Setup Your Internet Connection

- Make sure your wireless adapter is set to dynamically obtain an IP address

- Connect to the wireless network **MSFTGUEST**

- Open a browser and navigate to a web site to be redirected to the Captive Portal

- Click on Event Attendee Code and enter the access code: **msevent765cn**

Download Power BI Desktop

Power BI Challenge

Andrea Benedetti
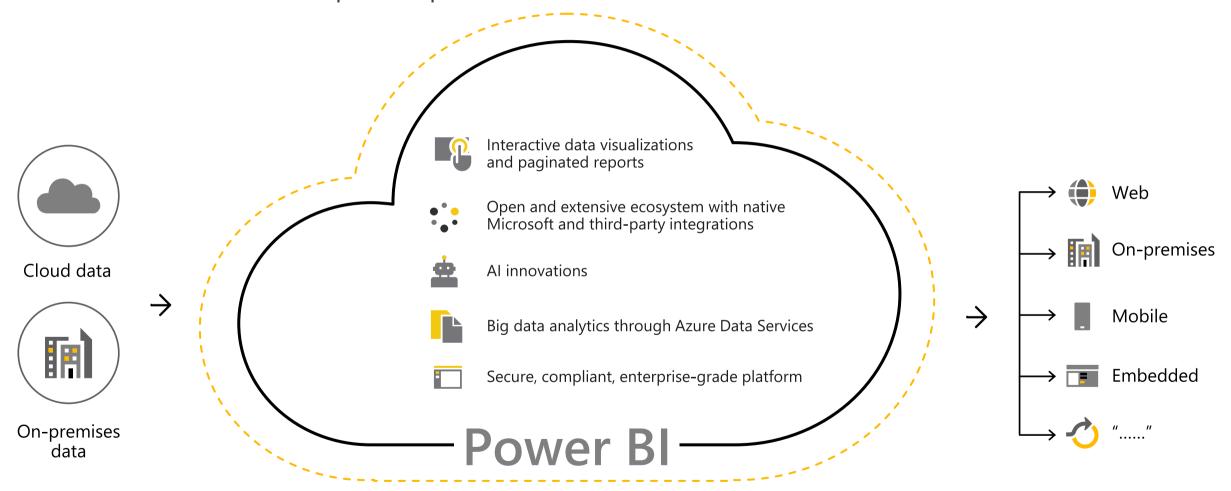
Sr. Cloud Architect / Data & AI Engineer | Microsoft Italia

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Power BI: analytics for every organization

Unified self-service & enterprise BI platform

Cloud data

On-premises data

Interactive data visualizations and paginated reports

Open and extensive ecosystem with native Microsoft and third-party integrations

AI innovations

Big data analytics through Azure Data Services

Secure, compliant, enterprise-grade platform

Power BI

Web

On-premises

Mobile

Embedded

"......"

Transform data to insights

Get your data

Analyze

Visualize

Publish

Collaborate

Easily connect, clean, and mashup data

Get your data

Connect to any data sources
on-premises and cloud

Shape, transform, and clean data

Connect live to any data source

Prep your data using familiar
Power Query experience

Extend self-service prep
to Azure Data Lake Storage

Power BI data sources

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

Power Platform
- Power BI datasets
- Power BI dataflows
- Common Data Service

Database
- SQL Server database
- Access database
- SQL Server Analysis Services
- Oracle database
- IBM Db2 database
- IBM Informix database (Beta)

Database
- IBM Netezza
- MySQL database
- PostgreSQL database
- Sybase database
- Teradata database
- SAP HANA database
- SAP Business Warehouse Application Server
- SAP Business Warehouse Message Server
- Amazon Redshift
- Impala
- Google BigQuery
- Vertica
- Snowflake
- Essbase
- AtScale cubes (Beta)
- BI Connector
- Dremio
- Exasol
- Indexima (Beta)

Database
- Jethro (Beta)
- InterSystems IRIS (Beta)
- Kyligence
- MarkLogic

Azure
- Azure SQL database
- Azure SQL Data Warehouse
- Azure Analysis Services database
- Azure Blob Storage
- Azure Table Storage
- Azure Cosmos DB
- Azure Data Lake Storage Gen2 (Beta)
- Azure Data Lake Storage Gen1
- Azure HDInsight (HDFS)
- Azure HDInsight Spark
- HDInsight Interactive Query
- Azure Data Explorer (Kusto)
- Azure Cost Management (Beta)

Online Services
- SharePoint Online List
- Microsoft Exchange Online
- Dynamics 365 (online)
- Dynamics NAV
- Dynamics 365 Business Central
- Dynamics 365 Business Central (on-premises)
- Microsoft Azure Consumption Insights (Beta)
- Azure DevOps (Beta)
- Azure DevOps Server (Beta)
- Salesforce Objects
- Salesforce Reports
- Google Analytics
- Adobe Analytics
- appFigures (Beta)
- Data.World - Get Dataset (Beta)
- Facebook
- GitHub (Beta)
- MailChimp (Beta)
- Marketo (Beta)
- Mixpanel (Beta)

Online Services
- Planview Enterprise One - PRM (Beta)
- Planview Projectplace (Beta)
- QuickBooks Online (Beta)
- Smartsheet
- SparkPost (Beta)
- Stripe (Beta)
- SweetIQ (Beta)
- Planview Enterprise One - CTM (Beta)
- Twilio (Beta)
- tyGraph (Beta)
- Webtrends (Beta)
- Zendesk (Beta)
- Emigo Data Source (Beta)
- Intune Data Warehouse (Beta)
- Microsoft Graph Security (Beta)
- TeamDesk (Beta)
- Industrial App Store
- Quick Base
- Dynamics 365 Customer Insights (Beta)
- Entersoft Business Suite (Beta)

Other
- Web
- SharePoint list
- OData Feed
- Active Directory
- Microsoft Exchange
- Hadoop File (HDFS)
- Spark
- R script
- Python script
- ODBC
- OLE DB
- BI360 – Budgeting & Financial Reporting
- Denodo
- Information Grid (Beta)
- Paxata
- QubolePresto (Beta)
- Roamler (Beta)
- Workforce Dimensions (Beta)
- SurveyMonkey (Beta)
- Tenforce (Smart)List (Beta)
- Blank Query

Support hybrid data

LIVE POWER BI REPORTS & DASHBOARDS

LIVE CONNECTION OR SCHEDULED REFRESH

Data source

Application Gateway

Data source connection credentials can only be decrypted by the gateway

SSAS tabular/
multidimensional model

On-premises

Cloud

Gateway Cloud Service

Data source connection credentials are encrypted

Azure Service Bus
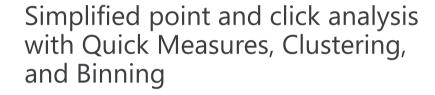
Build powerful models and flexible measures
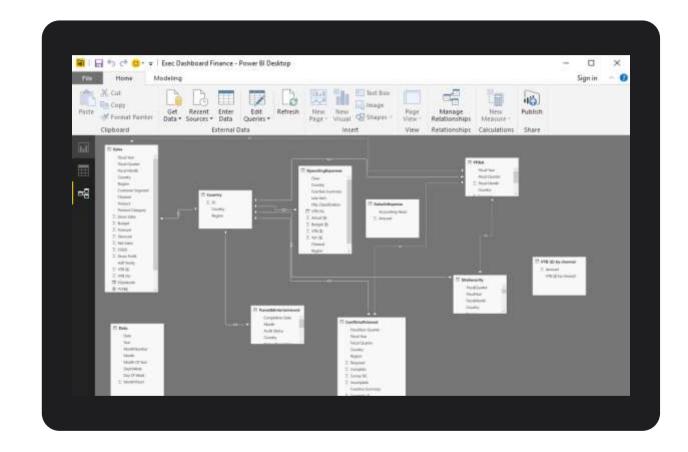
Analyze

Create model automatically

Simplified point and click analysis with Quick Measures, Clustering, and Binning

Create powerful measures with familiar DAX formulas

Create stunning interactive reports

Visualize

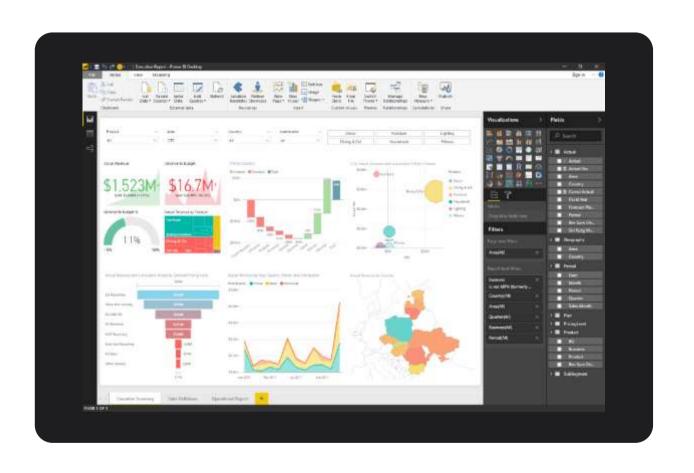Choose from limitless visualization options
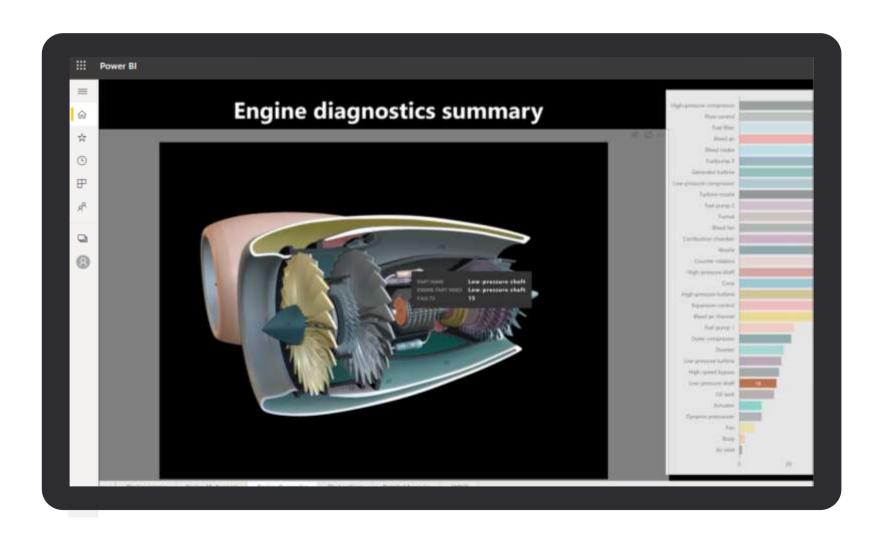
Visualizations are interactive and link together

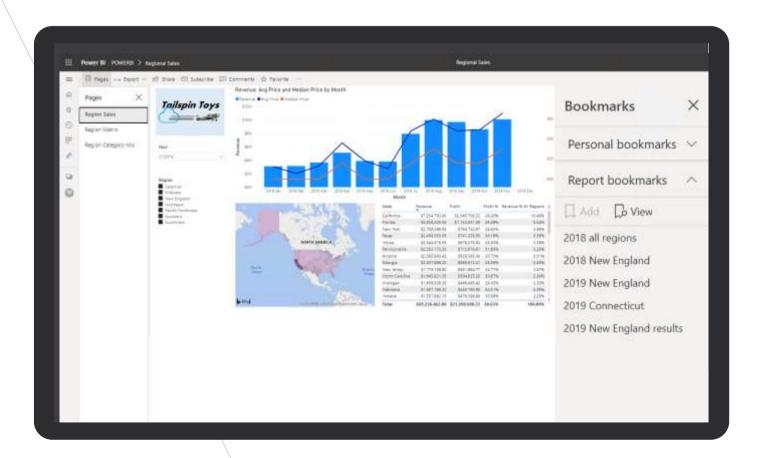Use bookmarks and custom navigation to bring your data story to life

Visualize insights in the context of your business

s1

s2

s2a

s3

s4

s5

s5a

s6

s7

s8

s8a

s8b

s9

s9b

s10

s10a

s10b

s11

s11a

Storytelling and customization with bookmarks

1. Keep track of states in your exploration

2. Tell a story with your data guiding your data consumers

3. Create a custom navigation within a report

4. Dynamically switch between visuals to tell your story

Built-in intelligence to empower everyone

1   Quick measures for advanced calculations

2   Out-of-the-box forecasting and through custom visuals

3   Grouping, binning, and clustering

4   Built in integration with R and Python

Share insights with others

Publish

Publish interactive or paginated reports to the cloud or on-premises

Automatic data refresh, so your reports are always up to date

Package your reports in apps for easy consumption and control

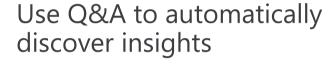Manage your analytics content with admin and governance tools

Empower your organization
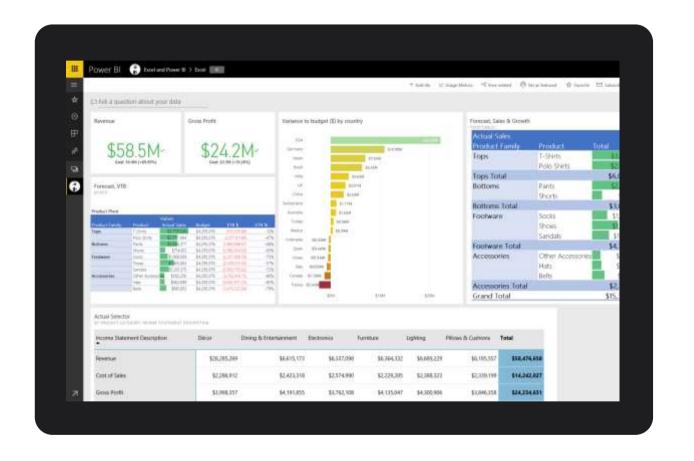
Collaborate

Provide insights on any device

Use Q&A to automatically discover insights

Deliver insights in other user flows like Teams and SharePoint

Connect live to your models in Excel and Power BI Desktop

AI in Power BI

	End users	Analysts	BI Professionals	Data Scientists

End users	Analysts	BI Professionals	Data Scientists

Natural Language exploration

Automated Insights

CAPABILITIES

- Quick Insights
- Q&A
- AI Visualizations

AI Enrichment

One-click AI transformations

CAPABILITIES

- Sentiment analysis
- Key phrase extraction
- OCR, Text Translations

Generate ML models in clicks

Turnkey model deployments

CAPABILITIES

- Predictions, Classifications,
- Forecasting, Clustering,
- Recommendations

Pro Data Science integration

LANGUAGES

- R
- Python

Azure ML integration

INTEGRATION

- Azure ML
- Azure Frameworks

Insights	Enrichment	Automated ML	Data Science Extensibility	Azure Extensibility

Help analysts prepare their data
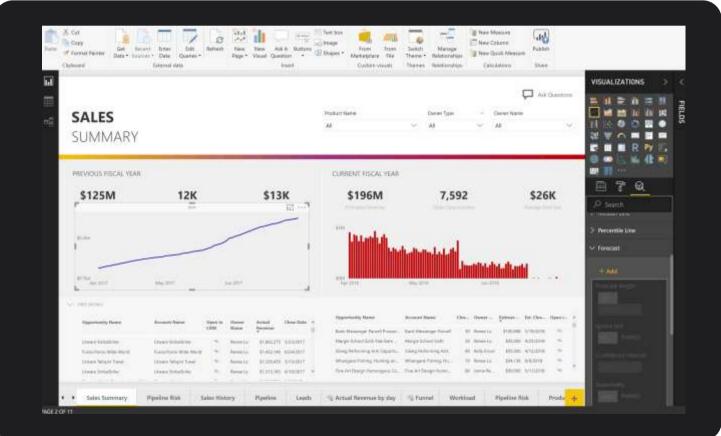
Forecast

Add a forecast line and see future max and min values

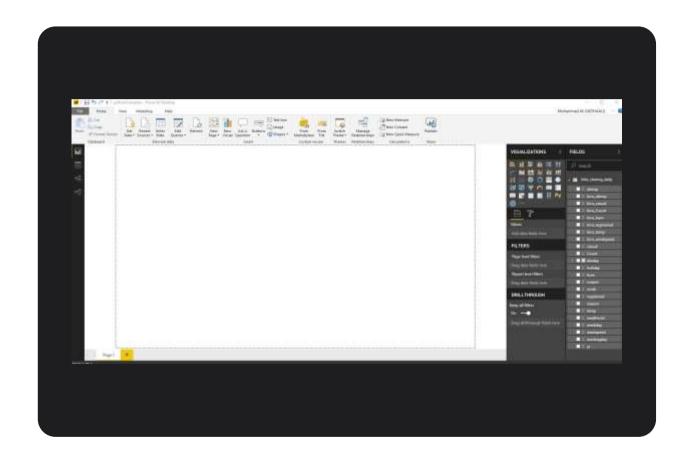# Simplify collaboration for data scientists and business analysts

Python visualization

Use your python scripts in
Power BI

Python visualization behaves like
any other visualization such than
slicing on data triggers the script
to rerun and the visual is refreshed

Microsoft

Demo

Addendum

Time intelligence

Time intelligence functions

07/06/2020 • 3 minutes to read • 👤👤👤

Data Analysis Expressions (DAX) includes time-intelligence functions that enable you to manipulate data using time periods, including days, months, quarters, and years, and then build and compare calculations over those periods.

In this category

Function	Description
CLOSINGBALANCEMONTH	Evaluates the expression at the last date of the month in the current context.
CLOSINGBALANCEQUARTER	Evaluates the expression at the last date of the quarter in the current context.
CLOSINGBALANCEYEAR	Evaluates the expression at the last date of the year in the current context.
DATEADD	Returns a table that contains a column of dates, shifted either forward or backward in time by the specified number of intervals from the dates in the current context.
DATESBETWEEN	Returns a table that contains a column of dates that begins with a specified start date and continues until a specified end date.
DATESINPERIOD	Returns a table that contains a column of dates that begins with a specified start date and continues for the specified number and type of date intervals.
DATESMTD	Returns a table that contains a column of the dates for the month to date, in the current context.
DATESQTD	Returns a table that contains a column of the dates for the quarter to date, in the current context.

Example

The following sample formula creates a measure that calculates the 'previous month sales' for Internet sales.

DAX

```
= CALCULATE(SUM(InternetSales_USD[SalesAmount_USD]), PREVIOUSMONTH('DateTime'[DateKey]))
```

```
Previous Month Sales =
    CALCULATE(
        SUM('Fact Sale'[Total Including Tax])
        ,PREVIOUSMONTH(
            'Dimension Date'[Date]
        )
    )
Sales Difference =
    VAR CurrentMonthSales = SUM('Fact Sale'[Total Including Tax])
    VAR PreviousMonthSales = 'Fact Sale'[Previous Month Sales]
    VAR Result = CurrentMonthSales - PreviousMonthSales
    RETURN
        Result
Sales Growth % =
    DIVIDE(
        [Sales Difference],
        'Fact Sale'[Previous Month Sales]
    )
```

This Month Sales, Previous Month Sales and Sales Difference % by Calendar Year and Short Month

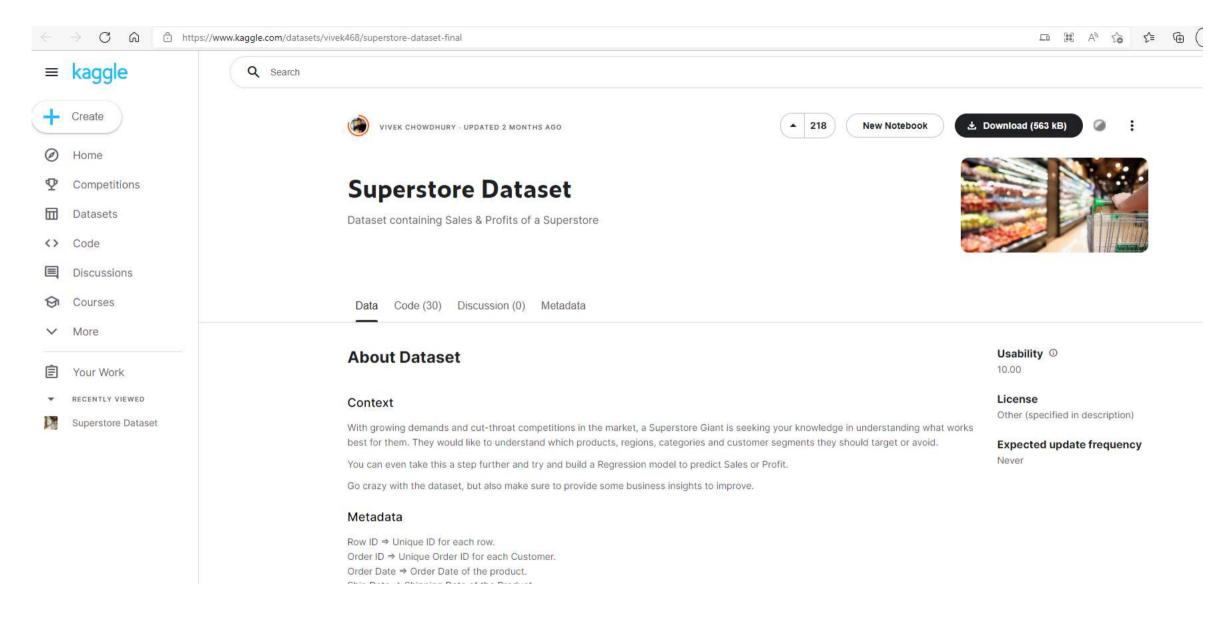| Calendar Year	Short Month	Previous Month Sales	This Month Sales	Sales Difference	Sales Growth %
2015	Jan	48,18,656.70	51,19,181.56	3,00,524.86	6.24%
2015	Feb	51,19,181.56	48,20,495.72	-2,98,685.84	-5.83%
2015	Mar	48,20,495.72	52,09,836.28	3,89,340.56	8.08%
2015	Apr	52,09,836.28	57,05,990.33	4,96,154.05	9.52%
2015	May	57,05,990.33	54,26,475.15	-2,79,515.18	-4.90%
2015	Jun	54,26,475.15	50,42,507.85	-3,83,967.30	-7.08%
2015	Jul	50,42,507.85	58,78,793.57	8,36,285.72	16.58%
2015	Aug	58,78,793.57	46,00,523.09	-12,78,270.48	-21.74%
2015	Sep	46,00,523.09	52,20,125.44	6,19,602.35	13.47%
2015	Oct	52,20,125.44	53,70,194.90	1,50,069.46	2.87%
2015	Nov	53,70,194.90	46,19,229.59	-7,50,965.31	-13.98%
2015	Dec	46,19,229.59	50,45,786.10	4,26,556.51	9.23%
2016	Jan	50,45,786.10	53,35,988.48	2,90,202.38	5.75%
2016	Feb	53,35,988.48	42,98,913.97	-10,37,074.51	-19.44%
2016	Mar	42,98,913.97	53,85,682.57	10,86,768.60	25.28%
2016	Apr	53,85,682.57	53,92,442.09	6,759.52	0.13%
2016	May	53,92,442.09	55,23,030.79	1,30,588.70	2.42%
2016	Jun	55,23,030.79		-55,23,030.79	-100.00%

https://docs.microsoft.com/en-us/dax/time-intelligence-functions-dax

"With enough data, the numbers speak for themselves"

https://www.sqlbi.com/ref/power-bi-visuals-reference/

Microsoft

Challenge

https://www.kaggle.com/datasets/vivek468/superstore-dataset-final

Agenda

16:00 – 16:30 Presentation
16:30 – 18:30 Challange
18:30 – 19:00 Presentations

→ https://github.com/anbened/Superstore

Microsoft

Enjoy