



# Data driven ambition



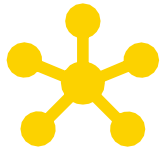
# In this session...



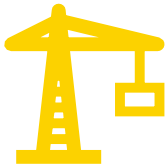
Challenges we face today



What exactly is a data culture



Center of Excellence as central driver



Tools and service offerings to help



# Marc Lelijveld

Data & AI consultant  
Macaw Netherlands



✉ [Marc.Lelijveld@outlook.com](mailto:Marc.Lelijveld@outlook.com)

🐦 [@MarcLelijveld](https://twitter.com/MarcLelijveld)

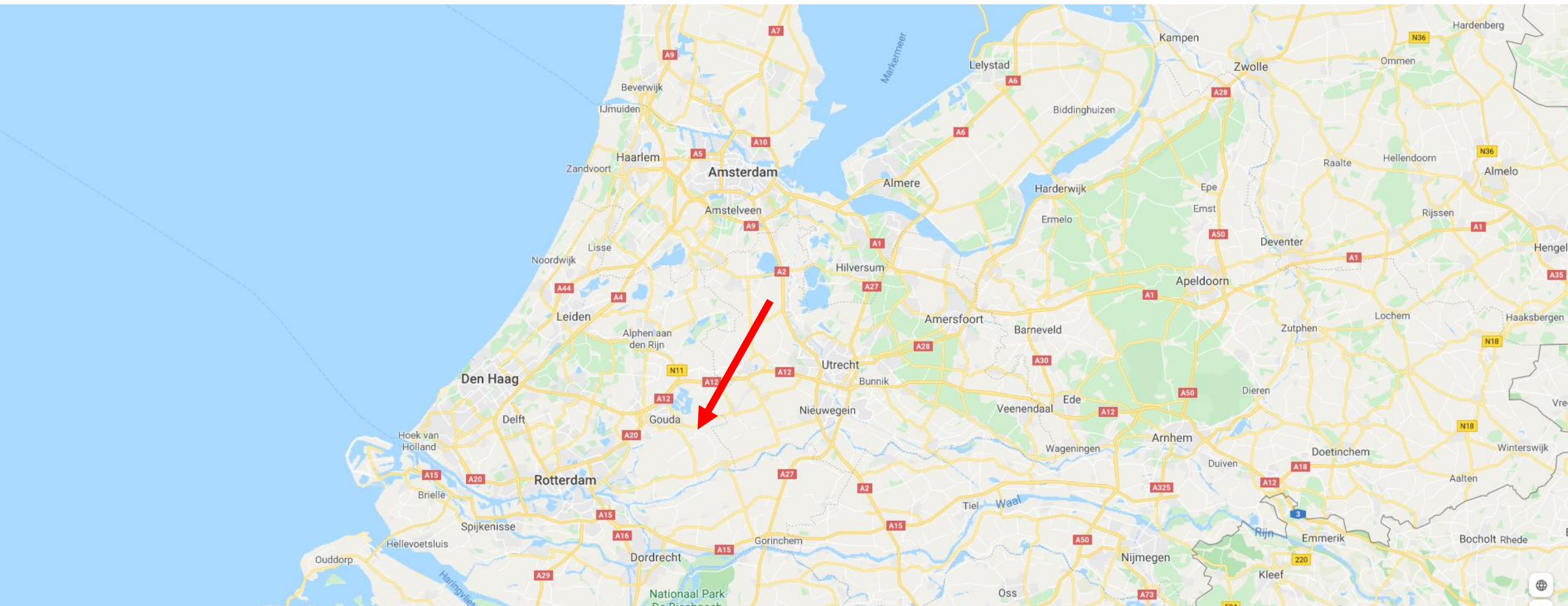
in [linkedin.com/in/MarcLelijveld](https://linkedin.com/in/MarcLelijveld)

🌐 [Data-Marc.com](https://Data-Marc.com)



**macaw**





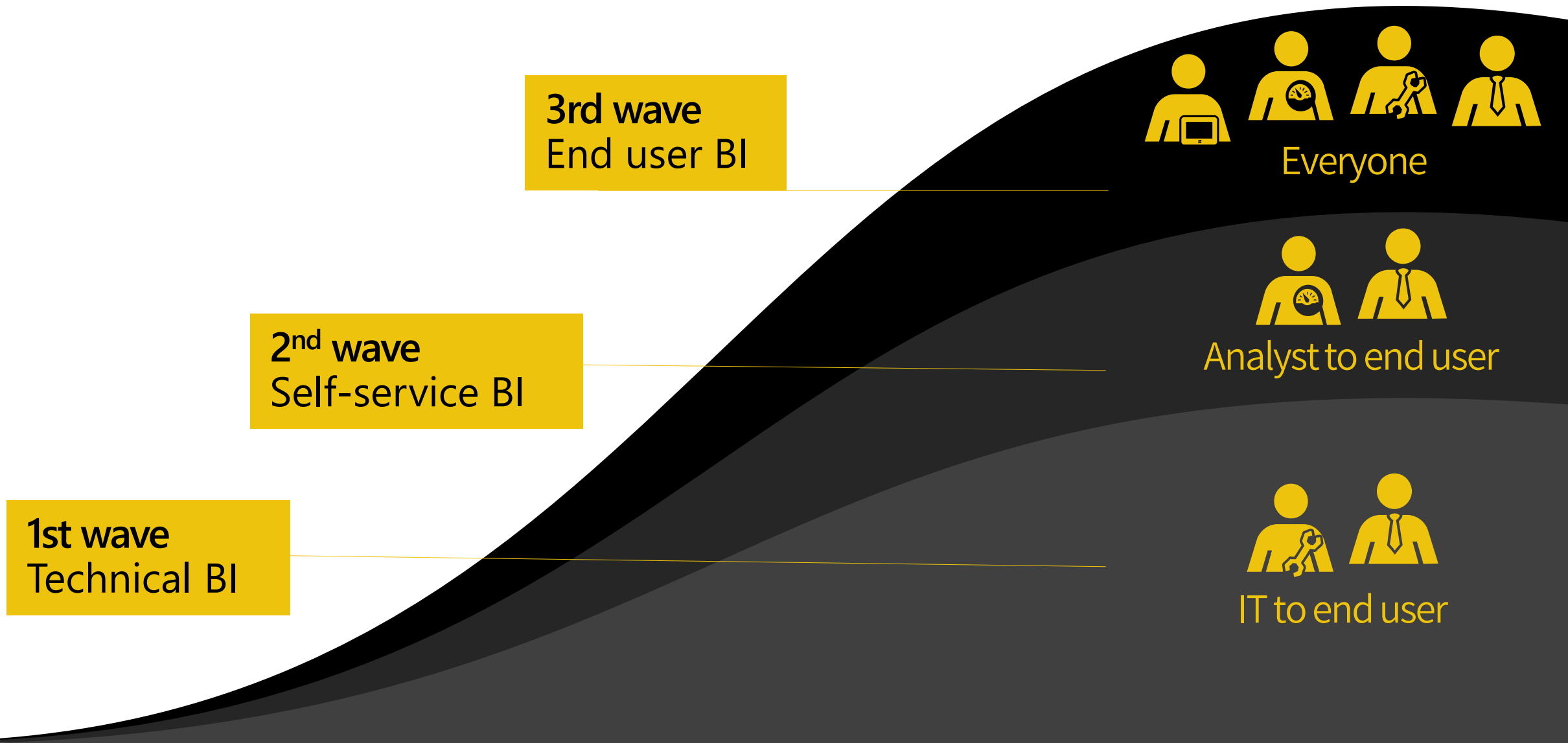
A blurred background image of an office interior. In the foreground, a man is seated, looking towards the right. In the background, another person is standing near a large screen or whiteboard, which displays the 'macaw' logo. The overall scene suggests a collaborative work environment.

# What's your digital challenge?

## Challenges we face today

What is blocking us today in our data driven ambitions?

# Power BI for everyone



# Everyone engages with ~~software~~ Power BI



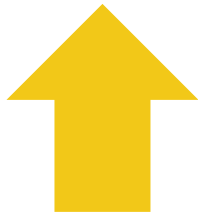


# Implementing Power BI



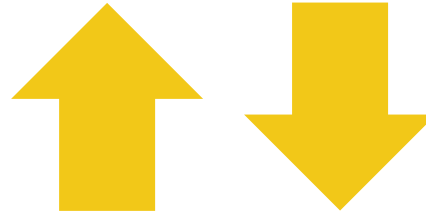
# Delivery approaches

**Business-Led  
Self-Service BI**



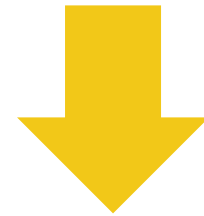
Bottom-Up

**IT- Managed  
Self-Service BI**



Blended

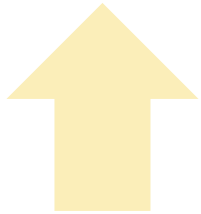
**Corporate BI**



Top-Down

# Exponential growth of content

Business-Led  
Self-Service BI



Bottom-Up



Dave  
Finance



Anne  
Human Resources



Leila  
Marketing



Reza  
Engineer



# So what...?

Everyone can do their own analysis



But we're lacking in terms of...



Control



Data sensitivity



Correctness



Solution health

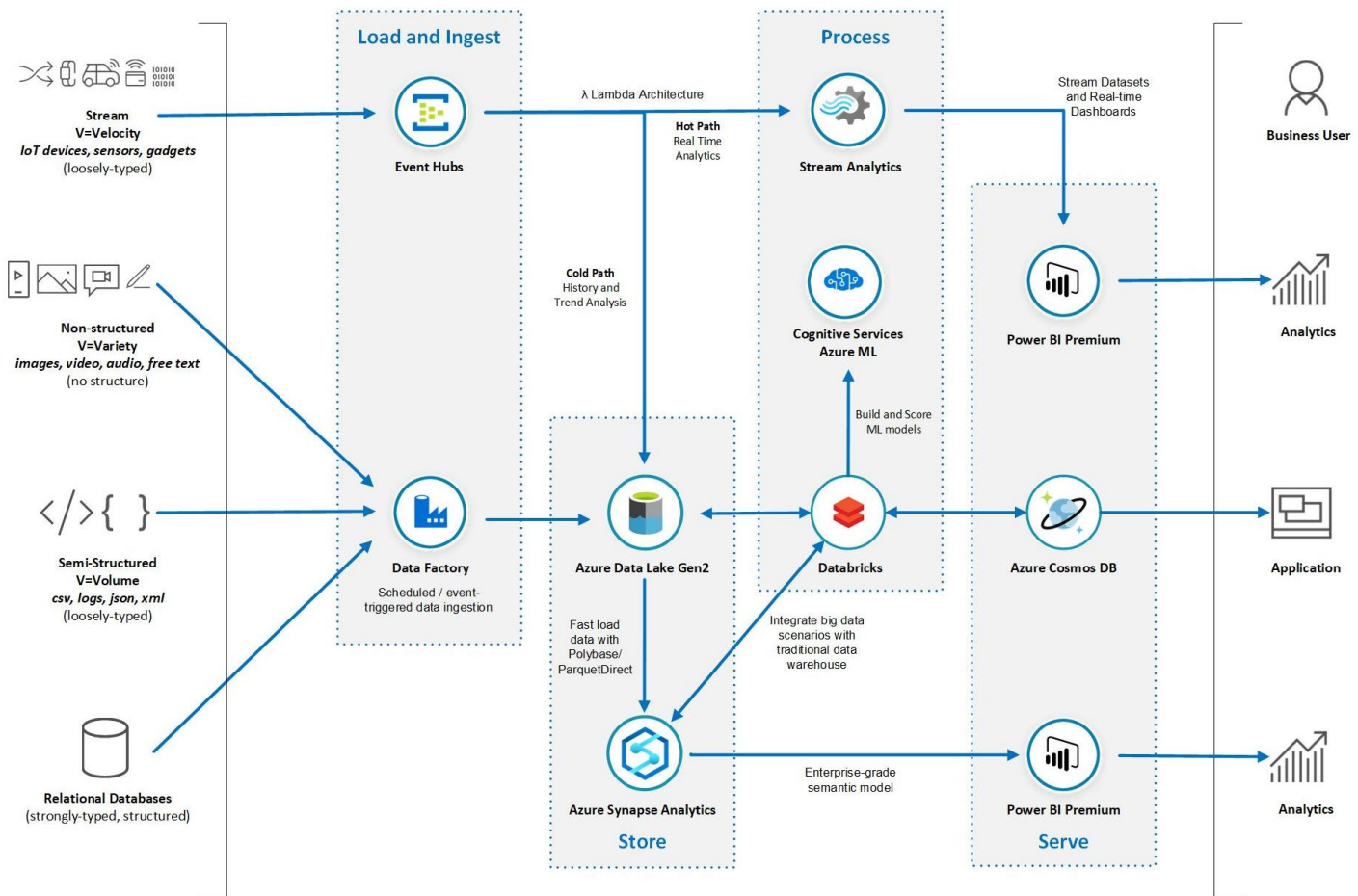
... and more



# What value do they add?



# Architecture leading vs goal leading



Perfect architecture...

or



Fit for purpose?

# COE is controlling and not facilitating



Monitoring

instead of



Informing and facilitating



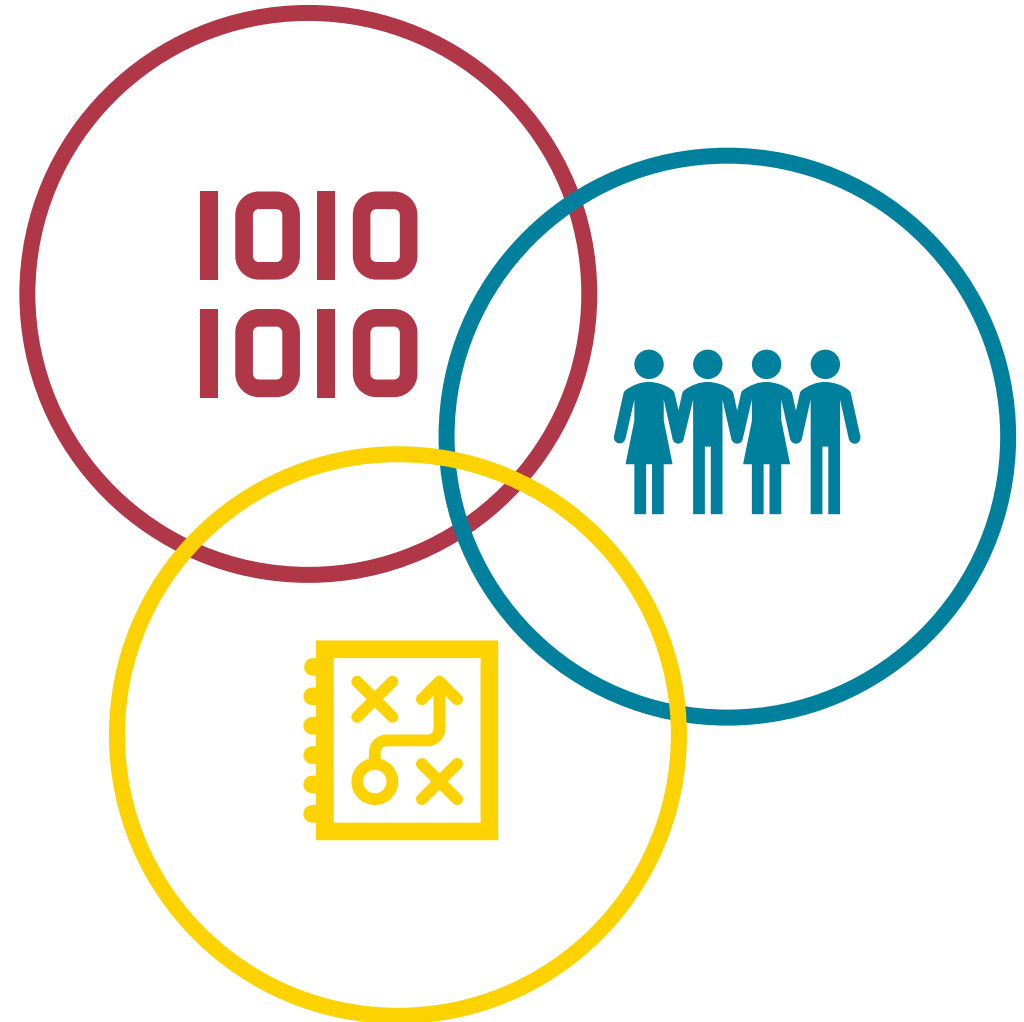
The word "CULTURE" is written in a large, white, sans-serif font with a subtle drop shadow. It is centered and surrounded by a cluster of overlapping, semi-transparent squares in various colors including orange, blue, pink, green, yellow, and purple. The squares vary in size and are scattered around the word, creating a vibrant, abstract background.

# CULTURE

**What exactly is a data culture**

# Combination of three components

- Data
- Analytics
- People





[ data + analytics + people ]

# [ data + analytics + people ]

- Cloud
- On-prem
- Hybrid

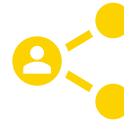


# [ data + analytics + people ]



## Discover

Search for data and combine different sources to one model



## Share

Share insights and analytics across the organization



## Analyze

Analyze tons of data in a few clicks and let it add value



## Find & Explore

Find answers and explore data in visuals + Q&A capabilities



## Visualize

Transform millions of rows of data in stunning visuals



## Anywhere

Your data on your fingertips on any device wherever you are.

[ data + analytics + people ]



[ data + analytics + people ]



[ data + analytics + people ]

= competitive advantage



# Center of Excellence

as central driver behind the data culture

# What's in the name?

- Center of Excellence
- Center of Expertise
- Business Intelligence Competence Center (BICC)
- Competence Center

**WHATEVER**



# Central position



Data in the heart of your organization



Pre-packaged artifacts to kick-start new initiatives



Data Driven Organization–  
Taking decisions based on data



Data at your fingertips, being  
able to build new solutions



Improve results & grow margin  
over time



Empower individuals to use  
data in their day-to-day work



Continuous analysis and  
improvements of market value



Data as ideation & innovation  
driver in your organization

# In the heart of your organization

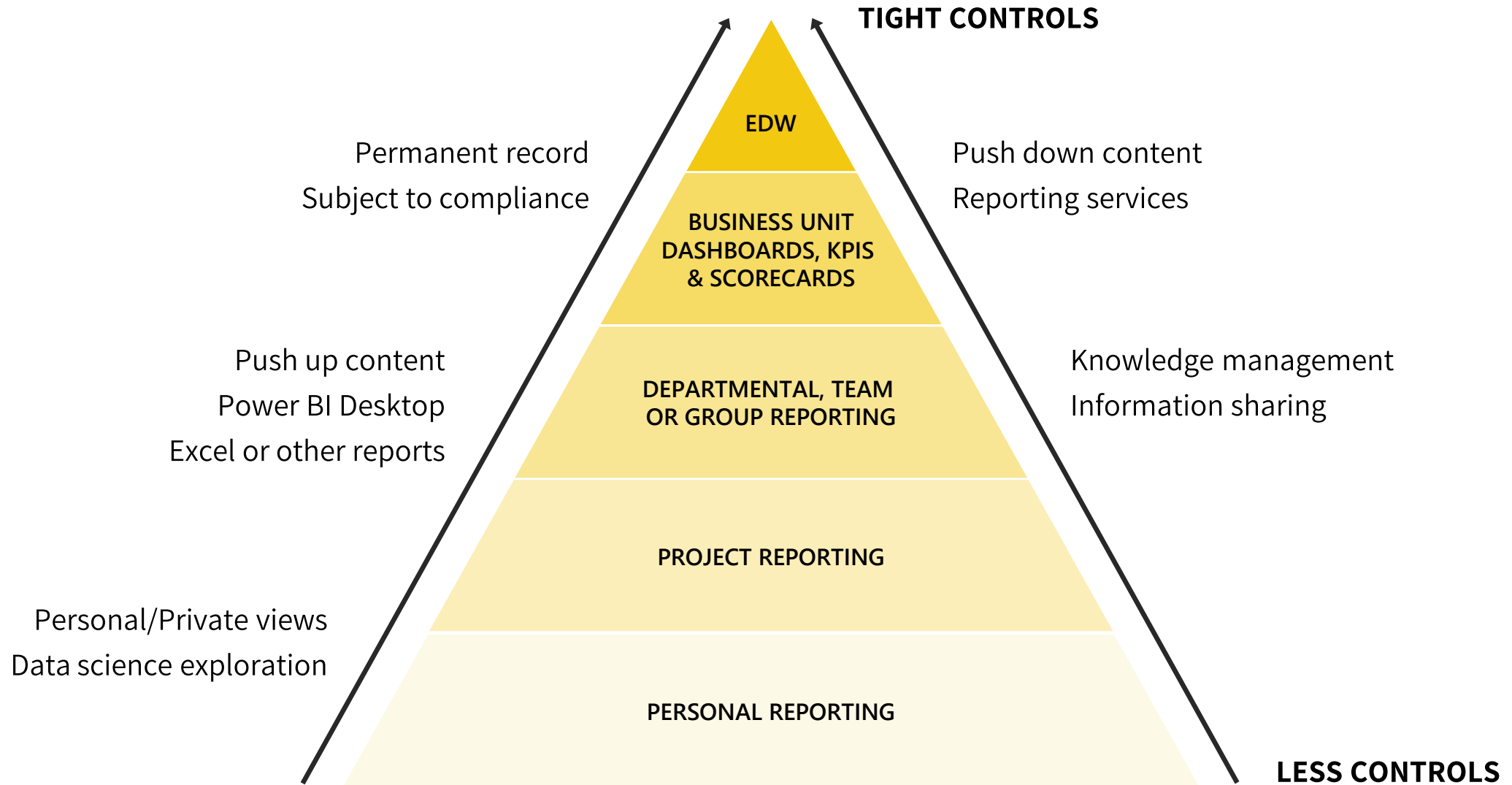




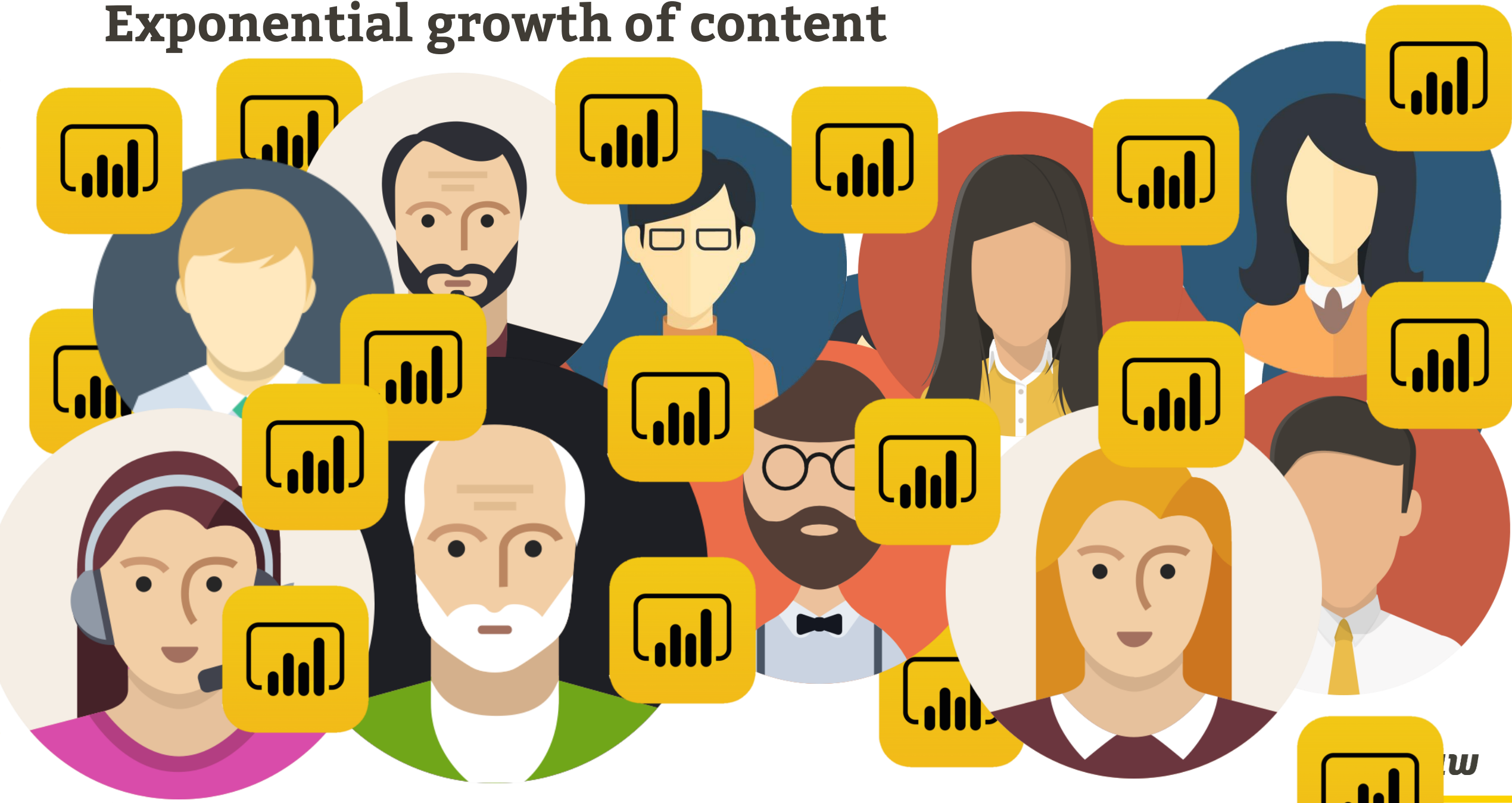
# Roles

	Skills	Responsibilities
<b>Corporate Sponsor</b>	Influence strategy around BI tools	Tool assessment
<b>Power BI Champion</b>	Subject matter expert	Strategically deploy Power BI across the organization or team
<b>Security Officer</b>	Auditing, Data classification	Data & usage policy
<b>Data Steward</b>	Data modelling	Enhance data quality, create and maintain a data catalog and dictionary
<b>Data Architect</b>	Technical knowledge of data sources and how to connect to them	Matching business requirements to technical capabilities and architecture
<b>BI Developer</b>	Fully understanding of Power BI capabilities	Make sources available for self-service and develop corporate BI solutions
<b>Administrator</b>	Authentication, IT service management	License assignment, monitoring set-up, gateway management
<b>Support</b>	Full understanding of Power BI capabilities and communication skills	Supports users in self-service scenarios and creating templates

# Governance Model



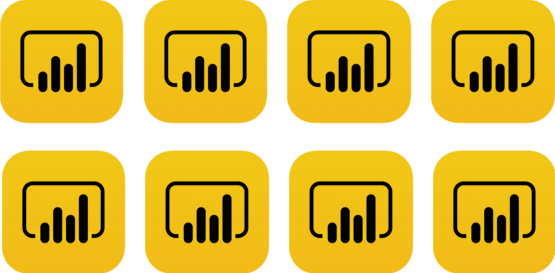
# Exponential growth of content



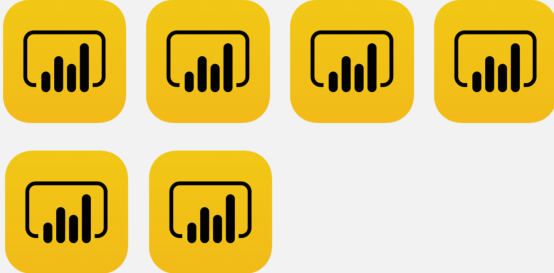
# Get order in the chaos



Dave  
Finance



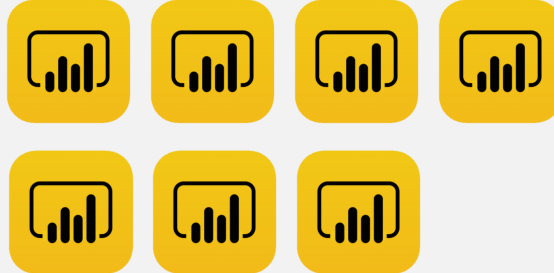
Anne  
Human Resources



Leila  
Marketing



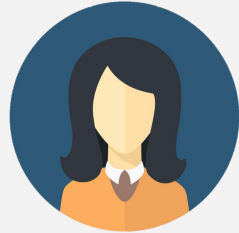
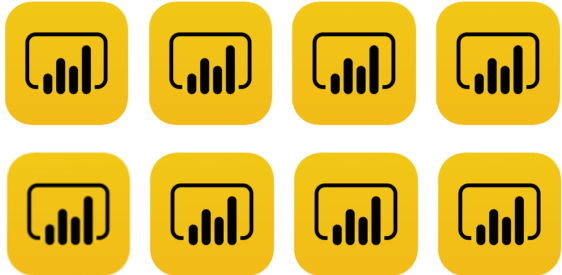
Reza  
Engineer



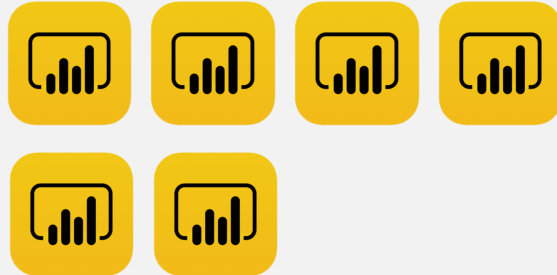
# Separate people and content!



Dave  
Finance



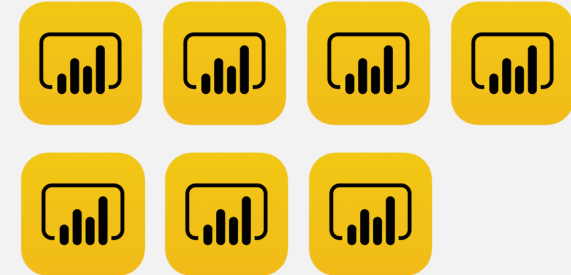
Anne  
Human Resources



Leila  
Marketing



Reza  
Engineer



# Monitor the environment



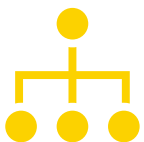
Content availability



Usage



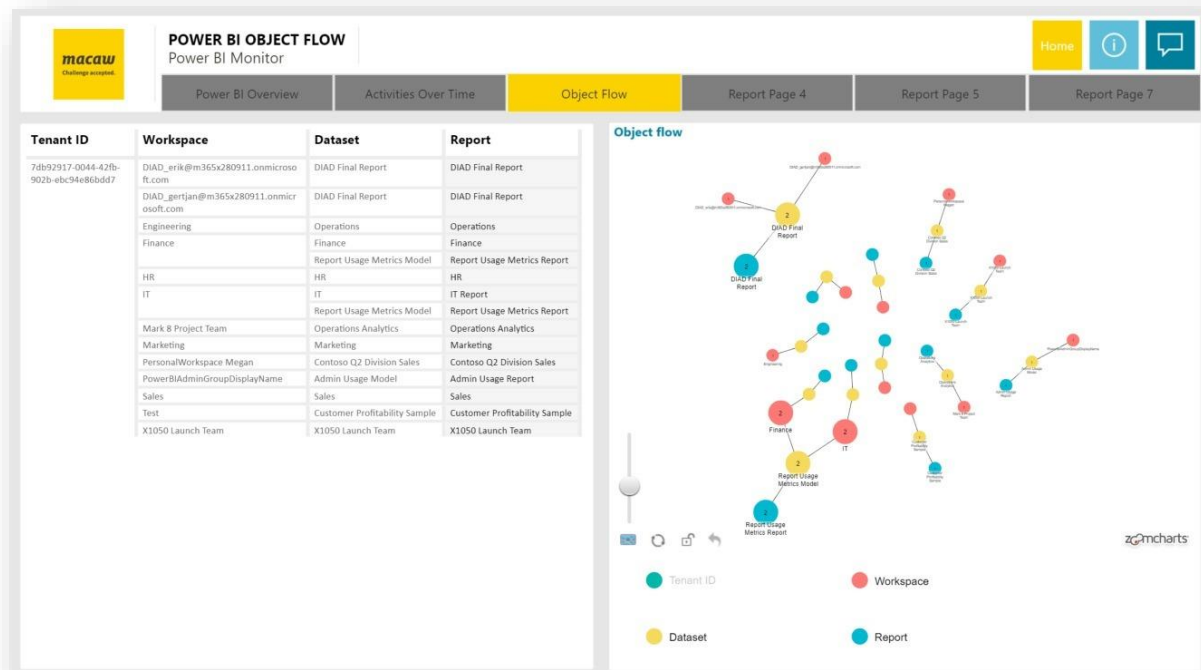
Performance



Lineage



Environmental health



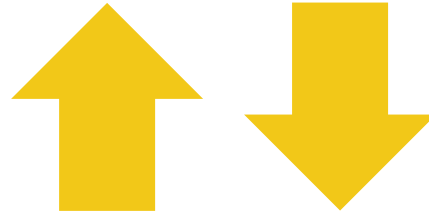
# Delivery Approaches

**Business-Led  
Self-Service BI**



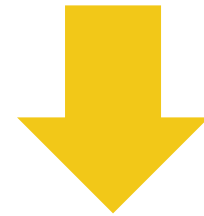
Bottom-Up

**IT- Managed  
Self-Service BI**






Blended

**Corporate BI**






Top-Down

# Delivery Approaches

	Business-Led Self-Service BI	IT-Managed Self-Service BI	Corporate BI
<b>Approach</b>	 Bottom-Up	 Blended	 Top-Down
<b>Data sources</b>	Any type of data source	Only governed sources	Published by IT
<b>Ownership</b>	Business supports all elements of the solution	IT for data model, Business for reports	Fully supported by IT
<b>Governed by</b>	Business	IT for data, business for reports	IT
<b>Usage scope of business</b>	Data prep, modelling, reports and dashboards	Creation of (custom) reports and dashboards	Only use of content



# Delivery Approaches

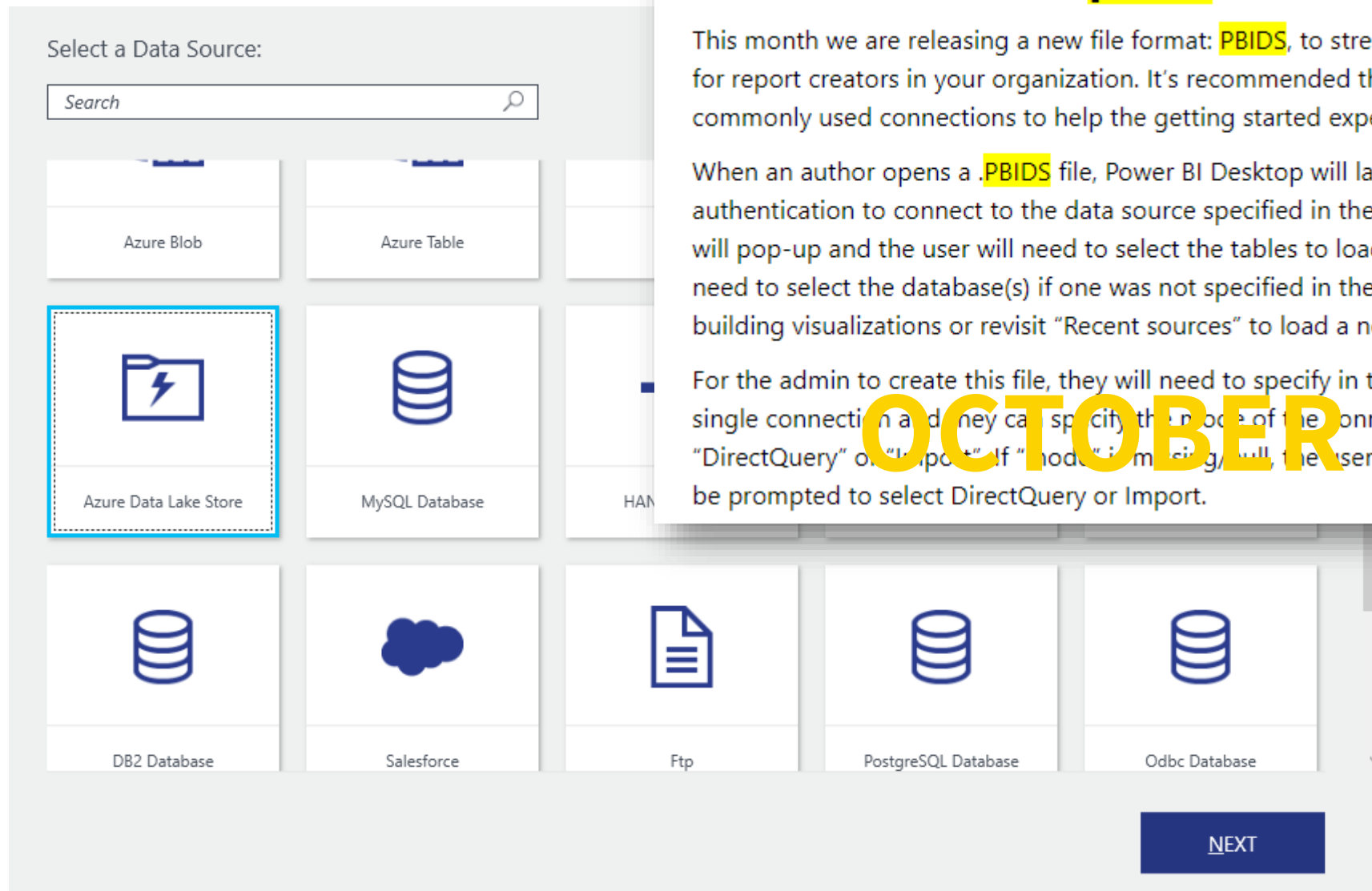
	Business-Led Self-Service BI	IT-Managed Self-Service BI	Corporate BI
Approach	 Bottom-Up	 Blended	 Top-Down
Data sources	Any type of data source	Only governed sources	Published by IT
Ownership	100% Business Driven	50/50 IT for data model, Business for reports	100% IT-Driven
Governed by	Business	IT for data, business for reports	IT
Usage scope of business	Data prep, modelling, reports and dashboards	Creation of (custom) reports and dashboards	Only use of content



# Tools and services to help

What can help you to reach your data driven ambition?

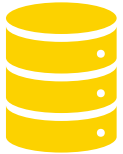
# Data catalog



# Master data management



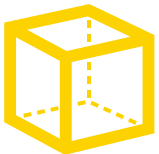
Pre-build dataflows to be leveraged by end-users



Access to dimensional data in the Common Data Model (CDM)



Easy access to datalakes and data warehouses



Pre-build data models to be leveraged by end-users

# Dataset classification

## Reuse of content







- Certified datasets
- Promoted datasets

## Freedom and end user

- Playgrounds / sandboxes (for AI insights for example)
- ...

Select a dataset to create a report

All datasets

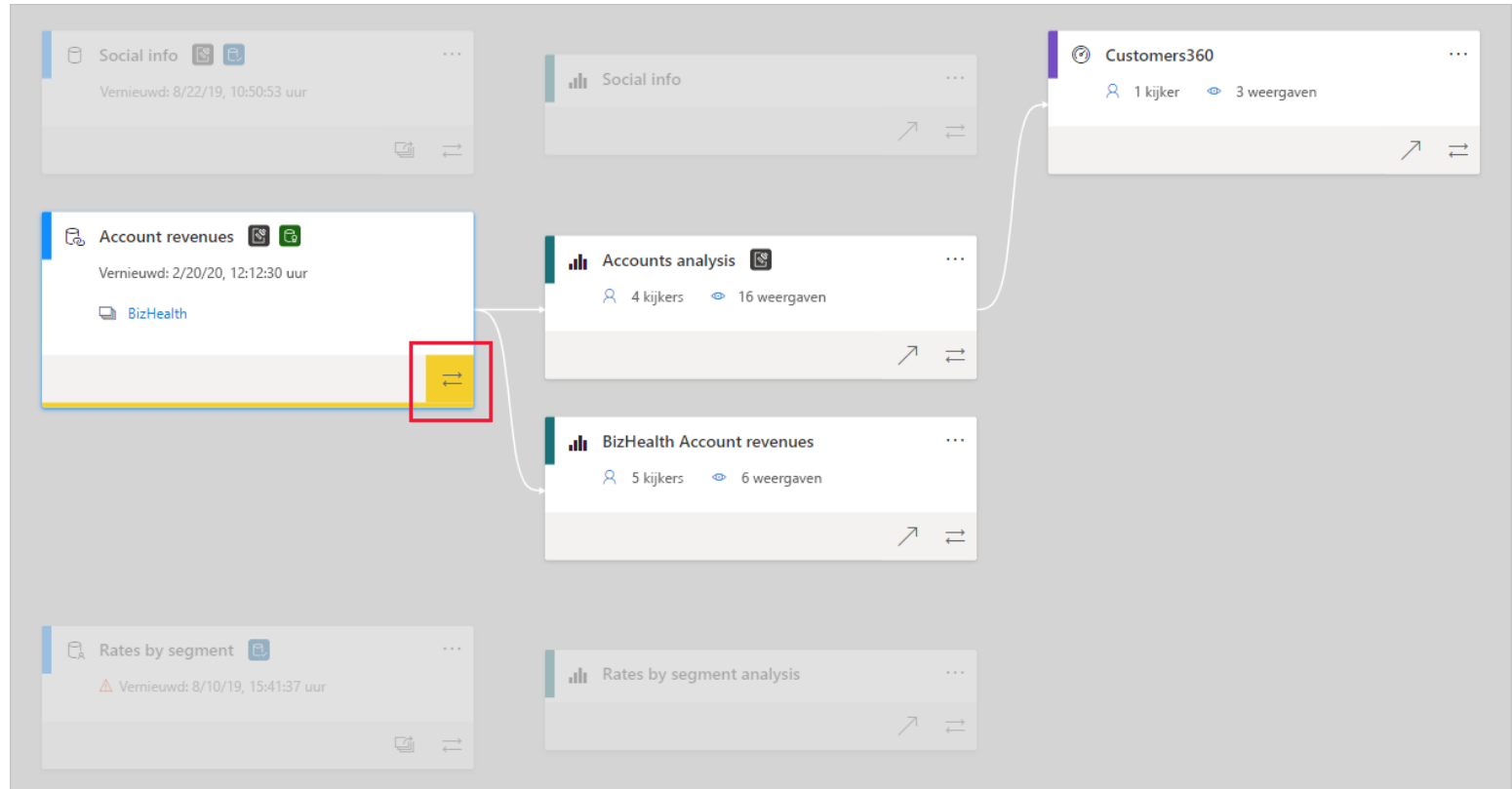
Name	ENDORSEMENT ↓	Owner	Workspace/App	Refreshed
Retail Analysis	 Certified	Steve Myer	Retail	4 days ago
Customer Profitability	 Certified	Susan Mailer	Customer	6/23/17
Ventage Global	 Promoted	Lane Barnes	Ventage	3/3/18
IT Spend Analytics	 Promoted	Ari Gold	IT	3 hours ago
Team Analytics	 Promoted	Ana Smith	Analytics	7/12/18
Opportunity Analysis	 Promoted	Lane Barnes	My Workspace	6/12/17
Retail		Lane Barnes	My Workspace	2 days ago
Procurement Analysis		Lane Barnes	My Workspace	7/22/18
Sales		Lane Barnes	My Workspace	1/24/17

OK

Cancel

# Lineage

- Where is this data used already?
- What is the source of this dataset / dataflow?
- How reliable is this data source?



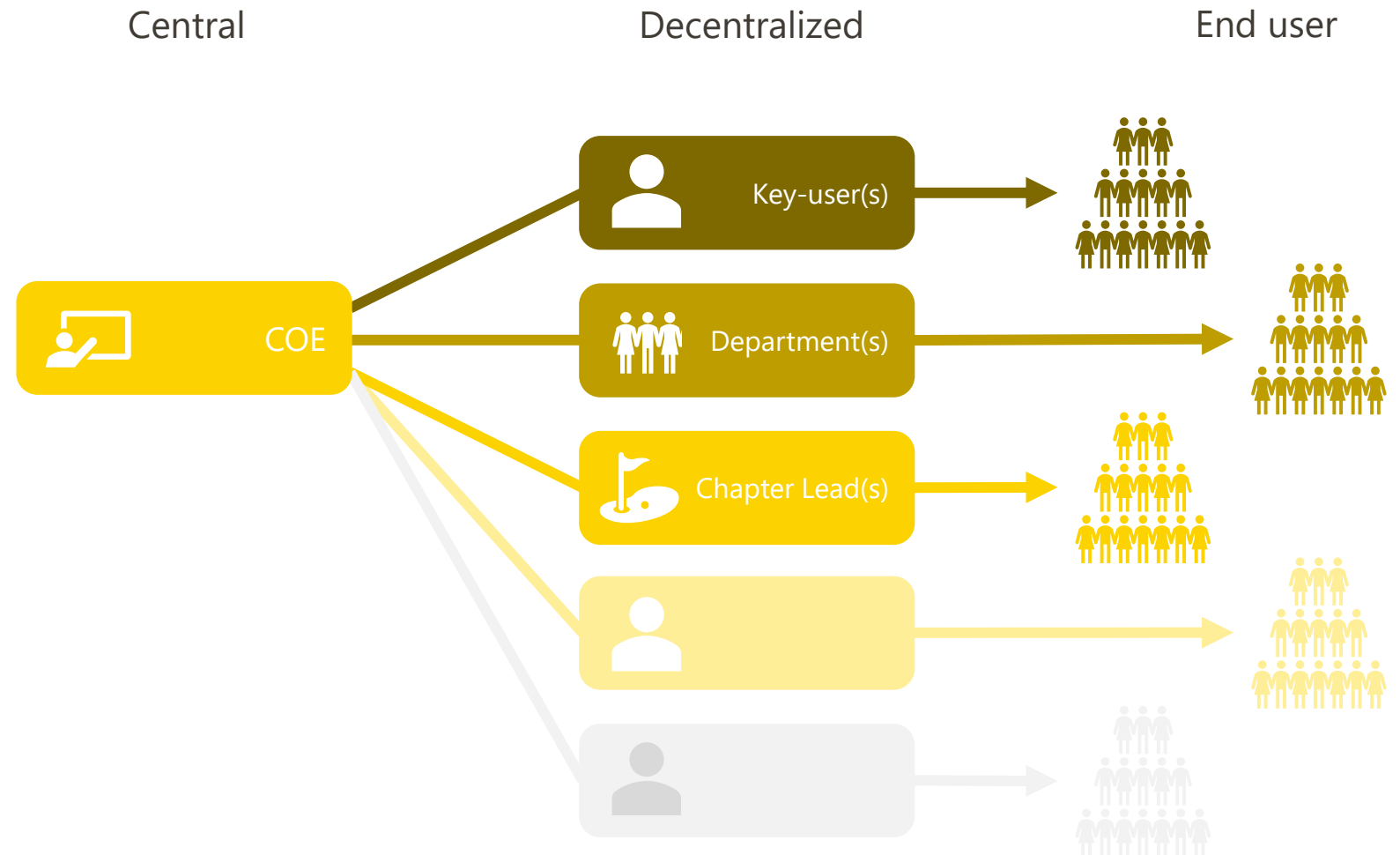
# Training



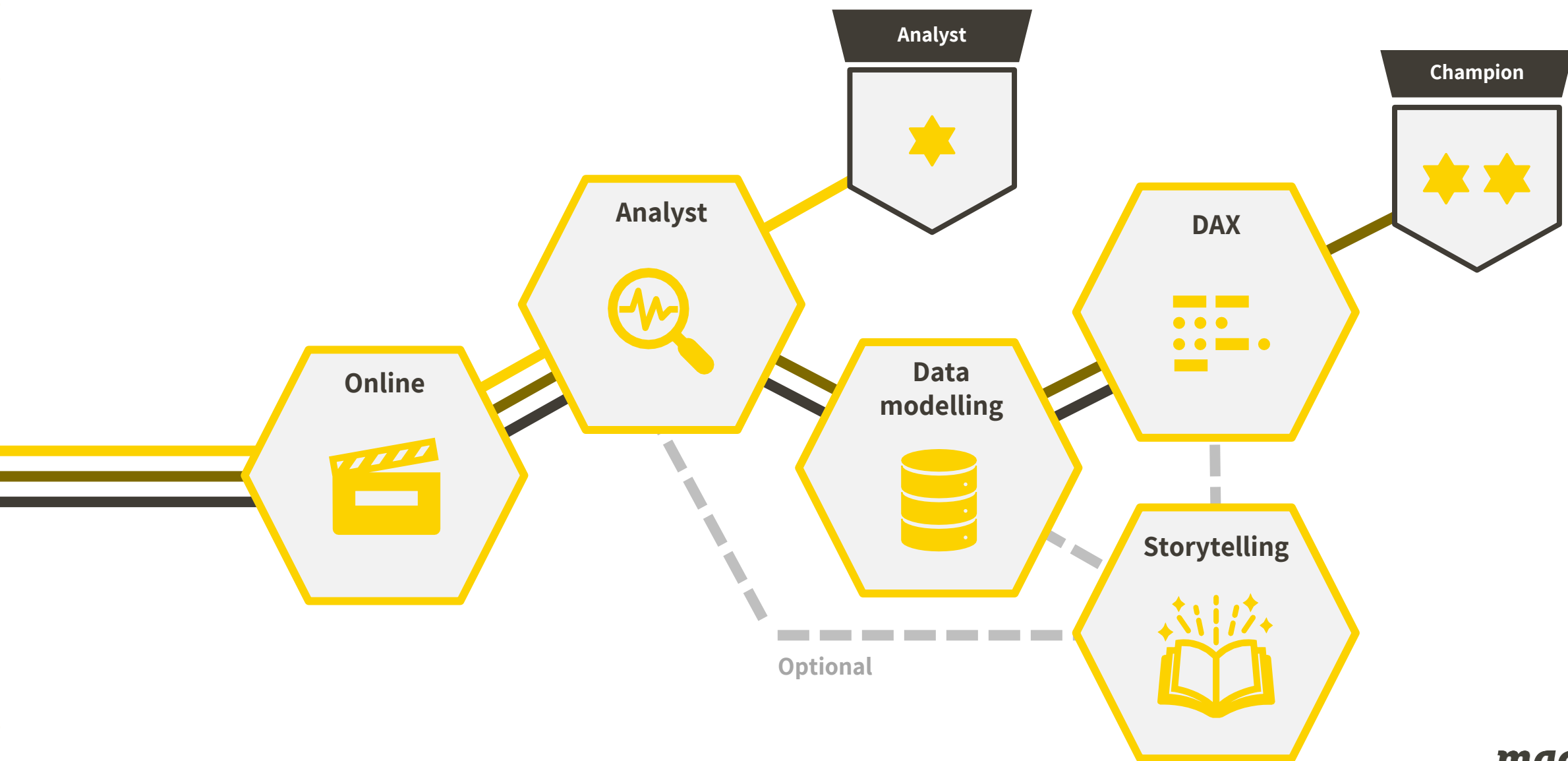
Online



Classroom




# Value their effort





# Best practices



## Power BI Cheat Sheet

English version - October 2019  
<https://bit.ly/cheatsheetpbi> (PDF download)  
<https://bit.ly/PBICheatSheetGitHub> (Contribute to the cheat sheet)

New: other languages available!

### Power Query

#### Tips & Tricks

- Give every step an explanatory name and merge steps of the same type, for better manageability. Updated  
Some people prefer to not use spaces in the name of a step, for a better M coding experience.
- Give queries and columns user-friendly names, as they will become part of your data model.
- Make sure that each column has the correct data type. Making the model smaller and faster.
- Remove columns you are not going to use in your report. Prefer 'Remove Other Columns' above the 'Remove Columns' option, for lower risk that structural changes in your data source break the query.
- Maximize the use of Query Folding for faster and more efficient queries. With Query Folding, multiple transformations are merged as one query and then sent to the source. If 'View Native Query' is not available, Query Folding has stopped before that step.
- In general, prefer 'Import' over 'DirectQuery'. Unless the amount of data is too large to import, or when there are other requirements (like real-time insights).
- Use Date.From instead of Date.Time.Date to extract a date from another field, and to make sure query folding won't break. More info on this blog post: <http://bit.ly/DateFrom>. view
- Turn off 'Enable Load' for queries/tables that you don't need in the Data Model.
- Re-use Power Query code and lower impact on your data source by using Power BI datalows.
- Turn on the Formula Bar so you get familiar with Power Query (M) code.
- Automatically beautify all column names in a query, e.g. "CustomerName" → "Customer Name", by using the Power Query function Alex Powers shared on his GitHub repo: <http://bit.ly/PQSplitByCase>. Note: he also has a function to replace underscores in all column names automatically.

#### Code examples

(don't forget that Power Query / M is case-sensitive!)

- `if T > 0 then A else B`
- `try A() otherwise 0`
- `#table({ "X", "Y" }, {{1, 2}, {3, 4}})`
- `DateTime.LocalNow()`
- `Date.From(DateTime.LocalNow())`
- `Excel.Workbook(Web.Contents("url[/filename.xlsx]"), null, true)`
- `#shared` to list all functions and get PQ documentation

#### Resources

- Power Query M Formula Reference: <http://bit.ly/PQMReference>.
- Repo by Imke Feldmann with a lot of custom Power Query functions: <https://github.com/ImkeF/M/>. view

### Data Model

#### Tips & Tricks

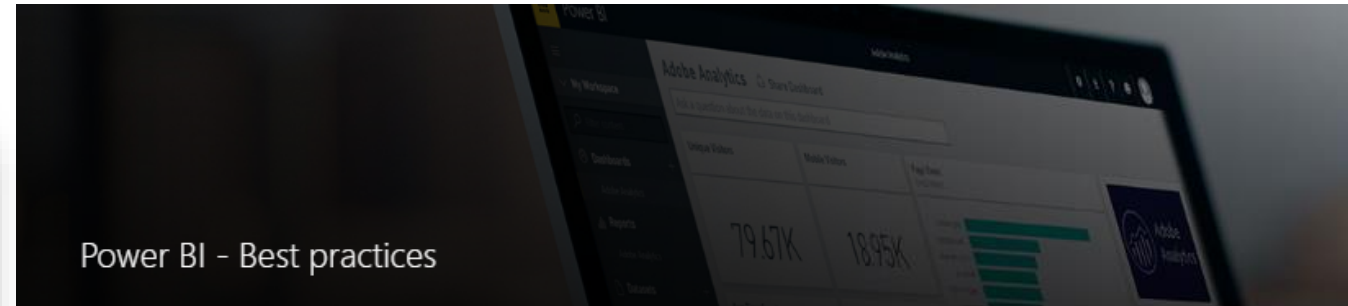
- Always use a separate Date table in your data model. Mark it as a Date Table.
- Only use DAX Calculated Columns when it's not possible to create it using Power Query. This improves clarity and manageability of your report as transformations are located where you expect them. It also improves query speed of the model and reduces refresh duration.
- Give measures a prefix (%), (#, €).
- Use abbreviations like YTD, LY, PY, PP as a suffix, to keep the base fields together in the sort order.
- Hide columns that are needed but are irrelevant for the user.
- Hide the key at the many side of a many-to-one relation (e.g. [OrderDate] in the 'Revenue' table).
- For each measure column in your data model, make a DAX Calculated Measure instead of using the 'Default Summarization', then hide the original column. This way all measures will have the same icon. And it enables you to easily change the calculation in the future (e.g. adding a filter condition). Also, it is easier to reference this measure in other DAX calculations.
- Always use the table name when you refer to a column, for example: 'Product'[Category].
- Use DIVIDE() to prevent division by 0, and to improve the speed of your divisions.
- Use IsInScope to get the right hierarchy level in DAX (read all about it in Kasper de Jonge's blog: <https://bit.ly/KasperOnBllnScope>).
- In DAX, (un)comment DAX lines by pressing Alt + Shift + A or CTRL + /, and Shift + Enter for line breaks.
- Use aggregations to keep your model small and performant, and still have all detailed data available.
- Use Tabular Editor to make changes to your Power BI file (currently unsupported by Microsoft). Also, make sure to check-out its best-practices analyzer.
- Avoid bi-directional cross filtering and make use of measure filters <http://bit.ly/MeasureFilters>.
- For very large models, group measures or fields in display folders for better usability.
- Use DAX Studio to capture all DAX queries executed on your Premium Capacity. view
- Keep your PBI desktop file fast and small by using TOP N (<http://bit.ly/ImproveReportBuilding>) and switch underlying data source in PBI service after publishing (<http://bit.ly/ParameterizeDatasource>). view

#### Resources

- Increase the readability of your DAX calculations: <https://www.daxformatter.com>.
- Use DAX Studio to analyze and tune your calculations: <http://daxstudio.org>.
- Find all about DAX expressions: <https://dax.guide>.
- Use Tabular Editor to easily build and manage your models: <https://tabulareditor.github.io/>.

### I'VE GOT THE POWER BI

macaw



## Power BI - Best practices

Take advantage of all our learnings and experiences. On this page you can find our Power BI best practices. Here we will provide you with examples, templates and much more!

Do you have anything useful to add? Let us know by sharing your idea with us and/or post it on Facebook Workplace.

### General

- Edit your report in Power BI Desktop and not in the Service. Making sure there is one golden version, which is your PBIX file but [Power BI desktop also offers more functionality](#).
- The best way to share your Power BI solution with others is [using Apps](#). Prefer to use Security Groups over named users. Also be aware of who you are sharing content with. Do not share content with the entire organization, but leverage an existing security group or setup a new one according to your report audience.
- It works well to have a shared [OneDrive location per Power BI solution](#), either provisioned via Microsoft Teams or SharePoint Online. Make sure all and only the accounts involved with the Power BI solution have access to this location. If possible, use the local OneDrive For Business client to sync the OneDrive location of the solution with your computer, and save the .pbix file(s) directly in the local synced directory. This way, every save in Power BI Desktop will be added to the file history and automatically saved in the cloud.
- Be aware that users can also access your data model through the Q&A, Quick Insights and Analyze in Excel functions. That's great but think about data protection using [\(dynamic\) row level security](#).

### Best Practices

+ New ▼ ... All Documents ▼

- template.pbix
- Color Theme.json

### Power Query

- Turn off 'Enable Load' for queries/tables that you don't need in the Data Model for faster refreshes.
- In general, prefer 'Import' over 'DirectQuery'. Unless the amount of data is too large to import, or

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# Templates



Template.pbix

Microsoft Power BI Community > Galleries > Themes Gallery

This board Search all content

Featured Top Kudos Recently Posted All Themes

Submit a report theme Options

**Nowalls Analytics**

belisqui 83

**Spring Day (Exposé Data)**

aexley 67

**University of Melbourne**

mike\_honey 63

**Tumble Road Multicolor Theme**

trebgate 58

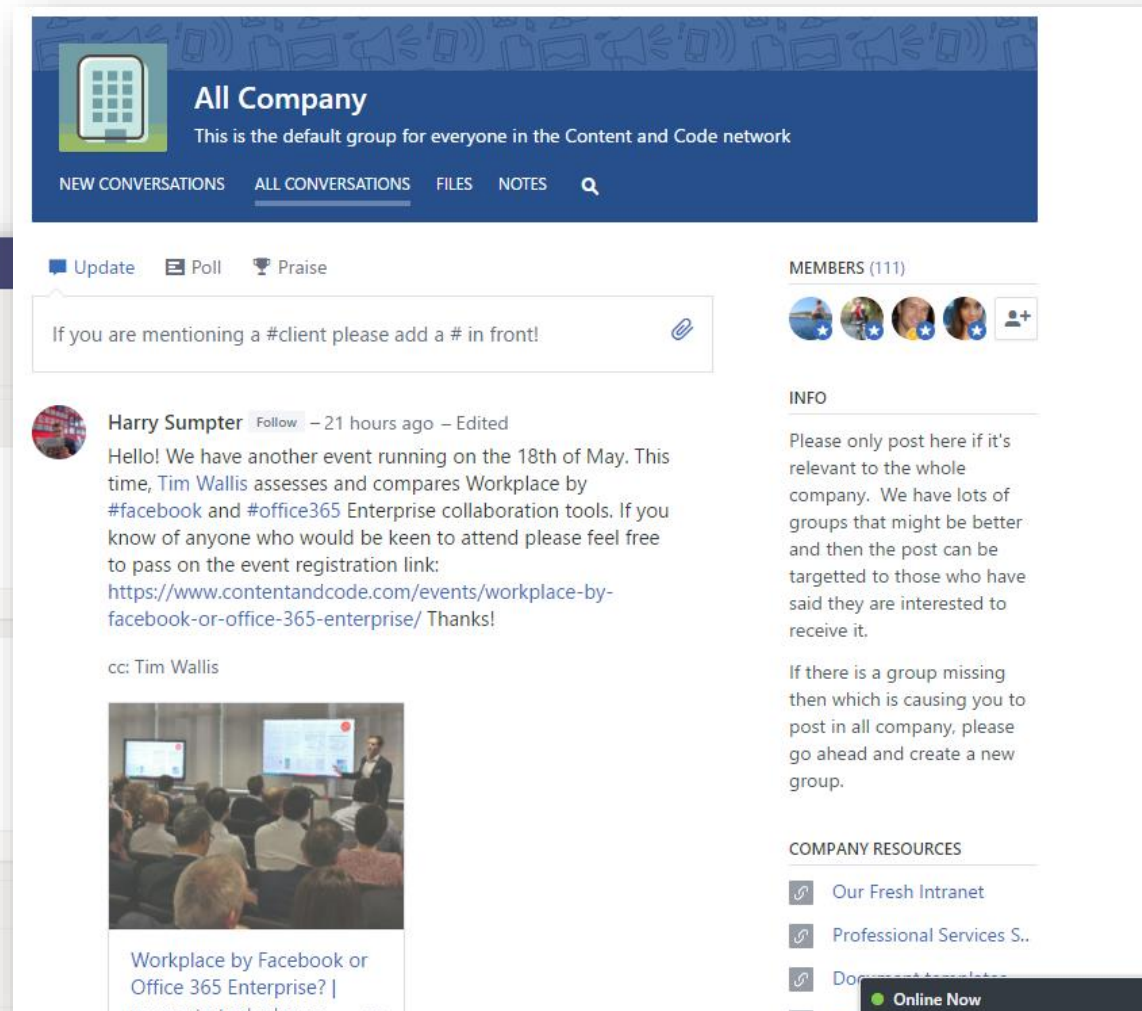
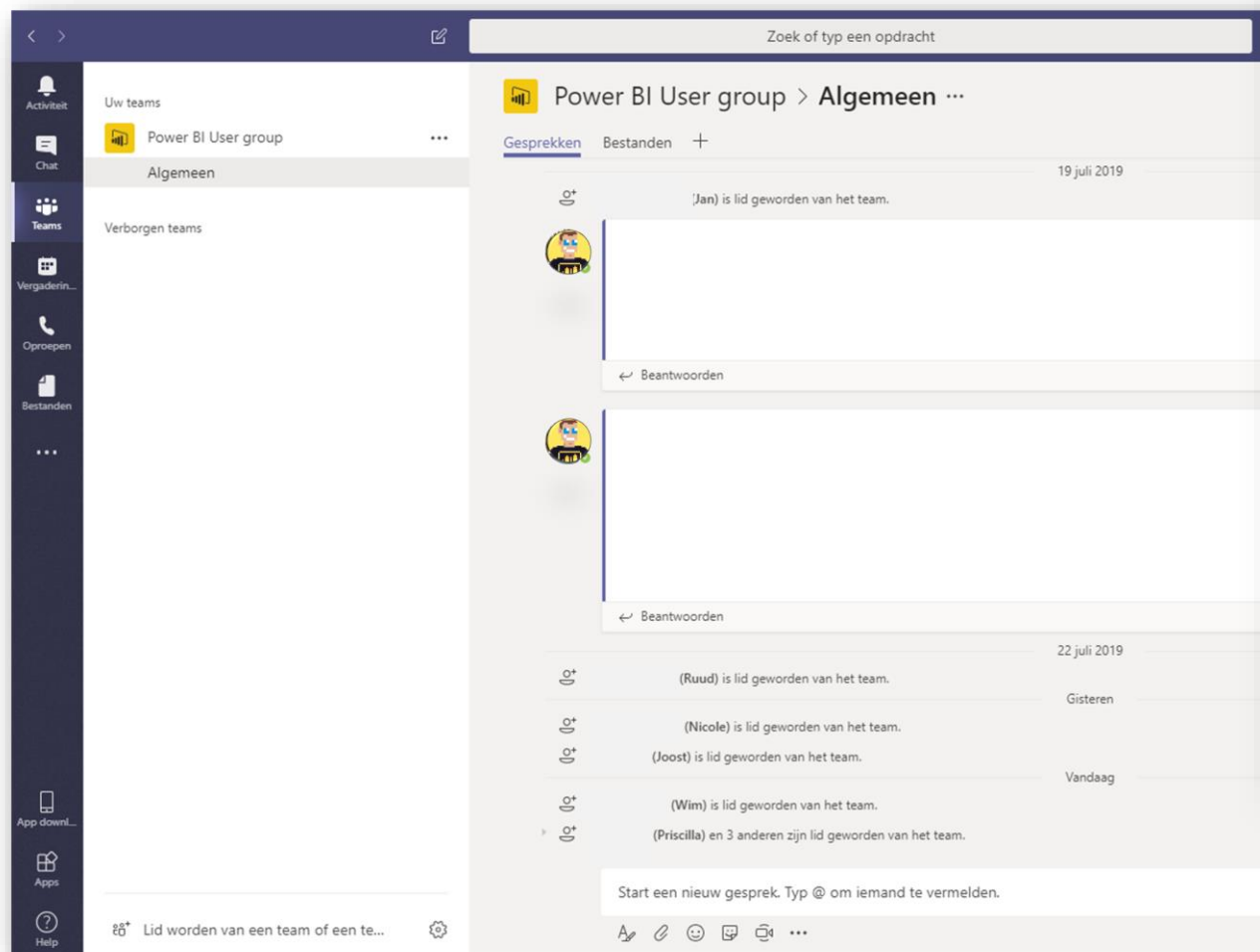
**Acterys Planning**

**Flat Colors Theme**

**Gartner Bakeoff Opioid Crisis Theme**

**Dynamics 365 Business Central inspired theme**

# Community building



# Q&A hours



Fill the knowledge gap



COE - Expert panels

# Recap

- Data in the **heart** of the organization
- Architecture is **fit for purpose**
- **Every employee** should be able to work with data
- COE as **central driver** behind the Data Culture
- COE is **facilitating** the business
- Data + Analytics + People = **Competitive advantage**

LET'S  
RECAP...

# Power BI Days Netherlands



Thursday July 9<sup>th</sup>  
7.30 PM – 9.00 PM (CEST)

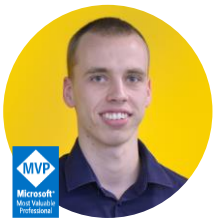
- Prathyusha Kamasani (Prathy)
- Kathrin Borchert

**Register now!**  
**PowerBIDays.com**



# Download for free!

<https://bit.ly/cheatsheetpbi>



**Marc Lelijveld**

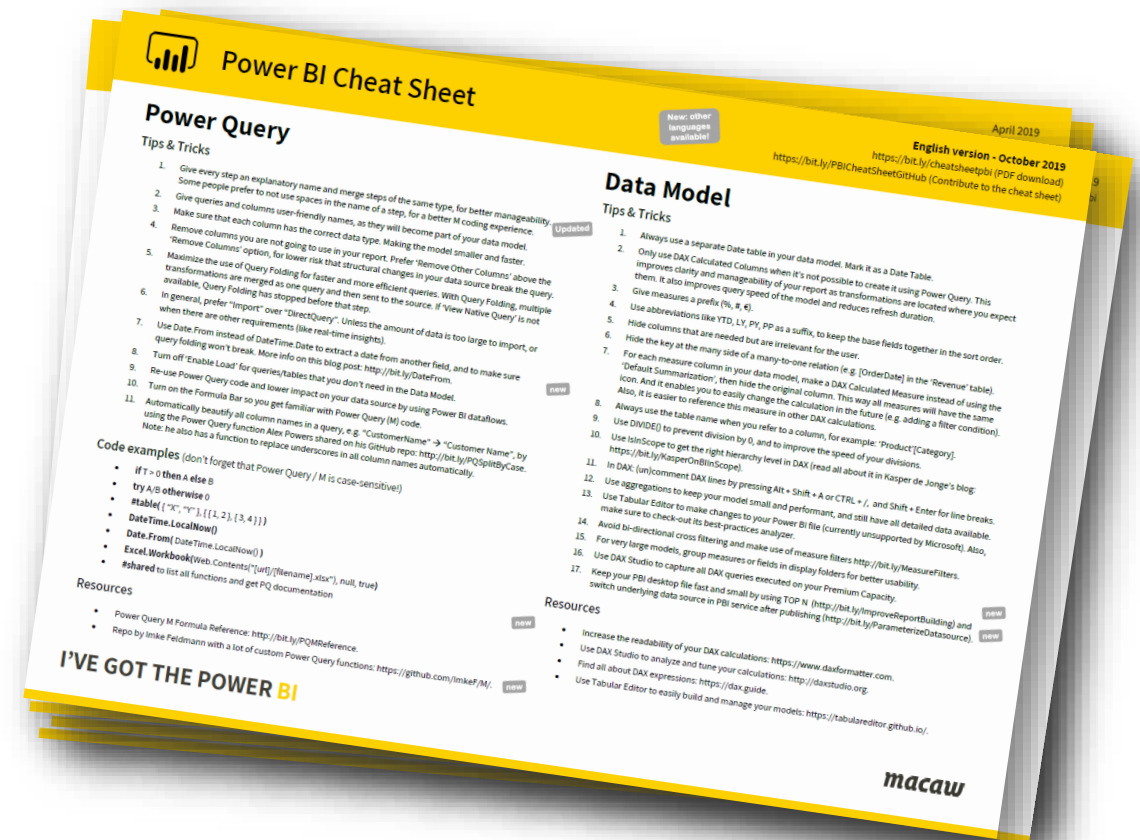
Data & AI consultant  
Macaw Netherlands

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🐦 [@MarcLelijveld](https://twitter.com/MarcLelijveld)

in [linkedin.com/in/MarcLelijveld](https://linkedin.com/in/MarcLelijveld)

🌐 [Data-Marc.com](https://Data-Marc.com)



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