

AI capabilities in Power BI

to make AI accessible for everyone





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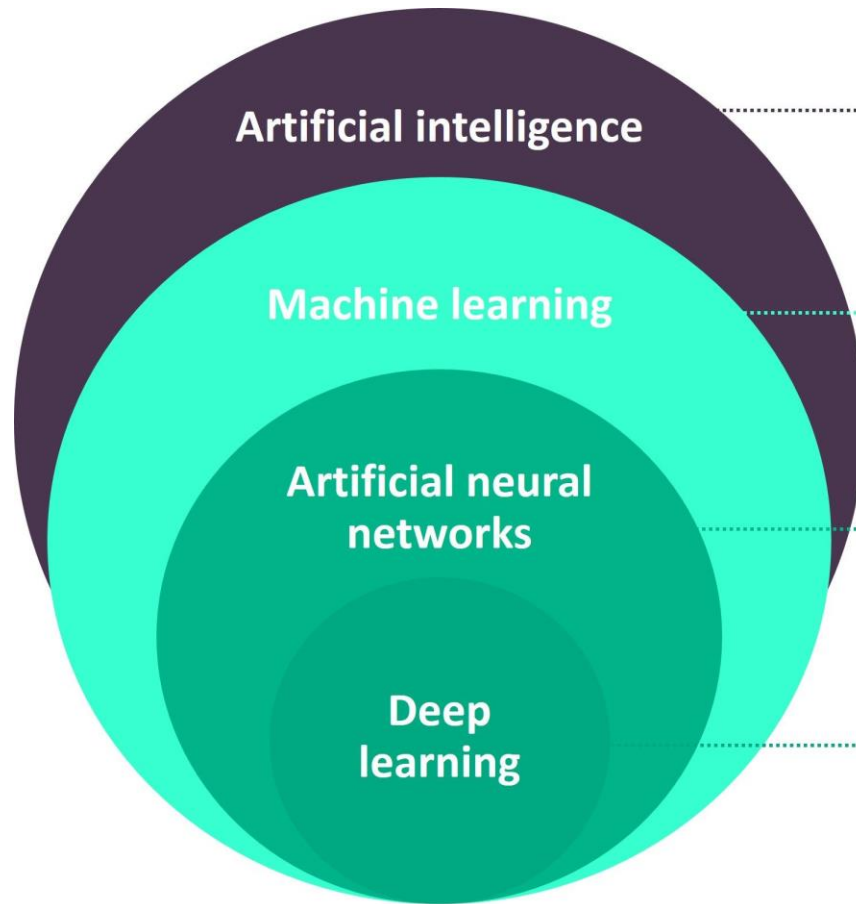
What we cover today

- Introduction to AI
- Reporting & dashboarding now a days
- AI in Power BI
- Demo time!



Artificial Intelligence

For me as a newbie in this area



Artificial intelligence (AI)

Any techniques that enable machines to solve a task in a way like humans do

Machine learning (ML)

Algorithms that allow computers to learn from examples without being explicitly programmed

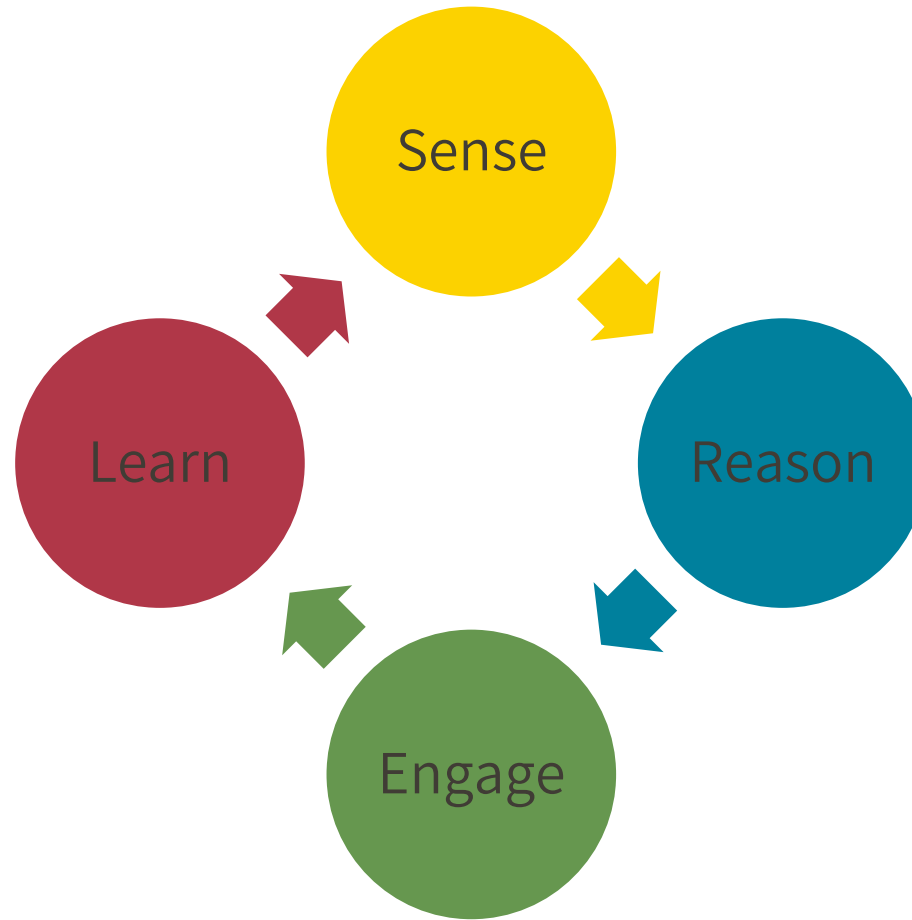
Artificial neural networks (ANN)

Brain-inspired machine learning models

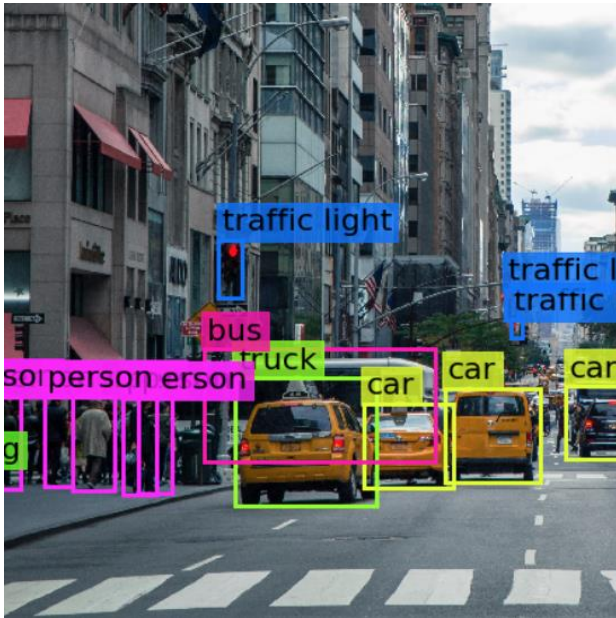
Deep learning (DL)

A subset of ML which uses deep artificial neural networks as models and automatically builds a hierarchy of data representations

Artificial Intelligence



Ability to sense, reason, engage and learn!



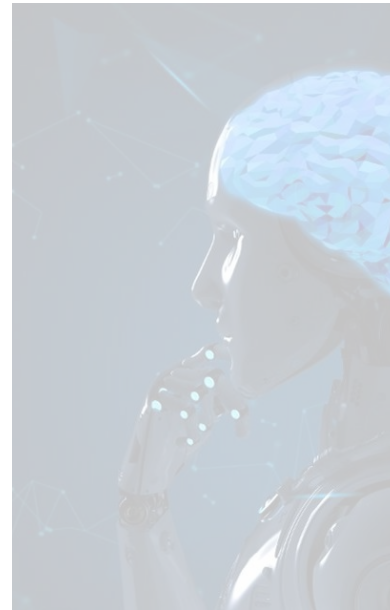
Computer vision



Voice recognition



Robotics



And more....

AI != Innovation

Does not understand the real world!

But Artificial Intelligence can:

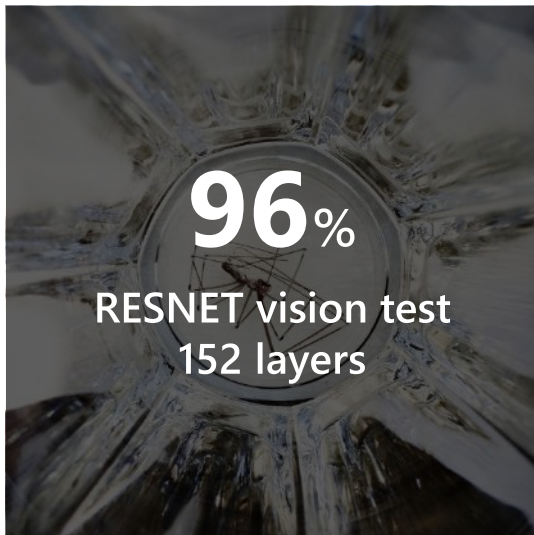
- Learn
- Optimize
- Detect patterns
- Inform
- Inspire



AI lives in water, yet it doesn't know what water is.
David Foster Wallace

Microsoft AI breakthrough

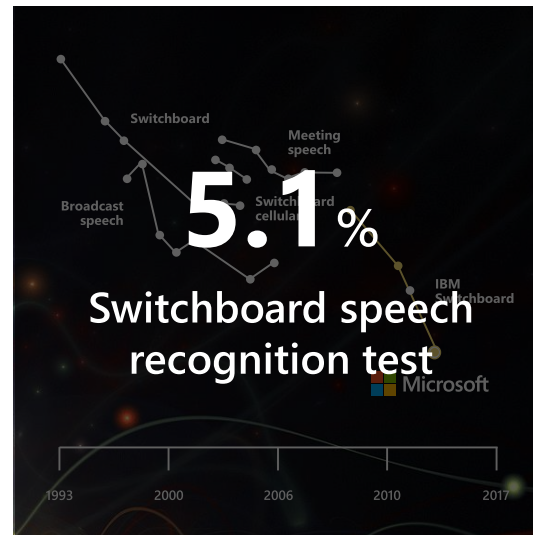
Vision



2016

Object recognition
human parity

Speech



2017

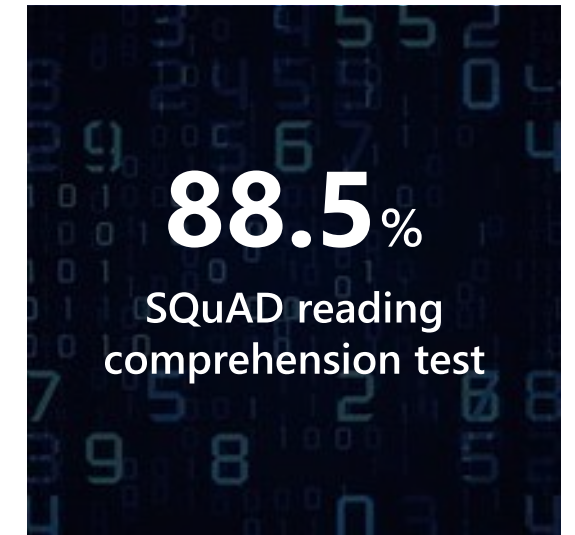
Speech recognition
human parity



March 2018

Machine translation
human parity

Language



January 2018

Machine reading
comprehension
human parity

The world's first AI whisky



Aqua vitae. Uisce beatha. Whisky - May 2019

“We want the AI to create a recipe that tastes good enough to win awards... we want to discover recipes that will never have occurred to a person”

Sales data

70

**Azure
cloud platform**

**Azure
Cognitive
Services**

**million
recipes**

Ingredients of
award-winning
blends

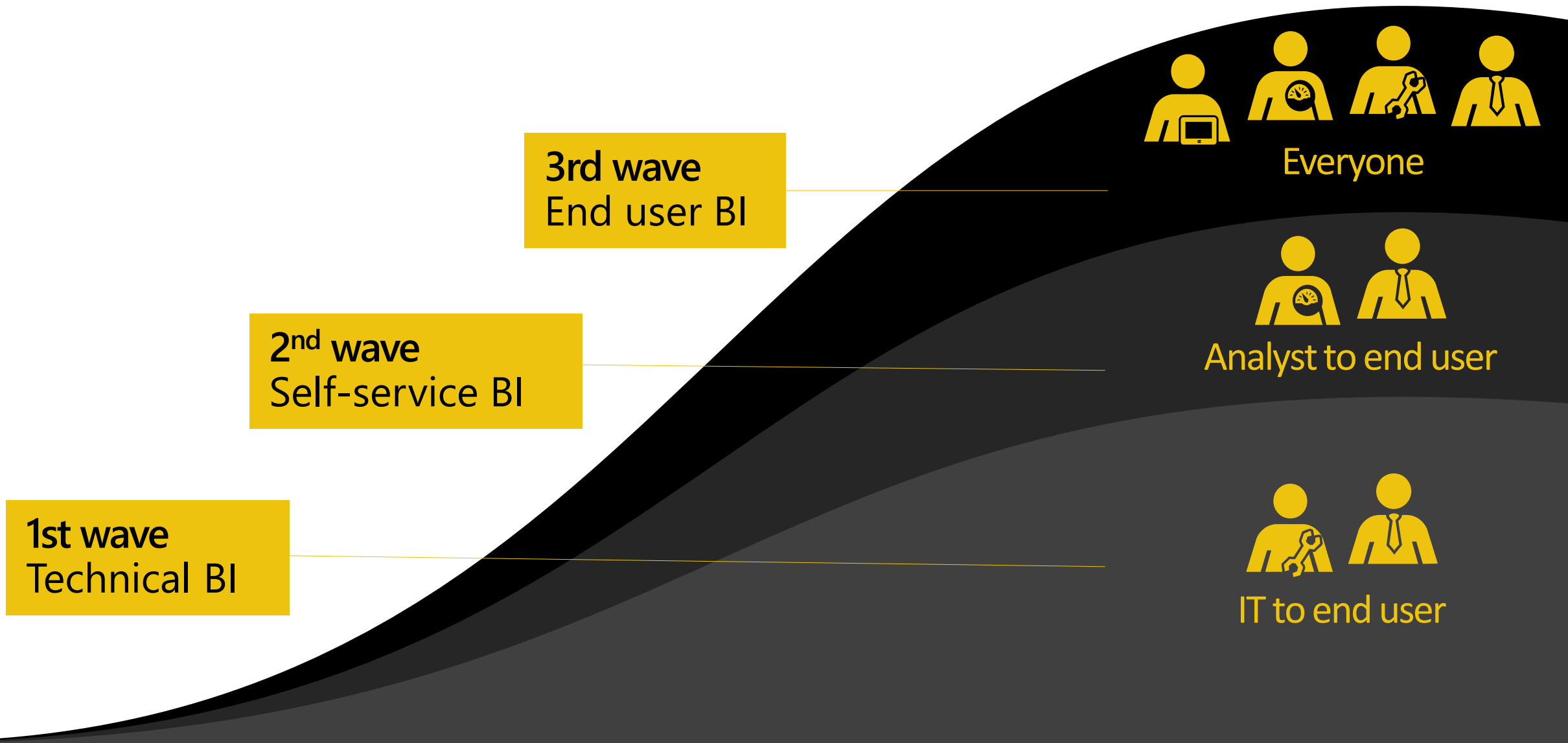
Customer preferences

Reporting and dashboarding

Everyone engages with ~~software~~ Power BI



Power BI for everyone



Types of reporting



Describe



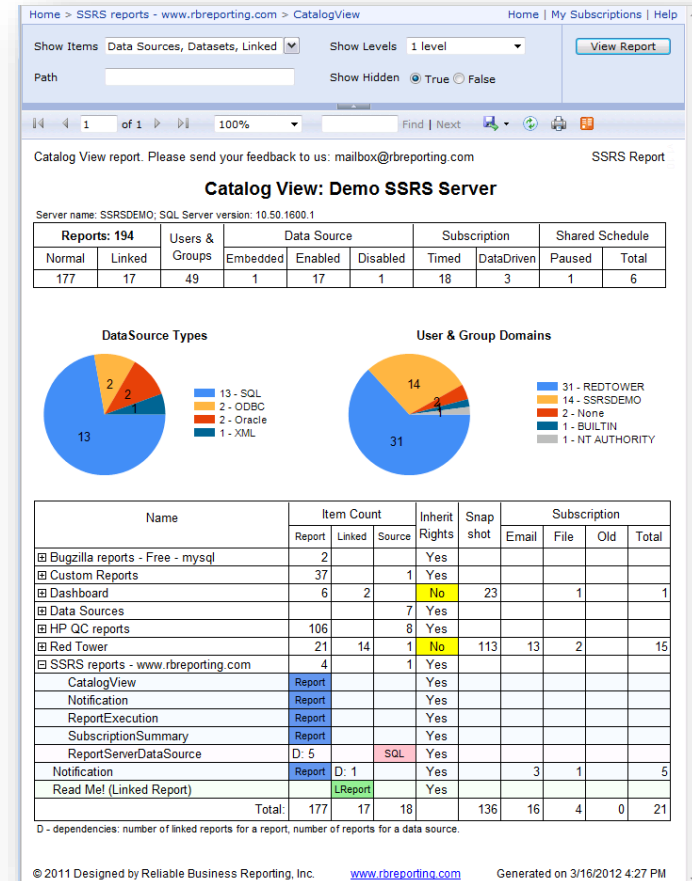
Declare



Explore

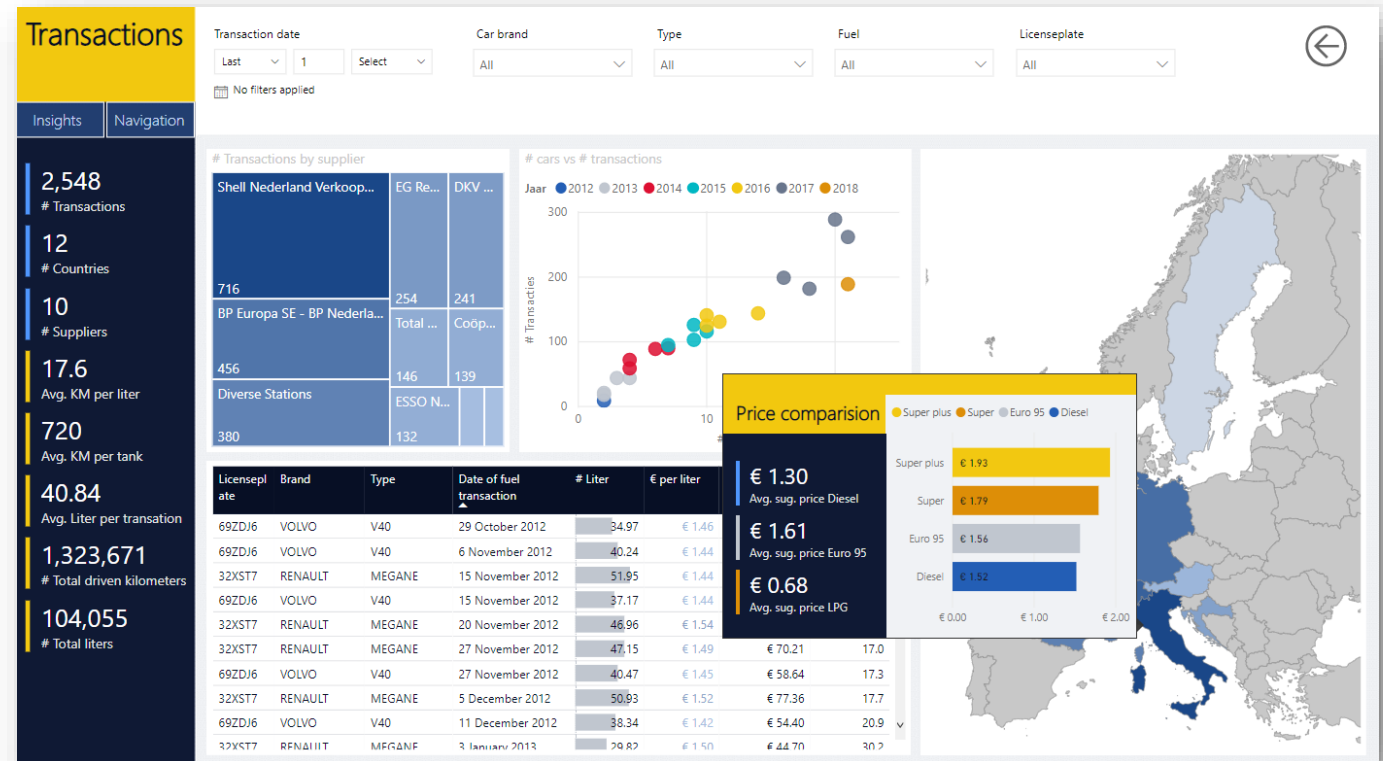
Reporting in the past

- Static
- Paginated
- Textual



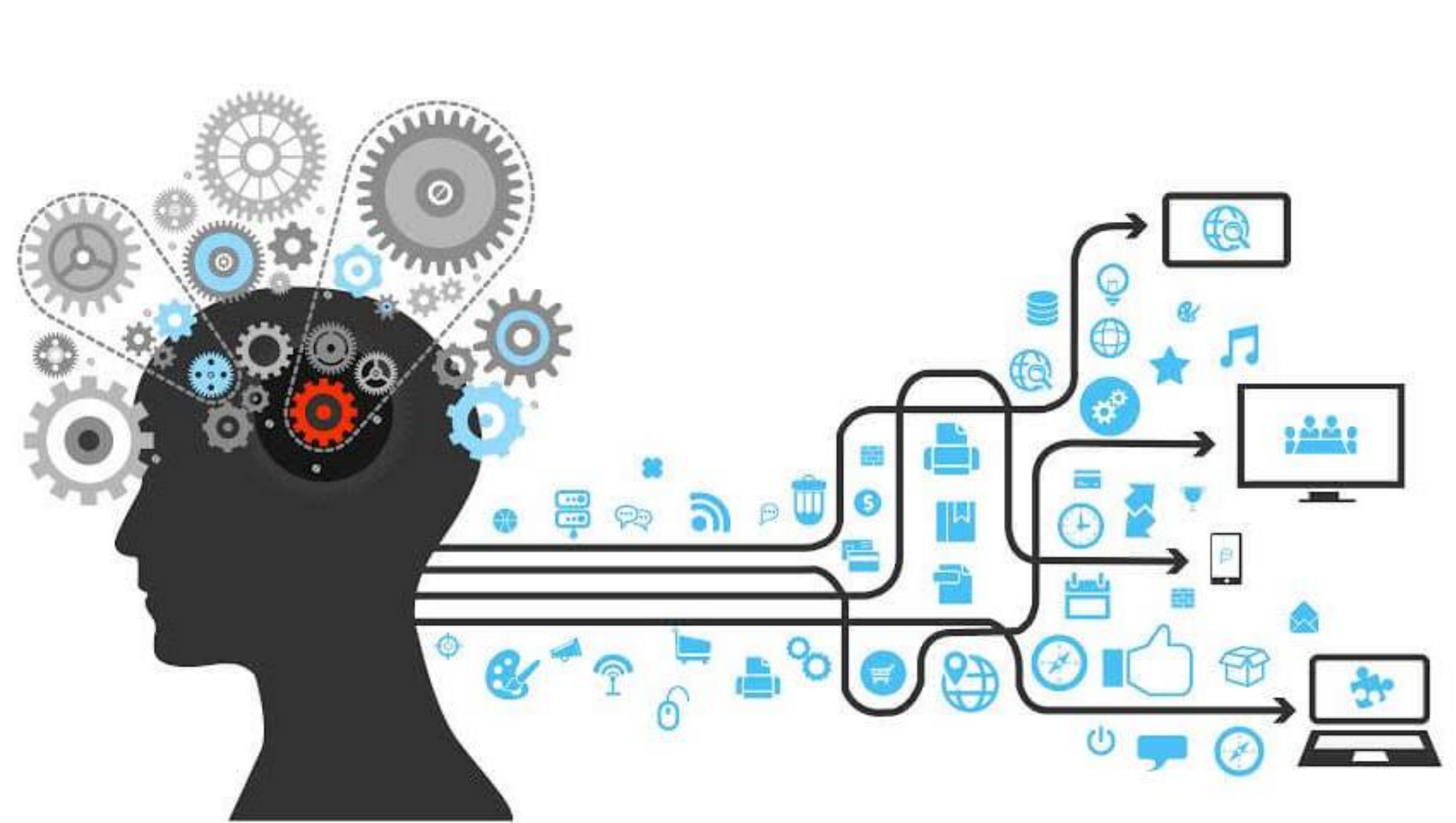
Intuitive reporting

- Clear navigation
- Consistent across pages
- Interactive experience
- High-level > detailed level



BUSINESS INTELLIGENCE

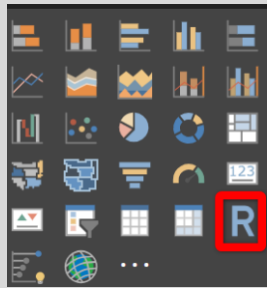




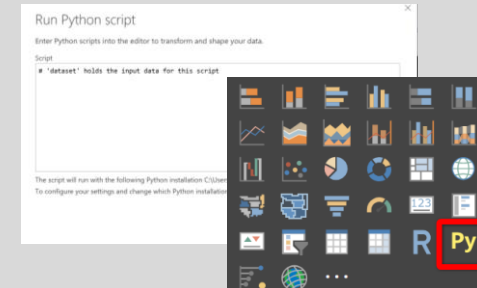
AI in Power BI

Power BI advanced capabilities

Desktop
Run R in
Power BI
visuals



Desktop
Python in
Visuals +
Power
Query



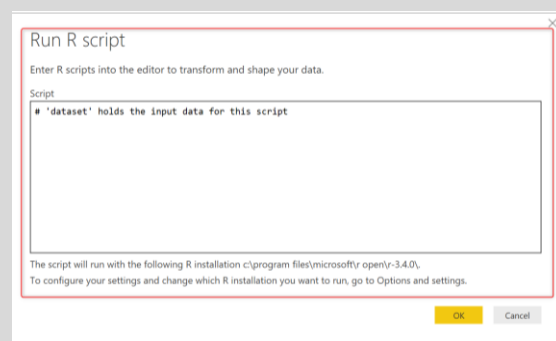
2015

2016

2018

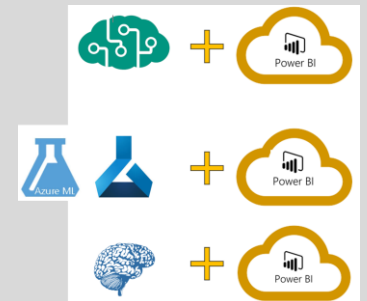
2019

Desktop
R in
Power
Query



Premium features

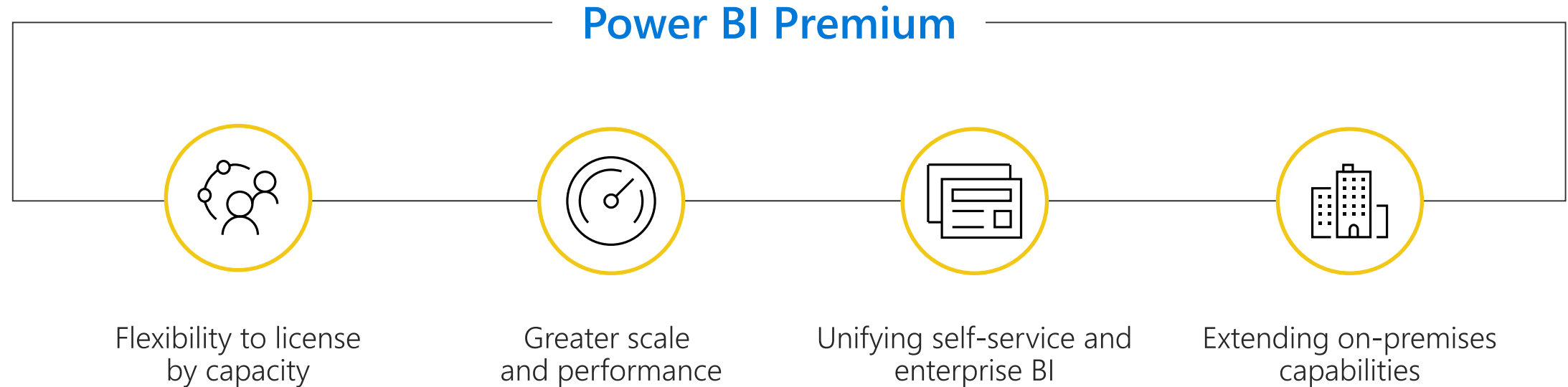
- AI in dataflows
- Key Influencer
- Azure Auto ML
- ML Studio



Power Platform
World Tour

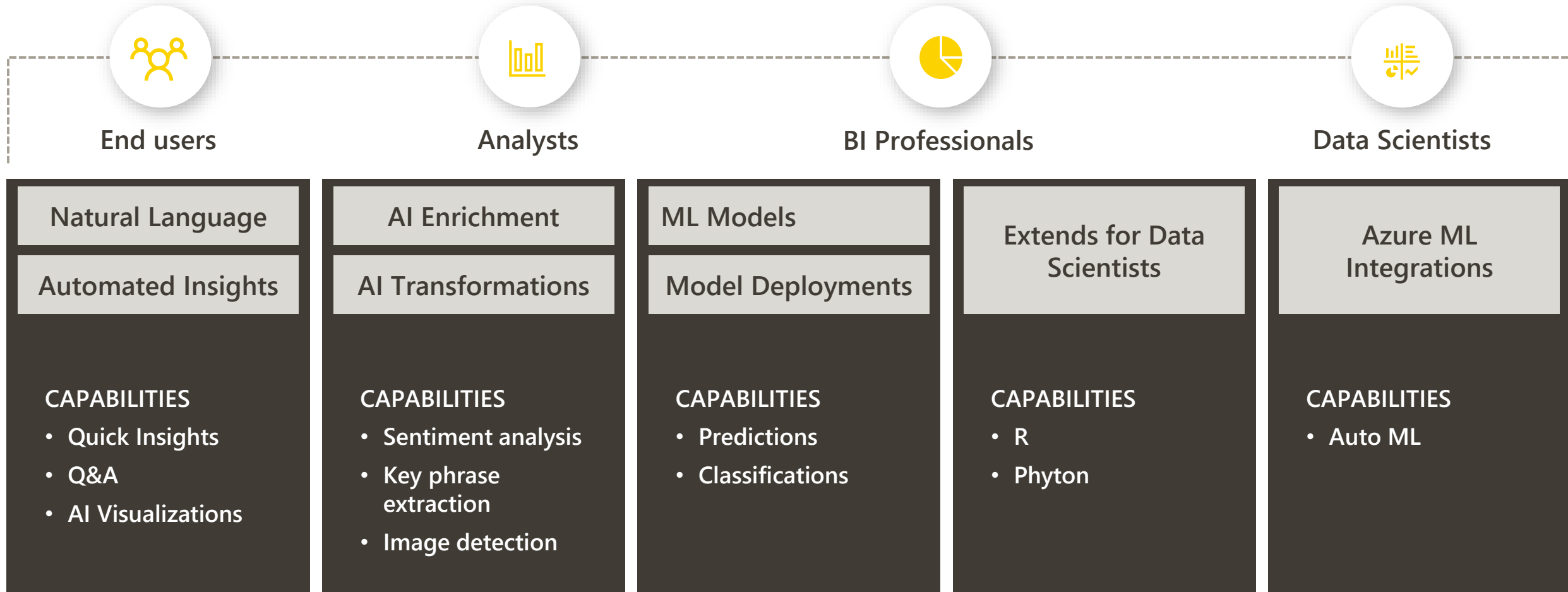
#PowerplatformWI
@MarcLelijveld

Part of Power BI Premium



Dedicated resources in the cloud

AI in Power BI



Make AI available for everyone!

Goal	How?
Help Business Users understand their data	Q&A
	Quick Insights
	Key Drivers
	Clustering

Make AI available for everyone!

Goal	How?
Help Business Users understand their data	Q&A
	Quick Insights
	Key Drivers
Help Analysts prepare their data	Clustering
	Forecasting
	Cognitive Services
	Automated ML
	R Integration

Make AI available for everyone!

Goal	How?
Help Business Users understand their data	Q&A
	Quick Insights
	Key Drivers
	Clustering
Help Analysts prepare their data	Forecasting
	Cognitive Services
	Automated ML
Make it easy for Data Scientists and Analysts to collaborate	R Integration
	Python Integration
	Azure ML Integration

Demo time!

Because life is boring without risks



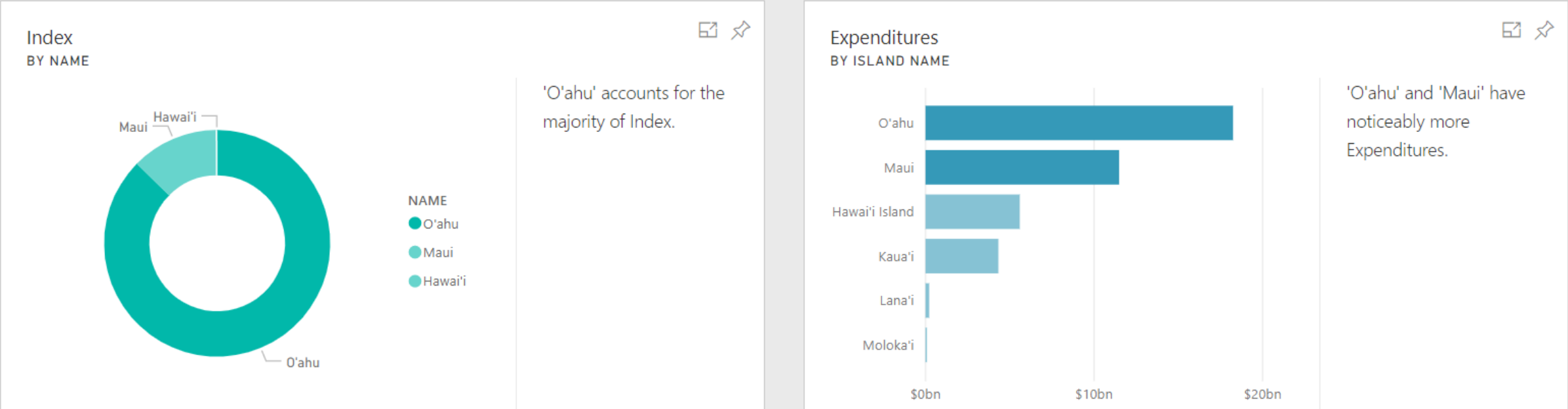
Demos

- Quick insights
- Power BI Natural Language Query
- Explain increase / decrease
- Analyze distribution
- Key influencer visual
- AI Insights in dataflows



Quick Insights for Hawaii Tourism Analysis

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



Questions to get you started

show me average trip length for the last year

show me average trip length YoY% for the last year

show me expenditures for the last year

show me expenditures YoY% for the last year

show me spending per trip (PP) for the last year

number of seasons

Number of visits by region over time

Ask a related question

Clear

Add this question

Visits by Date and Region

Region ● Canada ● Japan ● Other ● US East ● US West



Natural Language Query

27,5M

Visitors

948K

Arrivals per month

\$39,9bn

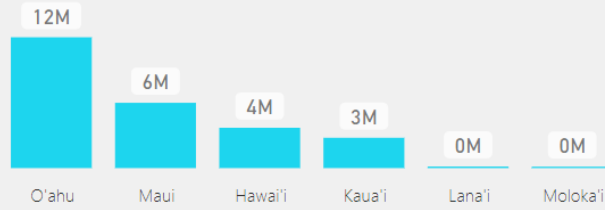
Expenditures

HAWAII TOURISM ANALYSIS

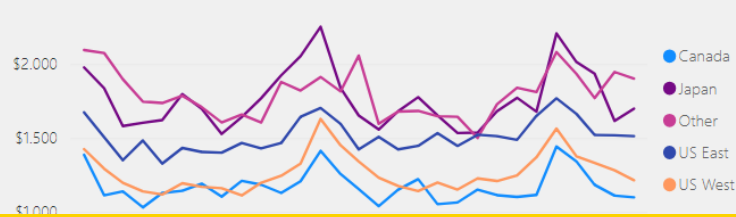
\$1,4bn

Expenditures/mo

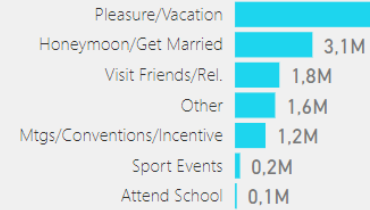
VISITS BY ISLAND



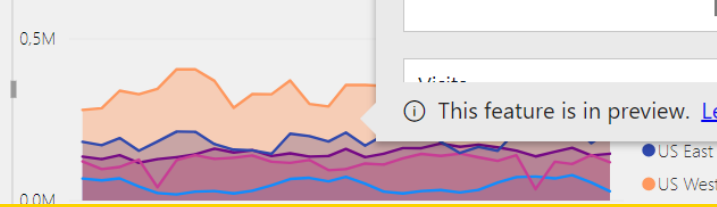
SPENDING PER TRIP (PP)



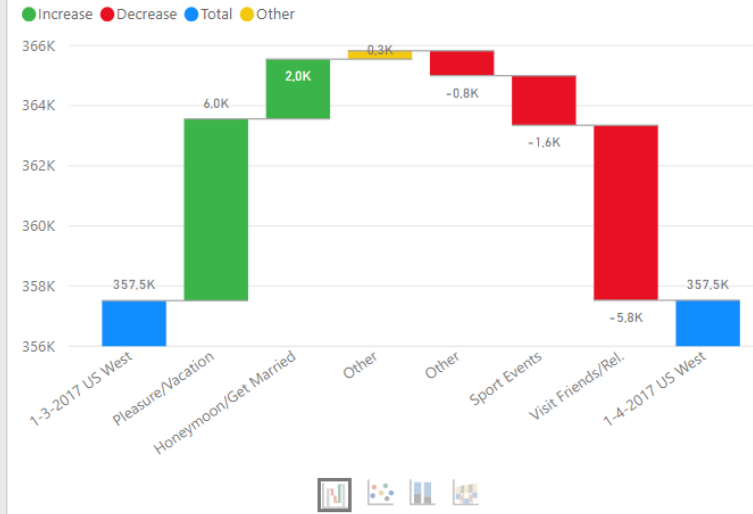
TRIP PURPOSE



VISITS BY REGION



'Pleasure/Vacation' accounted for the majority of the increase among Trip Purpose, offsetting the decrease of 'Visit Friends/Rel.'. The relative contributions made by 'Pleasure/Vacation' and 'Visit Friends/Rel.' changed the most.



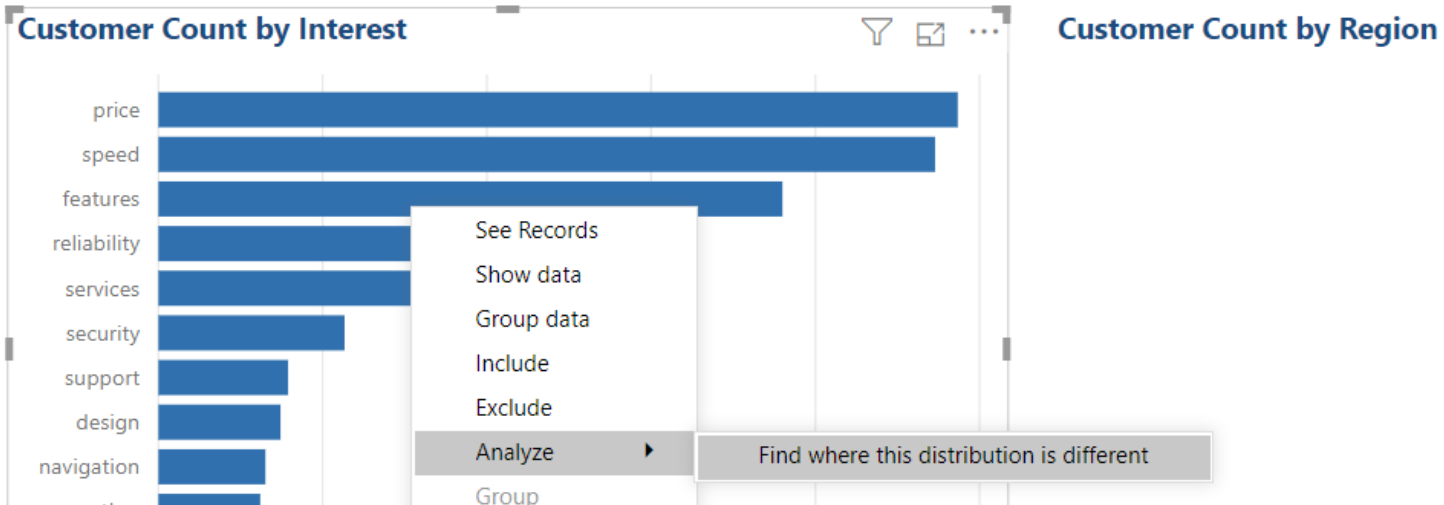
This feature is in preview. [Learn more](#)

Explain Increase / decrease

NEW CUSTOMERS

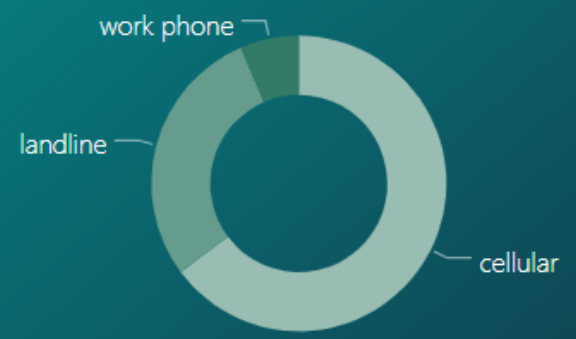
New Customers (February)

45.218



Analyze distribution

COMMUNICATION TYPE

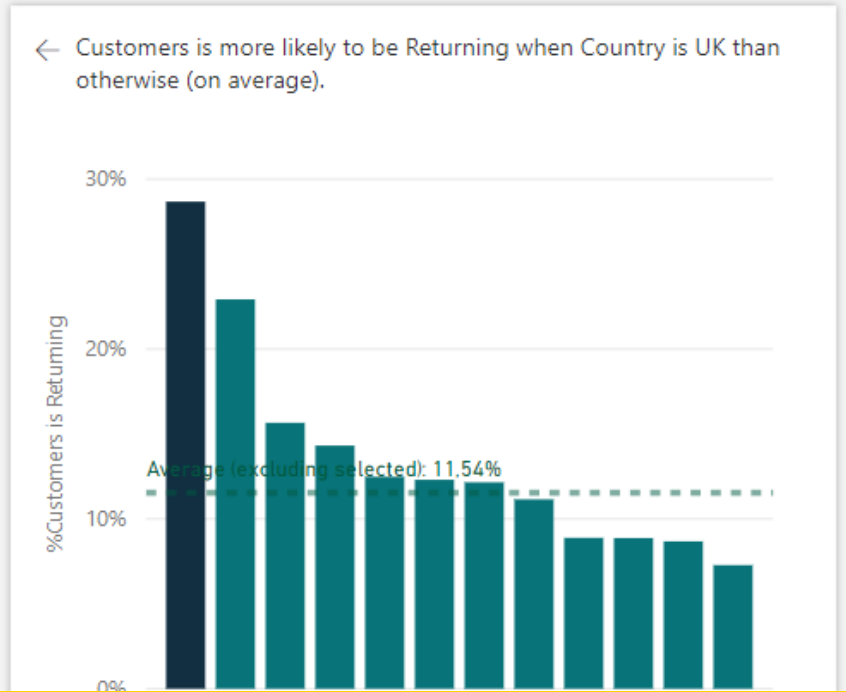
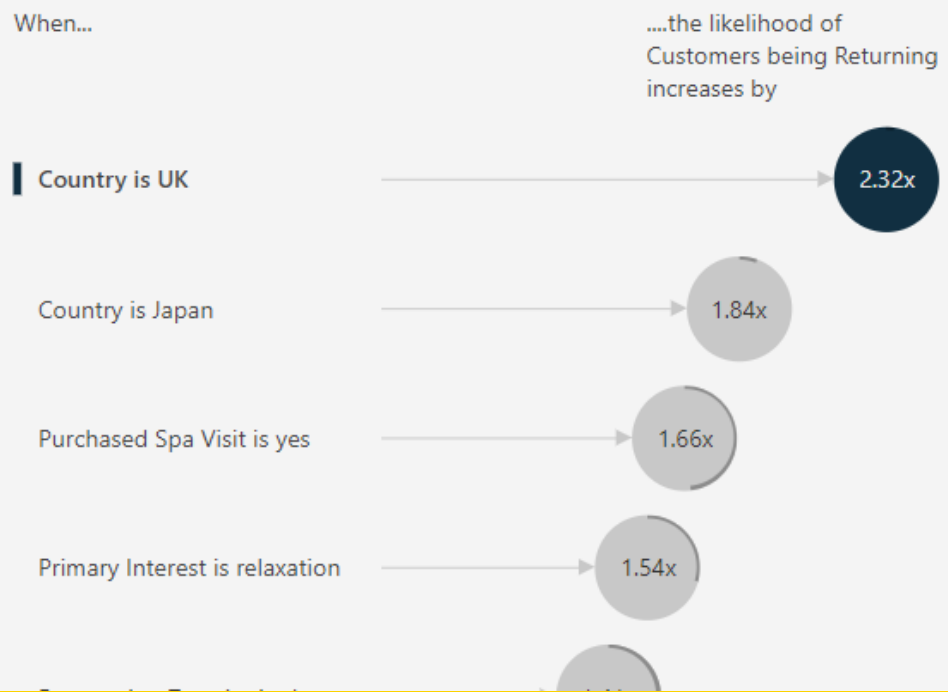


CUSTOMERS BY AGE




Key influencers Top segments


What influences Customers to be Returning ?




Key Influencer Visual

ENTITY NAME

▶  Language Detection

▶  Key Phrases

▶  Sentiment Score

AI Insights in dataflows

Trip advisor hotel reviews JUFA Hotel Vienna

Dataflows

Reports & dashboards

Datasets

Dataflows



Azure Data
Factory



Azure
Databricks



Azure SQL
DW



Azure ML

Azure Data Lake Storage Gen2

CDM folder

CDM folder

CDM folder

Business analysts

Low/no code

Data scientists
Data engineers

Cognitive services



Vision



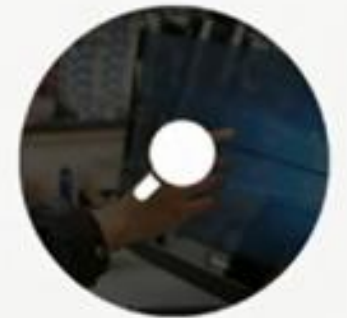
Speech



Language



Knowledge



Search

Pervasive application of AI

New capabilities that make AI accessible for everyone

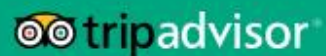
- Text analytics and image recognition through Azure Cognitive Services integration
- Key driver analysis helps surface what drives an outcome
- Enable business analysts to create new ML models through Automated ML
- Seamless collaboration between business analysts and data scientists through Azure ML integration

Power BI AI test > SalesOpportunities

Entities Machine learning models

Edit entities Add entities Save Close

ENTITY NAME	ENTITY TYPE	ACTIONS
Account	Custom	[Icons]
Contact	Custom	[Icons]
Lead	Custom	[Icons]
Opportunity	Custom	[Icons]
OpportunityProduct	Custom	[Icons]
Product	Custom	[Icons]
SystemUser	Custom	[Icons]

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998 reviews

#105 of 371 Hotels in Vienna



Mautner-Markhof-Gasse 50, Vienna 1110 Austria

❤ Save ➔ Share

Lowest prices for your stay

Check In
— / — / —

Check Out
— / — / —

Guests
1 room, 2 adults, 0 children

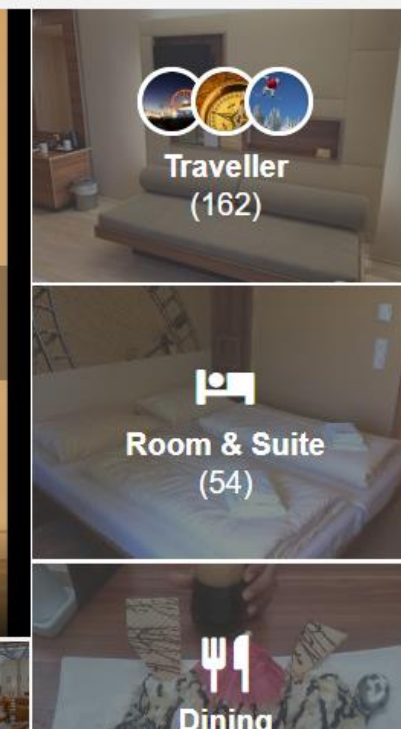
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Booking.com**€68****View Deal**

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Expedia.at ↗	€69	Hotels.com ↗	€69
Opodo ↗	€68	TripAdvisor	€68



View all photos (199)



Big thanks to...

- Justyna Lucznik (MSFT) – Demo's and inspiration
- Leila Etaai (MVP) – Inspiration

Other resources:

- Microsoft News – Award winning Wisky with AI
- Towards Data Science – AI is not innovation
- HPE – AI, what it is

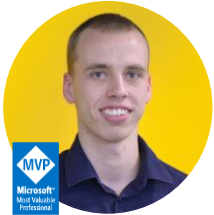
Recap

- AI is more than BI
- AI != Innovation
- Inspire, optimize and detect patterns
- AI on your fingertips in Power BI
- Next level insights with AI insights (PBI Premium)

LET'S
RECAP...

Download for free!

<https://bit.ly/cheatsheetpbi>



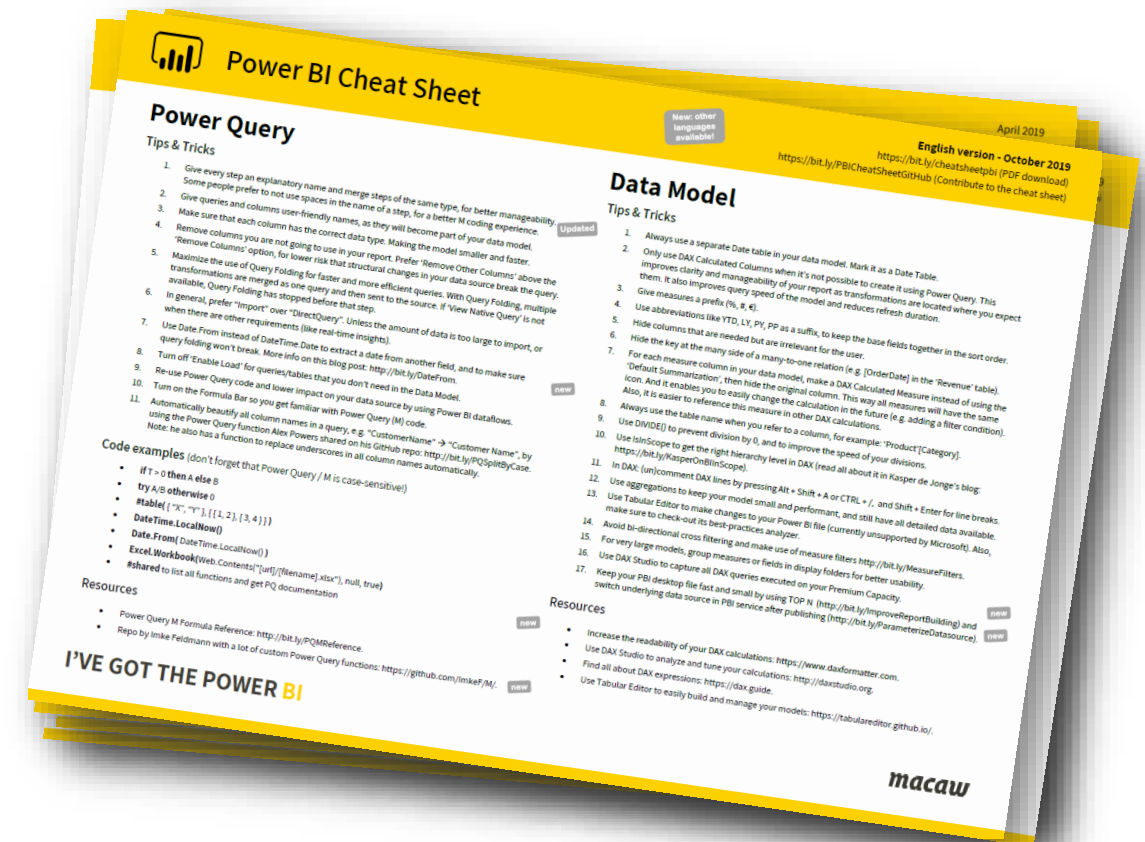
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