	Consumer	Guangzhou	Guangdong	China	North Asia	OFF-LA-10000879	Office Supplies	Labels	Hon File Folder Labels, Alphabetical	59.22	7	0	27.09
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TABLE: Orders (10,933 rows) COLUMN: Profit (7,568 distinct values)

Model



File Home

Get data Recent sources

SHredder12.pbix D: > powerBI > POWER BI

salesAnalysisStore.pbix D: > powerBI > POWER BI

eqpowerBI-Dryer.pbix C: > xampp > htdocs > eqservice

eq-oven1.pbix D: > powerBIDrPs

Open other reports

Page 1 +

Dr.Pasidth Thanachotanankul

WHAT'S NEW

Take a look at what's new and improved in Power BI in this month's update.

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POWER BI BLOG

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- See what others have built
- All guided learning

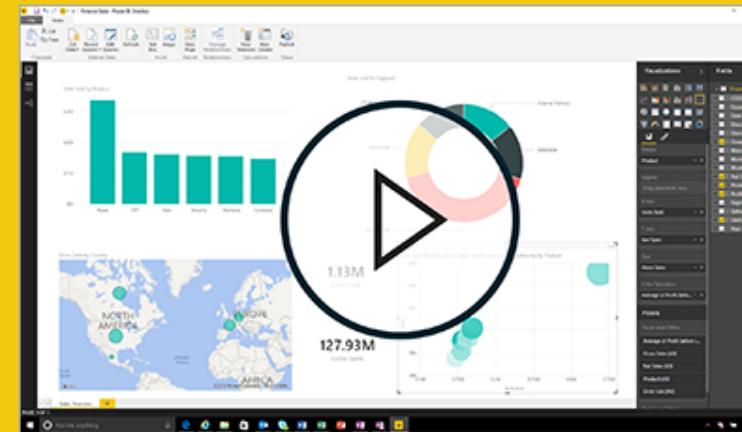
Getting started with Power BI Desktop

Building reports Query view concepts Uploading your reports

Create a Phone report

VIEW ALL VIDEOS

Show this screen on startup



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Fields

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File Home Insert Modeling View Help



Add data to your report

Once loaded, your data will appear in the Fields pane.

Import data from Excel

Import data from SQL Server

Paste data into a blank table

Try a sample dataset

Get data from another source →

Visualizations

Filters

Values

Add data fields here

Drill through

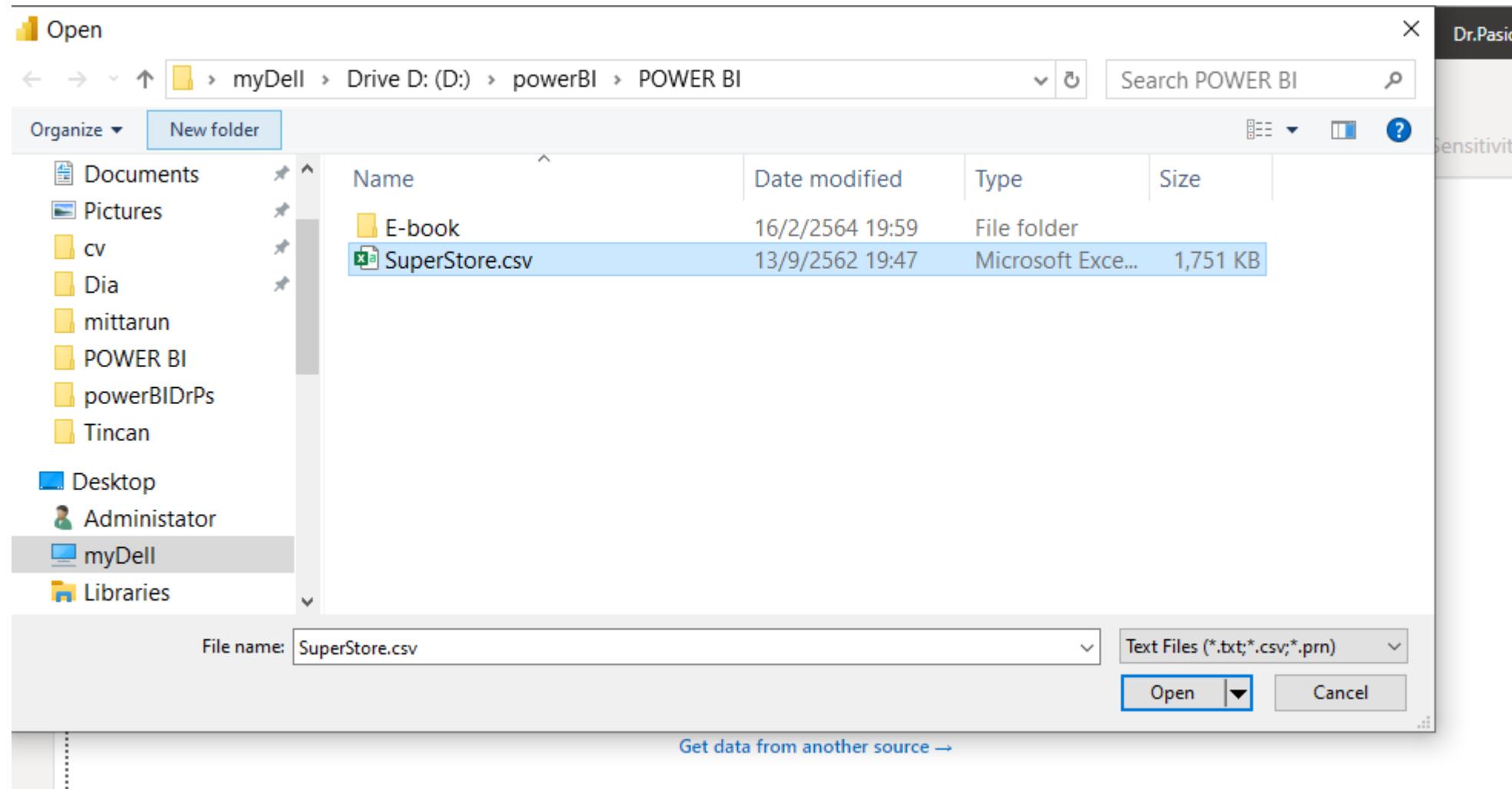
Cross-report

Off

Keep all filters

On

Add drill-through fields here



File Home Insert

Get data

SuperStore.csv

File Origin

874: Thai (Windows)

Delimiter

Comma

Data Type Detection

Based on first 200 rows

Row ID	Order ID	Order Date	Order Priority	Order Quantity	Target Profit	Sales	Discount	Ship Mode	Profit	Unit Price
1	3	13/10/2510	Low	6	-203.25	261.54	0.04	Regular Air	-213.25	38
49	293	1/10/2512	High	49	467.81	10123.02	0.07	Delivery Truck	457.81	208
50	293	1/10/2512	High	27	56.71	244.57	0.01	Regular Air	46.71	8
80	483	10/7/2511	High	30	1208.97	4965.76	0.08	Regular Air	1198.97	195
85	515	28/8/2510	Not Specified	19	40.94	394.27	0.08	Regular Air	30.94	21
86	515	28/8/2510	Not Specified	21	14.43	146.69	0.05	Regular Air	4.43	6
97	613	17/6/2511	High	12	-44.04	93.54	0.03	Regular Air	-54.04	
98	613	17/6/2511	High	22	137.7	905.08	0.09	Regular Air	127.7	42
103	643	24/3/2511	High	21	-685.26	2781.82	0.07	Express Air	-695.26	138
107	678	26/2/2510	Low	44	-216.36	228.41	0.07	Regular Air	-226.36	4
127	807	23/11/2510	Medium	45	-156.85	196.85	0.01	Regular Air	-166.85	4
128	807	23/11/2510	Medium	32	-4.33	124.56	0.04	Regular Air	-14.33	3
134	868	8/6/2512	Not Specified	32	144.72	716.84	0	Regular Air	134.72	21
135	868	8/6/2512	Not Specified	31	124.46	1474.33	0.04	Regular Air	114.46	47
149	933	4/8/2512	Not Specified	15	5.28	80.61	0.02	Regular Air	-4.72	5
160	995	30/5/2511	Medium	46	792.91	1815.49	0.03	Regular Air	782.91	39
161	998	25/11/2509	Not Specified	16	103.8	248.26	0.07	Regular Air	93.8	15
175	1154	14/2/2512	Critical	44	450.72	4462.23	0.04	Delivery Truck	440.72	100
176	1154	14/2/2512	Critical	11	-471.04	663.78	0.25	Regular Air	-481.04	71
203	1344	15/4/2512	Low	15	-1.68	834.9	0.06	Regular Air	-11.68	65

Load

Transform Data

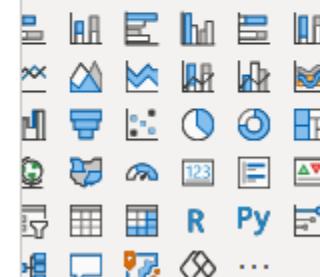
Cancel

Page 1

+

Publish

Visualizations >



Fields

Values

Add data fields here

Drill through

Cross-report

Off

Keep all filters

On

Add drill-through fields here

File

Home

Insert

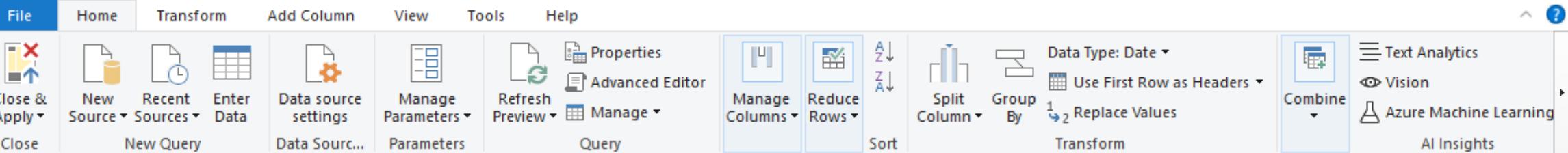
Modeling

View

Help



Untitled - Power Query Editor



Queries [1]

SuperStore

	Row ID	Order ID	Order Date	Order Priority
1	1	3	13/10/2010	Low
2	49	293	1/10/2012	High
3	50	293	1/10/2012	High
4	80	483	10/7/2011	High
5	85	515	28/8/2010	Not Specified
6	86	515	28/8/2010	Not Specified
7	97	613	17/6/2011	High
8	98	613	17/6/2011	High
9	100	643	24/3/2011	High
10	107	678	26/2/2010	Low
11	127	807	23/11/2010	Medium
12	128	807	23/11/2010	Medium
13	134	868	8/6/2012	Not Specified
14	135	868	8/6/2012	Not Specified
15	149	933	4/8/2012	Not Specified
16				

22 COLUMNS, 999+ ROWS Column profiling based on top 1000 rows

PREVIEW DOWNLOADED AT 23:01

Page 1

+

Once loaded, you can:

A Load

Import data from Excel
Import data from CSV

SuperStore
1.71 MB from SuperStore.csv

Cancel

Visualizations Fields

Filters

Values

Add data fields here

Drill through

Cross-report

Off

Keep all filters

On

Add drill-through fields here

Page 1 +

File

Home

Insert

Modeling

View

Help



Get data



Refresh



New visual



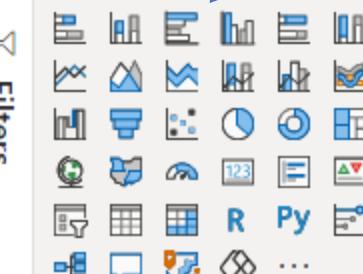
Sensitivity (preview)



Publish

1. Select Graph

Visualizations



Values

Add data fields here

Drill through

Cross-report

Off

Keep all filters

On

Add drill-through fields here

Fields

Search

SuperStore

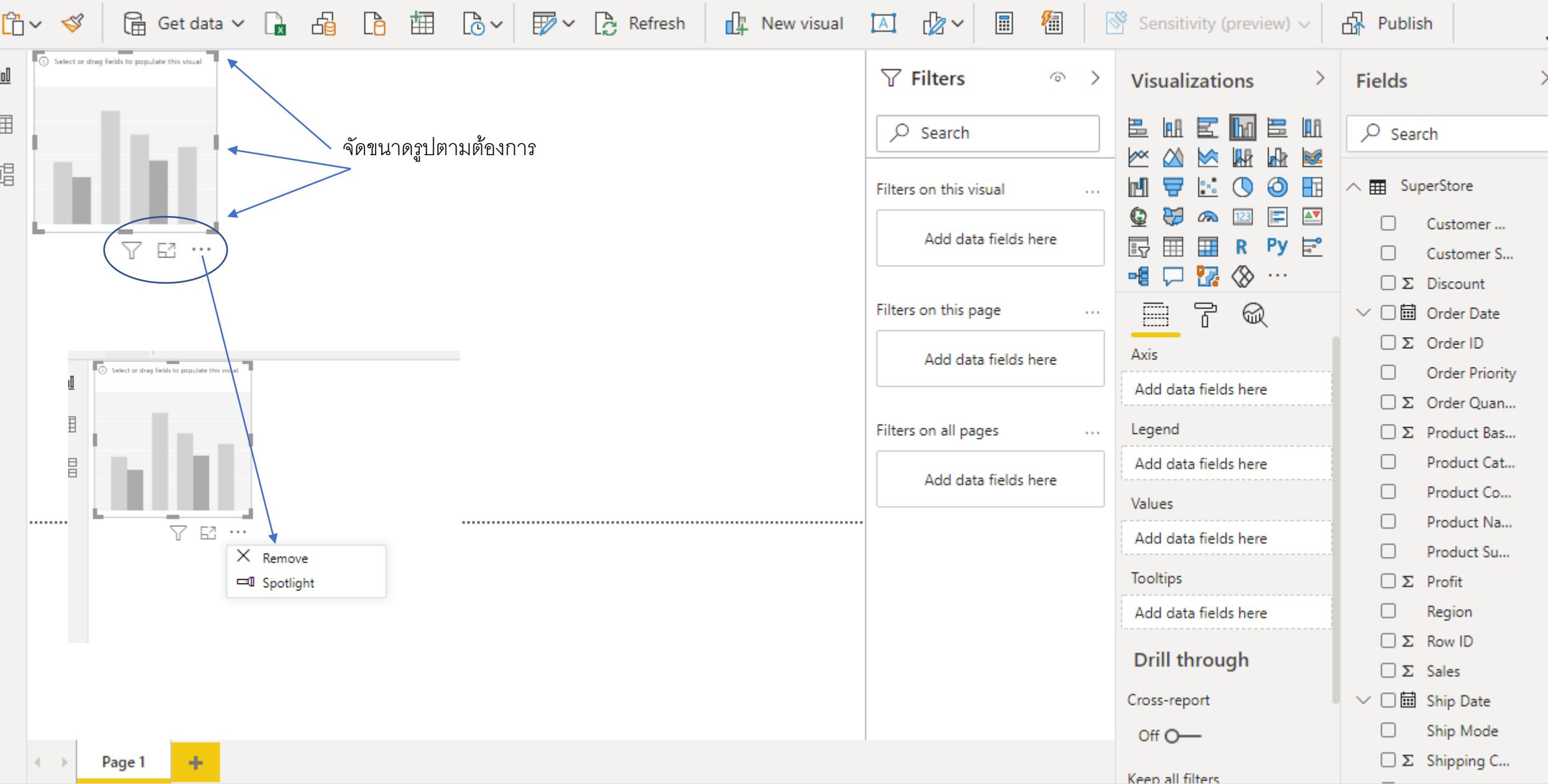
- Customer ...
- Customer S...
- Σ Discount
- Order Date
- Σ Order ID
- Order Priority
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- Σ Product Bas...
- Product Cat...
- Product Co...
- Product Na...
- Product Su...
- Σ Profit
- Region
- Σ Row ID
- Σ Sales
- Ship Date
- Ship Mode
- Σ Shipping C...

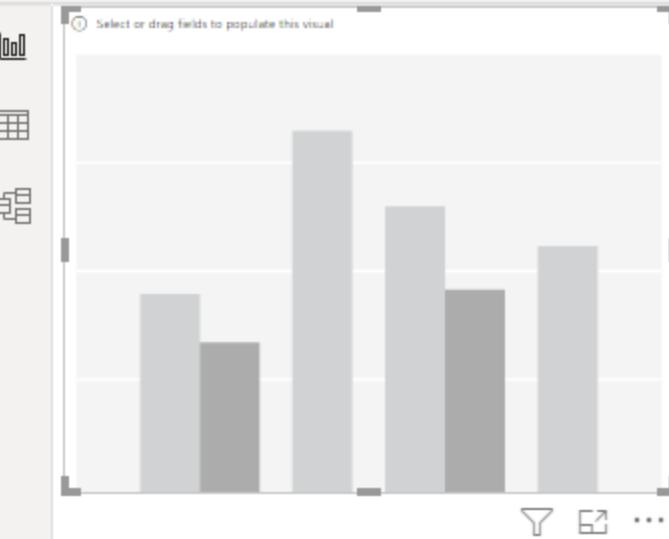
Build visuals with your data

Select or drag fields from the Fields pane onto the report canvas.



File Home Insert Modeling View Help Format Data / Drill



File **Home** Insert Modeling View Help Format Data / Drill**Filters**

Search

Filters on this visual

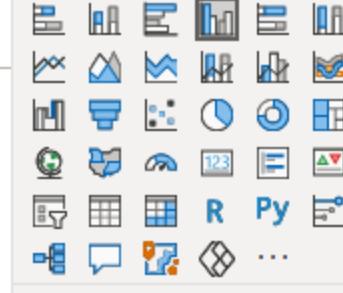
Add data fields here

Filters on this page

Add data fields here

Filters on all pages

Add data fields here

Visualizations**Axis**

Add data fields here

Legend

Add data fields here

Values

Add data fields here

Toolips

Add data fields here

Drill through

Cross-report

Off

Keep all filters

Fields

Search

SuperStore

- Customer ...
- Customer S...
- Σ Discount
- Σ Order Date
- Σ Order ID
- Order Priority
- Σ Order Quan...
- Σ Product Bas...
- Product Cat...
- Product Co...
- Product Na...
- Product Su...
- Σ Profit
- Region
- Σ Row ID
- Σ Sales
- Σ Ship Date
- Ship Mode
- Σ Shipping C...

The screenshot shows the Power BI Data view ribbon interface. On the left, there's a vertical toolbar with various icons for data management. The main area displays the 'Superstore' dataset with a hierarchical tree view. Under the 'Order Date' node, several options are listed: Customer ..., Customer S..., Discount, Order Date (which is expanded and highlighted with a yellow checkmark), Order ID, Order Priority, Order Quan..., Product Bas..., Product Cat..., Product Co..., and Product M... . Below this tree view, a table titled 'Axis' is shown, listing the levels of the 'Order Date' hierarchy: Year, Quarter, Month, and Day, each with a corresponding 'X' icon to the right.

Level	Action
Order Date	▼ X
Year	X
Quarter	X
Month	X
Day	X

File Home Insert Modeling View Help Format Data / Drill

Get data Refresh New visual Sensitivity (preview) Publish

Sales by Quarter

4M
3M
2M
1M
0M

Qtr 1 Qtr 2 Qtr 3 Qtr 4

Quarter

Filters

Search

Filters on this visual

- Order Date - Day is (All)
- Order Date - Month is (All)
- Order Date - Quarter is (All)

Sales is (All)

Add data fields here

Filters on this page

Add data fields here

Filters on all pages

Add data fields here

Visualizations

Fields

Search

CUSTOMER ...

Discount

Remove field

Rename for this visual

Move to

Sum

Average

Minimum

Maximum

Count (Distinct)

Count

Standard deviation

Variance

Median

Show value as

New quick measure

Ship Mode

Shipping C...

State

Target Profit

Unit Price

Axis

Order Date

- Quarter
- Month
- Day

Legend

Add data fields here

Values

Sales

Tooltips

Add data fields here

Drill through

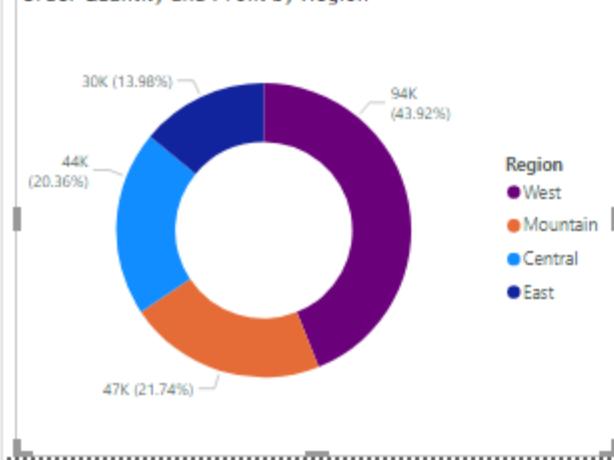
Page 1 +

The screenshot displays a Microsoft Power BI desktop application window. At the top, there's a ribbon with tabs: File, Home, Insert, Modeling, View, Help, Format, and Data / Drill. Below the ribbon is a toolbar with icons for Get data, Refresh, New visual, Sensitivity (preview), and Publish. The main area features a bar chart titled "Sales by Quarter" with four blue bars representing sales for each quarter. The Y-axis is labeled "Sales" and ranges from 0M to 4M. The X-axis is labeled "Quarter" and shows "Qtr 1", "Qtr 2", "Qtr 3", and "Qtr 4". To the right of the chart is a context menu with three main sections: "Filters", "Visualizations", and "Fields". The "Fields" section is currently active, showing a list of measures: Sum, Average, Minimum, Maximum, Count (Distinct), Count, Standard deviation, Variance, Median, Show value as, New quick measure, Ship Mode, Shipping C..., State, Target Profit, and Unit Price. Under the "Fields" section, there are dropdown menus for "Axis" (Order Date: Quarter, Month, Day) and "Values" (Sales). The "Filters" section includes sections for "Filters on this visual", "Filters on this page", and "Filters on all pages", each with an "Add data fields here" button. The "Visualizations" section contains icons for various chart types. The bottom of the screen shows navigation buttons for "Page 1" and a yellow "+" button, along with a status bar.

Average of Sales and Sales by Quarter



Order Quantity and Profit by Region



Visualizations

Filters

Legend

Region

Details

Add data fields here

Values

Order Quantity

Tooltips

Profit

Drill through

Fields

Search

- Customer S...
- Σ Discount
- Order Date
- Σ Order ID
- Order Priority
- Σ Order Quan...
- Σ Product Bas...
- Product Cat...
- Product Co...
- Product Na...
- Product Su...
- Profit
- Region
- Row ID
- Sales
- Ship Date
- Ship Mode
- Σ Shipping C...



Average of Sales and Sales by Quarter

Quarter	Average of Sales
Qtr 1	1.9K
Qtr 2	1.7K
Qtr 3	1.8K
Qtr 4	2.1K

Order Quantity and Profit by Region

Region	Value	Percentage
West	94K	43.92%
Mountain	(0%)	(0%)
Central	(0%)	(0%)
East	(0%)	(0%)

Sales by Region

Visualizations

Filters

Fields

Search

Customer ...

Σ Discount

Order Date

Σ Order ID

Order Priority

Σ Order Quan...

Σ Product Bas...

Product Cat...

Product Co...

Product Na...

Product Su...

Σ Profit

Region

Σ Row ID

Σ Sales

Ship Date

Ship Mode

Σ Shipping C...

State

Σ Target Profit

Σ Unit Price

Add data fields here

Drill through

Cross-report

Off

Keep all filters

On

Add drill-through fields here

Change to Thailand

Use SuperStoreTh.xls

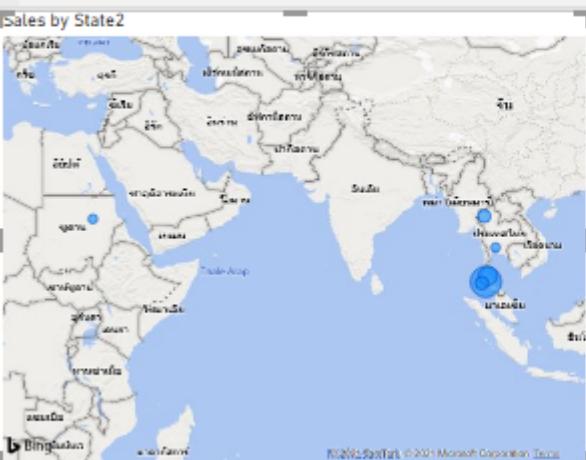
1. Open SuperStore.csv
2. เพิ่ม Column State2 ข้าง ๆ State
3. วางสูตร

=IF(N8396="illinois","Khongkang",IF(N8396="Oregon","Suratthani",IF(N8396="Georgia","Phuket",IF(N8396="Arizona","Songkla",IF(N8396="California","Krabi",IF(N8396="Massachusetts","Chiengrai",IF(N8396="Texas","Prae","Nil"))))))))

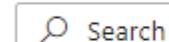
4. เลื่อนเม้าส์ ในเซลล์ และเห็นเครื่องหมาย “+”
5. Double Click เพื่อ copy ลงไปทุก ๆ แฉว



Get data



Filters



Filters on this visual

Sales
is (All)State2
is (All)

Add data fields here

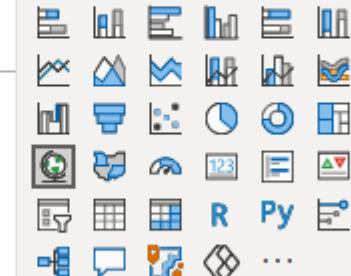
Filters on this page

Add data fields here

Filters on all pages

Add data fields here

Visualizations



State2

Legend

Add data fields here

Latitude

Add data fields here

Longitude

Add data fields here

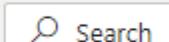
Size

Sales

Toolips

Add data fields here

Fields



Order Date

 Σ Order ID Order Priority Σ Order Quan... Σ Product Bas... Product Cat... Product Co... Product Na... Product Su... Σ Profit Region1 Region2 Σ Row ID Σ Sales

Ship Date

 Ship Mode

Shipping C...

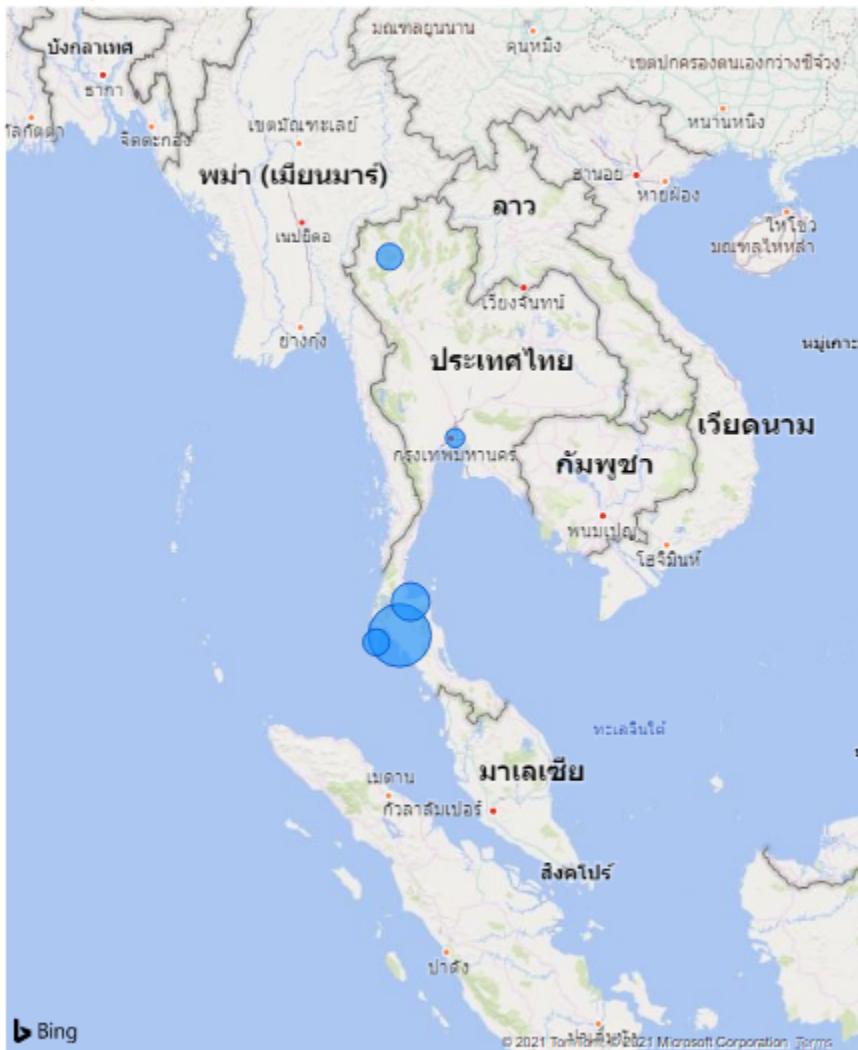
 State1 State2

Target Profit

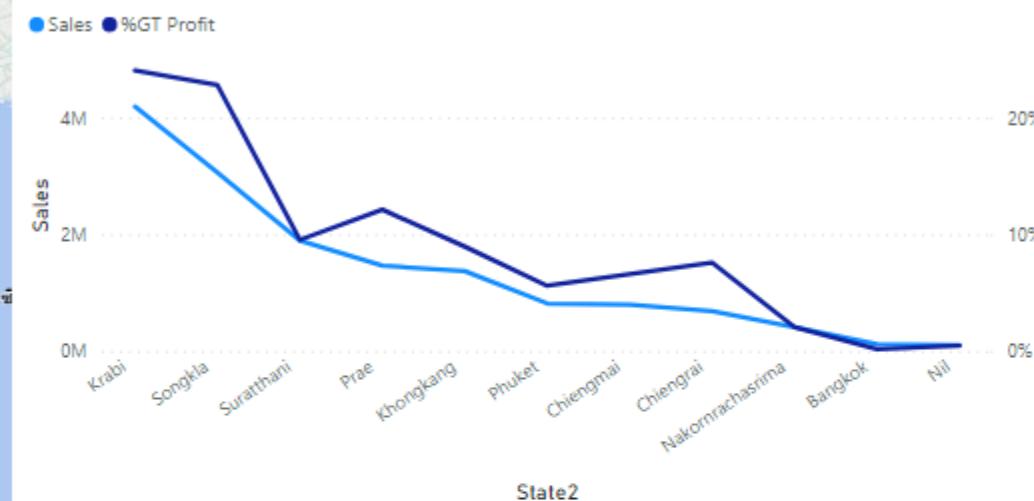
 Σ Unit Price



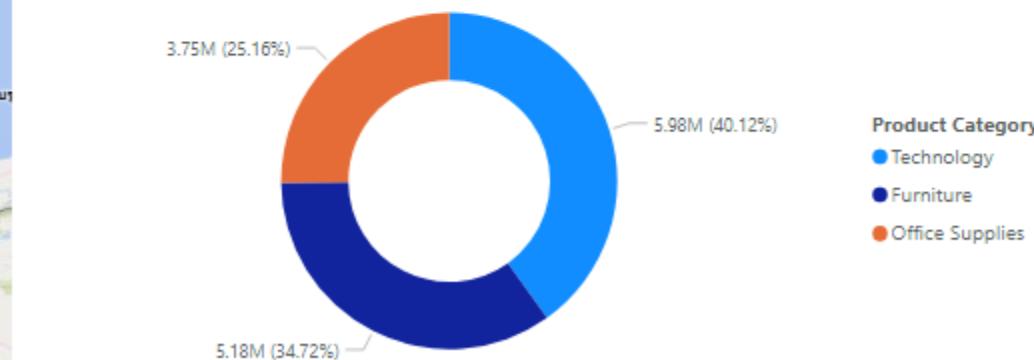
Sales by State2



Sales and %GT Profit by State2



Sales by Product Category



Fields
Filters
Visualizations

Sales by State2

Sales and %GT Profit by State2

Sales %GT Profit

Publish to Power BI

Select a destination

My workspace

Select Cancel

Product Category

- Technology
- Furniture
- Office Supplies

20%

10%

0%

Yima Bangkok Nai

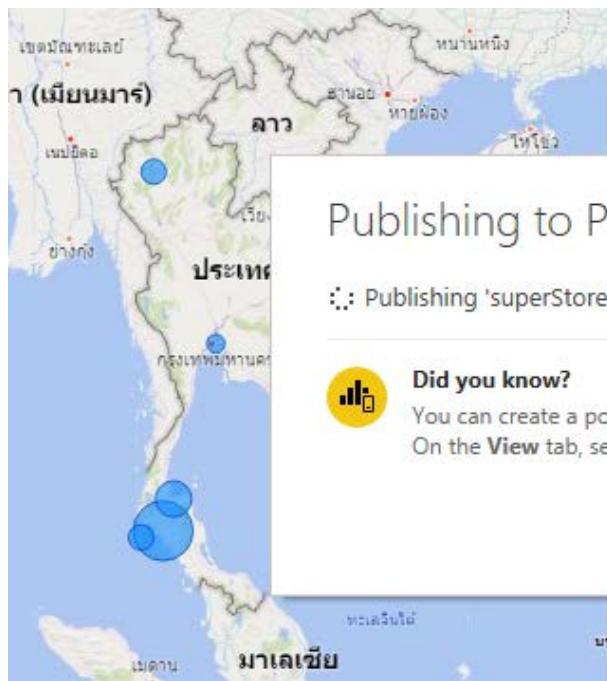
2%

1%

0%

Product Category

- Technology
- Furniture
- Office Supplies



Publishing to Power BI

Publishing 'superStoreTh.pbix' to Power BI

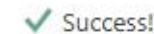


Did you know?

You can create a portrait view of your report, tailored for mobile phones. On the View tab, select **Mobile Layout**. [Learn more](#)



Publishing to Power BI



Success!

[Open 'superStoreTh.pbix' in Power BI](#)

[Get Quick Insights](#)



Did you know?

You can create a portrait view of your report, tailored for mobile phones. On the View tab, select **Mobile Layout**. [Learn more](#)

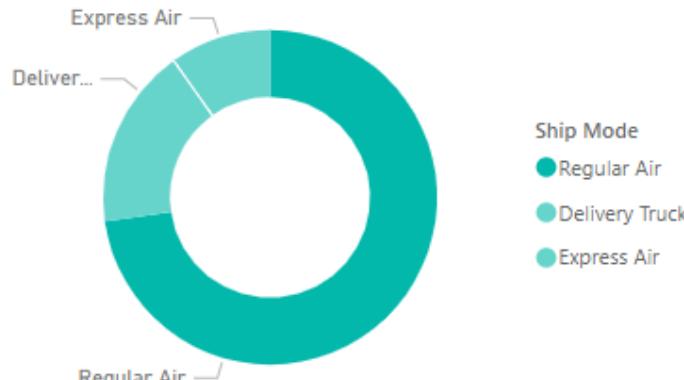
[Got it](#)

5.98M (40.12%)

Quick Insights for superStoreTh

A subset of your data was analyzed and the following insights were found. [Learn more](#)

Target Profit
BY SHIP MODE



'Regular Air' accounts for the majority of Target Profit.

[Home](#)[Favorites](#)[Recent](#)[Create](#)[Datasets](#)[Apps](#)[Shared with me](#)[Learn](#)[Workspaces](#)[My workspace](#)[Logout](#)



Power BI



superStoreTh - Power BI



app.powerbi.com

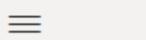


G บัญชีของ Google pse server Digital Oce... leanSim2021 mobile App SUT Google pswebsite mcMonitoring coreLab Other bookmarks

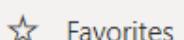
Power BI My workspace

superStoreTh | Data updated 3/9/21

Search



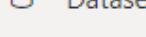
Home



Favorites



Recent



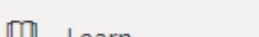
Create



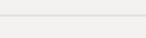
Datasets



Apps



Shared with me



Learn



Workspaces



My workspace



Pages



Page 1

Page 2



File



Export



Share



Chat in Teams



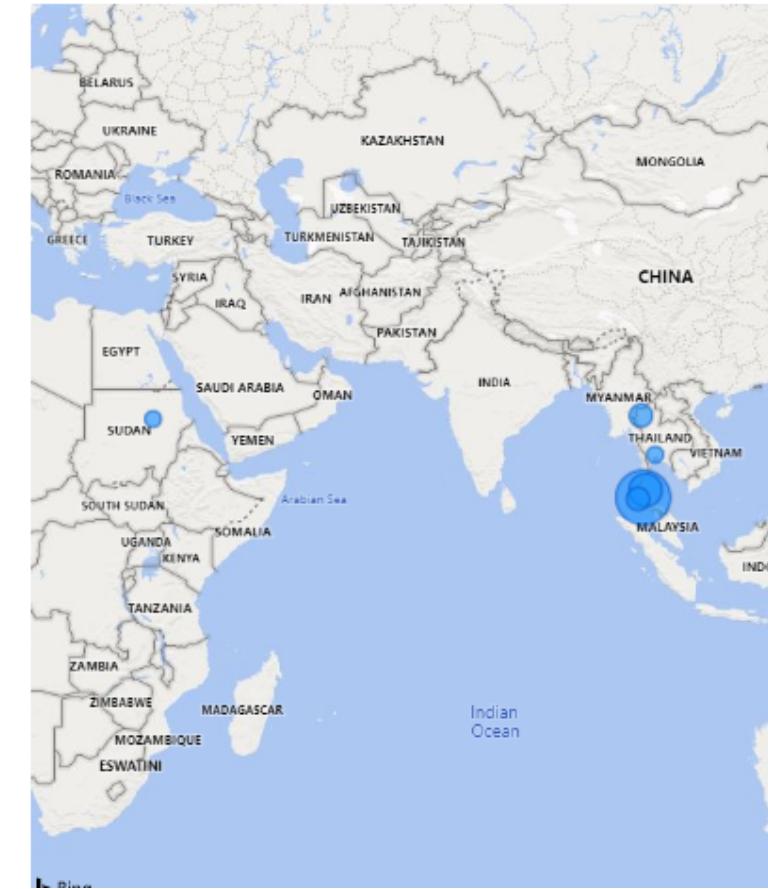
Comment



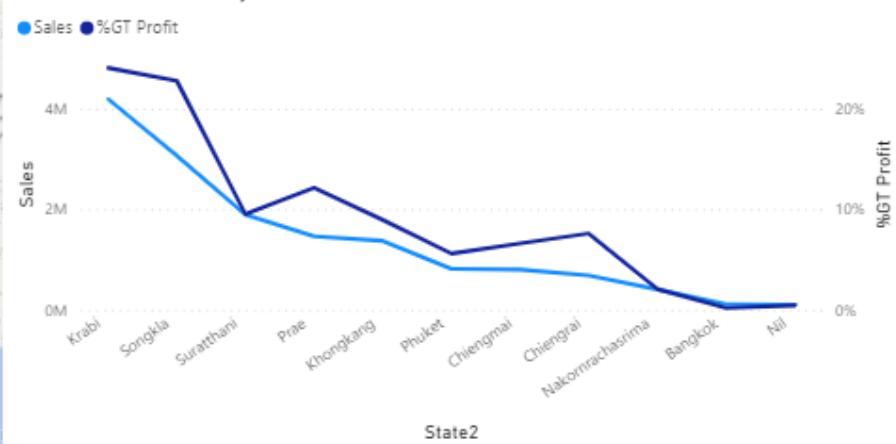
...



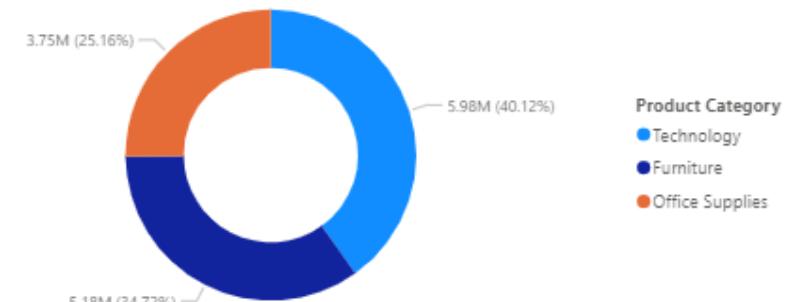
Sales by State2



Sales and %GT Profit by State2



Sales by Product Category



Product Category

Technology

Furniture

Office Supplies

Filters

Analysis

File Home Insert Modeling View Help Format Data / Drill

Get data Refresh New visual Publish Sensitivity (preview)

Key influencers Top segments

What influences Ship Mode to be Regular Air ?

When...
Sales is 315.88 or less → 1.34x
Sales is 315.88 - 1717.21 → 1.04x

...the likelihood of Ship Mode being Regular Air increases by 1.34x.

← Ship Mode is more likely to be Regular Air when Sales is 315.88 or less than otherwise (on average).

%Ship Mode is Regular Air

Average (excluding selected): 65.03%

Sales (bins)

Sales (bins)	%Ship Mode is Regular Air
315.88 or less	~82%
315.88 - 1717.21	~72%
1717.21 - 4387.24	~60%
more than 4387.24	~40%

Only show values that are influencers

Filters

Visualizations

Analyze

Ship Mode

Explain by

Sales

Order Quantity

Expand by

Add data fields here

Drill through

Cross-report

Off

Keep all filters

Fields

Search

SuperStoreTh

- Customer ...
- Customer S...
- Σ Discount
- Order Date
- Σ Order ID
- Order Priority
- Σ Order Quan...
- Σ Product Bas...
- Product Cat...
- Product Co...
- Product Na...
- Product Su...
- Profit
- Region1
- Region2
- Σ Row ID
- Σ Sales
- Ship Date
- Ship Mode

Page 1 Page 2 Page 3 +

Tree Diagram

File Home Insert Modeling View Help Format Data / Drill Table tools Column tools

Name Region2 Text Text \$ % Auto Σ Don't summarize

Product Category State2 Sales Profit

Office Supplies Krabi 75.6 -225.25

Krabi 30719 72 46

Songkla 25582 70 26

Suratthani 15868 60

Prae 13467 53

Khongkang 11244 51

Phuket 6237 50

Chiangmai 5164 50

Chiangrai 4625 50

Nakornrachasrima 2988 50

Order Quantity 214777

Technology 52175

Furniture 44324

Visualizations

Analyze

Order Quantity

Explain by

Product Category

State2

Sales

Profit

Tooltips

Add data fields here

Drill through

Cross-report

Off

Fields

Search

Order Date

Order ID

Order Priority

Order Quan...

Product Bas...

Product Cat...

Product Co...

Product Na...

Product Su...

Profit

Region1

Region2

Row ID

Sales

Ship Date

Ship Mode

Shipping C...

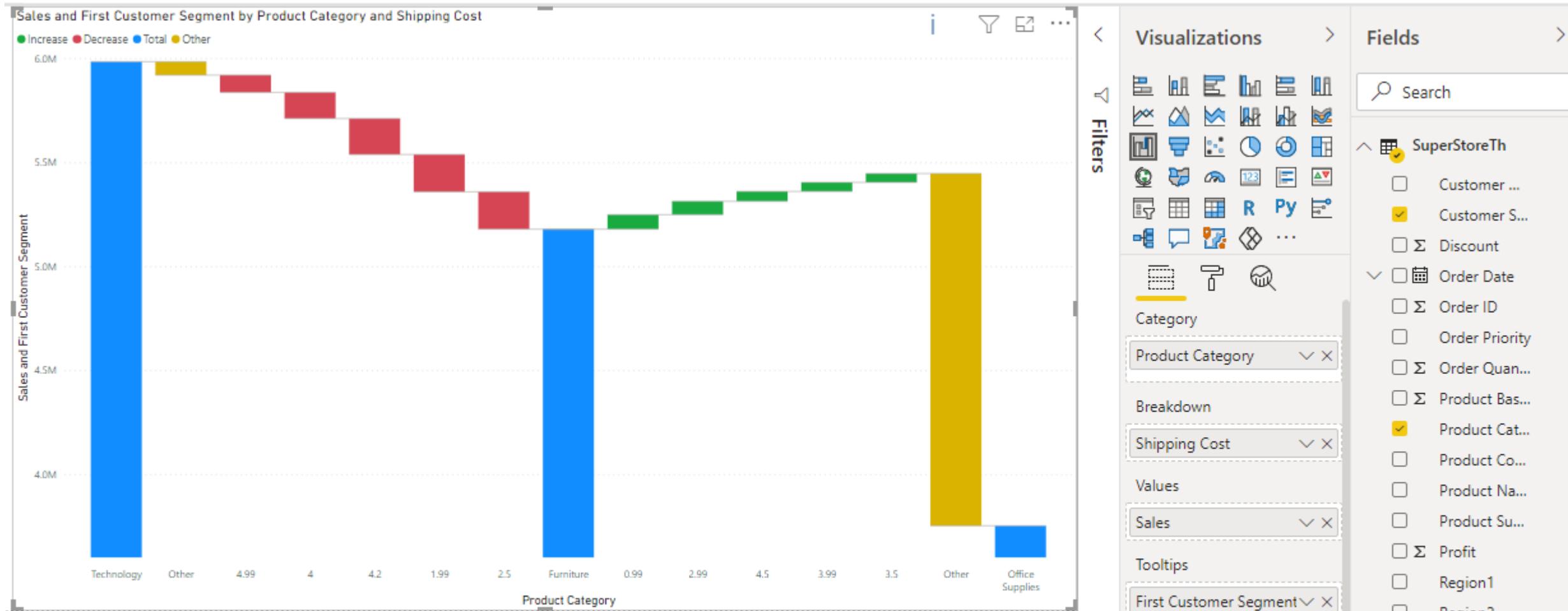
State1

State2

Target Profit

Unit Price

Page 1 Page 2 Page 3 Page 4 +



Waterfall charts show a running total as Power BI adds and subtracts values. They're useful for understanding how an initial value (like net income) is affected by a series of positive and negative changes. The columns are color coded so you can quickly notice increases and decreases.

Order Quantity Consumer Corporate Home Office Small Business Total

1	3,776.15	26,814.66	8,500.21	6,475.14	45,566.16
2	13,799.20	4,707.96	6,134.39	7,174.26	31,815.81
3	38,478.78	27,017.75	54,358.33	34,590.94	154,445.80
4	54,607.26	43,223.72	29,023.90	18,641.08	145,495.96
5	30,950.16	22,567.42	24,491.18	7,983.18	85,991.94
6	31,827.24	50,732.71	17,035.78	34,476.44	134,072.17
7	26,315.26	53,629.63	68,610.23	22,289.16	170,844.28
8	46,527.79	73,330.09	44,827.14	12,427.87	177,112.89
9	39,082.25	27,748.06	38,194.85	62,615.15	167,640.31
10	24,528.04	53,034.25	17,215.26	19,593.32	114,370.87
11	44,760.75	44,940.49	26,652.46	21,235.63	137,589.33
12	37,933.00	80,730.85	42,485.74	25,097.03	186,246.62
13	118,069.77	74,205.03	41,441.53	18,574.60	252,290.93
14	29,208.66	107,635.13	34,578.89	21,302.23	192,724.91
15	37,682.78	84,677.25	43,321.65	19,520.90	185,202.58
16	23,788.07	62,360.79	62,374.12	28,935.80	177,458.78
17	31,207.81	72,736.70	26,829.30	30,238.29	161,012.10
18	38,870.15	62,838.45	33,360.92	52,380.42	187,449.94
19	50,102.97	98,760.37	33,854.95	32,082.08	214,800.37
20	56,330.86	81,467.46	65,632.81	68,287.61	271,718.74
21	29,505.42	82,914.27	61,743.40	57,827.84	231,990.93
22	30,997.41	66,059.06	65,955.47	23,120.86	186,132.80
23	45,120.70	108,899.51	49,077.52	85,015.93	288,113.66
24	36,542.54	94,057.56	106,471.36	71,940.38	309,011.84
25	70,876.73	109,787.80	93,652.92	45,657.42	319,974.87
26	59,489.06	83,094.84	82,636.30	52,051.88	277,272.08
27	54,940.11	97,829.19	50,718.74	86,561.42	290,049.46
28	47,624.57	145,302.83	26,570.10	43,208.62	262,706.12
29	92,584.32	107,334.01	68,336.05	83,036.64	351,291.02
30	83,385.04	138,140.01	136,154.98	48,204.38	405,884.41
31	96,130.53	118,922.94	88,733.39	64,008.47	367,795.33
32	88,792.14	153,584.47	100,712.93	49,141.44	392,230.98
33	68,213.33	97,160.68	128,210.61	81,880.25	375,464.87
34	79,635.94	146,100.30	101,327.51	45,867.97	372,931.72
Total	3,063,611.13	5,498,904.92	3,564,628.29	2,788,321.05	14,915,465.39

Shipping Cost by Customer Segment

A donut chart titled "Shipping Cost by Customer Segment" showing the percentage breakdown of shipping costs across four segments: Corporate (blue), Home Office (dark blue), Consumer (orange), and Small Business (purple). The segments represent 36.23%, 24.07%, 19.92%, and 19.79% respectively.

Customer Segment	Percentage
Corporate	36.23%
Home Office	24.07%
Consumer	19.92%
Small Business	19.79%

Sales by Customer Segment and Product Category

A treemap visualization titled "Sales by Customer Segment and Product Category" showing the relative size of sales for different combinations of Customer Segment and Product Category. The largest segments are Corporate (Technology) and Consumer (Furniture).

Customer Segment	Product Category	Value
Corporate	Technology	214,800.37
Corporate	Furniture	186,246.62
Corporate	Office Supplies	134,072.17
Corporate	Consumer	114,370.87
Corporate	Small Business	85,991.94
Consumer	Technology	187,449.94
Consumer	Furniture	167,640.31
Consumer	Office Supplies	137,589.33
Small Business	Technology	120,740.46
Small Business	Furniture	104,445.80
Small Business	Office Supplies	85,991.94
Home Office	Technology	83,094.84
Home Office	Furniture	72,736.70
Home Office	Office Supplies	62,360.79

Visualizations

Fields

Search:

Filters

Group: Customer Segment

Details: Product Category

Values: Sales

Tooltips: Add data fields here

Drill through: Off

Cross-report: Off

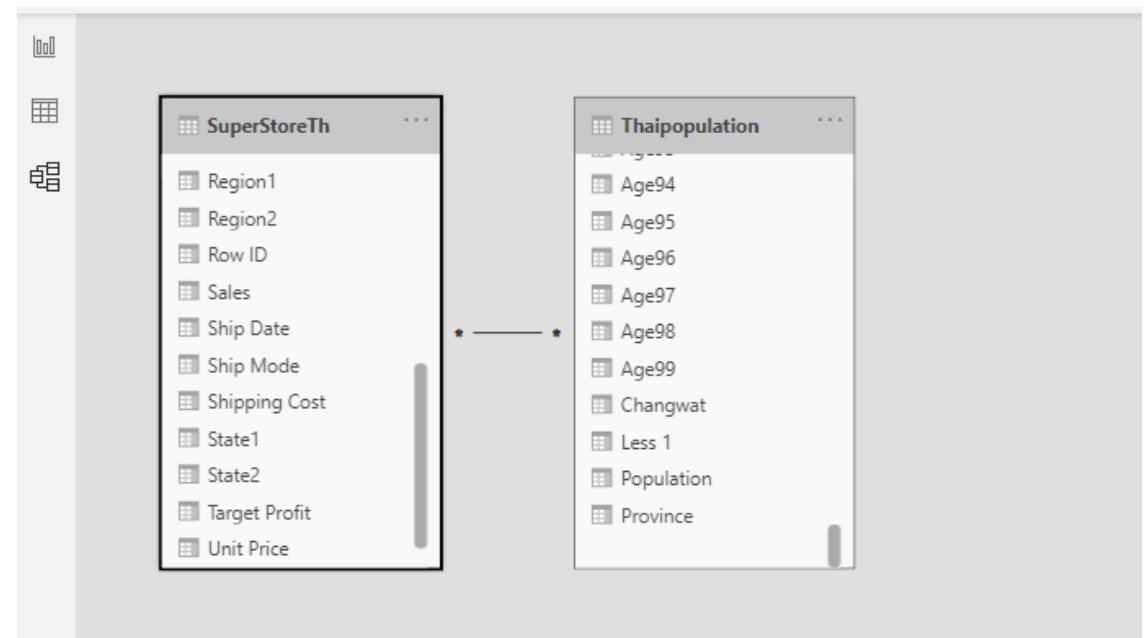
Fields:

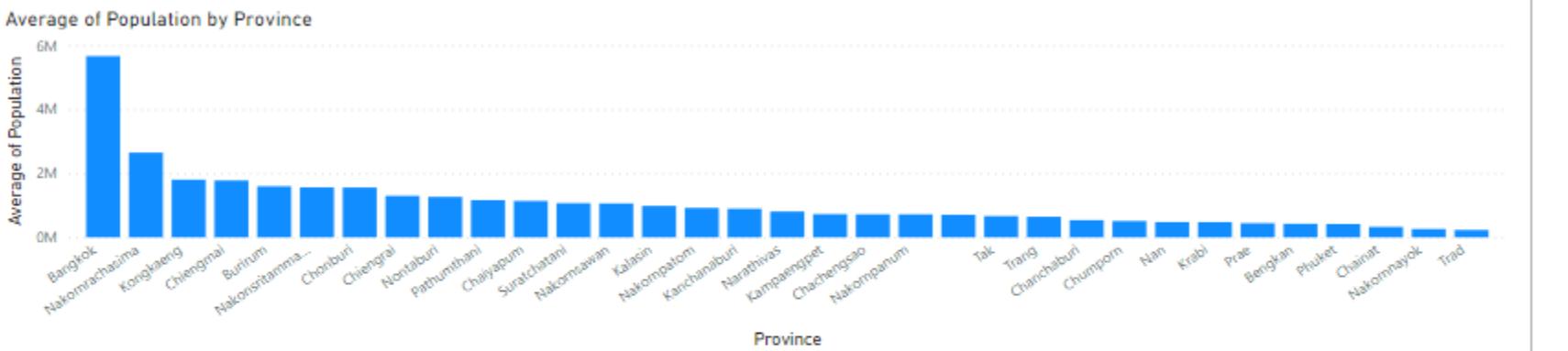
- Customer ...
- Customer S...
- Σ Discount
- Order Date
- Σ Order ID
- Order Priority
- Σ Order Quan...
- Σ Product Bas...
- Product Cat...
- Product Co...
- Product Na...
- Product Su...
- Profit
- Region1
- Region2
- Row ID
- Sales
- Ship Date
- Ship Mode
- Σ Shipping C...

Page 1 Page 2 Page 3 Page 4 Page 5 Page 6 +

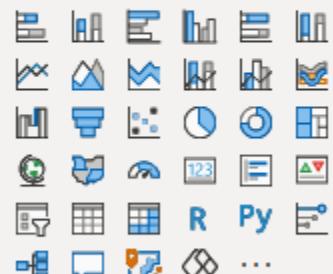
Build Model

1. Select Model
2. Choose data “Thaipopulation.csv”
3. Link State2 and Province





Visualizations



Filters



Values

Add data fields here

Drill through

Cross-report

Off

Keep all filters

On

Add drill-through fields here

Fields

Search

- Σ Age4
- Σ Age85
- Σ Age86
- Σ Age87
- Σ Age88
- Σ Age89
- Σ Age90
- Σ Age91
- Σ Age92
- Σ Age93
- Σ Age94
- Σ Age95
- Σ Age96
- Σ Age97
- Σ Age98
- Σ Age99
- Changwat
- Σ Less 1
- Σ Population
- Province

Exercise

1. สร้างชาร์ตแสดงจำนวน Order แยกตาม จังหวัด
2. สร้างชาร์ตแผนที่แสดงจำนวน Order บนแผนที่ และขนาดวงกลมเป็นไปตามยอดขาย
3. สร้าง Summary Report โดยใช้ Multi Card แสดงคอลัมน์ Order Quantity, Sales, Target Profit, Unit Price ของแต่ละจังหวัด เรียง Order จากมากไปน้อย

Exercise II: Key Influence

- ให้หัวว่า โฆษณาการขนส่งมีอิทธิพลต่อยอดขายหรือไม่
- โฆษณาการขนส่งมีอิทธิพลต่อจำนวนการสั่งซื้อด้วยหรือไม่
- ให้หัวว่า อะไร มีอิทธิพลต่อจำนวนสั่งซื้อ
- ให้หัวว่า ออร์เดอร์เร่งด่วน มีความสัมพันธ์กับ เดือนที่สั่งสินค้าหรือไม่

Exercise III :Tree Diagram & Scatter

- สร้าง Tree Diagram
 - Sales → จังหวัด → กลุ่มลูกค้า → หมวดสินค้า
- สร้าง Scatter Diagram
 - แกน X → จังหวัด
 - แกน Y → จำนวนออร์เดอร์
 - Values → Sales
 - ให้อธิบายกราฟ

Q & A