Driving a data culture

in your organization

Data driven ambition

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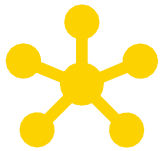
In this session...

Challenges we face today

What exactly is a data culture



Center of Excellence as central driver

Tools and service offerings to help

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Marc Lelijveld

Data & AI consultant
Macaw Netherlands

Microsoft® MVP Most Valuable Professional

Marc.Lelijveld@outlook.com
@MarcLelijveld
linkedin.com/in/MarcLelijveld
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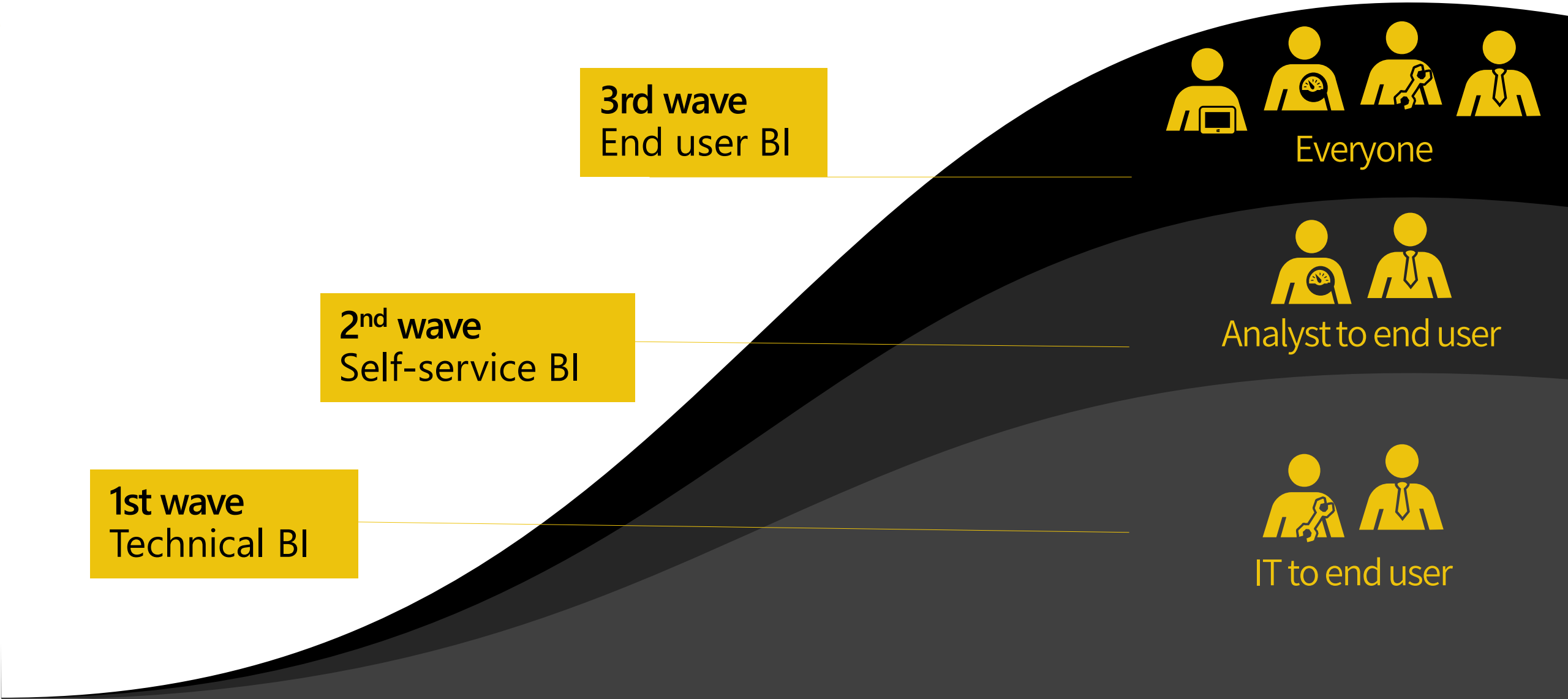
Challenges we face today

What is blocking us today in our data driven ambitions?

Power BI for everyone



Everyone engages with ~~software~~ Power BI

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Implementing Power BI

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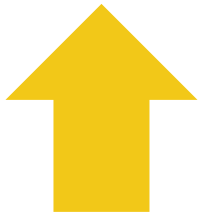
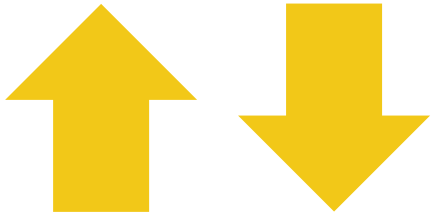
Delivery approaches

Business-Led Self-Service BI



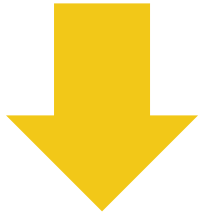
Bottom-Up

IT- Managed Self-Service BI



Blended

Corporate BI



Top-Down

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Exponential growth of content

Business-Led Self-Service BI

Bottom-Up

Dave
Finance

Anne
Human Resources

Leila
Marketing

Reza
Engineer

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Expo cont

So what…?

Everyone can do their own analysis

But we're lacking in terms of…

- Control
- Data sensitivity
- Correctness
- Solution health

… and more

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What value do they add?

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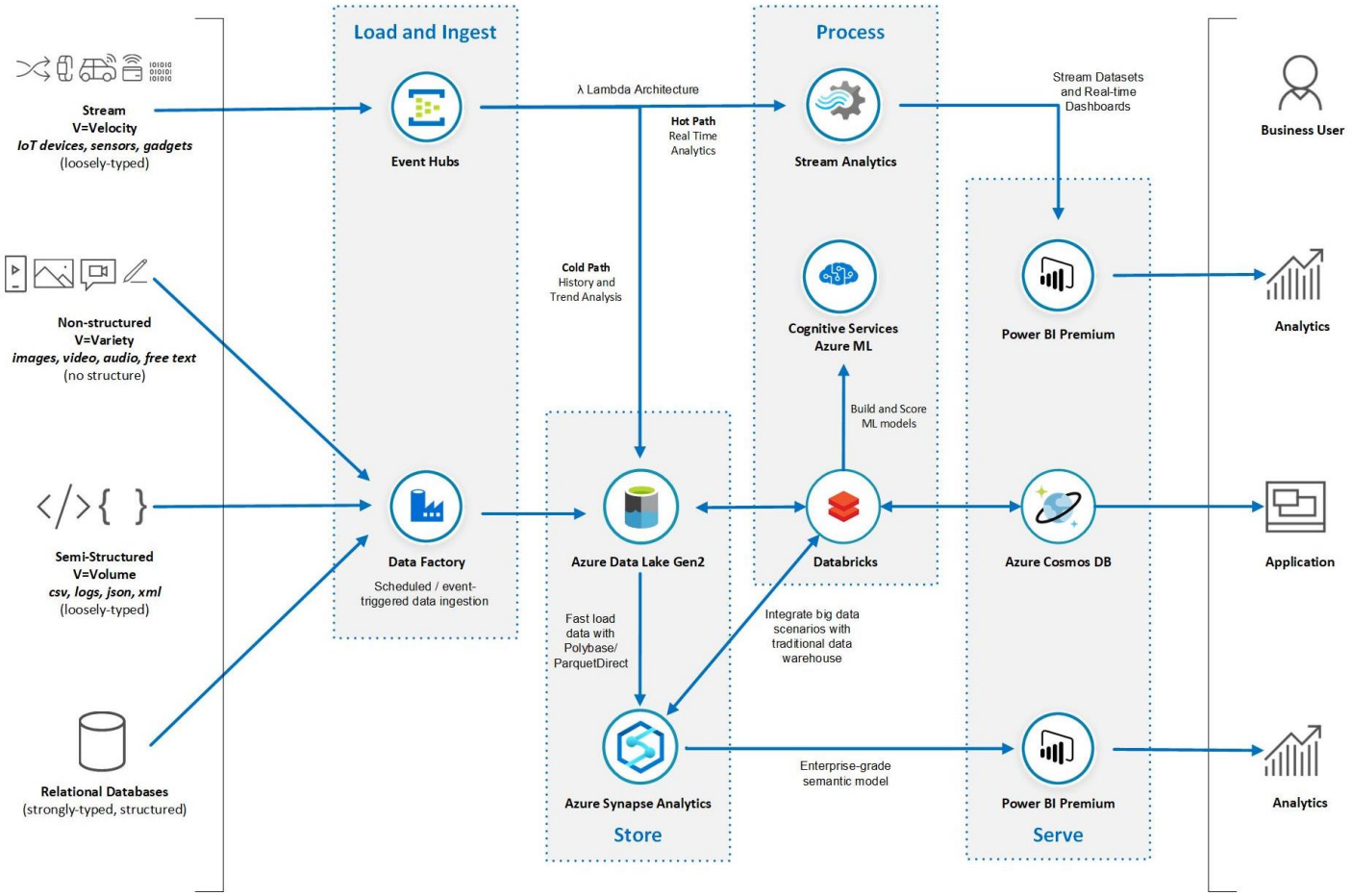
Architecture leading vs goal leading



Perfect architecture…

or

Fit for purpose?

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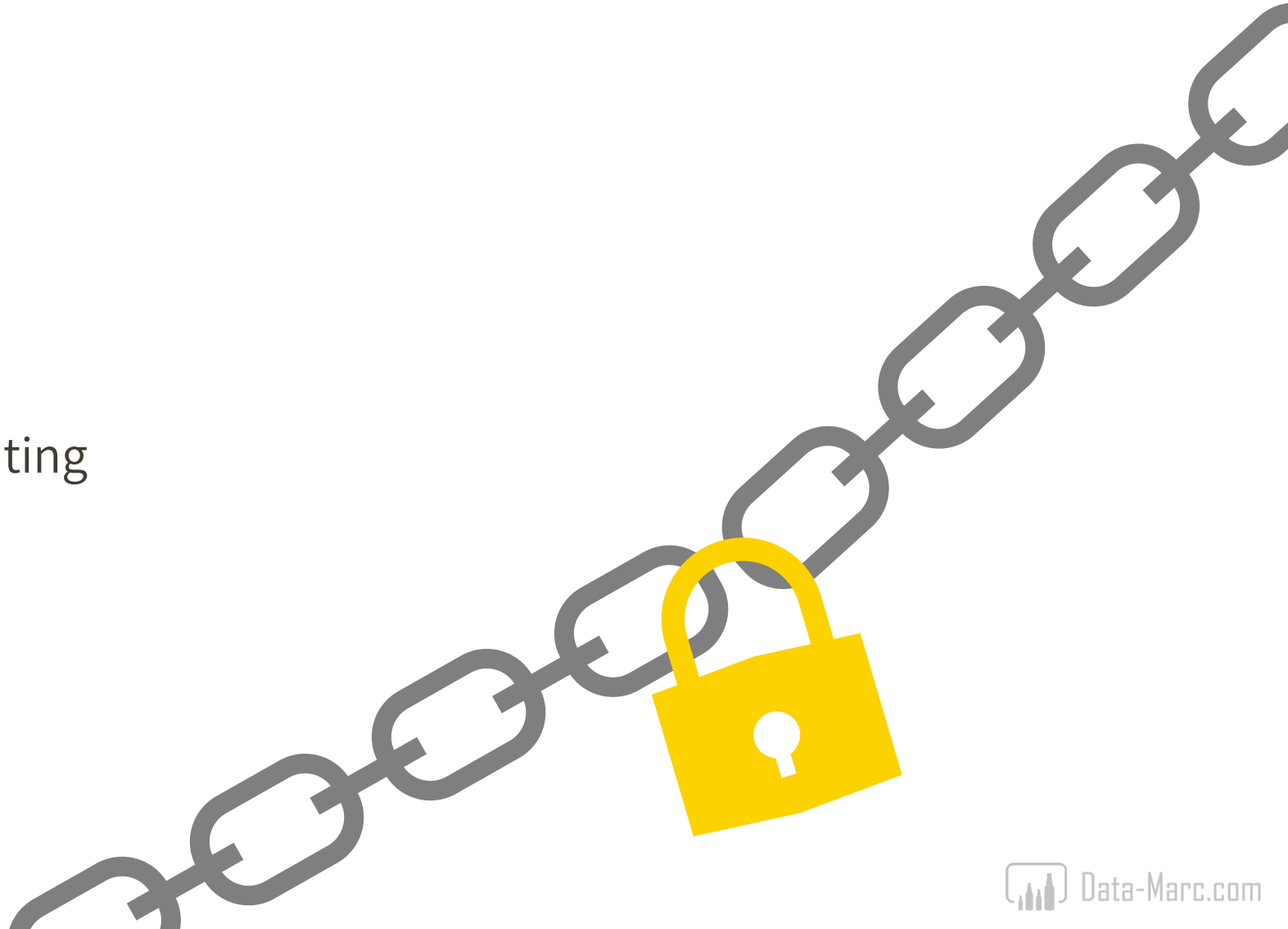
COE is controlling and not facilitating

Monitoring

instead of

Informing and facilitating



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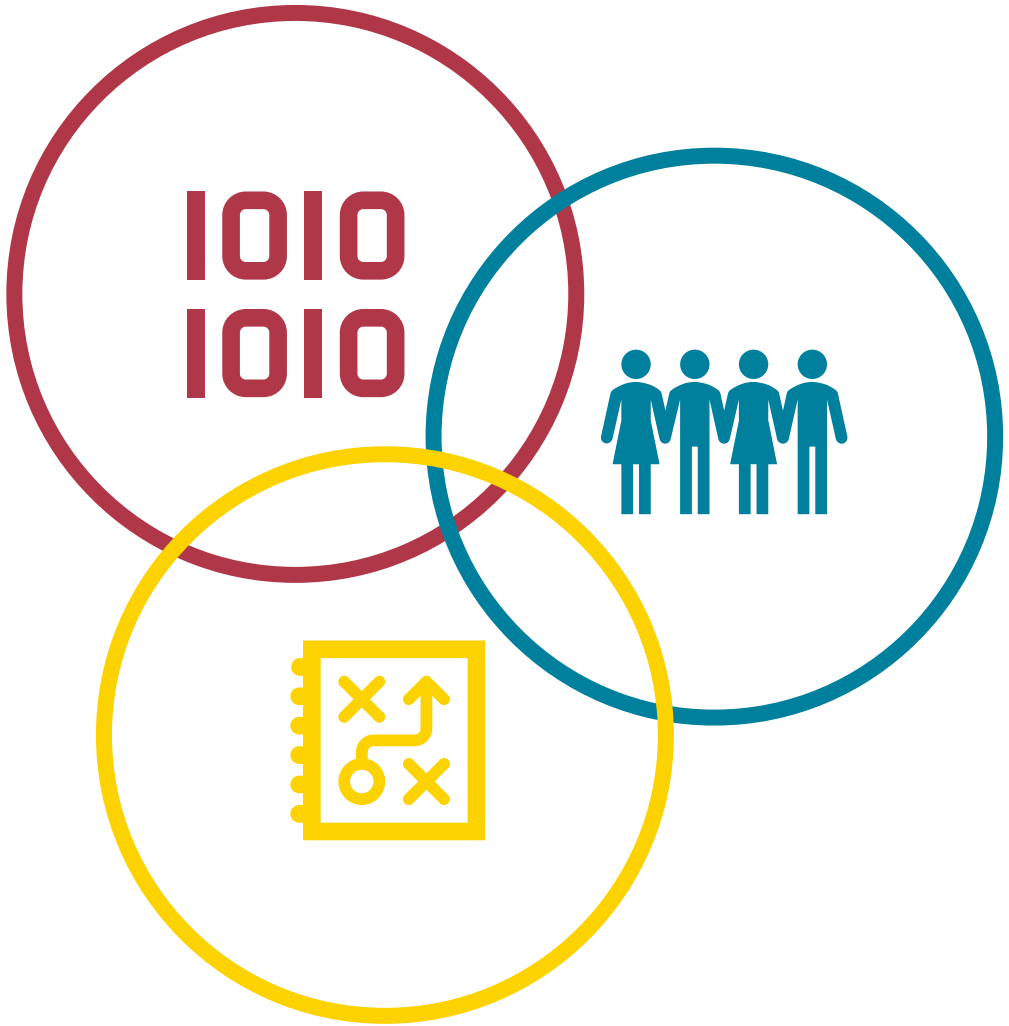
What exactly is a data culture

Combination of three components

- Data
- Analytics
- People



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[data + analytics + people]

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[data + analytics + people]

- Cloud
- On-prem
- Hybrid

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[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.

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[data + analytics + people]

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= competitive advantage

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Center of Excellence

as central driver behind the data culture

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What’s in the name?

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

WHATEVER

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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

Source: https://www.slideshare.net/JonathanWoodward1/microsoft-data-culture-series-keynote-27th-november-2014

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In the heart of your organization

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Roles

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

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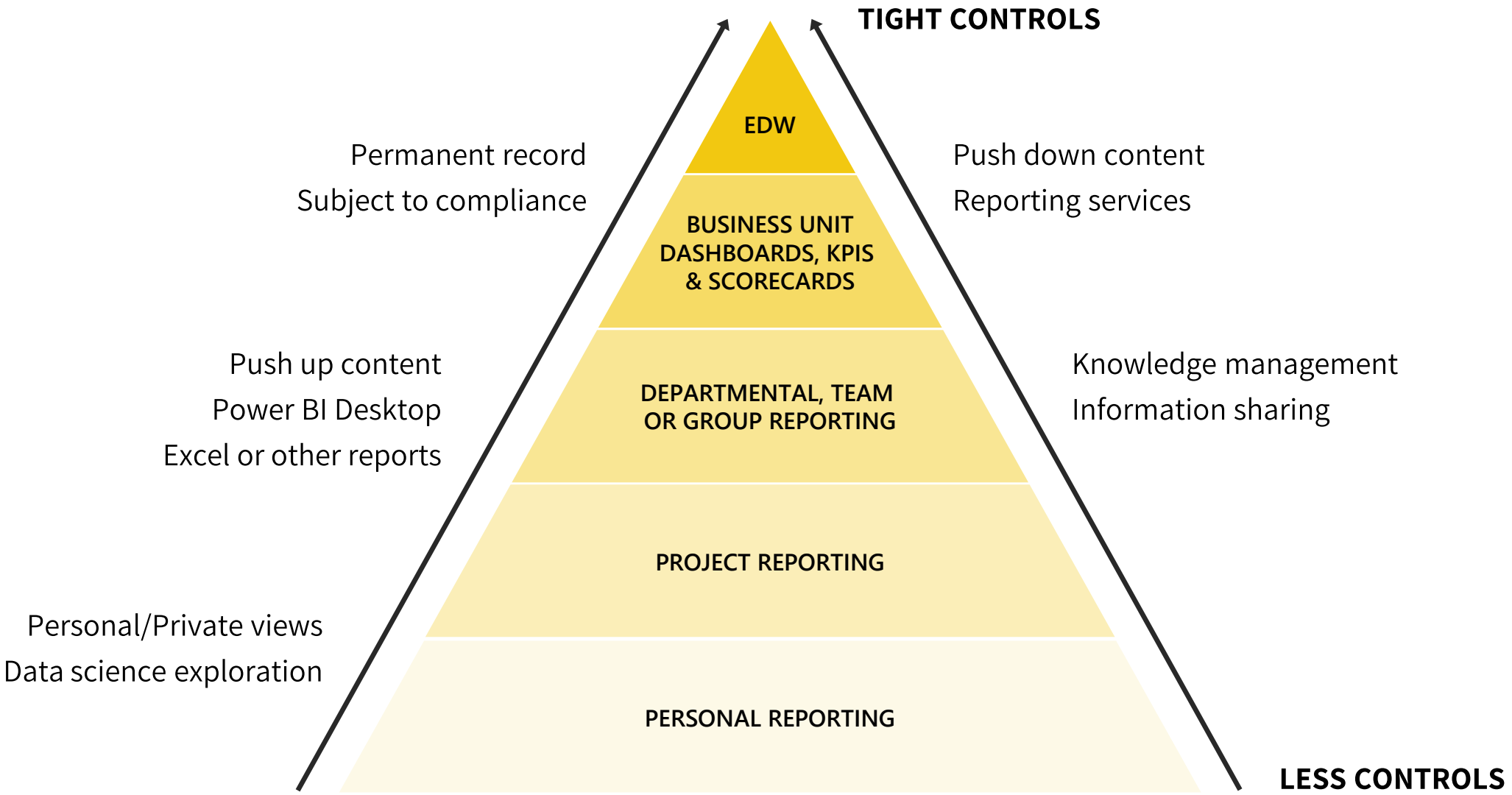
Governance Model



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Exponential growth of content

Get order in the chaos

Dave
Finance

Anne
Human Resources

Leila
Marketing

Reza
Engineer

Separate people and content!

Dave
Finance

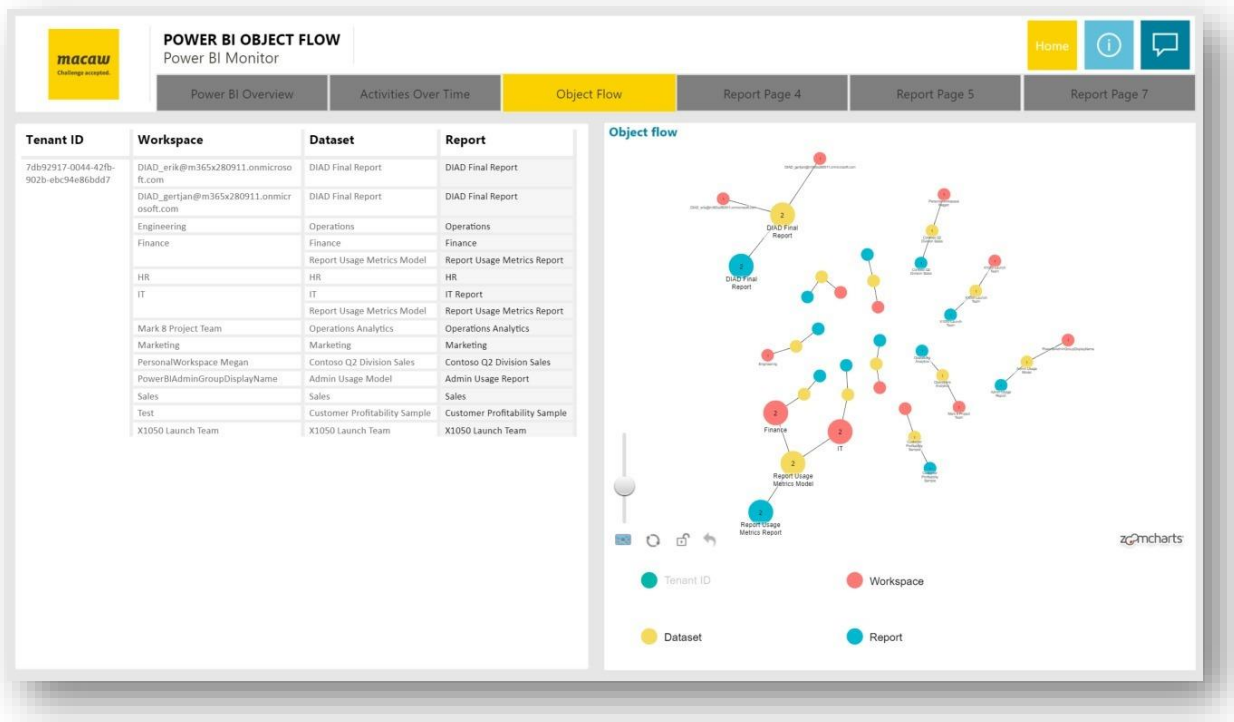
Anne
Human Resources

Leila
Marketing

Reza
Engineer

Monitor the environment

- Content availability
- Usage
- Performance
- Lineage
- Environmental health



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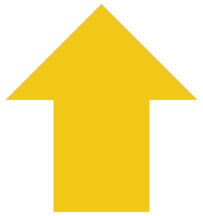
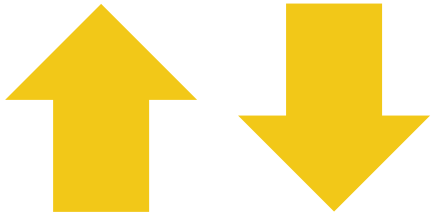
Delivery Approaches

Business-Led Self-Service BI



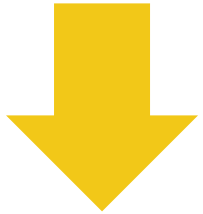
Bottom-Up

IT- Managed Self-Service BI



Blended

Corporate BI



Top-Down

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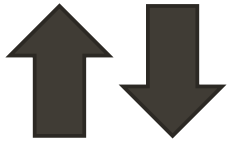
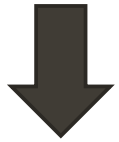
Delivery Approaches

	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	Business supports all elements of the solution	IT for data model, Business for reports	Fully supported by IT
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

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Delivery Approaches

	Business-Led Self-Service BI	IT-Managed Self-Service BI	Corporate BI
Approach	Bottom-Up	Blended	Top-Down
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100%
Business Driven

50/50

100%
IT-Driven

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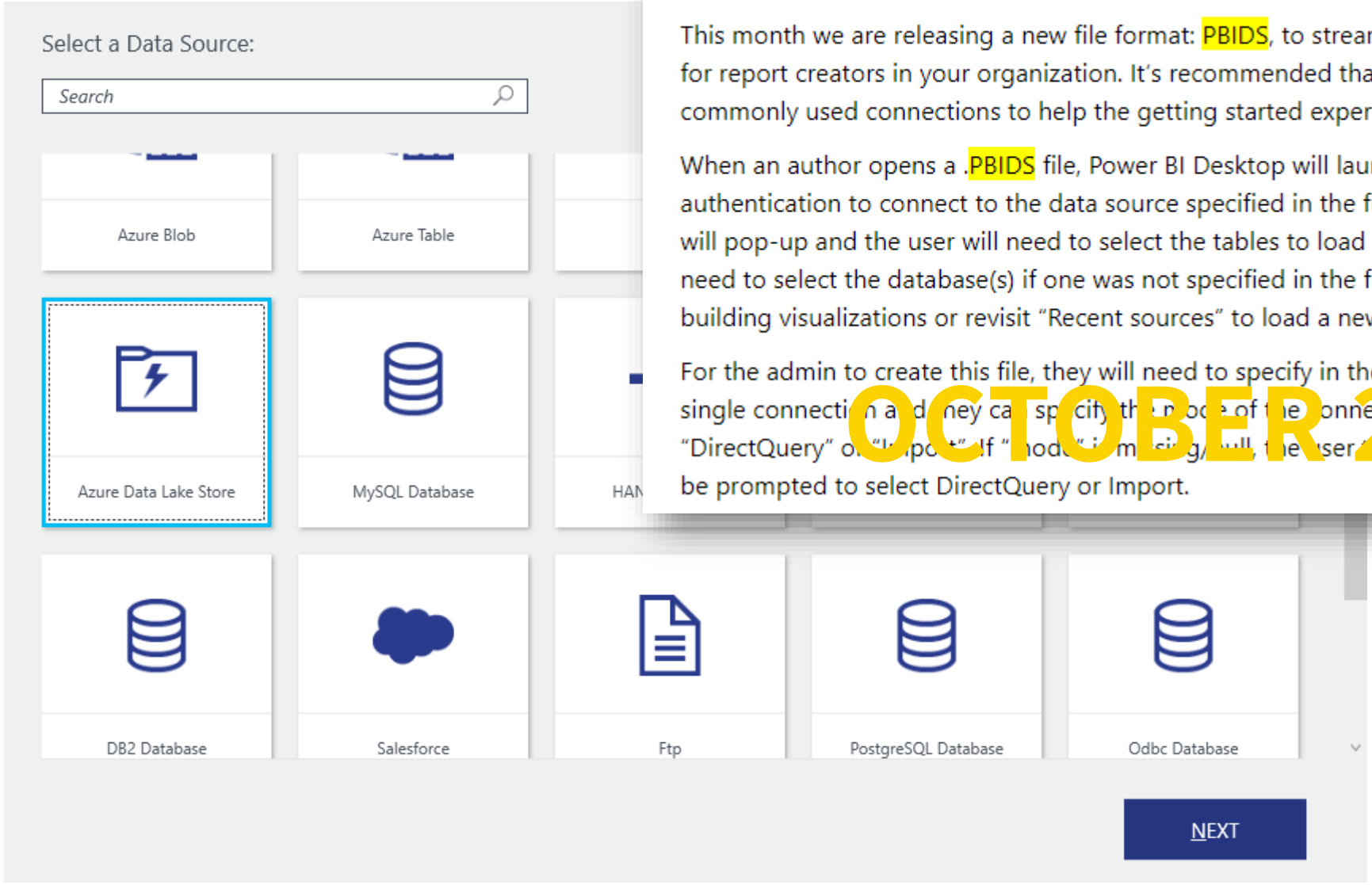
Tools and services to help

What can help you to reach your data driven ambition?

Data catalog



New file format: .pbids

This month we are releasing a new file format: PBIDS, to streamline the "Get Data" experience for report creators in your organization. It's recommended that admins create these files for commonly used connections to help the getting started experience for new report authors.

When an author opens a .PBIDS file, Power BI Desktop will launch and prompt for authentication to connect to the data source specified in the file. Then the navigation dialog will pop-up and the user will need to select the tables to load into the model. They may also need to select the database(s) if one was not specified in the file. From there the user can start building visualizations or revisit "Recent sources" to load a new set of tables into the model.

For the admin to create this file, they will need to specify in the file the required inputs for a single connection and they can specify the mode of the connection. The mode can be either "DirectQuery" or "Import". If "mode" is missing/null, the user that opens the file in Desktop will be prompted to select DirectQuery or Import.

OCTOBER 2019

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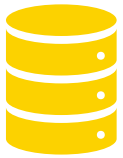
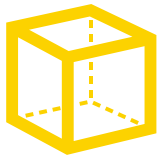
Master data management

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

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Classification

Reuse of content

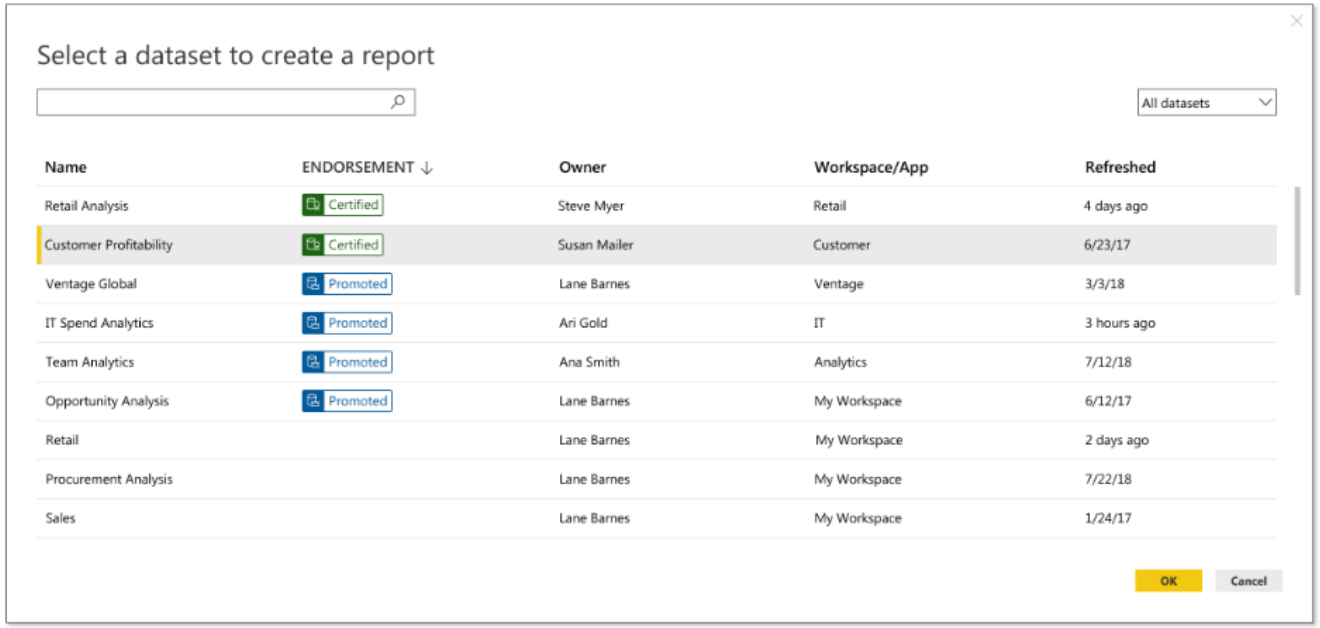
- Certified & promoted dataflows
- Certified & promoted datasets

Classified content

- Certified & promoted reports
- Featured content

Freedom and end user

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



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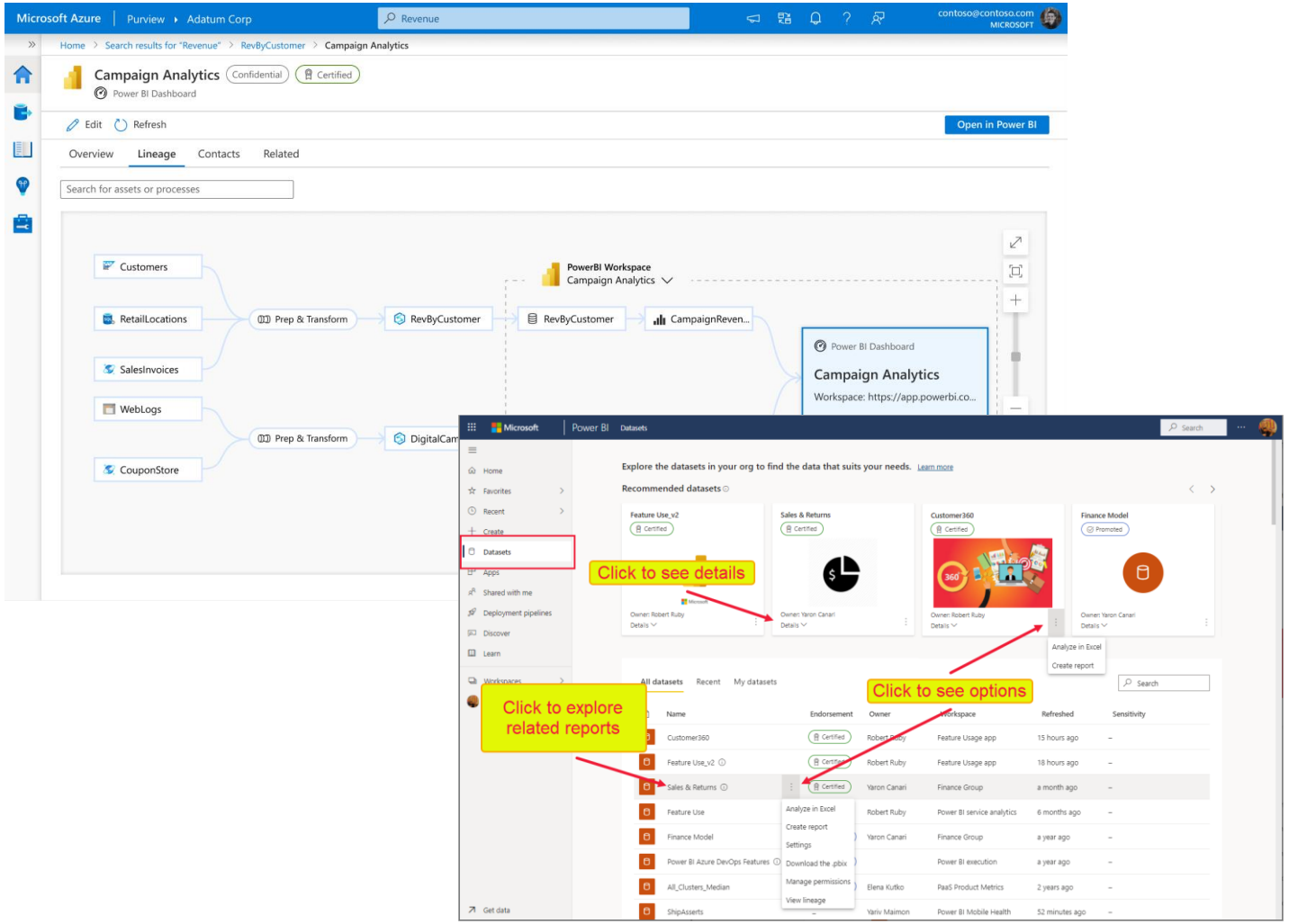
Discoverability

Power BI and Microsoft

- Azure Purview
- Power BI Service – Datasets hub
- Integration in Teams

3rd party options

- Collibra
- Enquero PowerMe
- …



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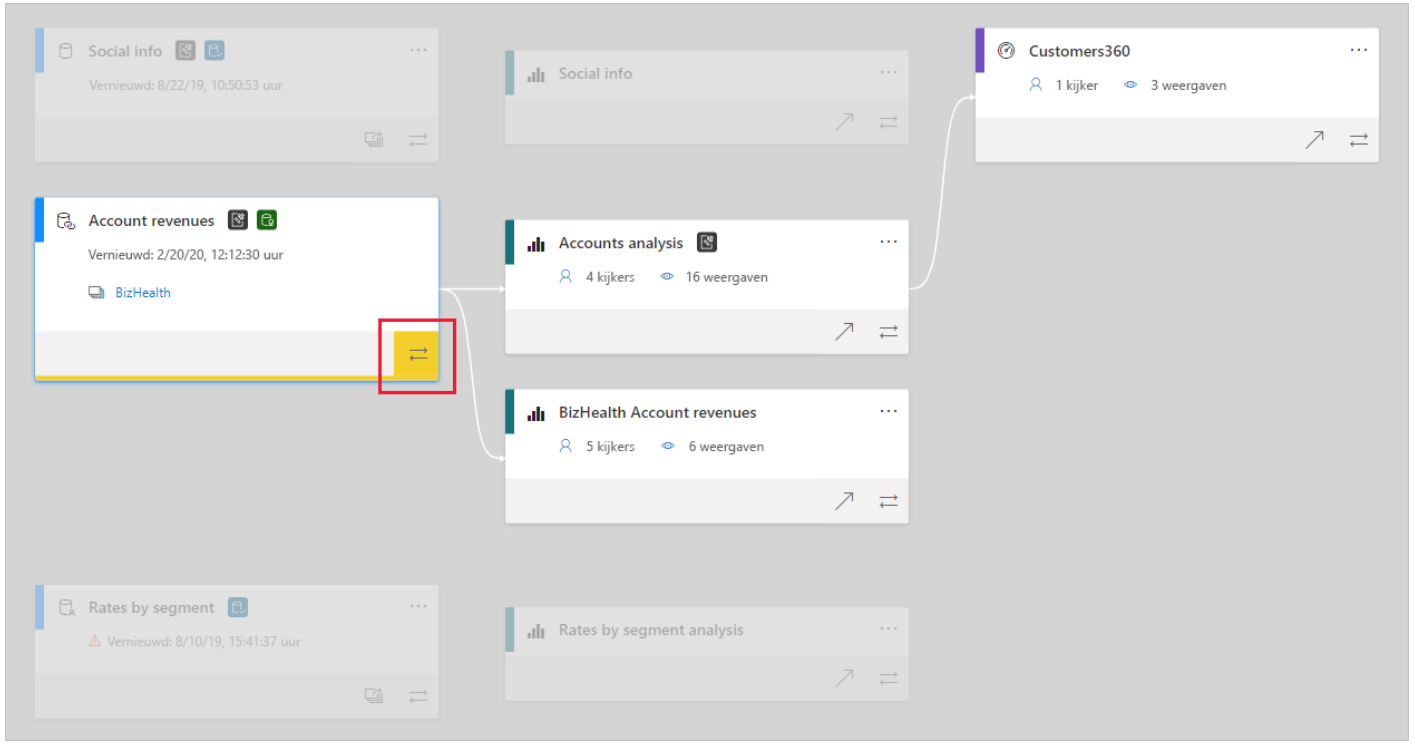
Demo time!

Because life is boring without risks

Lineage

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



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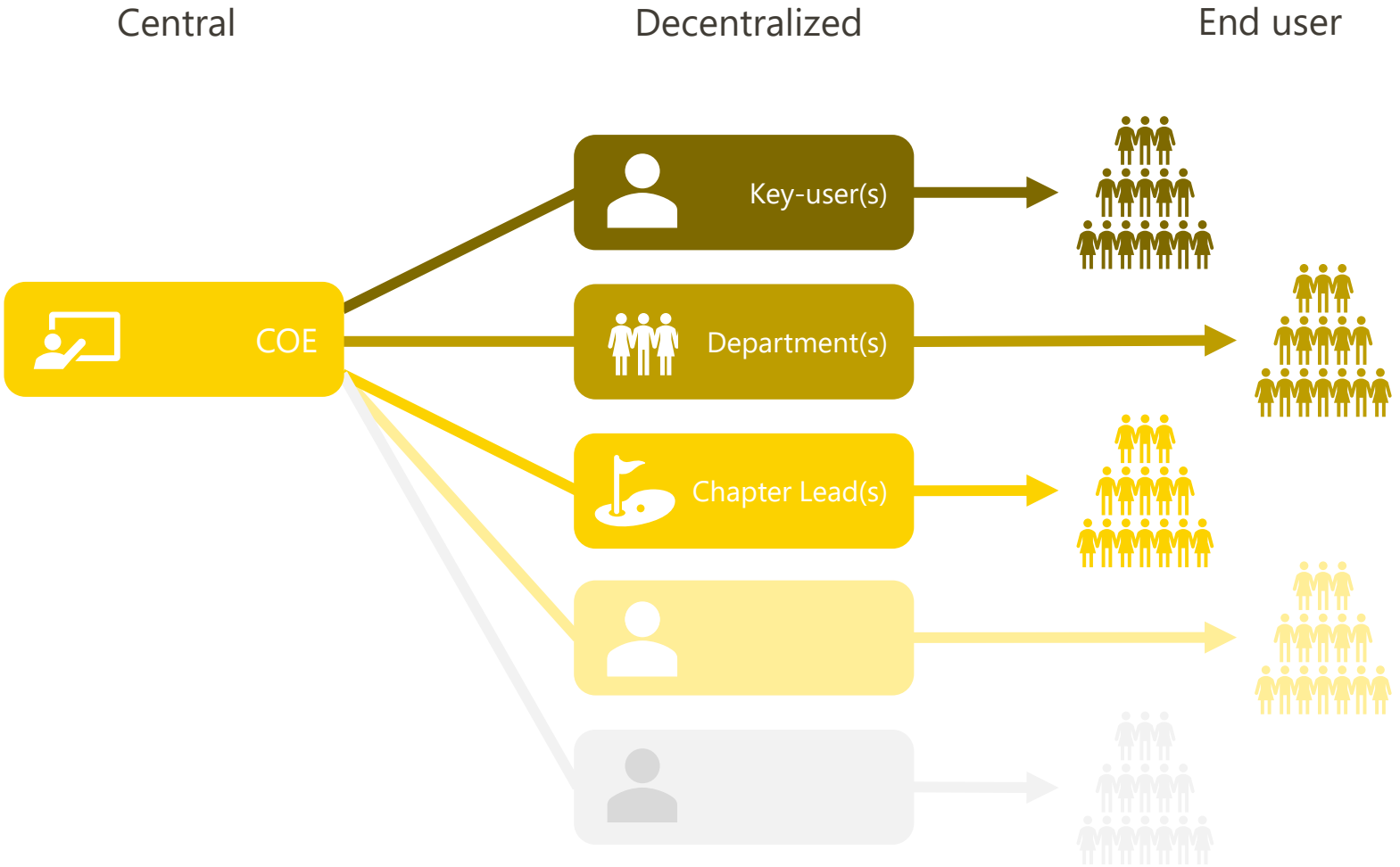
Training

Online

Classroom



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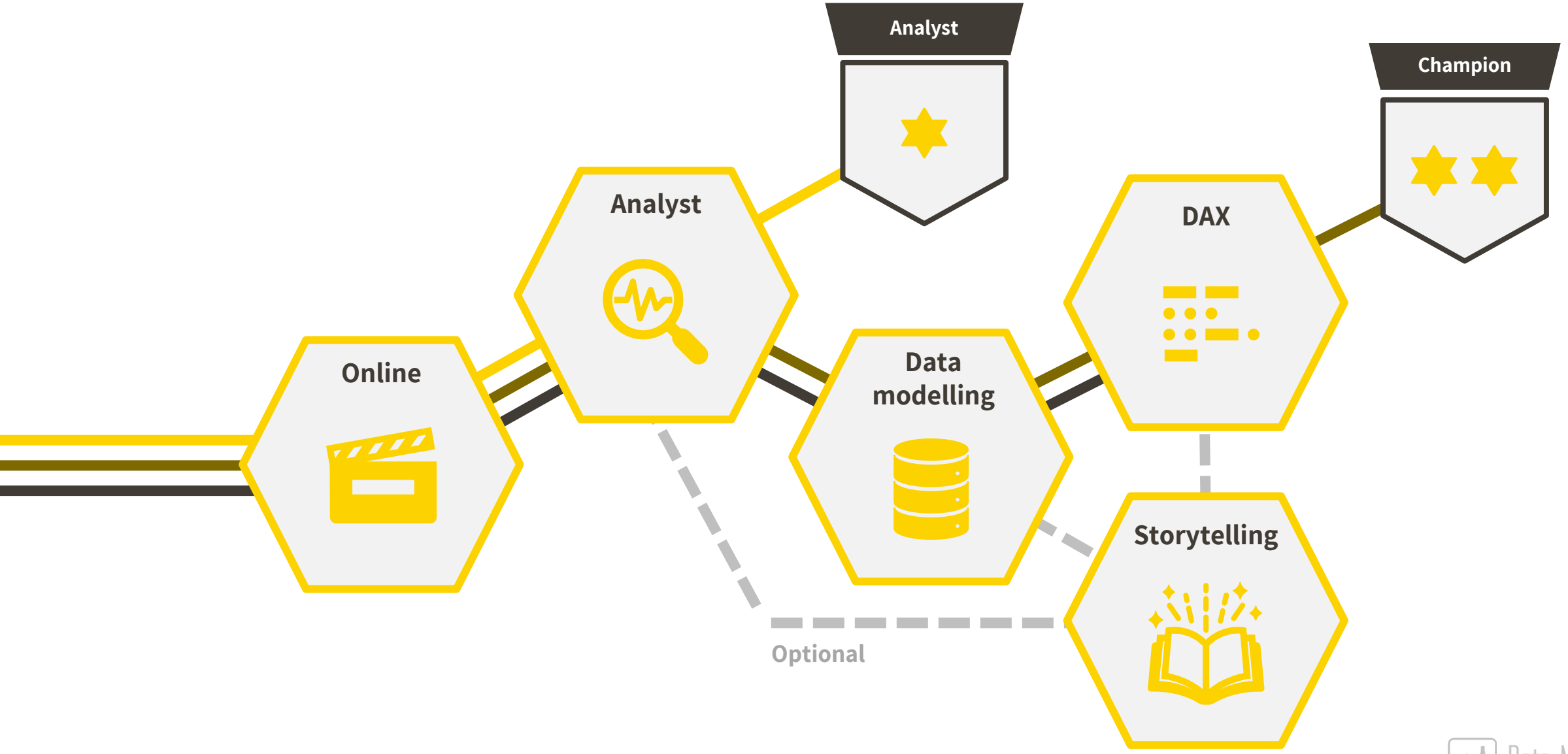
Value their effort



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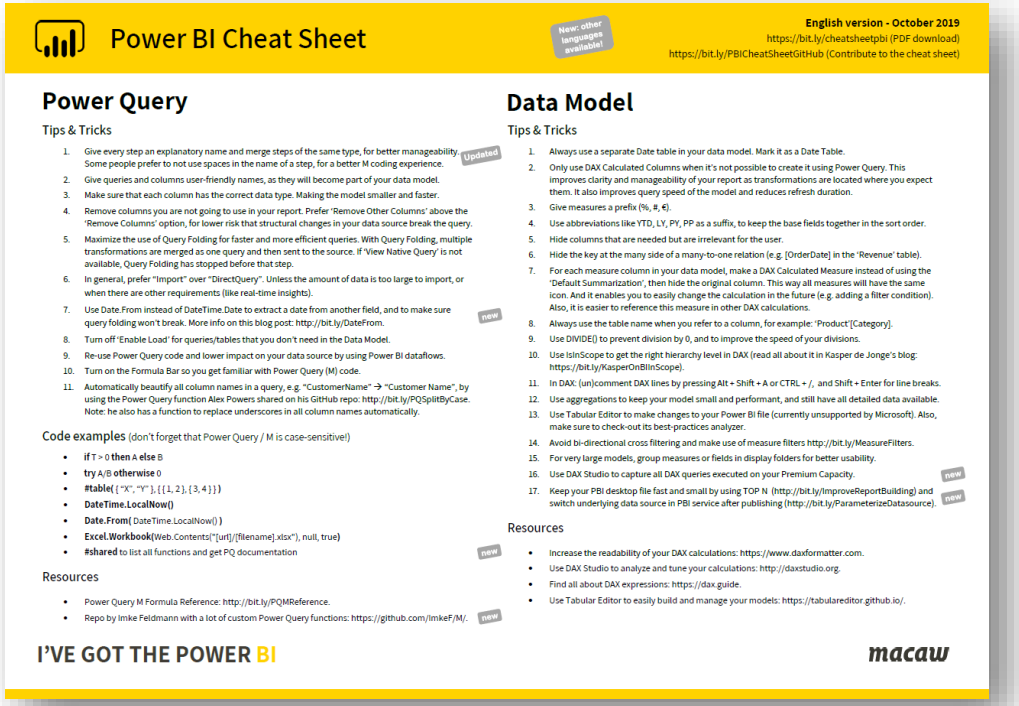
Best practices



Power BI Cheat Sheet

New: other languages available!

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

Power Query

Tips & Tricks

1. Give every step an explanatory name and merge steps of the same type, for better manageability. Some people prefer to not use spaces in the name of a step, for a better M coding experience. Updated
2. Give queries and columns user-friendly names, as they will become part of your data model.
3. Make sure that each column has the correct data type. Making the model smaller and faster.
4. 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.
5. 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.
6. 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).
7. Use Date.From instead of DateTime.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. new
8. Turn off 'Enable Load' for queries/tables that you don't need in the Data Model.
9. Re-use Power Query code and lower impact on your data source by using Power BI dataflows.
10. Turn on the Formula Bar so you get familiar with Power Query (M) code.
11. 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/B **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 new

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/. new

Data Model

Tips & Tricks

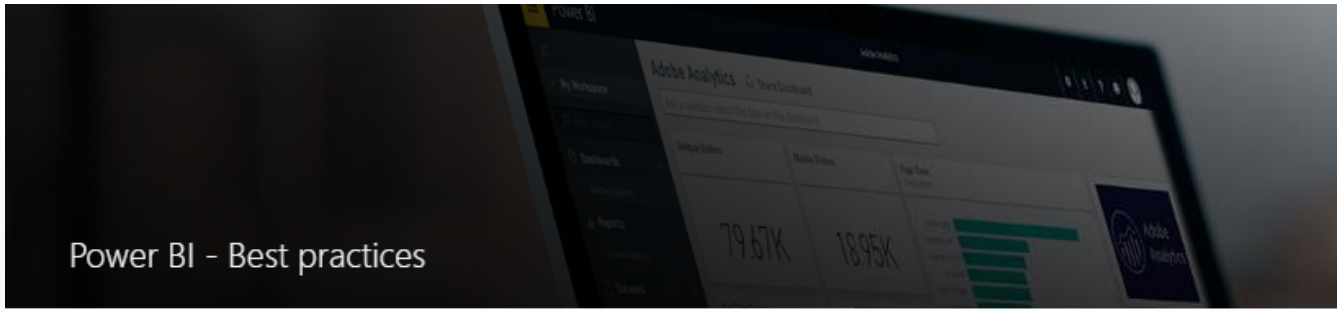
1. Always use a separate Date table in your data model. Mark it as a Date Table.
2. Only use DAX Calculated Columns when it's not possible to create it using Power Query. This improves clarity and manageability of your report as transformations are located where you expect them. It also improves query speed of the model and reduces refresh duration.
3. Give measures a prefix (%, #, €).
4. Use abbreviations like YTD, LY, PY, PP as a suffix, to keep the base fields together in the sort order.
5. Hide columns that are needed but are irrelevant for the user.
6. Hide the key at the many side of a many-to-one relation (e.g. [OrderDate] in the 'Revenue' table).
7. 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.
8. Always use the table name when you refer to a column, for example: 'Product'[Category].
9. Use DIVIDE() to prevent division by 0, and to improve the speed of your divisions.
10. Use IsInScope to get the right hierarchy level in DAX (read all about it in Kasper de Jonge's blog: https://bit.ly/KasperOnBIInScope).
11. In DAX: (un)comment DAX lines by pressing Alt + Shift + A or CTRL + /, and Shift + Enter for line breaks.
12. Use aggregations to keep your model small and performant, and still have all detailed data available.
13. 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.
14. Avoid bi-directional cross filtering and make use of measure filters http://bit.ly/MeasureFilters.
15. For very large models, group measures or fields in display folders for better usability.
16. Use DAX Studio to capture all DAX queries executed on your Premium Capacity. new
17. 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). new

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



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 usefull 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.

Power Query

- Turn off 'Enable Load' for queries/tables that you don't need in the Data Model for faster refreshes.

Best Practices

+ New ··· All Documents

Name
template.pbit
-Color Theme.json

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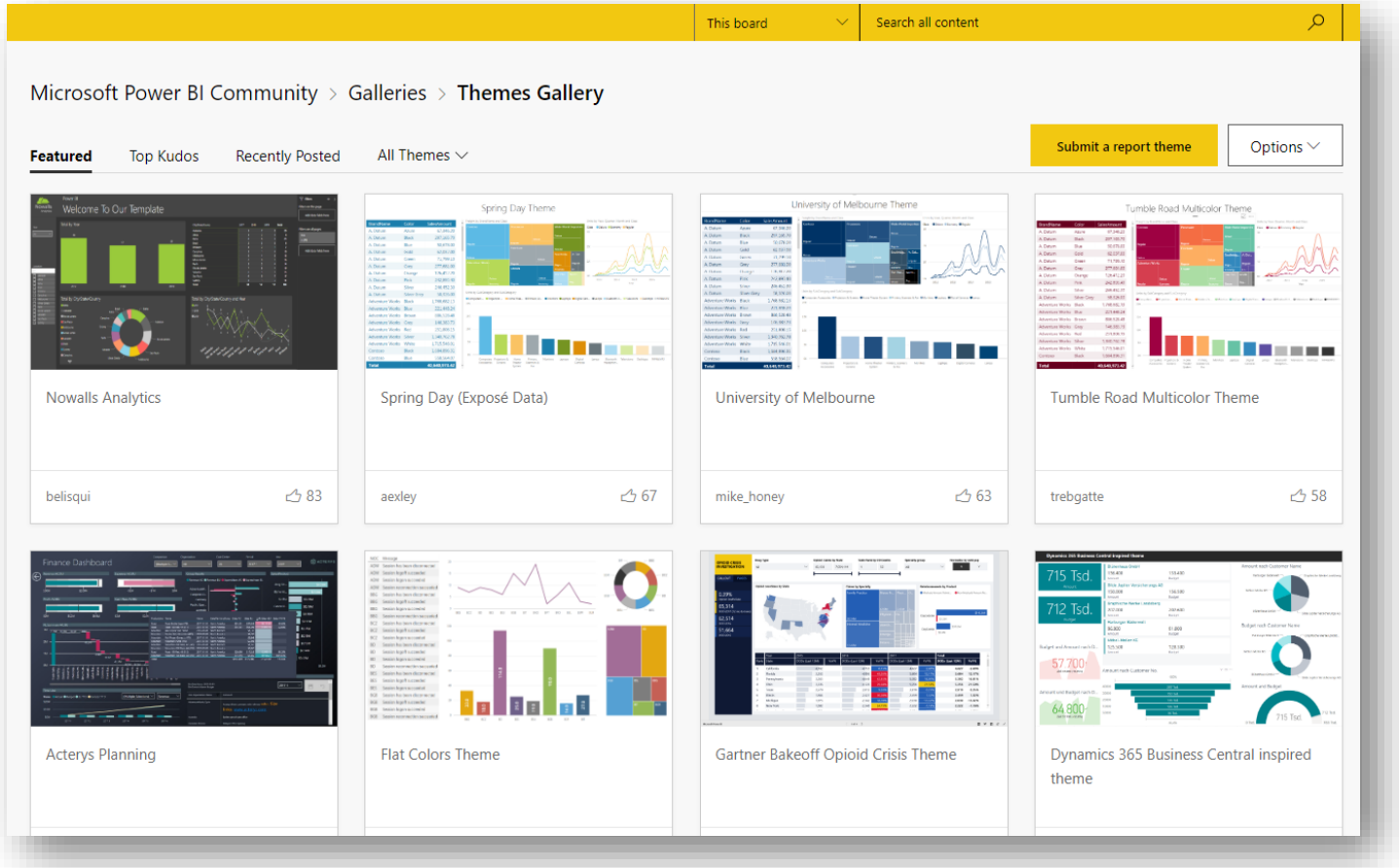
Templates

Template.pbit



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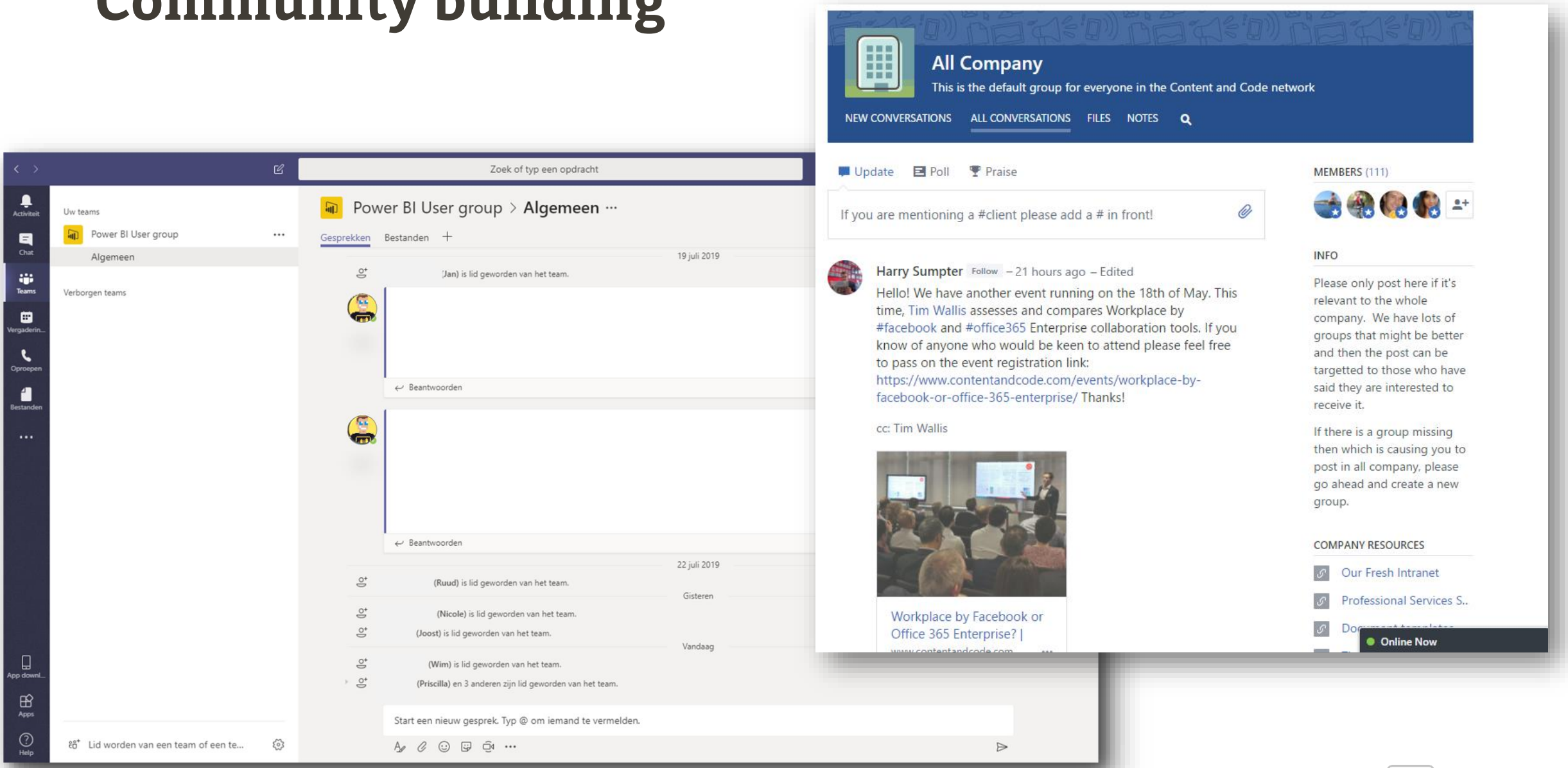
Community building



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Q&A hours

Fill the knowledge gap

COE - Expert panels

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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**

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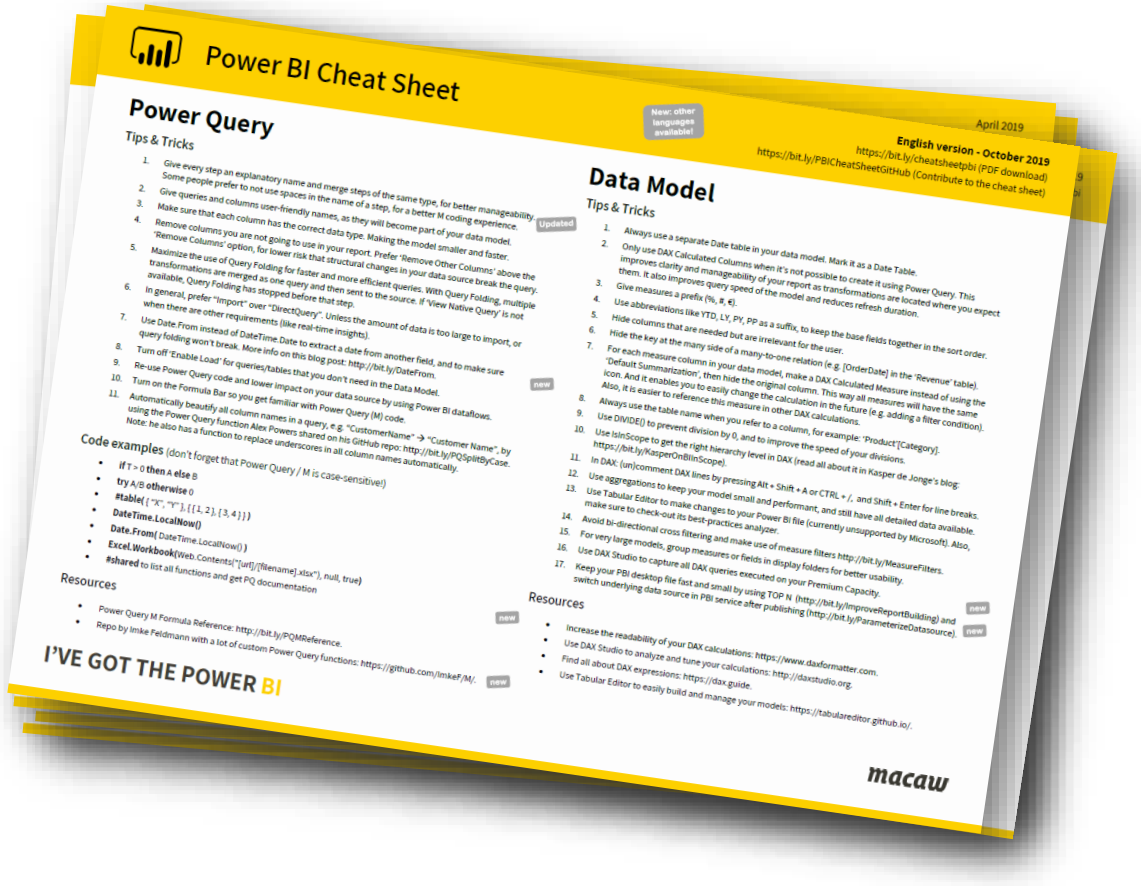
Download for free!

Https://bit.ly/cheatsheetpbi



Marc Lelijveld

Data & AI consultant
Macaw Netherlands

Marc.Lelijveld@outlook.com

@MarcLelijveld

linkedin.com/in/MarcLelijveld

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