AI capabilities in Power BI

to make AI accessible for everyone

Marc Lelijveld

Data & AI consultant
Macaw Netherlands

Microsoft® MVP Most Valuable Professional

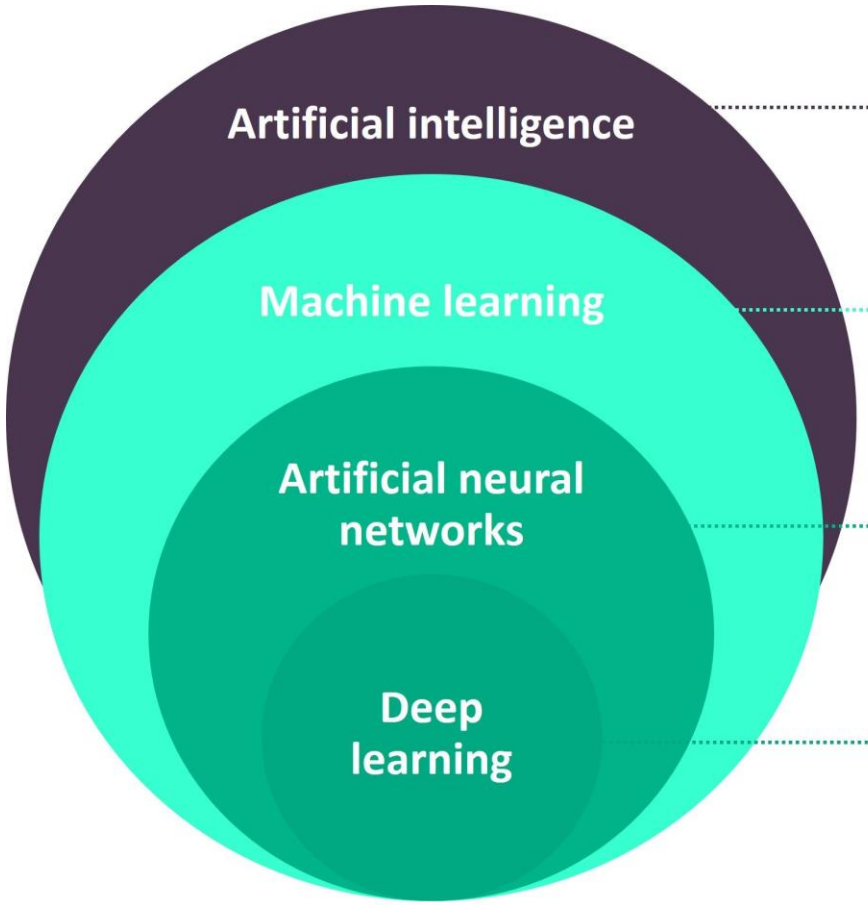
Marc.Lelijveld@outlook.com
@MarcLelijveld
linkedin.com/in/MarcLelijveld
Data-Marc.com

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



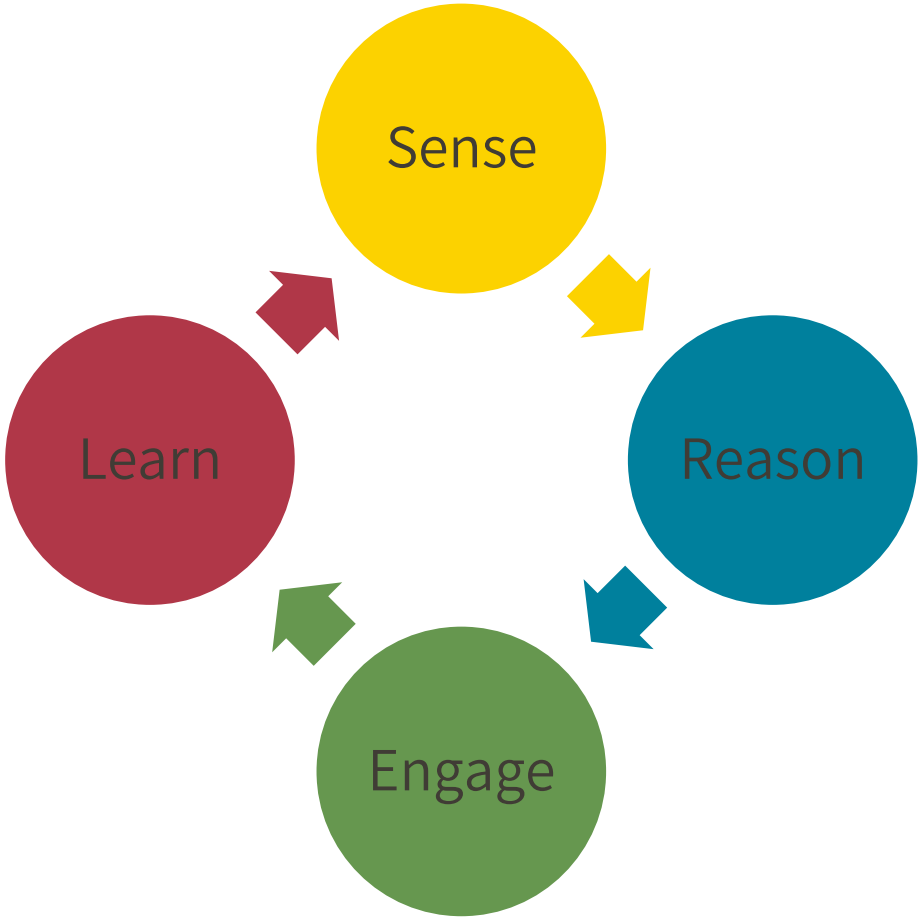
Artificial intelligence (AI)
Any techniques that enable machines to solve a task in a way like humans do

Machine learning (ML)
Algorithms that allow computers to learn from examples without being explicitly programmed

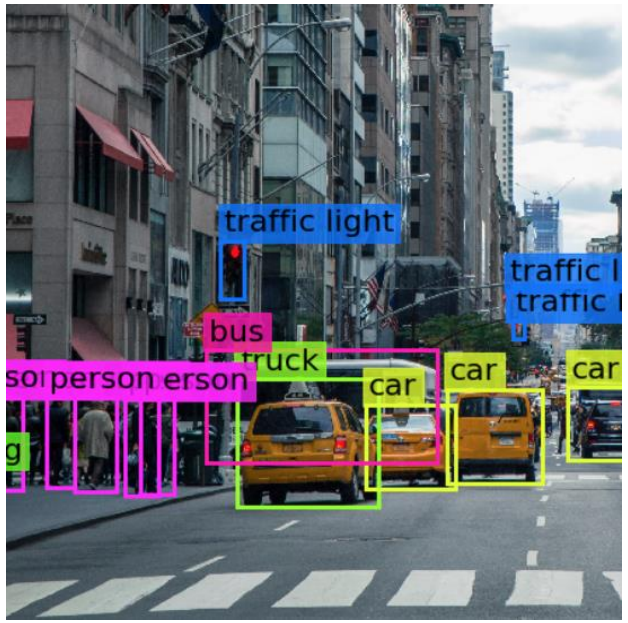
Artificial neural networks (ANN)
Brain-inspired machine learning models

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



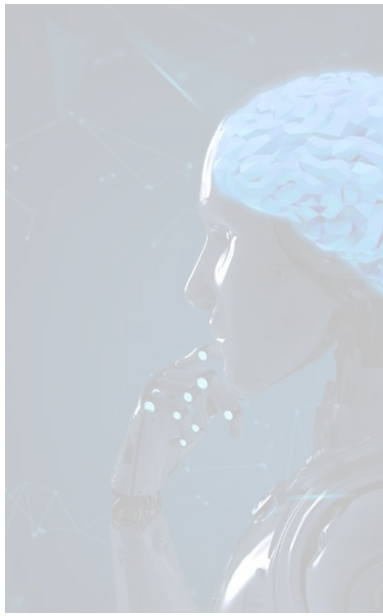
Ability to sense, reason, engage and learn!



Computer vision

Voice recognition

Robotics



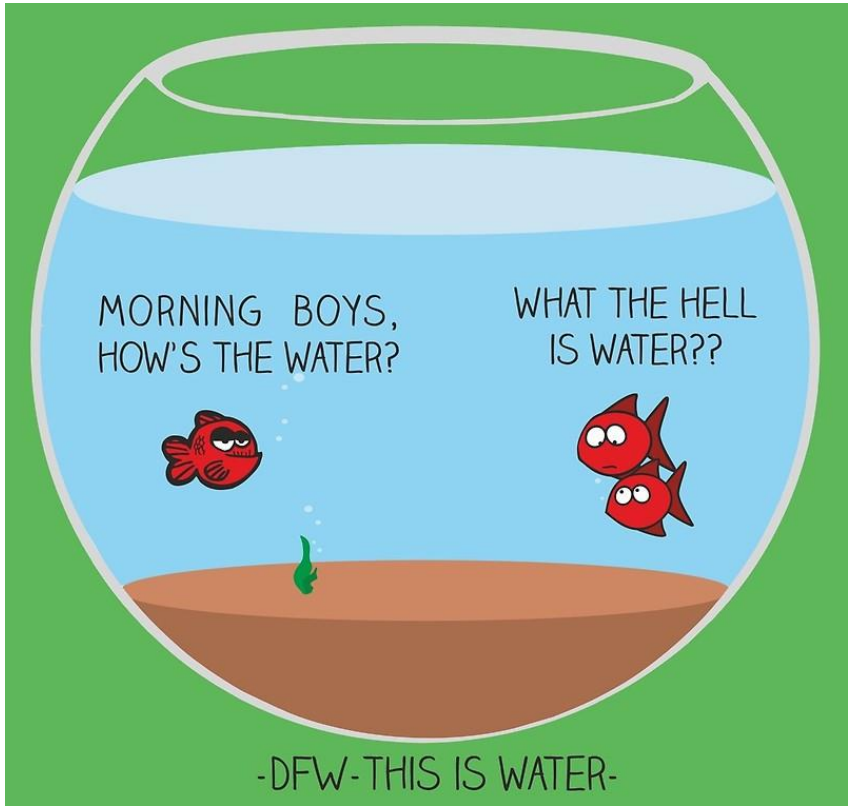
And more….

AI != Innovation

Does not understand the real world!

But Artificial Intelligence can:

- Learn
- Optimize
- Detect patterns
- Inform
- Inspire

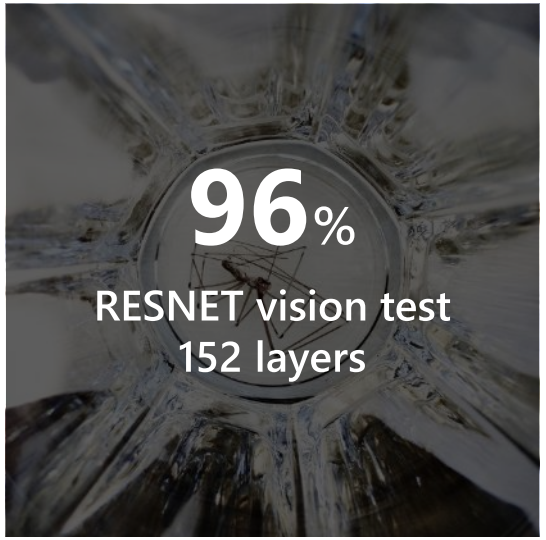


AI lives in water, yet it doesn't know what water is.

David Foster Wallace

Microsoft AI breakthough

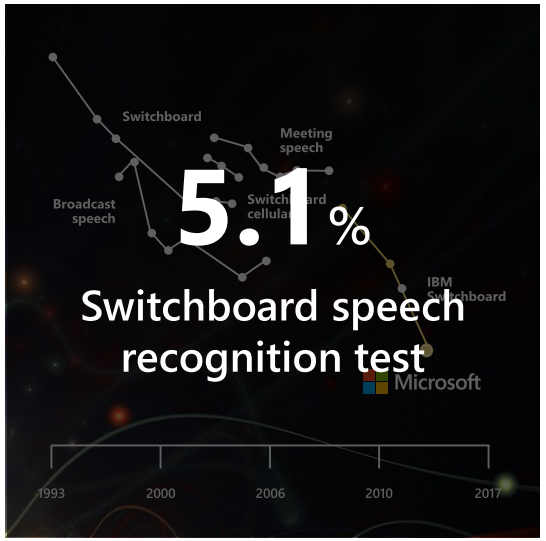
Vision



2016

Object recognition
human parity

Speech



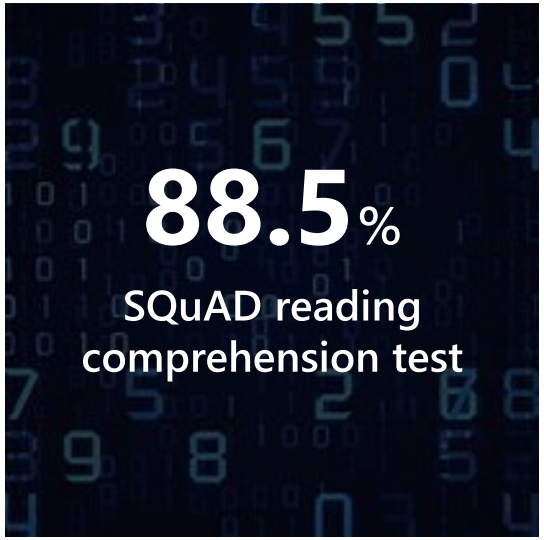
2017

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

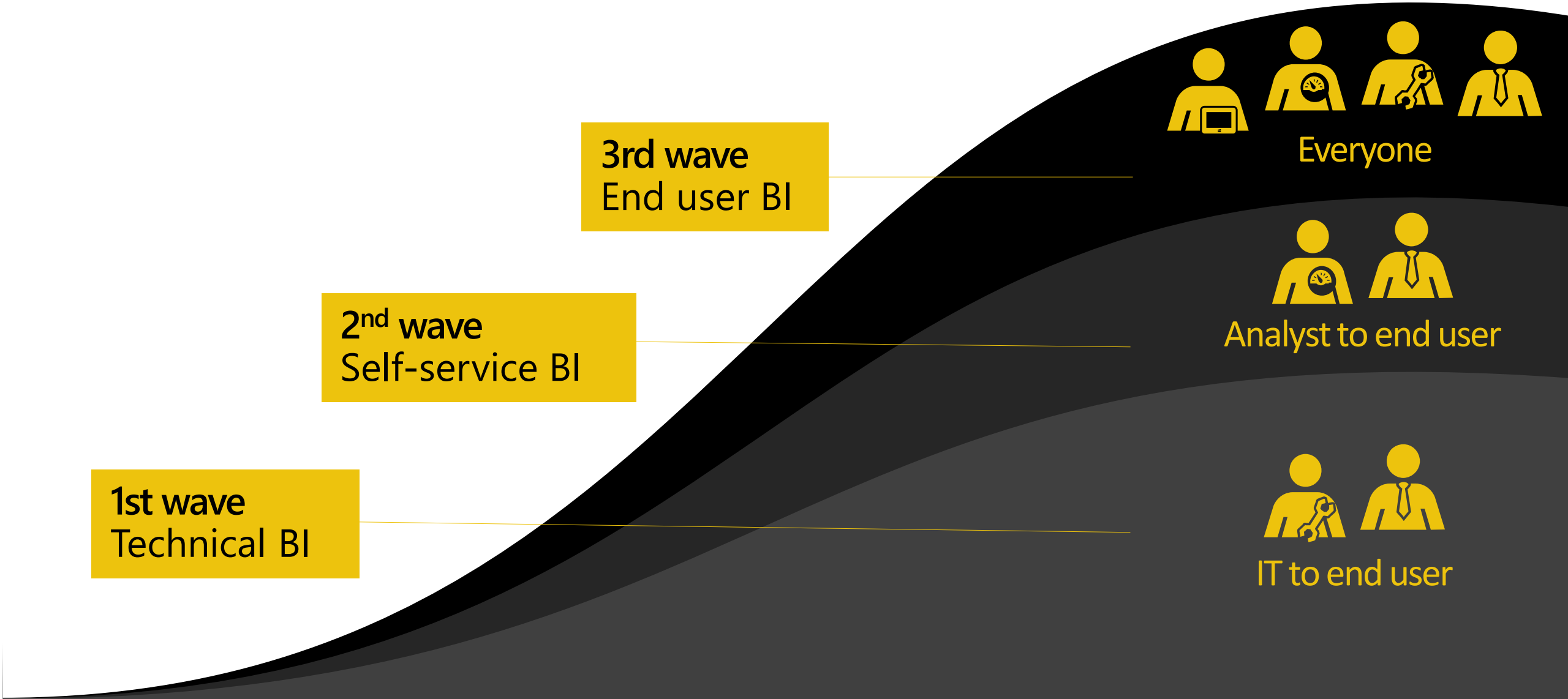
Ingredients of
award-winning
blends

Customer preferences

Reporting and dashboarding

Everyone engages with ~~software~~ Power BI

Power BI for everyone



Types of reporting

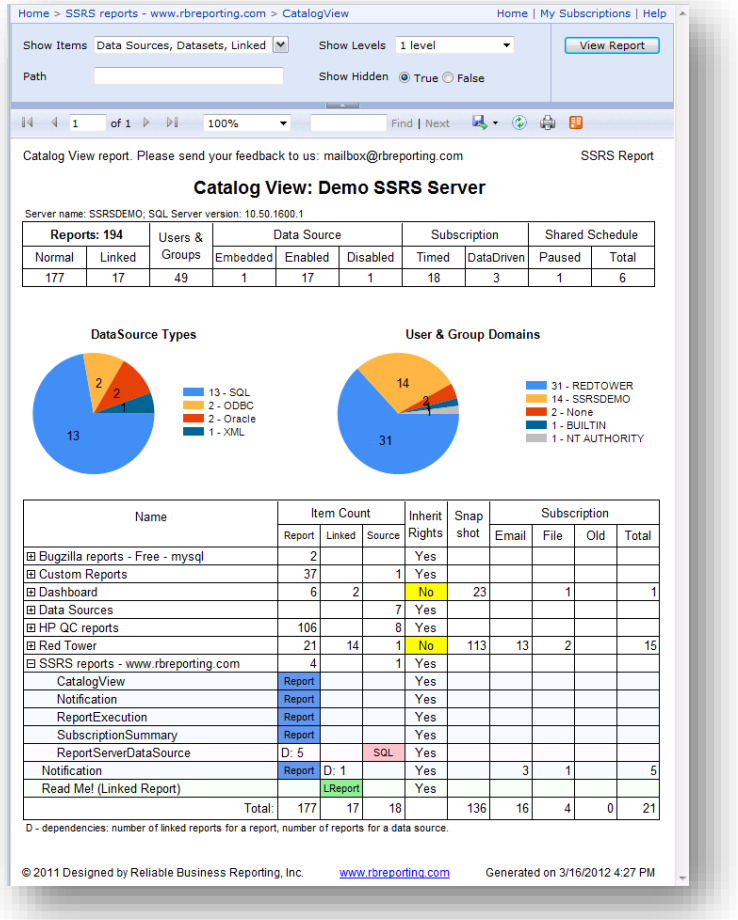
Describe

Declare

Explore

Reporting in the past

- Static
- Paginated
- Textual

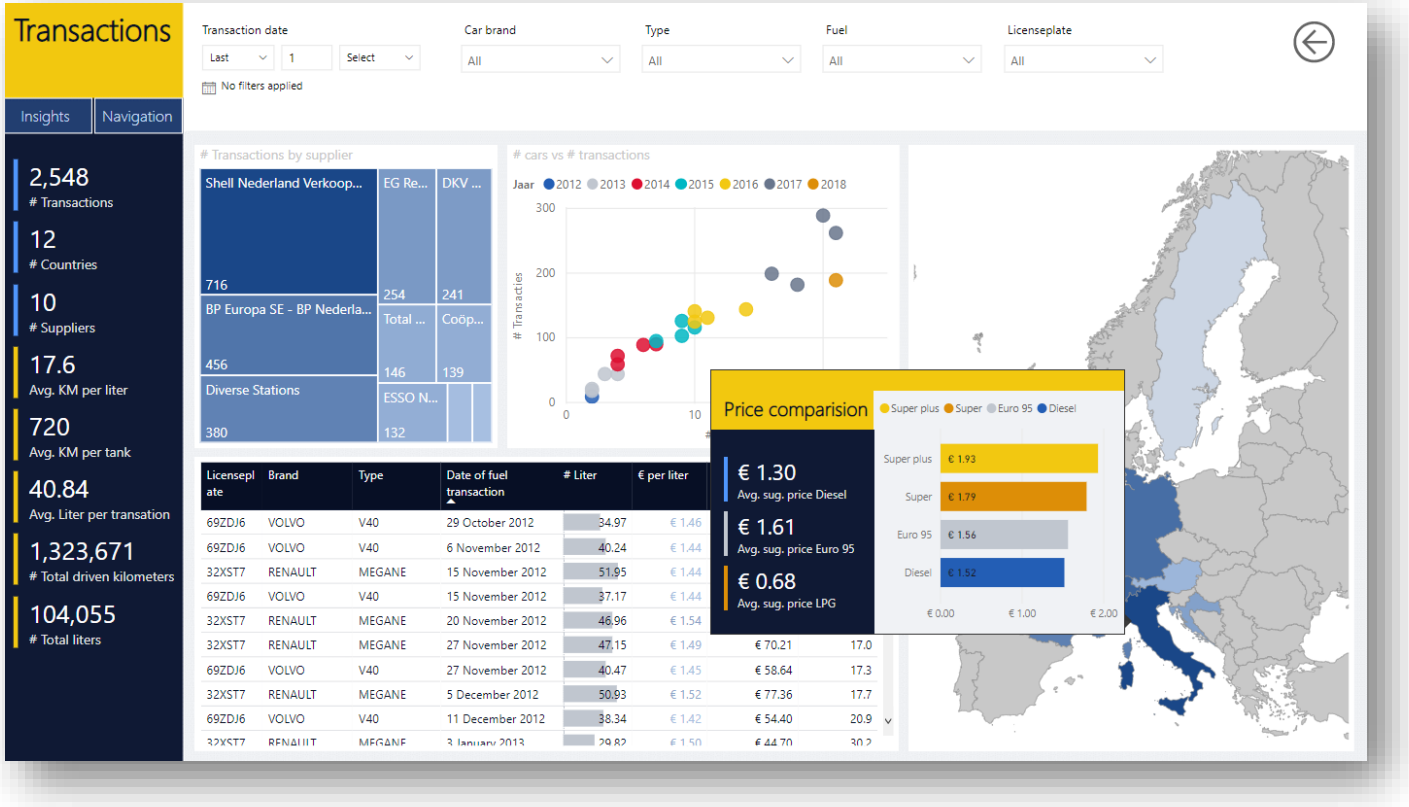


Reports: 194		Users & Groups	Data Source			Subscription		Shared Schedule	
Normal	Linked		Embedded	Enabled	Disabled	Timed	DataDriven	Paused	Total
177	17	49	1	17	1	18	3	1	6

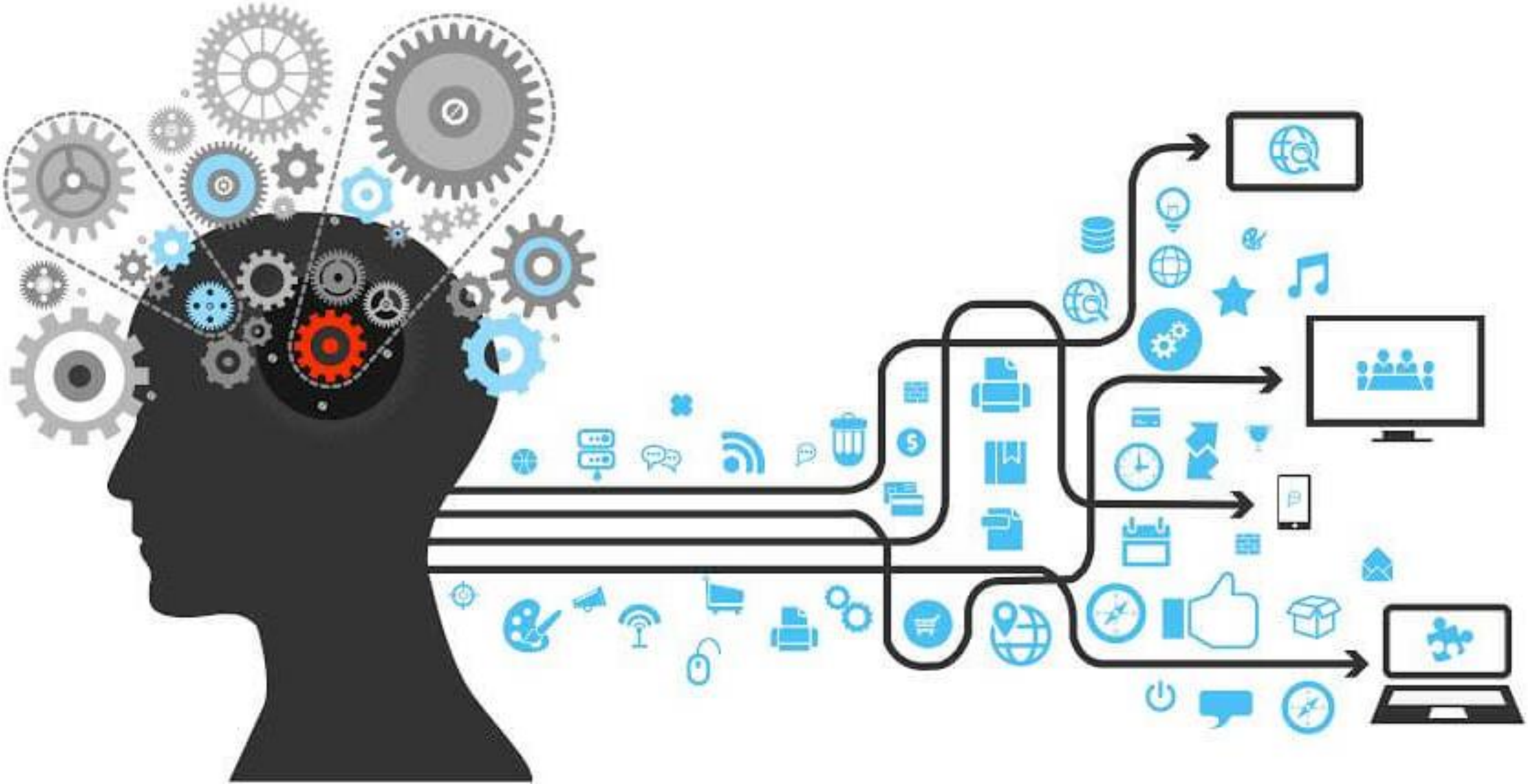
Name	Item Count			Inherit Rights	Snap shot	Subscription			
	Report	Linked	Source			Email	File	Old	Total
⊞ Bugzilla reports - Free - mysql	2			Yes					
⊞ Custom Reports	37		1	Yes					
⊞ Dashboard	6	2		No	23		1		1
⊞ Data Sources			7	Yes					
⊞ HP QC reports	106		8	Yes					
⊞ Red Tower	21	14	1	No	113	13	2		15
⊟ SSRS reports - www.rbreporting.com	4		1	Yes					
CatalogView	Report			Yes					
Notification	Report			Yes					
ReportExecution	Report			Yes					
SubscriptionSummary	Report			Yes					
ReportServerDataSource	D: 5		SQL	Yes					
Notification	Report	D: 1		Yes		3	1		5
Read Me! (Linked Report)		LReport		Yes					
Total:	177	17	18		136	16	4	0	21

Intuitive reporting

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



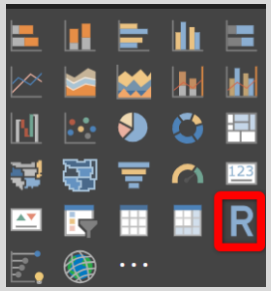
BUSINESS INTELLIGENCE



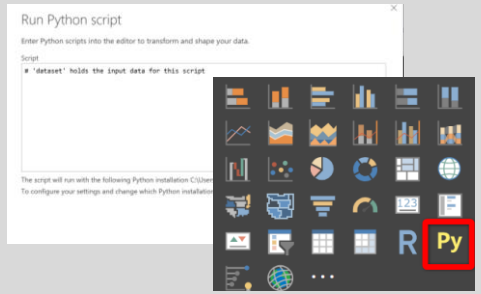
AI in Power BI

Power BI advanced capabilities

Desktop
Run R in Power BI visuals

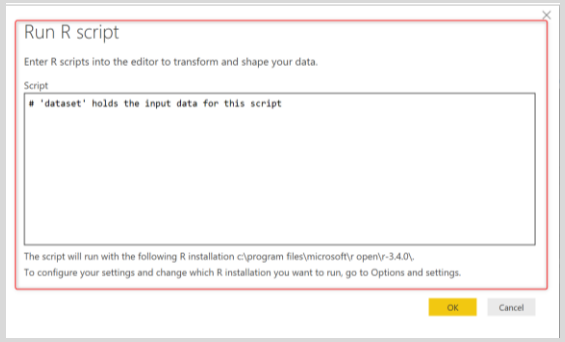


Desktop
Phyton in Visuals + Power Query

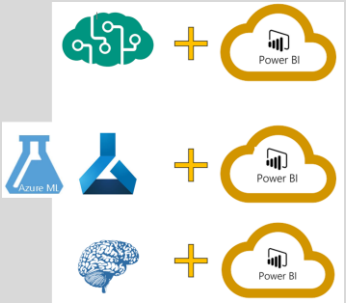


2015 2016 2018 2019

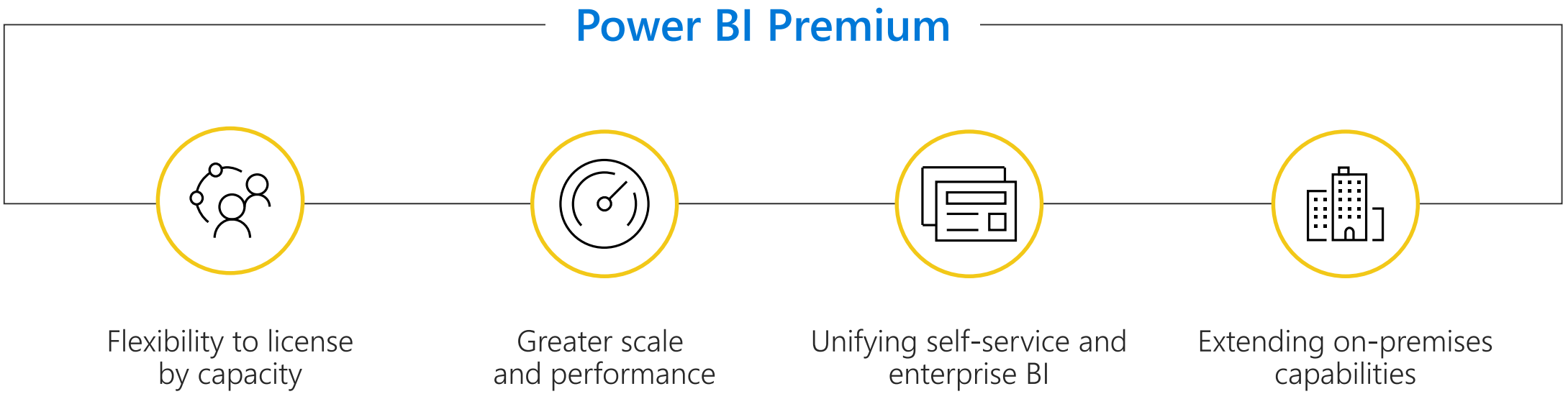
Desktop
R in Power Query



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



Part of Power BI Premium



Dedicated resources in the cloud

AI in Power BI

End users

Natural Language

Automated Insights

CAPABILITIES

- Quick Insights
- Q&A
- AI Visualizations

Analysts

AI Enrichment

AI Transformations

CAPABILITIES

- Sentiment analysis
- Key phrase extraction
- Image detection

BI Professionals

ML Models

Model Deployments

CAPABILITIES

- Predictions
- Classifications

Extends for Data Scientists

CAPABILITIES

- R
- Phyton

Data Scientists

Azure ML Integrations

CAPABILITIES

- Auto ML

Make AI available for everyone!

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

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

Make AI available for everyone!

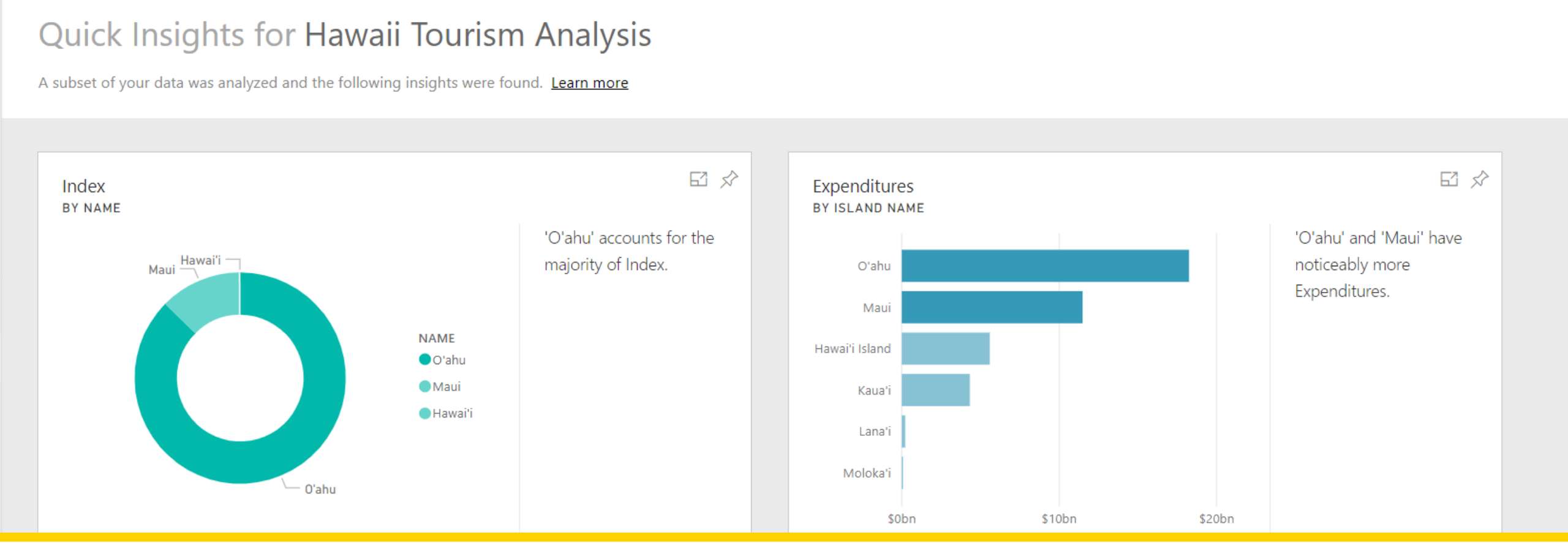
Goal	How?
Help Business Users understand their data	Q&A
	Quick Insights
	Key Drivers
	Clustering
Help Analysts prepare their data	Forecasting
	Cognitive Services
	Automated ML
	R Integration
Make it easy for Data Scientists and Analysts to collaborate	Python Integration
	Azure ML Integration

Demo time!

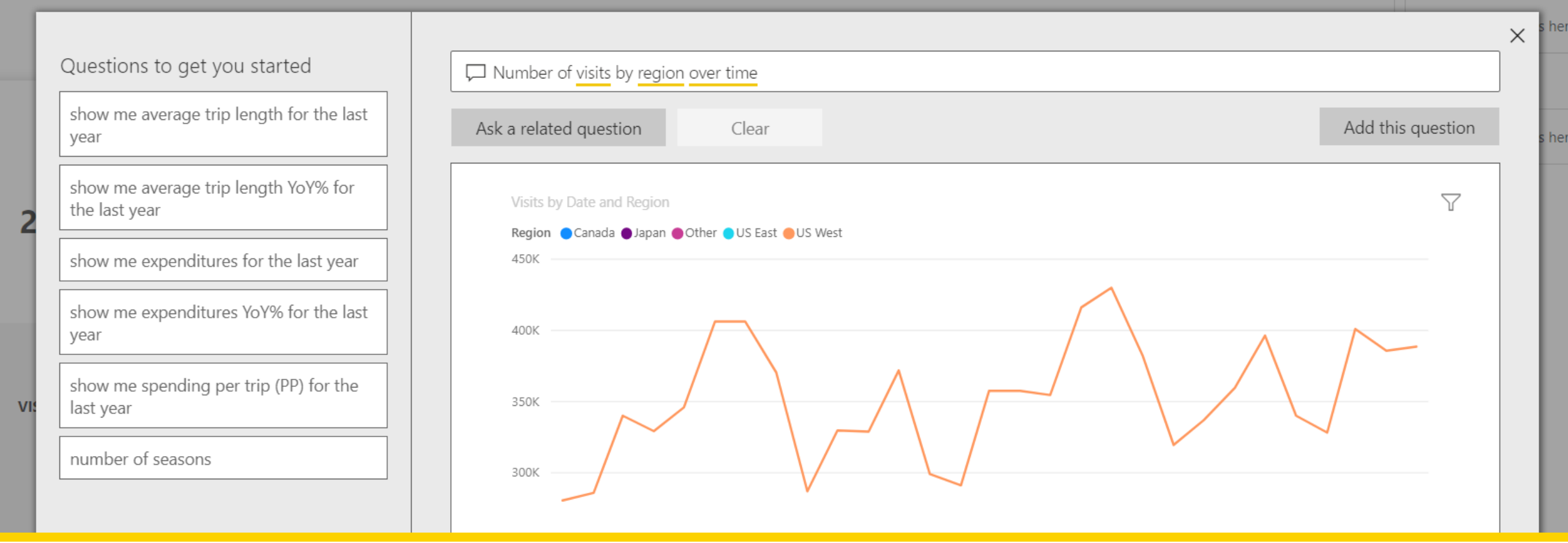
Because life is boring without risks

Demos

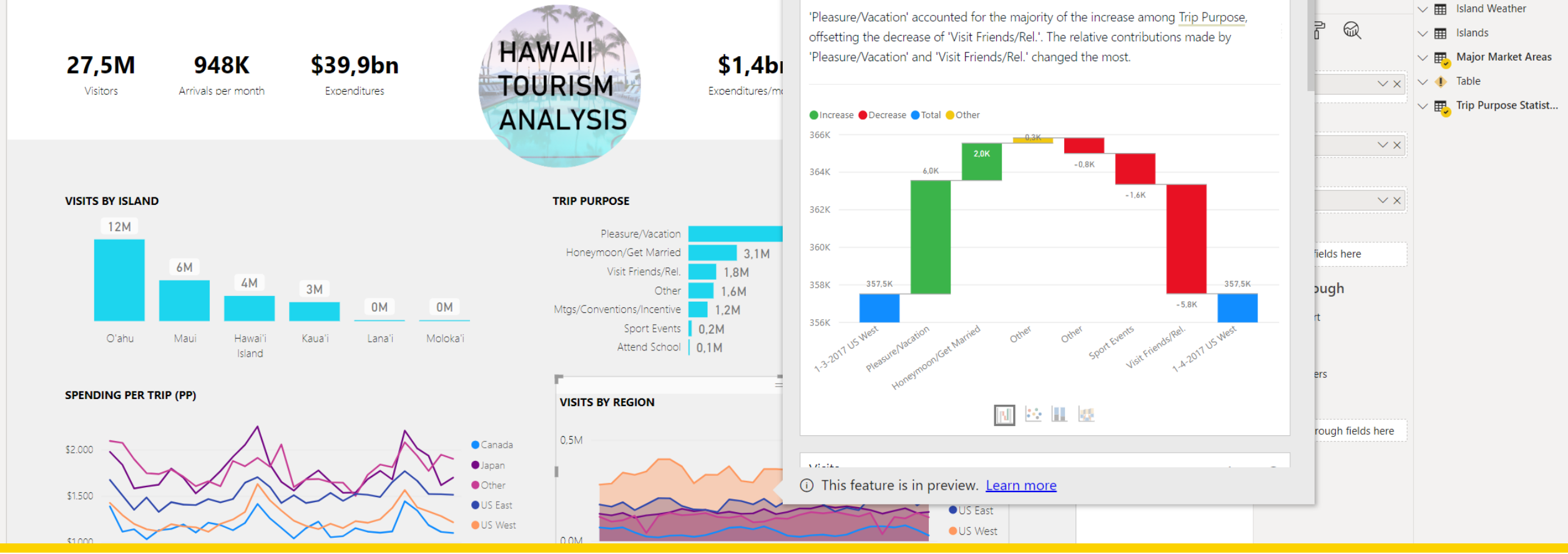
- Quick insights
- Power BI Natural Language Query
- Explain increase / decrease
- Analyze distribution
- Key influencer visual
- Decomposition tree
- AI Insights (in dataflows)



Quick Insights



Natural Language Query

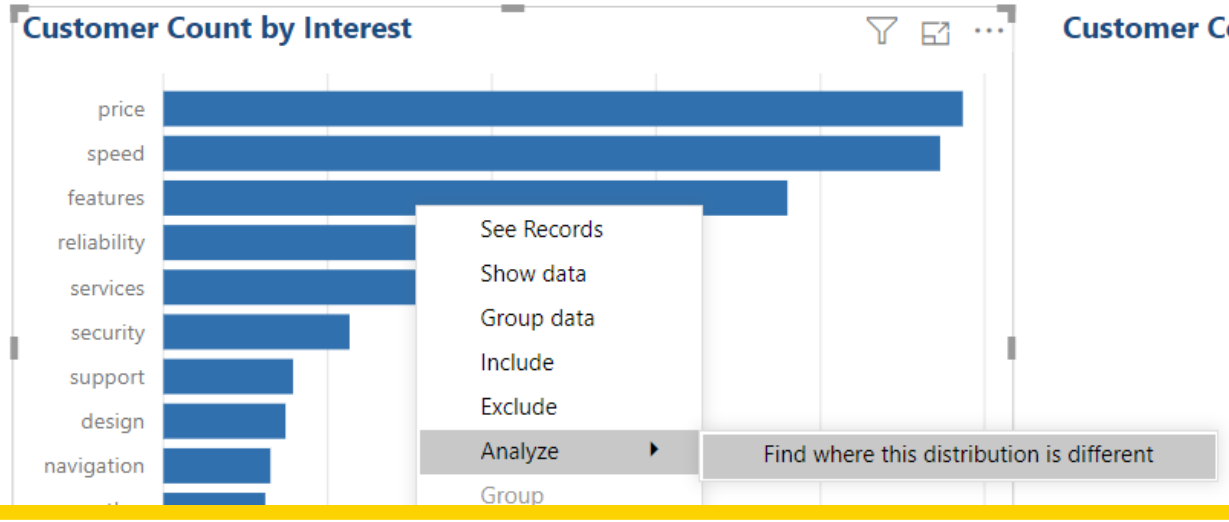


Explain Increase / decrease

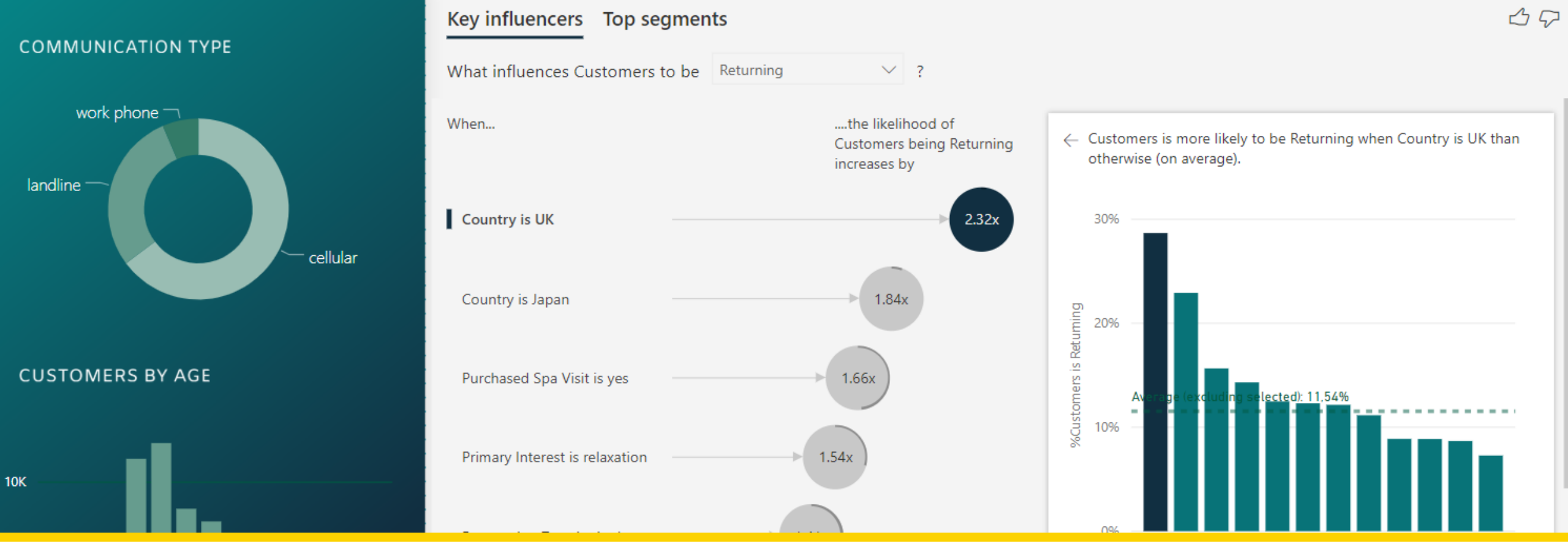
NEW CUSTOMERS

New Customers (February)

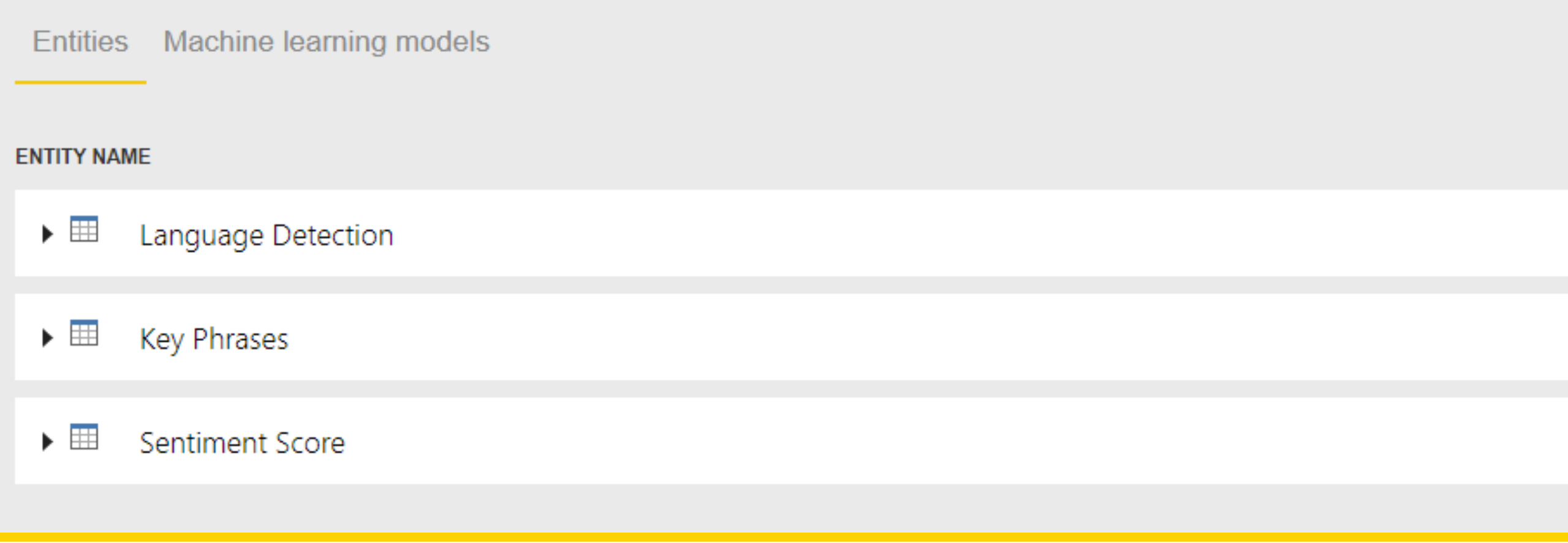
45.218



Analyze distribution



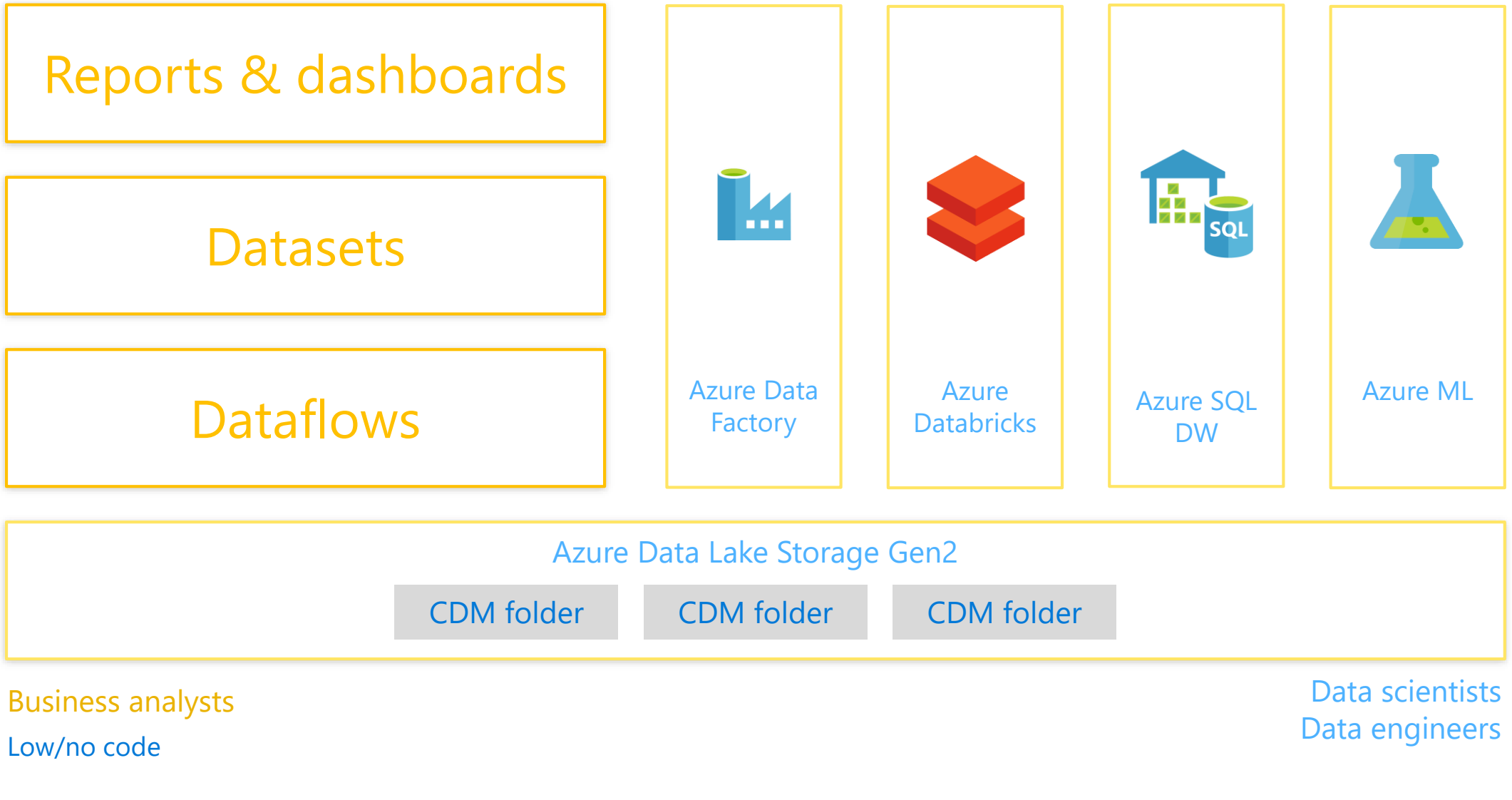
Key Influencer Visual



AI Insights (in dataflows)

Airbnb analysis

Dataflows


Reports & dashboards
Datasets
Dataflows
Azure Data Factory
Azure Databricks
SQL
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

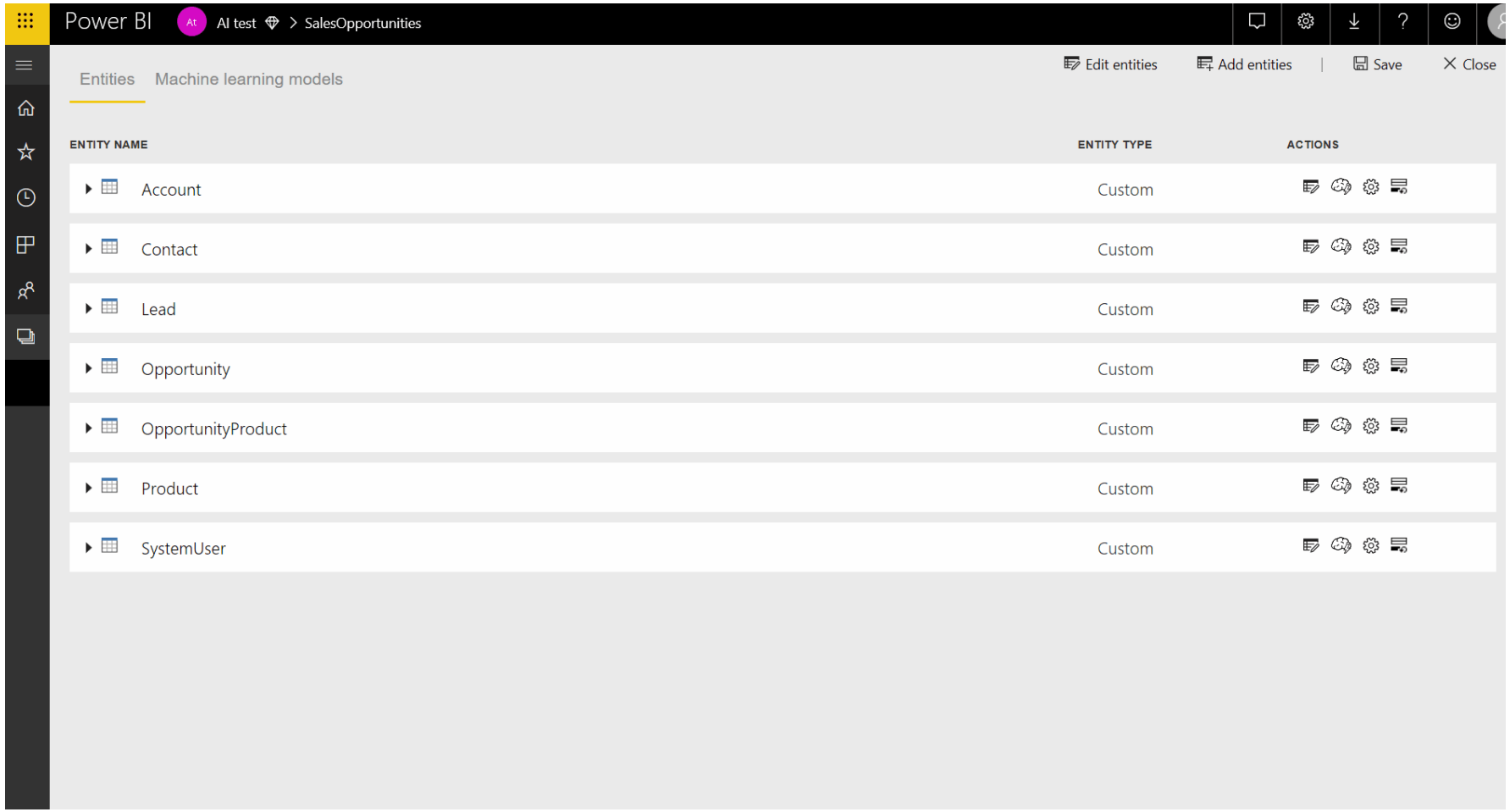
Knowledge

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



28 nov - 29 nov | 1 gast | Zakenreis | Type ruimte | Prijs | Direct Reserveren | Meer filters

Kaart tonen

29% van de accommodaties in Manchester is al gereserveerd voor jouw datums en aantal gasten.

112 accommodaties

"SUPERVERHUURDER" Privékamer ★4.82 (100)

Single bed in the heart of MCR

1 gast · 1 slaapkamer · 1 Bed · 1 eigen badkamer
Wifi · Keuken

Nieuwe lagere prijs

~~€58~~ **€43** per nacht
€43 in totaal

Privékamer ★4.89 (9)

No 6 Decent Home (Double room)

2 gasten · Studio · 1 Bed · 1,5 gedeelde badkamer
Gratis parkeergelegenheid · Wifi · Keuken · Verwarming

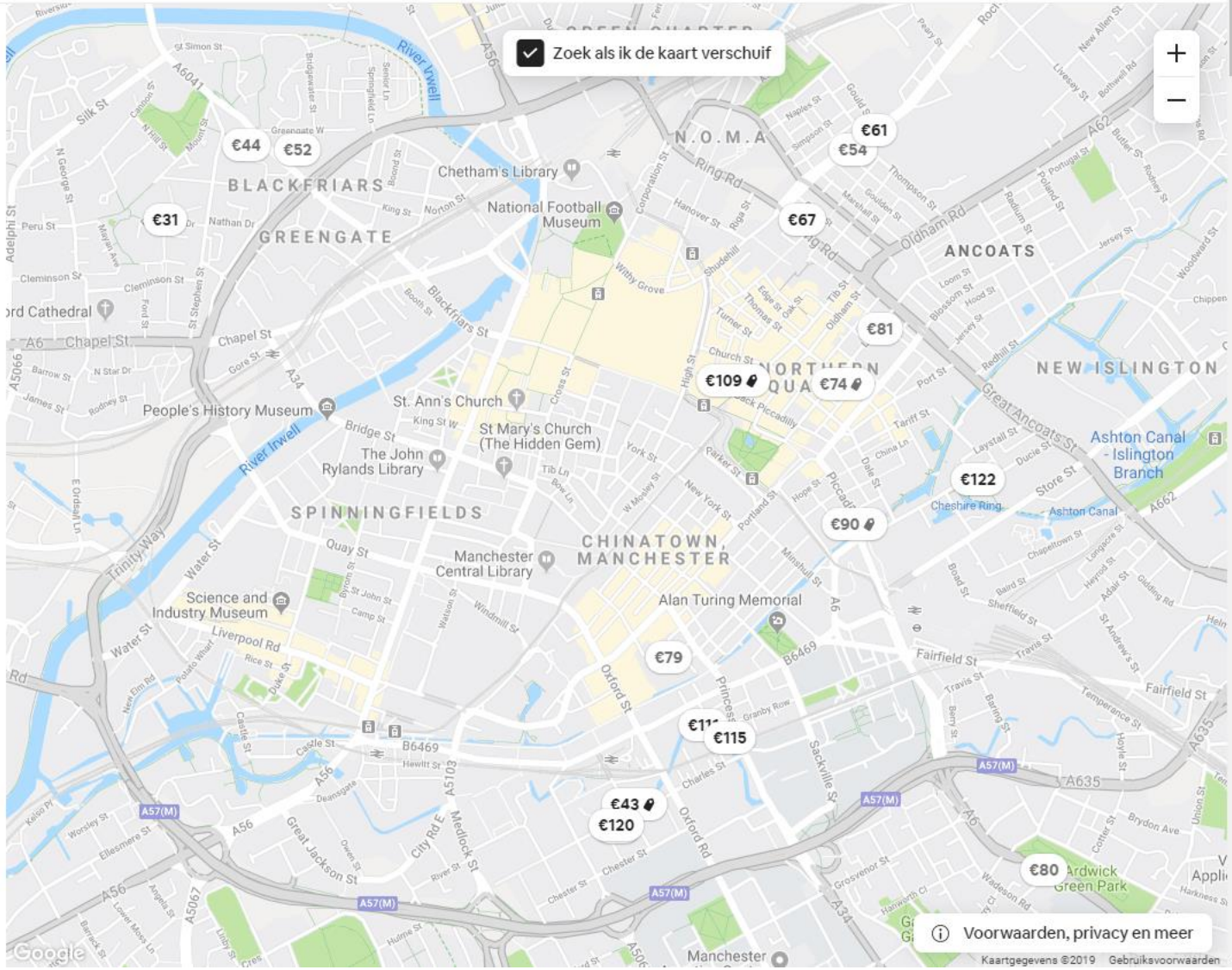
Zeldzame vondst

€44 per nacht
€44 in totaal

Privékamer ★4.80 (298)

Mini-malist (!) "Drop-n-Go" FREE PARKING TOO!

2 gasten · 1 slaapkamer · 1 Bed · 1,5 gedeelde badkamer
Gratis parkeergelegenheid · Wifi · Keuken · Verwarming

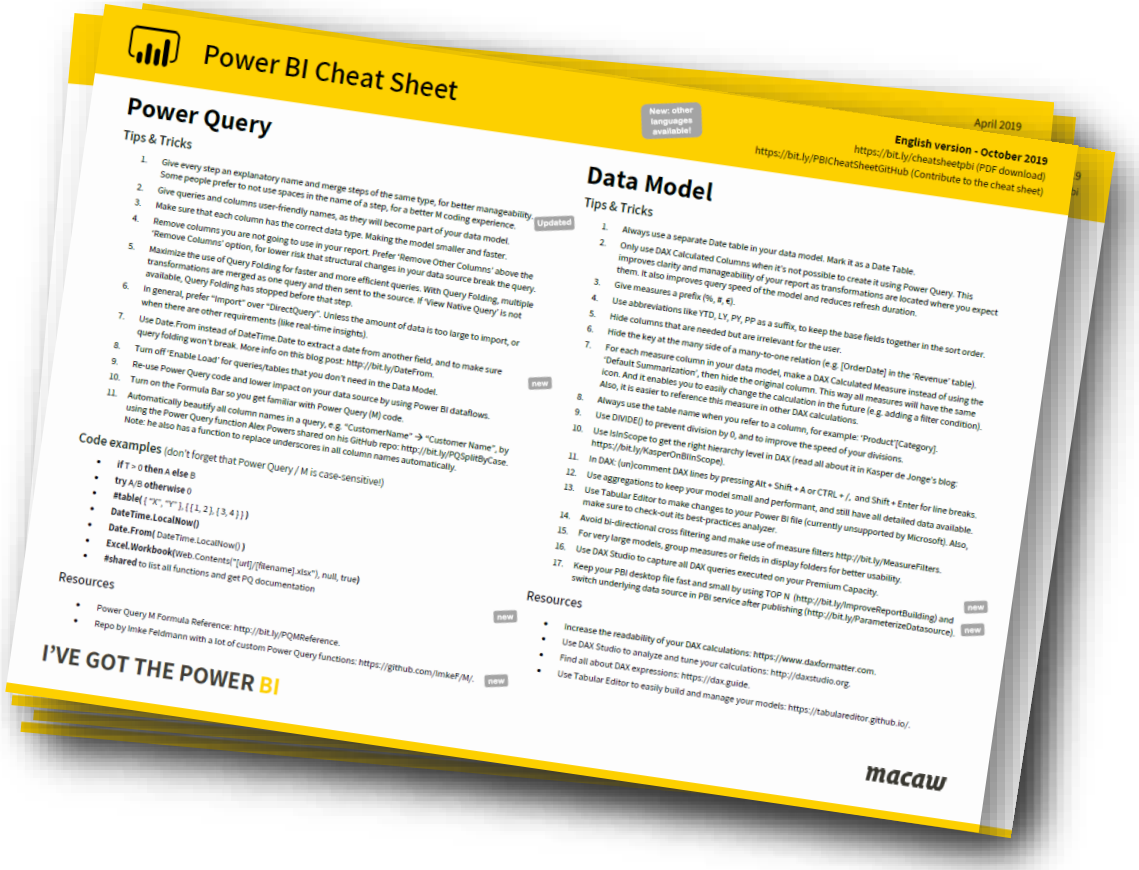


Recap

- 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)

Download for free!

Https://bit.ly/cheatsheetpbi



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Marc.Lelijveld@outlook.com

@MarcLelijveld

linkedin.com/in/MarcLelijveld

Data-Marc.com