

# Uncovering Secrets and Mysteries in your Power BI Tenant

Sainsbury

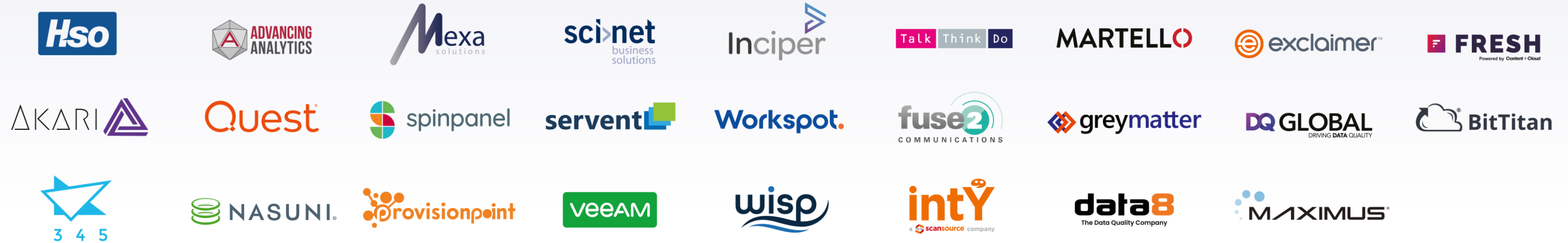
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# Thank you to our Sponsors



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#SouthCoastSummit2021



## About me



**dataMinds.be** Co-Leader



@BenniDeJagere



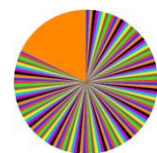
/bennidejagere



sessionize /bennidejagere



Data Platform



#SayNoToPieCharts

<https://github.com/BenniDeJagere/Presentations>





# Session Objectives

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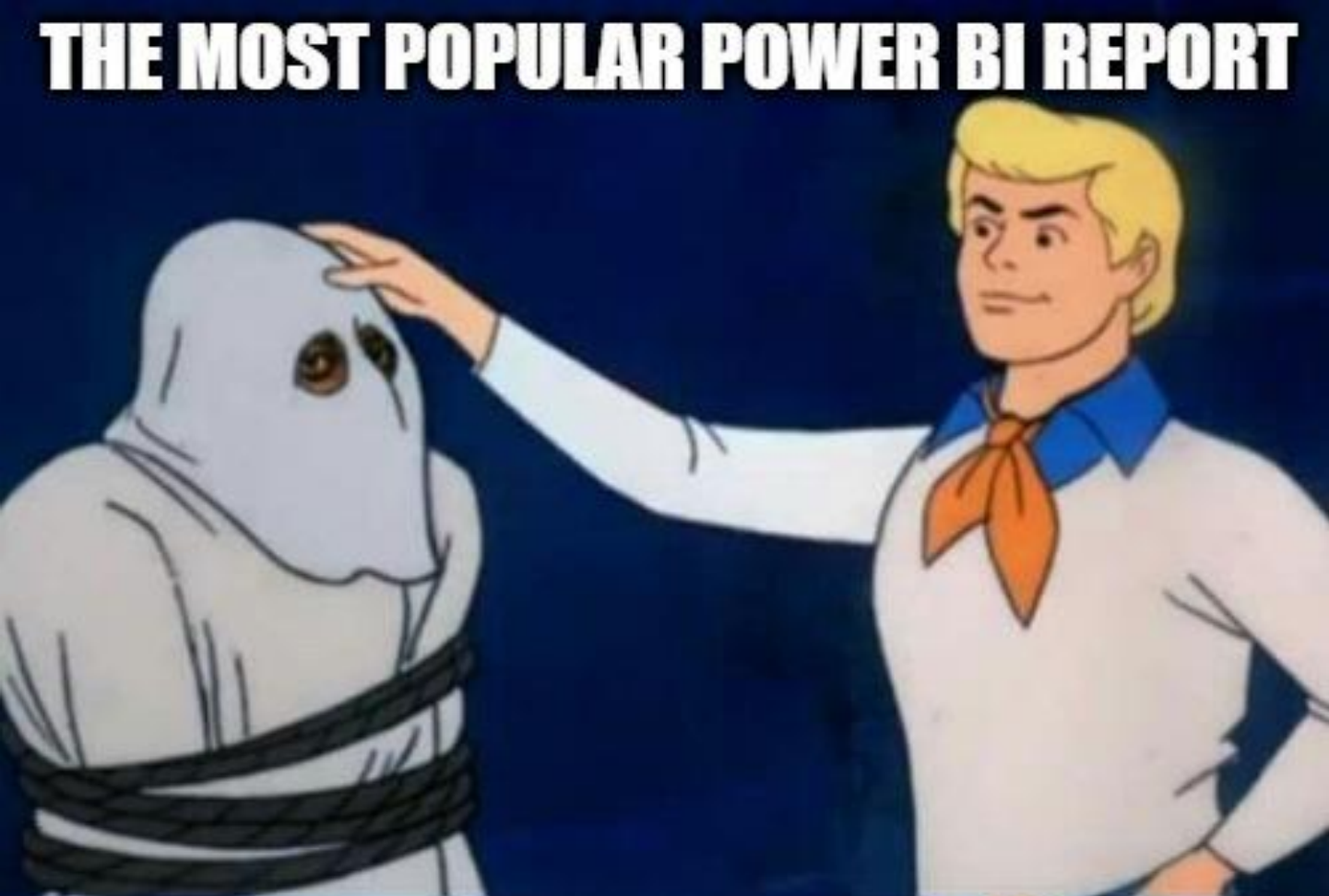
Realise the importance of auditing and logging

Look at free techniques to implement

Spark ideas for useful guidelines

Stimulate to ACT and COMMUNICATE





What sparked this thing

# More Information



STRATEGIC ICT ▾

TACTICAL ICT ▾

OPERATIONAL ICT ▾

Jobs

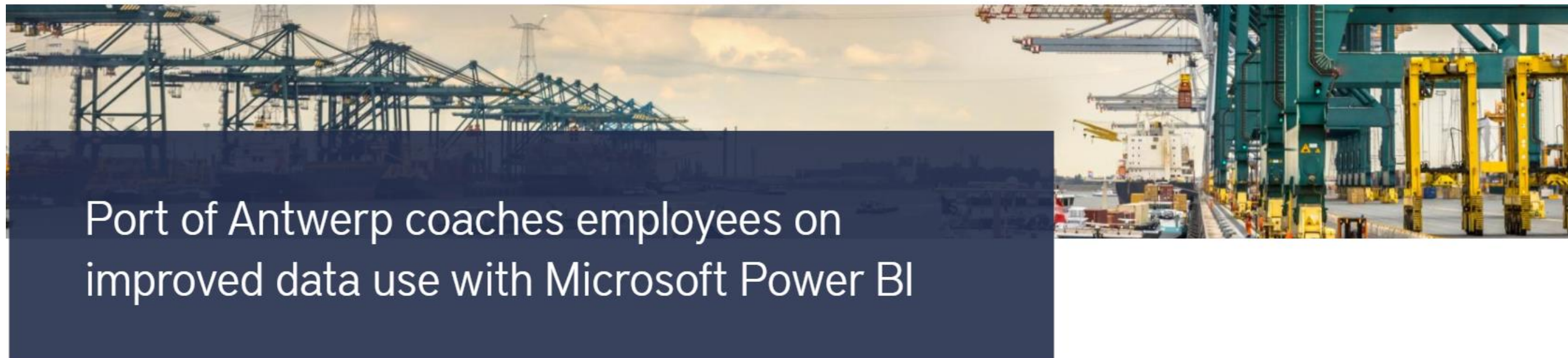
Store

Contact

🔍 ≡ more

en ▾

Realdolmen > Blog > Port of Antwerp coaches employees on improved data use with Microsoft Power BI



## Port of Antwerp coaches employees on improved data use with Microsoft Power BI

22 JULY 2021

Microsoft

Data



<https://www.realdolmen.com/en/blog/port-of-antwerp-coaches-employees-on-improved-data-use-microsoft-power-bi>





# The Situation

# Port of Antwerp

DI (Dienst Informatica / IT) is the main supplier

Source System data is captured to ODS

SQL Server, with multiple Databases

SQL Views available for reporting needs

Prior to 2018, focus on Operational Reporting

DIY Attitude, External Partners for PoC, 2nd opinion

# Power BI in motion

Enterprise Agreement changed in 2019

Moved to Power BI Premium P1

External Guidance on Governing and Managing Power BI

Currently:

- 70 Content Creators

- 800 Content Consumers



# Power BI as a strategic choice

Strategic tool for corporate reporting needs  
(excluding Data Analytics/Science experiments)

FI/CO has migrated SSAS MultiDim to:

Tabular Models (ongoing to Power BI datasets)

Power BI Apps

- Power BI Reports & Dashboards
- Paginated Reports
- Excel Online



# Self-Service BI Guidance

# Self-Service BI Guidelines

Design a cockpit to facilitate conversations with:

Data Stewards

Content Creators

Functional Business Owners

Goal of exercise is help enable high quality work

Guidelines to be introduced in the in-house training

Stimulate, not enforce



# Initial Brainstorm

5 different subject areas

Get Data

Transform Data

Model Data

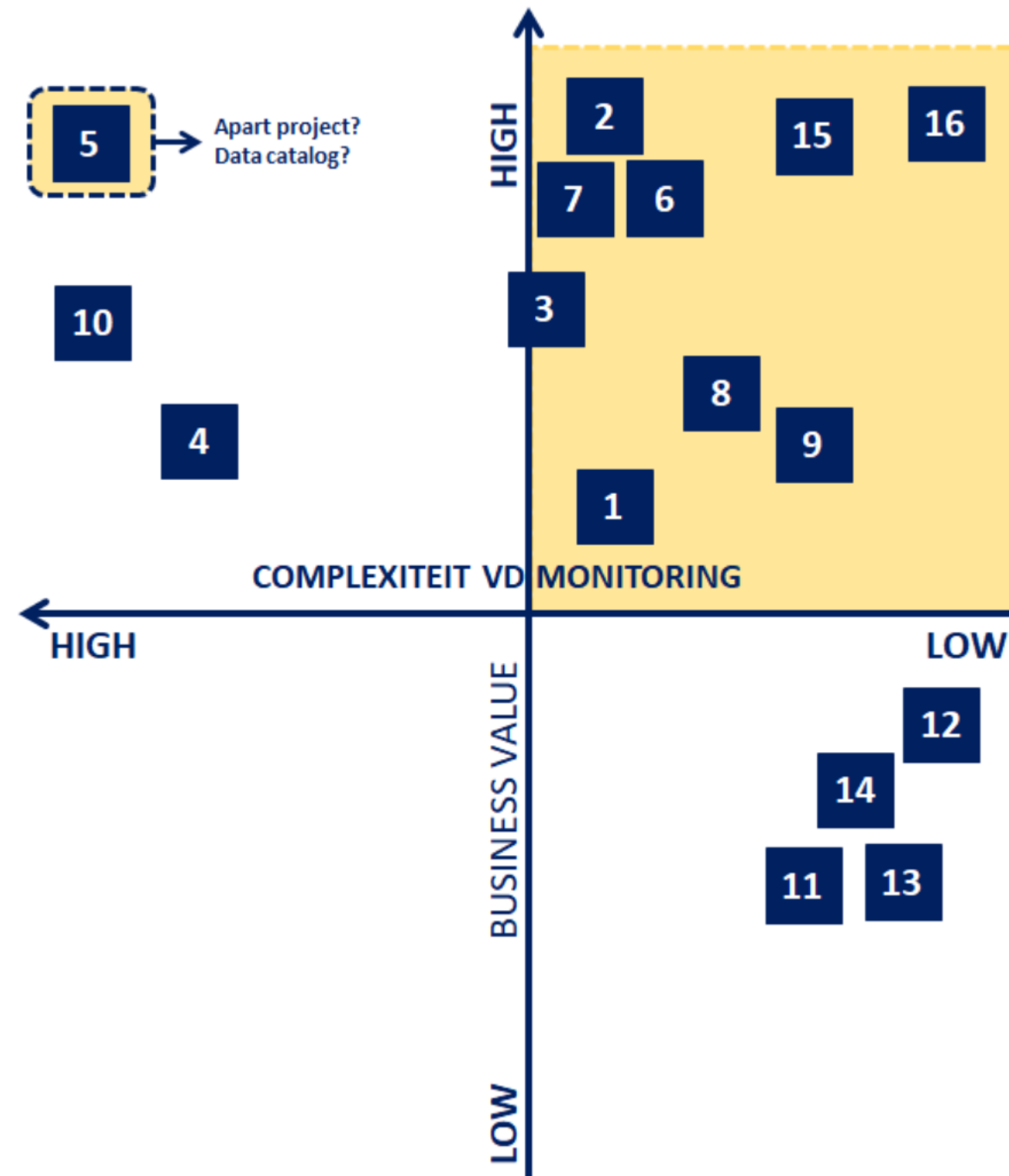
Build Reports

Publish and Share

Audience from different facets of the organisation

## Outcome

### Priority / Complexity Quadrant



Eerste focusgebied is het kwadrant rechtsboven: *lage monitoring complexiteit & hoge business value*.

# Initial Guidelines

| ID | Guideline  |
|----|--|
| 1  | Each .pbix file is checked in to the appropriate local folder              |
| 2  | Reuse datasets as much as possible   |
| 3  | Shared reports in a production context use ODS Reporting as a data source  |
| 4  | Import & Live Connection are the preferred methods of connectivity         |
| 5  | A report should always have an 'About' section                             |
| 6  | DAX Calculated Columns should be avoided                                   |
| 7  | Do not use Auto Date/Time  |
| 8  | Each workspace owner uses resources sensibly                               |
| 9  | Clean up unused artefacts  |
| 10 | Minimalise a dataset to the tables/columns/measures that are actually used |
| 11 | Use Personal Workspaces only for exploration                               |
| 12 | Avoid manual report sharing, rather publish to a workspace/app             |
| 13 | Avoid 'Export to Excel/CSV', use 'Analyze in Excel'                        |
| 14 | Only use certified custom visuals  |
| 15 | Every Report uses the PoA Template   |
| 16 | Every content creator takes the Power BI Training                          |



# Planned Approach

Divide into Phases 1 through 3

Phase 1 (6 days) :

- PowerShell Extraction

- Generic Model setup

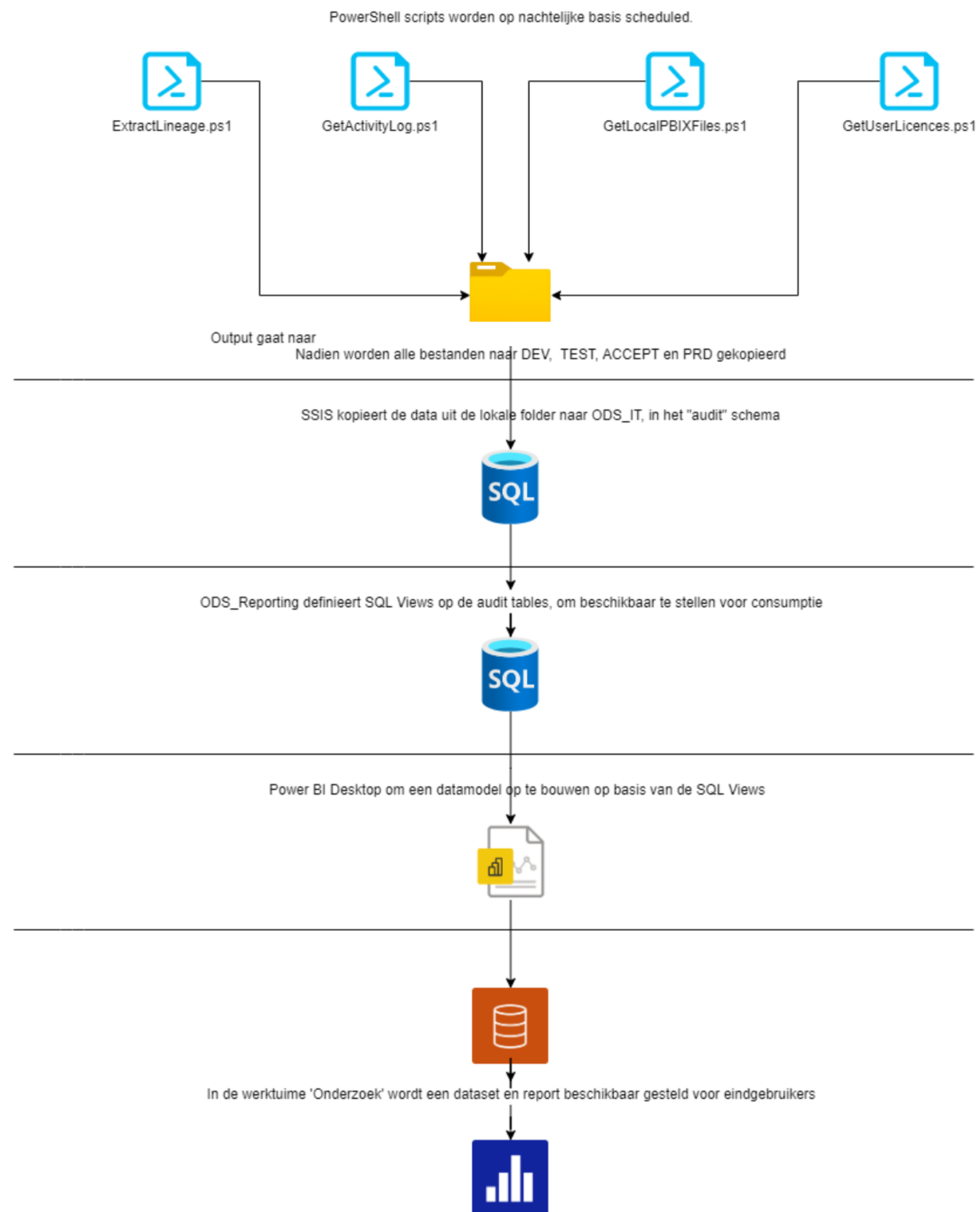
- Build v1 for Power BI Dataset & Report

Phase 2 (2 days):

- Automate Extraction of Scanner APIs

Phase 3 (TBD):

- Automate Extraction of TE Best Practice Analyzer



# Solution Architecture

## PowerShell scripts

- Authenticate through Service Principal

- Use Read-Only Admin APIs

- Scheduled through Windows Task Scheduler

- Output CSV Files to a file share location

  - User Licenses

  - AD Groups

  - Activity Log

  - Artefacts

  - Local File Information



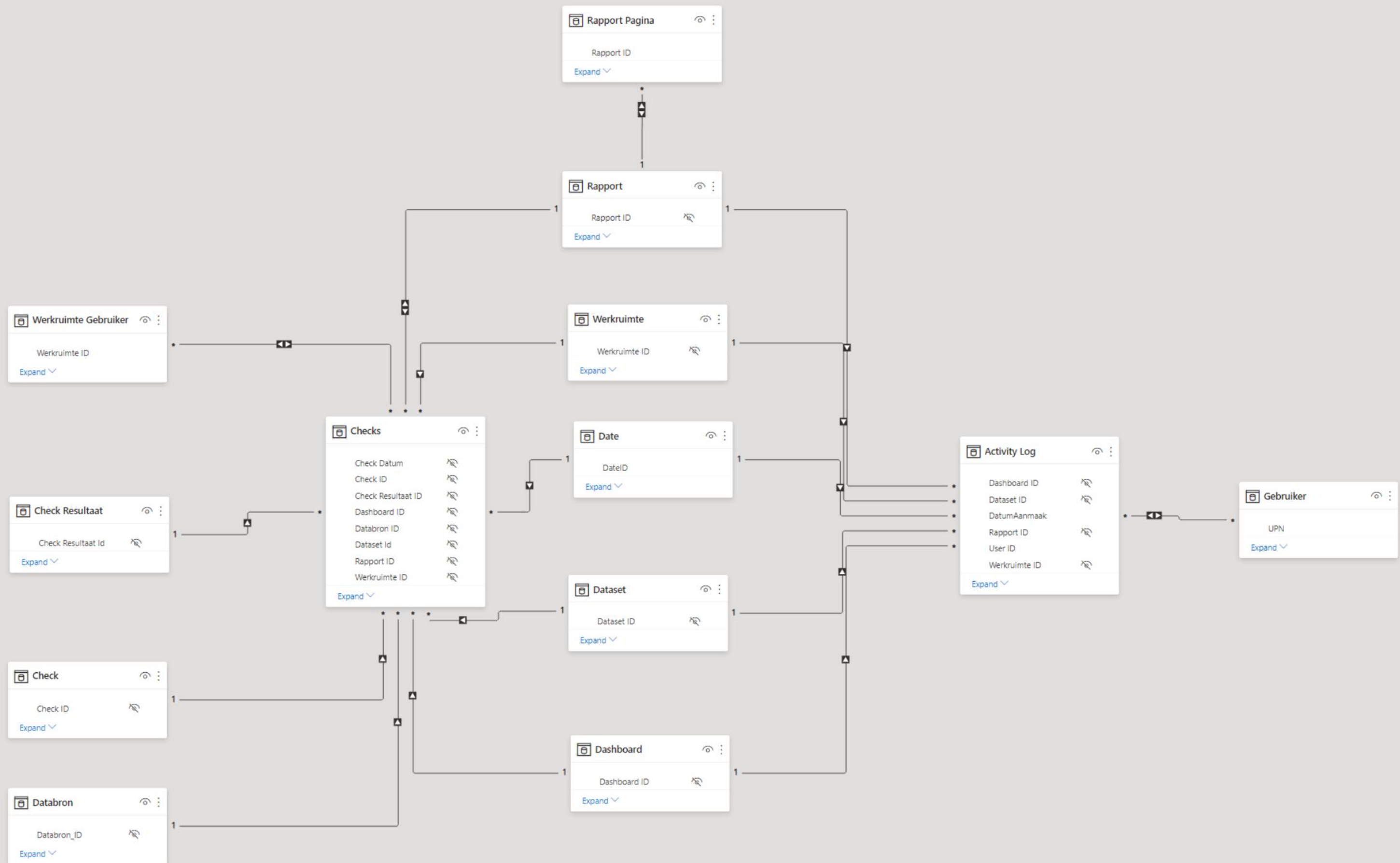
# Solution Architecture

## SQL Server Integration Services

Lands CSV Data in ODS (Staging and Consumption)

Executes the SQL Scripts for the actual Checks

```
, -- CHECK_ID, @CheckDate, 112) as int) AS 'CHECK_DATE'
, 4 AS 'CHECK_ID'
, CASE
    WHEN dso.DATASOURCE_TYPE = ('Sql')
      AND ds.CONTENT_PROVIDER_TYPE IN ('PbixInImportMode' , 'Unknown')
    THEN 1 -- SUCCESS
    WHEN dso.DATASOURCE_TYPE NOT IN ( 'Sql', 'AnalysisServices' )
      AND ds.CONTENT_PROVIDER_TYPE = 'PbixInImportMode'
    THEN 1 -- SUCCESS
    WHEN dso.DATASOURCE_TYPE = ('AnalysisServices')
      AND ds.CONTENT_PROVIDER_TYPE = 'PbixInLiveConnectionMode'
    THEN 1 -- SUCCESS
    WHEN dso.DATASOURCE_TYPE = ('Sql')
      AND ds.CONTENT_PROVIDER_TYPE = 'PbixInDirectQueryMode'
    THEN 2 -- FAILED
    WHEN dso.DATASOURCE_TYPE = ('AnalysisServices')
      AND ds.CONTENT_PROVIDER_TYPE IN ('PbixInImportMode' , 'Unknown')
    THEN 2 -- FAILED
    WHEN dso.DATASOURCE_TYPE NOT IN ( 'Sql', 'AnalysisServices' )
      AND ds.CONTENT_PROVIDER_TYPE = 'PbixInDirectQueryMode'
    THEN 2 -- FAILED
    ELSE 3 -- WARNING
  END AS 'CHECK_RESULT_ID'
, CAST(CONVERT(char(8), @CheckDate, 112) as int) AS 'CHECK_DATE'
```



# Solution Architecture

## Power BI (Report)

- Build an overview page with key metrics (including bookmarks)

- Build a page per check

  - Key Metrics

  - Trend Graph

  - Detail List

  - Explanation of Rule

  - Link to Confluence

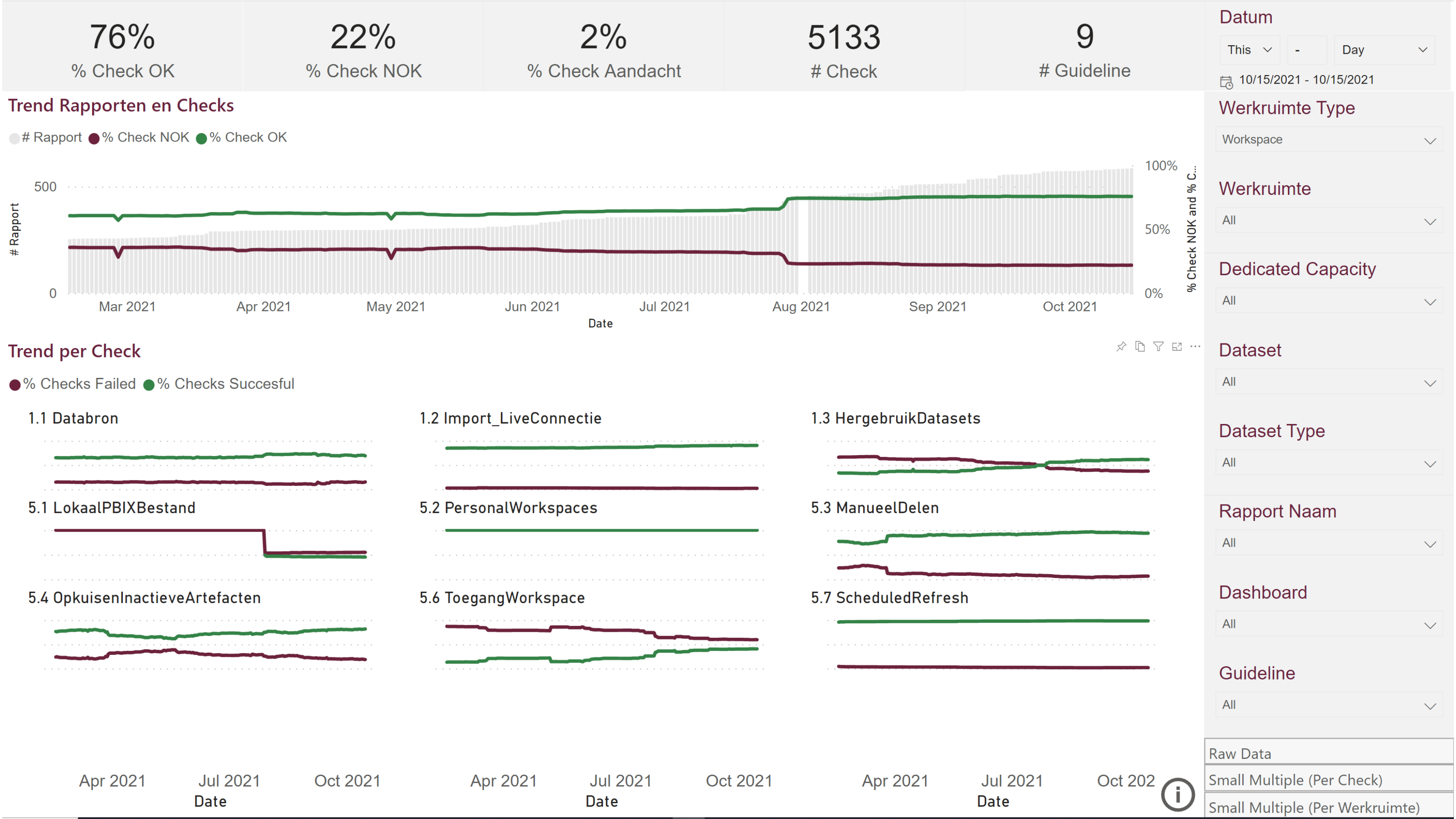
- About Page





Let's take it for a spin





76%  
% Check OK

22%  
% Check NOK

2%  
% Check Aandacht

5133  
# Check

9  
# Guideline

Datum

This

-

Day

10/15/2021 - 10/15/2021

Werkrumte Type

Workspace

Werkrumte

All

Dedicated Capacity

All

Dataset

All

Dataset Type

All

Rapport Naam

All

Dashboard

All

Guideline

All

Raw Data

Small Multiple (Per Check)

Small Multiple (Per Werkrumte)

Trend Rapporten en Checks

# Rapport

% Check NOK

% Check OK

# Rapport

% Check NOK and % C...

500

0

100%

0%

Mar 2021

Apr 2021

May 2021

Jun 2021

Jul 2021

Aug 2021

Sep 2021

Oct 2021

Date

Onderwerp

# Check

# Check OK

# Check Aandacht

# Check NOK

1. Data Ophalen

1.1 Databron

1.2 Import\_LiveConnectie

1.3 HergebruikDatasets

5. Rapporten Publiceren

5.1 LokaalPBIXBestand

5.2 PersonalWorkspaces

5.3 ManueelDelen

5.4 OpkuisenInactieveArtefacten

5.6 ToegangWorkspace

5.7 ScheduledRefresh

445

306

72

67

586

529

46

11

586

358

9

219

586

265

321

586

586

586

549

37

586

478

108

586

237

1

348

586

575

11

51%

% Hergebruik

586

# Rapport

286

# Dataset

61%

% Check OK

37%

% Check NOK

2%

% Check Aandacht

Trend Rapporten en Checks

# Rapport

% Check NOK

% Check OK

# Rapport

% Check NOK and % Chec...

Date

Rapport werkruimte

Rapport Naam

Dataset werkruimte

Dataset Naam

Dataset Opgezet

Datum

This

-

Day

10/15/2021 - 10/15/2021

Werkruimte Type

Workspace

Werkruimte

All

Dedicated Capacity

All

Dataset

All

Dataset Type

All

Rapport

All

Dashboard

All

Guideline

All

Guideline Topic

Search

1. Data Ophalen

1.3 Datasets hergebruiken overheen werkruimten en rapporten

Shared datasets zorgen voor een hogere beheersbaarheid, en meer herbruikbaarheid over rapporten heen. In gedeelde werkruimten wordt best een splitsing gemaakt tussen een dataset (leeg rapport), en de afhankelijke rapporten. Gedeelde datasets kunnen zelfs gebruikt worden over de werkruimten heen, en kunnen op deze manier nog extra ingezet worden als een mechanisme voor uniformiteit.

Een rapport zal in de lijst weergegeven worden als :

- Er geen afhankelijke rapporten zijn

OF

- Er geen splitsing is tussen dataset en rapport

i

←

82%

% Rapport OK

18%

% Rapport NOK

46

# Werkruimte

586

# Rapport

Datum

This

-

Day

10/15/2021 - 10/15/2021

Werkruimte Type

Workspace

Werkruimte

All

Dedicated Capacity

All

Dataset

All

Dataset Type

All

Rapport

All

Dashboard

All

Guideline

All

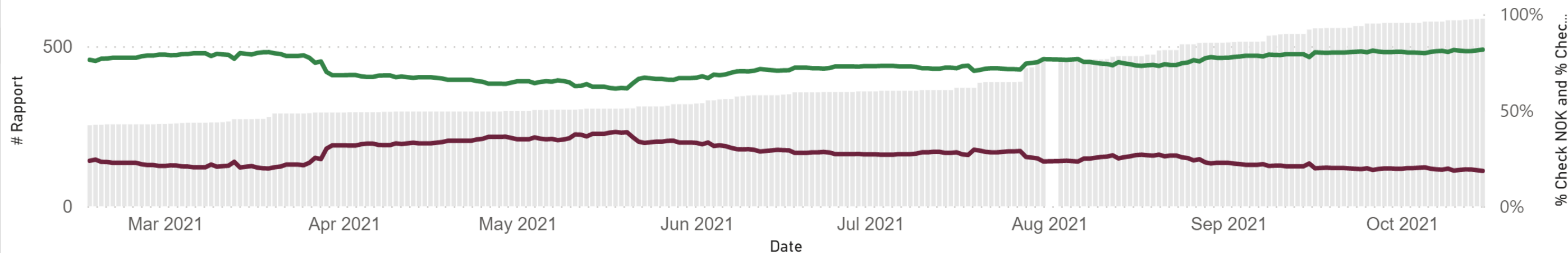
Guideline Topic

Search

5. Rapporten Publiceren

## Trend Rapporten en Checks

# Rapport % Check NOK % Check OK



| Rapport Naam | Dataset Naam | Dataset Opgezet Door | Laatst Gebruikt | # Check NOK |
|--------------|--------------|----------------------|-----------------|-------------|
|              |              |                      |                 | 2           |
|              |              |                      |                 | 120         |
|              |              |                      |                 | 3           |
|              |              |                      |                 | 3           |
|              |              |                      |                 | 129         |
|              |              |                      |                 | 49          |
|              |              |                      |                 | 2           |
|              |              |                      |                 | 136         |

### 5.4 - Kuis niet meer gebruikte rapporten en datasets op

We rekenen op de verantwoordelijkheid van de rapportage-owners om niet meer gebruikte rapporten & datasets ook opnieuw te verwijderen. Oude - niet meer gebruikte - rapporten kunnen gedateerde en onduidelijke info bevatten. Voor nieuwe gebruikers zal het bovendien ook niet altijd duidelijk zijn welk rapport de juiste info bevat als er meerdere gelijkaardige rapporten bestaan.

Een rapport zal in de lijst weergegeven worden als :

- Het rapport (of bijbehorende dataset) 60 dagen, of langer, voor het laatst gebruikt is







## Next Steps

# Next Steps

Operationalise the setup and scripts

Including a solution on Azure Functions

Expand User Access Overview (Report, Dataset, ..)

Include the automated extraction of

Tabular Editor Best Practice Analyzer

Integrate with Azure Monitor (Log Analytics)

Whatever other insights may rise up

Rebuild to Azure Native Components

Open Source

# Lessons Learned

Experiment, gone right!

Enabling and promoting a strategic Data Culture pays off

MSFT Docs has some gaps to fill 😊

API Product Team has been informed on strategic gaps

Try it!

# Resources

<https://powerbi.microsoft.com/en-us/blog/use-power-bi-api-with-service-principal-preview/>

<https://docs.microsoft.com/en-us/power-bi/admin/read-only-apis-service-principal-authentication>

<https://docs.microsoft.com/en-us/rest/api/power-bi/admin/groups-get-group-as-admin>

<https://docs.microsoft.com/en-us/rest/api/power-bi/admin/workspace-info-get-scan-result>

<https://docs.microsoft.com/en-us/rest/api/power-bi/admin/datasets-get-datasources-as-admin>





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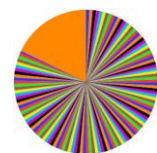
/bennidejagere



sessionize /bennidejagere



Data Platform



#SayNoToPieCharts

# Thank You!

Please scan the QR Code to provide any feedback.

<https://forms.office.com/r/q2FK7p2XiR>

