

Power BI and DAC Sales Orders

Note: This is the shared Power Point presentation that has the live connections to the actual Power BI Report used in the presentation. Slides 12 and 13 have the hyperlink to the live report and will be available for access for at least a couple of months.

Also, you can [click here](#). Enjoy!

Feel free to contact me with any questions.

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About Power BI

- Microsoft Power BI is a Business Intelligence tool that provides dashboards and interactive visuals to help organizations gain more insight into their operations.
- Originally released in July of 2015. By 2017 a completely new product emerged for the **Data Insights Summit in Seattle June 2017**.
- Since June 2017 Microsoft has been delivering **20-30 new features per month** based on a very active user community. Features are suggested by the users and voted on by the user community. Features most voted for are added to the product.
- Very powerful tool with loads of data source connectors.
- Very easy to use.
- Superb data visualization capabilities.
- Easy to embed in Web or Windows Applications
- Component of Office 365



Power BI

Data Connections

File

- Excel
- Text/CSV
- XML
- JSON
- Folder
- SharePoint folder

Database

- SQL Server database
- Access database
- SQL Server Analysis Services database
- Oracle database
- IBM DB2 database
- IBM Informix database (Beta)
- IBM Netezza
- MySQL database
- PostgreSQL database
- Sybase database
- Teradata database
- SAP HANA database
- SAP Business Warehouse Application Server
- SAP Business Warehouse Message Server (Beta)
- Amazon Redshift
- Impala
- Google BigQuery (Beta)
- Snowflake

Azure

- Azure SQL database
- Azure SQL Data Warehouse
- Azure Analysis Services database (Beta)
- Azure Blob Storage
- Azure Table Storage
- Azure Cosmos DB (Beta)
- Azure Data Lake Store
- Azure HDInsight (HDFS)
- Azure HDInsight Spark (Beta)
- HDInsight Interactive Query (Beta)

Other

- Vertica (Beta)
- Web
- SharePoint list
- OData Feed
- Active Directory
- Microsoft Exchange
- Hadoop File (HDFS)
- Spark (Beta)
- R script
- ODBC
- OLE DB
- Blank Query

Online Services

- Power BI service
- SharePoint Online List
- Microsoft Exchange Online
- Dynamics 365 (online)
- Dynamics NAV (Beta)
- Dynamics 365 for Financials (Beta)
- Common Data Service (Beta)
- Microsoft Azure Consumption Insights (Beta)
- Visual Studio Team Services (Beta)
- Salesforce Objects
- Salesforce Reports
- Google Analytics
- appFigures (Beta)
- comScore Digital Analytix (Beta)
- Dynamics 365 for Customer Insights (Beta)
- Data.World - Get Dataset (Beta)

- Data.World - Get Dataset (Beta)
- Facebook
- GitHub (Beta)
- MailChimp (Beta)
- Marketo (Beta)
- Mixpanel (Beta)
- Planview Enterprise (Beta)
- Projectplace (Beta)
- QuickBooks Online (Beta)
- Smartsheet
- SparkPost (Beta)
- Stripe (Beta)
- SweetIQ (Beta)
- Troux (Beta)
- Twilio (Beta)
- tyGraph (Beta)
- Webtrends (Beta)
- Zendesk (Beta)

Intuitive Modeling Controls

The screenshot displays the Microsoft Power BI Desktop application. The 'Transform' ribbon is active, showing various data manipulation options. On the left, the 'Queries' pane lists several data sources: OrderDtData, OrderHeaData, SalesPDData, VendorData, InvtData, Shipping, States, and CustomerData. The main workspace shows a table with columns: Order Number, Line Number, Item_ID, Units Sold, and Unit Price. Three context menus are overlaid on the table:

- Sort Menu:** Located over the 'Order Number' column, it includes options for 'Sort Ascending', 'Sort Descending', 'Clear Sort', 'Clear Filter', 'Remove Empty', and 'Text Filters'.
- Column Context Menu:** Located over the 'Item_ID' column, it includes options like 'Copy', 'Remove', 'Remove Other Columns', 'Duplicate Column', 'Add Column From Examples...', 'Remove Duplicates', 'Remove Errors', 'Change Type', 'Transform', 'Replace Values...', 'Replace Errors...', 'Group By...', 'Fill', 'Unpivot Column', 'Unpivot Other Columns', 'Unpivot Only Selected Columns', 'Rename...', 'Move', 'Drill Down', and 'Add as New Query'.
- Type Conversion Menu:** Located over the 'Units Sold' column, it lists various data types for conversion: 'Decimal Number', 'Fixed decimal number', 'Whole Number', 'Percentage', 'Date/Time', 'Date', 'Time', 'Date/Time/Timezone', 'Duration', 'Text', 'True/False', 'Binary', and 'Using Locale...'.

The background table data is as follows:

Order Number	Line Number	Item_ID	Units Sold	Unit Price
1	1.2	ACE-2	1	
2	1.2	ACE1	1	
3	1.2	BEARS	5	
4	1.2	BRIDGE		
5	1.2	CASE		
6	1.2	CITIES		
7	1.2	CUA		
8	1.2	DATES		
9	1.2	DT		
10	1.2	DT PK		
11	1.2	FLEX-O-MAT		
12	1.2	GOLD		
13	1.2	GOLD-DLX		
14	1.2	JEWELRY-DL		
15	1.2	JEWELRY-I		
16	1.2	JOKES		
17	1.2	MADE		
18	1.2	MODEMS		
19	1.2	TABLE-MAH		
20	1.2	REPORTS		

Complex Queries As Data Source

```
IF OBJECT_ID('tempdb.dbo.#slsbymtcustpline', 'U') IS NOT NULL
DROP TABLE #slsbymtcustpline;

SET TRANSACTION ISOLATION LEVEL READ UNCOMMITTED

SELECT rn.MarketID, rn.MarketName, c.CustomerID, c.CustomerName, pl.PriceLineID, pl.Description as PricelineName, p.Product
sum(sod.Price * (sod.StockQty + sod.DirectQty)) as sales,
sum(sod.Price * (sod.StockQty + sod.DirectQty)) - sum(sod.COGS * (sod.StockQty + sod.DirectQty)) as COGS_GP
into #slsbymtcustpline
FROM LedgerSOHeader so
left join LedgerSODetail sod on sod.ETLSourceID = so.ETLSourceID and sod.LedgerID = so.LedgerID and sod.Gen = so.Ge
left join LedgerLogPrintStatus lps on lps.ETLSourceID = sod.ETLSourceID and lps.LedgerID = sod.LedgerID and lps.VMC
left join Customer c on c.ETLSourceID = so.ETLSourceID and so.BillToCustomerID = c.CustomerID
left join meta.dimDate d on so.ShipDate = d.Date
left join branch b on b.ETLSourceID = so.ETLSourceID and so.GLBranchID = b.BranchID
left join MSCWVSQLP02.MorscoODS.meta.RegionNew rn on b.BranchID = rn.BranchID
left join Product p on p.ETLSourceID = sod.ETLSourceID and sod.ProductID = p.ProductID
left join priceline pl on pl.ETLSourceID = p.ETLSourceID and p.PriceLineID = pl.PriceLineID
where so.ETLSourceID = 'MSC'
and d.Year >= 2018
and so.OrderStatus = 'I'
and ISNULL(lps.PrintStatus, '') in ('N','B')
and isnull(so.SaleSource, '') != 'INTERCO'
and LEFT(so.LedgerID,2) not in ('SA','SB')
group by rn.MarketID, rn.MarketName, c.CustomerID, c.CustomerName

IF OBJECT_ID('tempdb.dbo.#slsbymtcustpline_over', 'U') IS NOT NULL
DROP TABLE #slsbymtcustpline_over;

select *, nullif(cogs_gp,0)/nullif(sales,0) as cogs_gp_pct
, sum(sales) over(partition by marketname, PricelineName) as sales
, sum(cogs_gp) over(partition by marketname, PricelineName) as cogs_gp
, sum(sales) over(partition by marketname, customername) as sales
, sum(cogs_gp) over(partition by marketname, customername) as cogs_gp
--, rank() over(partition by customername order by CustomerID) as rank_customer
--, rank() over(partition by description order by description) as rank_description
into #slsbymtcustpline_over
from #slsbymtcustpline;

IF OBJECT_ID('tempdb.dbo.#slsbymtcustpline_over_rank', 'U') IS NOT NULL
DROP TABLE #slsbymtcustpline_over_rank;

select *, sales/nullif(sales_line_market,0) as cust_to_mkt_sl
, dense_rank() over (partition by marketname order by sales_gp) as rank_sales
, dense_rank() over (partition by marketname order by sales_gp) as rank_sales
into #slsbymtcustpline_over_rank
from #slsbymtcustpline_over;

select *, concat(marketid, customerid, pricelineid, productid, shipdate)
```

Add Complex Queries

SQL Server database

Server

MSCWVSQLP02

Database

Eclipse_ODS

Data Connectivity mode

Import

DirectQuery

Advanced options

Command timeout in minutes (optional)

45

SQL statement (optional, requires database)

```
IF OBJECT_ID('tempdb.dbo.#slsbymtcustpline', 'U') IS NOT NULL
DROP TABLE #slsbymtcustpline;

SET TRANSACTION ISOLATION LEVEL READ UNCOMMITTED

SELECT rn.MarketID, rn.MarketName, c.CustomerID, c.CustomerName, pl.PriceLineID, pl.Description as PricelineName, p.Product
sum(sod.Price * (sod.StockQty + sod.DirectQty)) as sales,
sum(sod.Price * (sod.StockQty + sod.DirectQty)) - sum(sod.COGS * (sod.StockQty + sod.DirectQty)) as COGS_GP
into #slsbymtcustpline
FROM LedgerSOHeader so
left join LedgerSODetail sod on sod.ETLSourceID = so.ETLSourceID and sod.LedgerID = so.LedgerID and sod.Gen = so.Gen
left join LedgerLogPrintStatus lps on lps.ETLSourceID = sod.ETLSourceID and lps.LedgerID = sod.LedgerID and lps.VMC
left join Customer c on c.ETLSourceID = so.ETLSourceID and so.BillToCustomerID = c.CustomerID
left join meta.dimDate d on so.ShipDate = d.Date
left join branch b on b.ETLSourceID = so.ETLSourceID and so.GLBranchID = b.BranchID
left join MSCWVSQLP02.MorscoODS.meta.RegionNew rn on b.BranchID = rn.BranchID
left join Product p on p.ETLSourceID = sod.ETLSourceID and sod.ProductID = p.ProductID
left join priceline pl on pl.ETLSourceID = p.ETLSourceID and p.PriceLineID = pl.PriceLineID
where so.ETLSourceID = 'MSC'
and d.Year >= 2018
and so.OrderStatus = 'I'
and ISNULL(lps.PrintStatus, '') in ('N','B')
and isnull(so.SaleSource, '') != 'INTERCO'
and LEFT(so.LedgerID,2) not in ('SA','SB')
group by rn.MarketID, rn.MarketName, c.CustomerID, c.CustomerName

IF OBJECT_ID('tempdb.dbo.#slsbymtcustpline_over', 'U') IS NOT NULL
DROP TABLE #slsbymtcustpline_over;

select *, nullif(cogs_gp,0)/nullif(sales,0) as cogs_gp_pct
, sum(sales) over(partition by marketname, PricelineName) as sales
, sum(cogs_gp) over(partition by marketname, PricelineName) as cogs_gp
, sum(sales) over(partition by marketname, customername) as sales
, sum(cogs_gp) over(partition by marketname, customername) as cogs_gp
--, rank() over(partition by customername order by CustomerID) as rank_customer
--, rank() over(partition by description order by description) as rank_description
into #slsbymtcustpline_over
from #slsbymtcustpline;

IF OBJECT_ID('tempdb.dbo.#slsbymtcustpline_over_rank', 'U') IS NOT NULL
DROP TABLE #slsbymtcustpline_over_rank;

select *, sales/nullif(sales_line_market,0) as cust_to_mkt_sl
, dense_rank() over (partition by marketname order by sales_gp) as rank_sales
, dense_rank() over (partition by marketname order by sales_gp) as rank_sales
into #slsbymtcustpline_over_rank
from #slsbymtcustpline_over;

select *, concat(marketid, customerid, pricelineid, productid, shipdate)
```

☒ Include relationship columns

☐ Navigate using full hierarchy

☐ Enable SQL Server Failover support

OK

Cancel

Power BI Components

1. Power BI Desktop

2. Power BI On-Premises Data Gateway

3. Power BI Web Service

Power BI Desktop

- Connection to Data Sources
- Managing Data Models
 - Manage Data Sources with M Scripts
 - Create Custom Measures and Columns with DAX
- Create User Roles for RLS
- Publish to the Web

Power BI On-Premises Data Gateway

- On-Premises Gateway service management.
- Provides access and connectivity to On-Premises data sources
- Connections managed on the Power BI Web Service

Power BI Web Service

- Create Workspaces
- User Report Design on the Web
- Build and Manage Apps
- Manage the Gateway
- Manage User Access for Workspaces, Apps and User Roles

Create and Manage Workspaces

The screenshot displays the Microsoft Power BI web interface. On the left, a navigation pane includes links for Favorites, Recent, Apps, Shared with me, Workspaces, and My Workspace. The 'Workspaces' section is expanded, showing 'My Workspace' and a list of 'APP WORKSPACES' including 'DAC Sample'. A yellow button labeled 'Create app workspace' is visible at the bottom of this list. The main content area shows a search bar and a list of items, including 'DAC Order Entry' and 'DAC Sales Sample sql'. On the right, the 'Edit workspace' dialog is open, allowing configuration of the workspace's name, privacy settings, and members. The dialog includes a 'Name' field with 'DAC Sample', a 'Privacy' dropdown set to 'Private - Only approved members can see what's inside', and a 'Members can edit Power BI content' checkbox. Below, the 'Workspace members' section lists three users with their roles (Member, Admin, Admin) and a table to manage them. At the bottom, there are buttons for 'Delete workspace', 'Save', and 'Cancel'. The top right of the interface shows a 'Pro trial: 87 days left' notification and various utility icons.

Power BI ☆ Favorites

Pro trial: 87 days left

Search content...

NAME

- ★ DAC Order Entry
- ★ DAC Sales Sample sql

Workspaces < My Workspace

My Workspace

APP WORKSPACES

- DAC Sample

Create app workspace

Edit workspace

Name

DAC Sample

Privacy

Private - Only approved members can see what's inside

Members can edit Power BI content

Workspace members

Enter email addresses

Add

chuck_gleamssoftware.com#ext#@reit...	Member	
ross@reitzammer.com	Admin	
ross@reitzammer.onmicrosoft.com	Admin	

Advanced ^

Dedicated capacity ⓘ

Off

Delete workspace Save Cancel

Power BI and DAC Order Entry

Power BI

Order Entry Web Application - DataFlex 19.0

File Views Reports Demo Themes Remember

Customer List
Order List
Customer Orders
DataFlex Report Writer (Live)
Dynamic AI (Live)
Power BI (Live)
Power BI (Live) in an iFrame

Clear/Add Clear all Save Delete

Power BI Demo

DAC Sales Order

1,290,806 Sales

8,828 Units

4 Invoices

Date: 2/26/2012 2/18/2016

State: All

Customer: All

Salesperson: All

Vendor: All

Product: All

Sales Units Sold, Units Sold and Invoices by Year

Sales by Salesperson

Year	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Total
2012	4	396	338	273	792
2013	77	21,303	108	20,079	20,468
2014	5	565	29	3,652	4,251
2015	3	277	34	2,036	2,374
2016	9	775	58	37,310	38,152
2017	5	315	24	2,960	3,294
Total	12	1,238	250	40,409	41,906

Microsoft Power BI

1 of 5

1,290,806

Sales

8,828

Units

477

Invoices

Date

2/26/2012

2/18/2016

State

All

Customer

All

Salesperson

All

Vendor

All

Product

All

Regions

Alaska & Hawaii

North

Northeast

Northwest

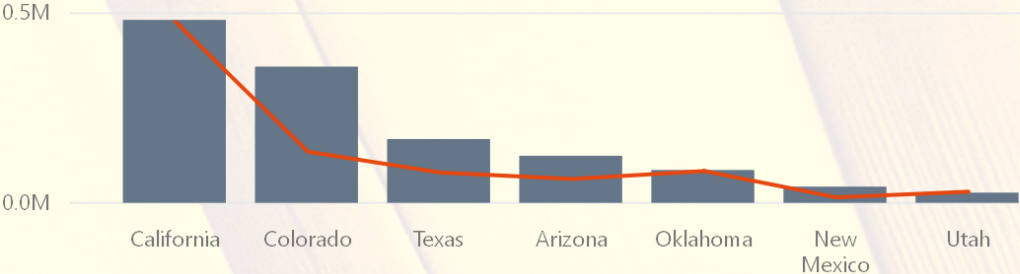
Southeast

Southwest

Sales, Units, Invoices and Units by State

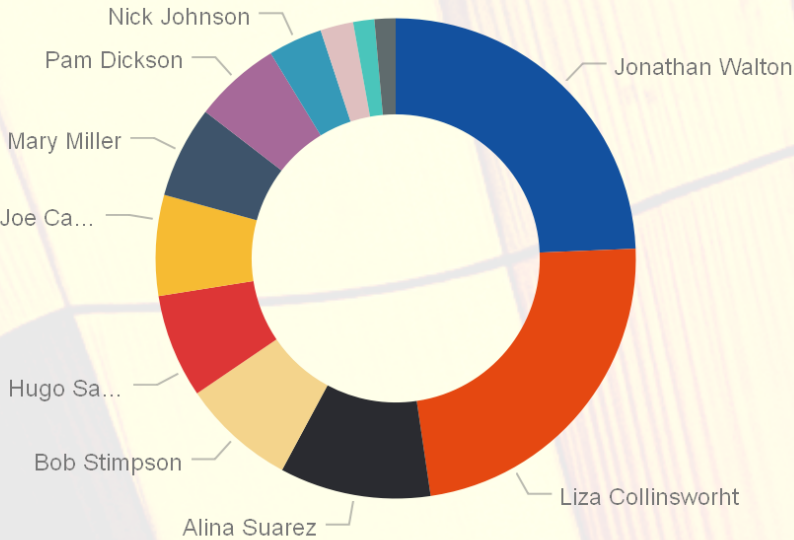
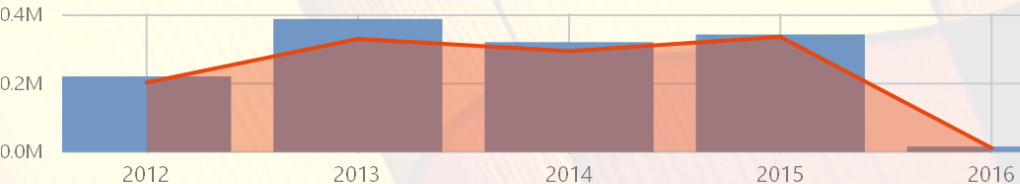
Sales by Salesperson

Sales Units



Sales, Units Sold, Units Sold and Invoices by Year

Sales Units Sold



Year	2012														
Quarter	Qtr 1		Qtr 2		Qtr 3		Qtr 4		Total		Qtr 1		Qtr 2		
Regions	Un...	Sales	Units	Sales	Units	Sales	Units	Sales	Units	Sales	Units	Sales	Units	Sales	Un
Southwest															
California	4	396	116	12,530	339	23,451	273	28,138	732	64,515	406	46,288	453	51,588	
Colorado			77	21,103	116	29,630	59	20,079	252	70,812	86	16,518	111	25,877	
Texas	5	565	29	3,652	90	14,374	69	22,155	193	40,746	51	13,579	77	15,458	
Arizona	3	277	14	2,036	17	2,123	42	5,058	76	9,494	30	12,140	37	5,213	
Oklahoma			9	773	99	5,097	57	6,149	165	12,019	30	3,568	48	8,364	
New Mexico					58	17,110	1	295	59	17,405	2	590	1	295	
Utah			5	315	24	2,966	17	2,753	46	6,034	13	737	9	741	
Total	12	1,238	250	40,409	743	94,751	518	84,627	1,523	221,025	618	93,420	736	107,536	
Total	12	1,238	250	40,409	743	94,751	518	84,627	1,523	221,025	618	93,420	736	107,536	



482,523

Sales

4,772

Units

202

Invoices

Date

2/26/2012

2/12/2016

City

All

Customer

All

Salesperson

All

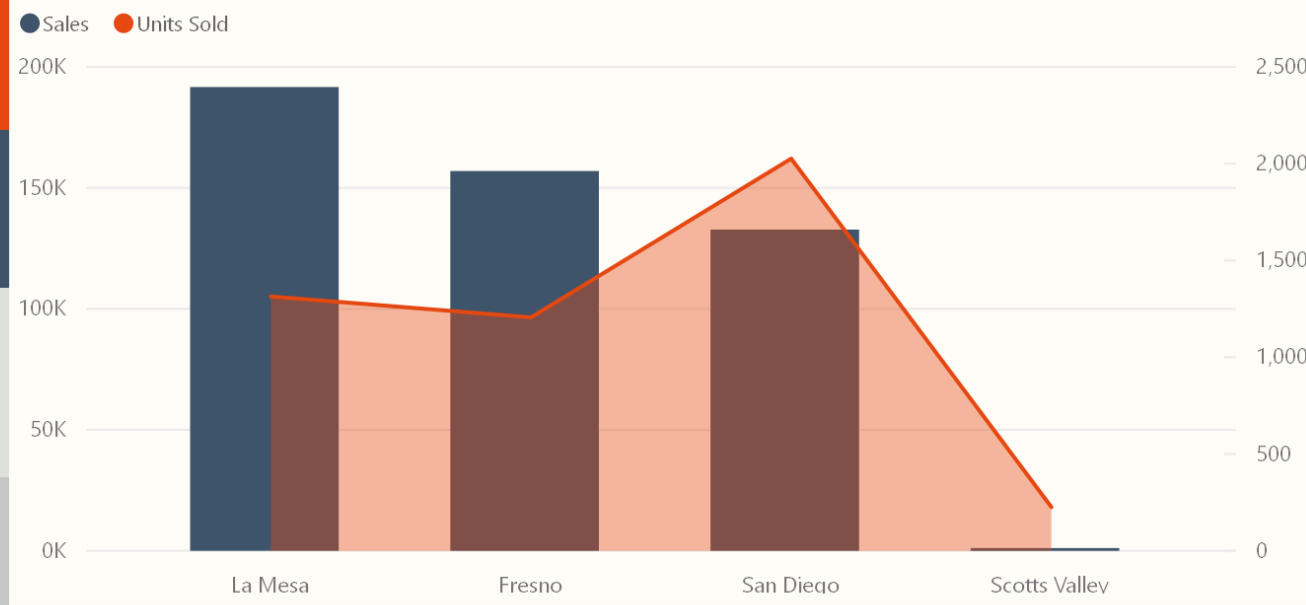
Vendor

All

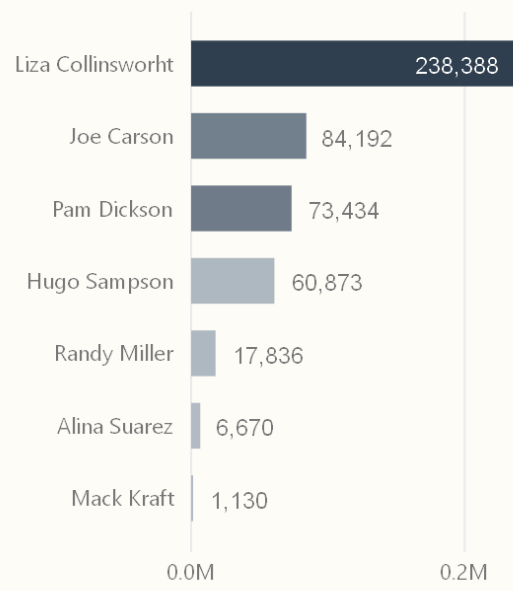
Product

All

Sales, Units Sold and Units Sold by City



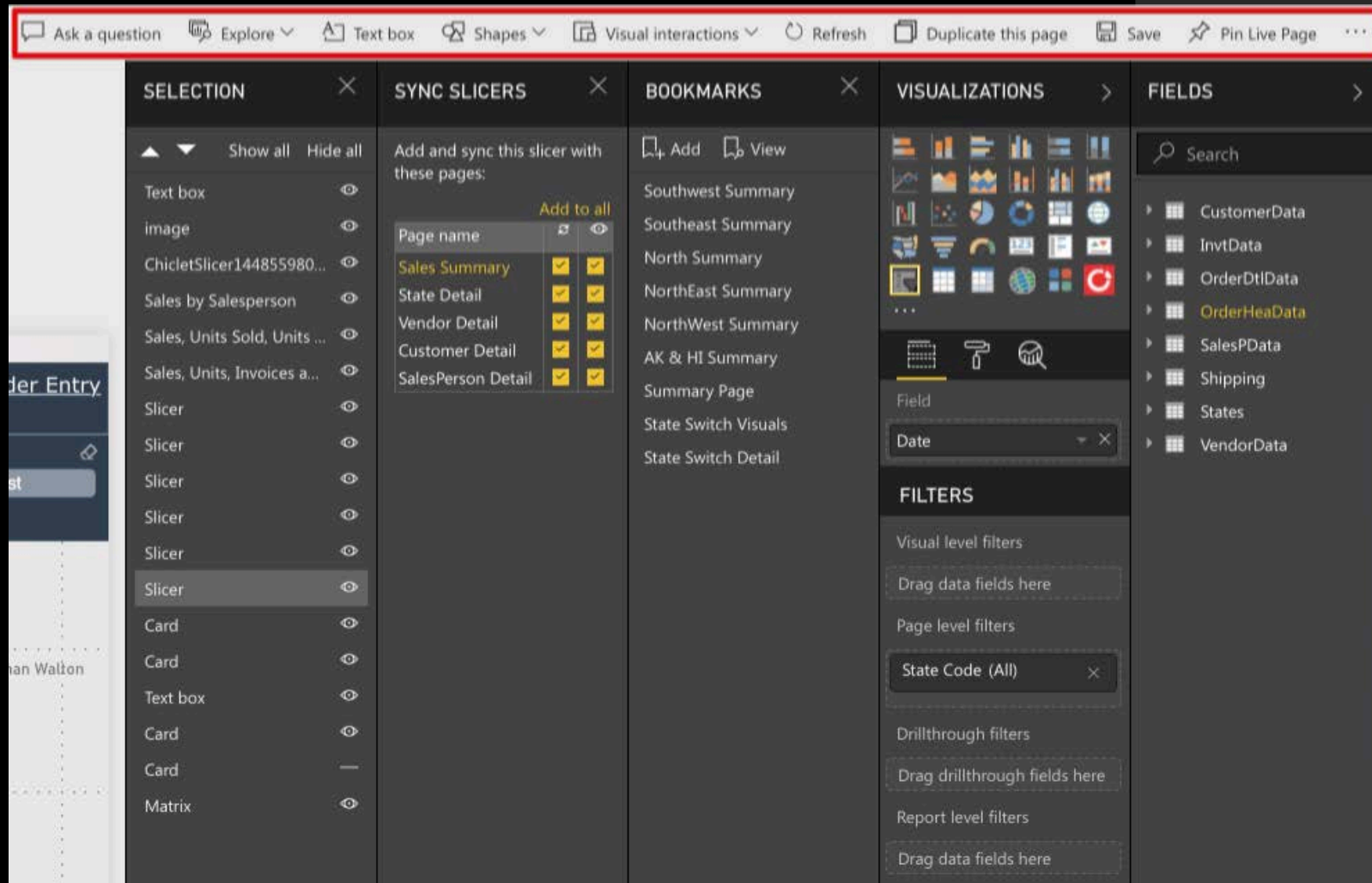
Sales by Salesperson/Customer



Customer Sales

Customer	Regions	City	Order Date	Ship_Via	Salesperson	Credit Limit	Balance	Units Sold	Sales Total
3A Softw are	Southw est	La Mesa	1/30/2013	FEDEXCOD	Liza Collinsw orht	16,383	7,051	66	18,724
3A Softw are	Southw est	La Mesa	9/12/2013	FEDEXCOD	Liza Collinsw orht	16,383	7,051	55	17,335
3A Softw are	Southw est	La Mesa	4/25/2014	FEDEXCOD	Liza Collinsw orht	16,383	7,051	31	13,849
3A Softw are	Southw est	La Mesa	6/29/2013	FEDEXCOD	Liza Collinsw orht	16,383	7,051	59	13,631
3A Softw are	Southw est	La Mesa	12/6/2014	FEDEXCOD	Liza Collinsw orht	16,383	7,051	42	11,508
3A Softw are	Southw est	La Mesa	11/26/2013	FEDEXCOD	Liza Collinsw orht	16,383	7,051	47	11,223
3A Softw are	Southw est	La Mesa	11/16/2012	FEDEXCOD	Liza Collinsw orht	16,383	7,051	26	8,774
3A Softw are	Southw est	La Mesa	7/9/2014	FEDEXCOD	Liza Collinsw orht	16,383	7,051	29	8,621
3A Softw are	Southw est	La Mesa	7/19/2015	FEDEXCOD	Liza Collinsw orht	16,383	7,051	46	8,354
3A Softw are	Southw est	La Mesa	9/2/2012	FEDEXCOD	Liza Collinsw orht	16,383	7,051	45	8,295
3A Softw are	Southw est	La Mesa	4/15/2013	FEDEXCOD	Liza Collinsw orht	16,383	7,051	36	7,744
3A Softw are	Southw est	La Mesa	10/2/2015	FEDEXCOD	Liza Collinsw orht	16,383	7,051	18	7,452
Stunning Softw are Corp.	Southw est	Fresno	1/13/2013	UPS	Hugo Sampson	15,184	4,387	35	6,975
Stunning Softw are Corp.	Southw est	Fresno	2/2/2015	UPS	Hugo Sampson	15,184	4,387	26	6,534
Stunning Softw are Corp.	Southw est	Fresno	9/5/2014	UPS	Hugo Sampson	15,184	4,387	34	6,400
Stunning Softw are Corp.	Southw est	Fresno	10/7/2013	FEDEX	Liza Collinsw orht	15,184	4,387	54	5,706
3A Softw are	Southw est	La Mesa	9/22/2014	FEDEXCOD	Liza Collinsw orht	16,383	7,051	34	5,636
3A Softw are	Southw est	La Mesa	5/5/2015	FEDEXCOD	Liza Collinsw orht	16,383	7,051	16	5,416
Total						51,749	23,076	4,772	482,523

Power BI Design Features



Ask Power BI Questions!

- How many Salespersons are there? How Many Net30 Customers? (Customers, Cities or Products)
- List of states sold to by salesperson Alina Suarez?
- List of Terms and Total Units Sold and total sales by Salesperson Alina Suarez by year 2013
- Correlation of Sales and Units sold by Ship via in 2015 Quarter

Question Session ...

Feel free to contact me with any questions.

rossgraphix

Ross Reitzammer

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