

Abstract geometric lines in the top left corner of the page, consisting of several overlapping, irregular polygons and lines that create a complex, layered effect.

Benni De Jagere

**UNCOVERING SECRETS AND MYSTERIES
IN YOUR POWER BI TENANT**

WHO AM I



Power BI CAT

dataMinds.be Member



@BenniDeJagere

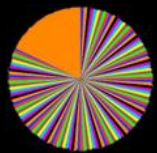


/bennidejagere



sessionize

/bennidejagere



#SayNoToPieCharts

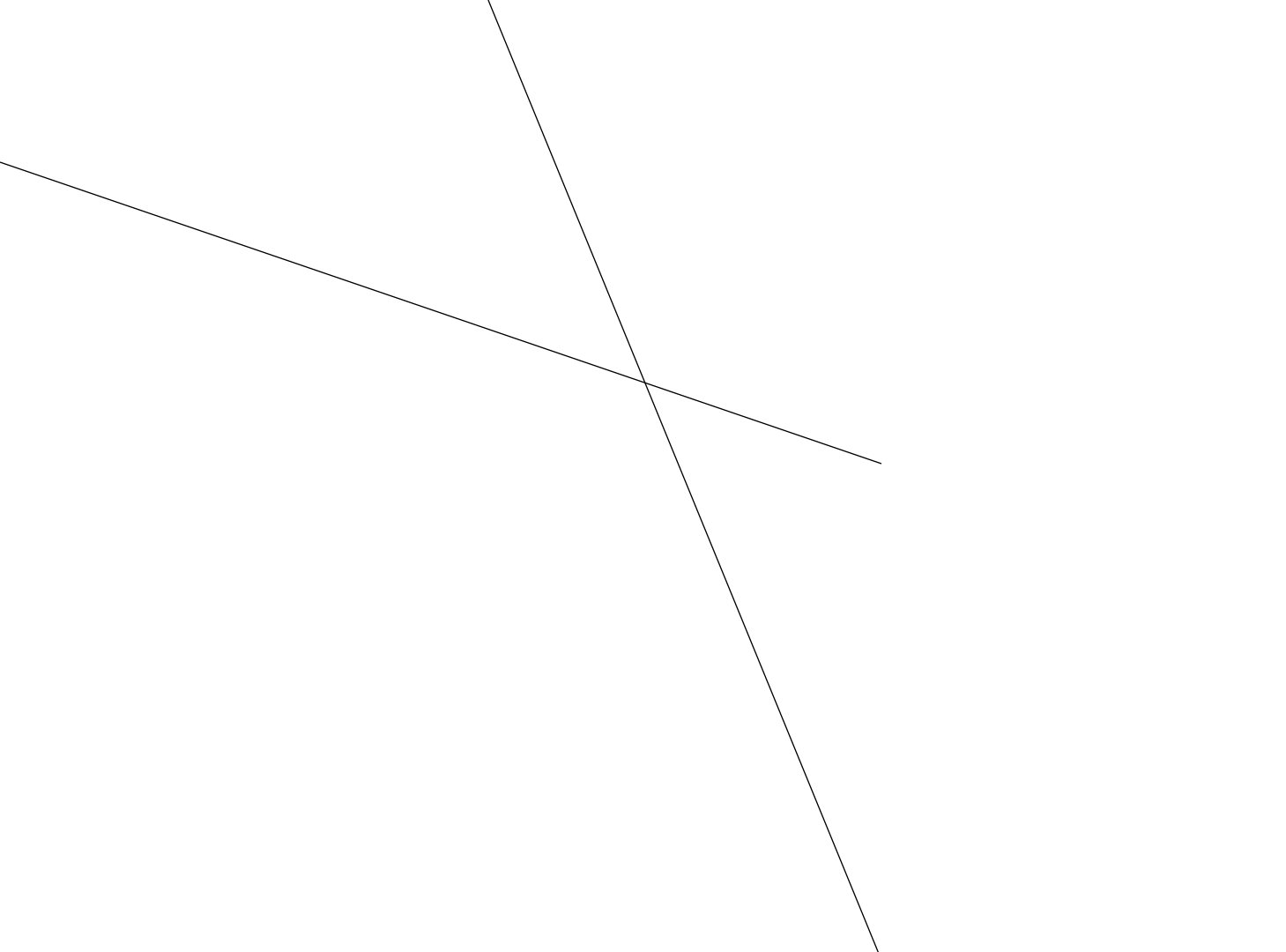
OBJECTIVES

Emphasize role of auditing and logging

Stimulate to ACT and COMMUNICATE

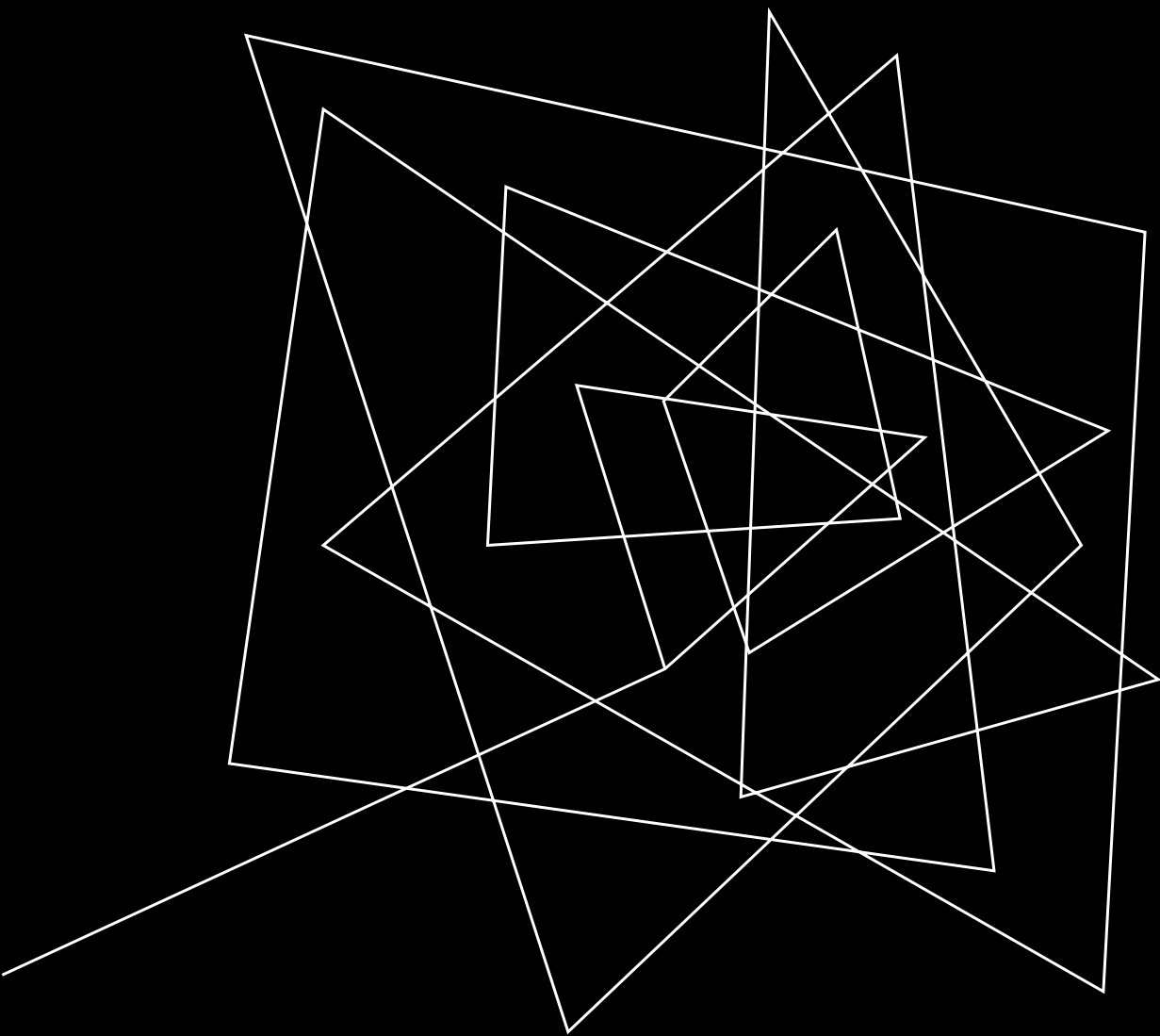
Spark ideas for useful guidelines

Look at free techniques to implement



WHAT SPARKED THIS?





THE SITUATION

THE CUSTOMER

DI (IT) is the main supplier of data

Source System data is captured to ODS

SQL Server, with multiple Databases

SQL Views available for reporting needs

Data is at the centre of their decisions

DIY Attitude, External Partners for PoC / 2nd opinion

THE CUSTOMER

Prior to 2018, focus on Operational Reporting

Finance created SSAS Multidimensional Cubes

SharePoint BI + Excel Pivot as main reporting tools

POWER BI IN MOTION

Licensing changed in 2019

Moved to Power BI Premium P1

Wanted External Guidance on Governing and Managing Power BI

Currently:

80 Content Creators

900 Content Consumers

POWER BI AS A STRATEGIC CHOICE

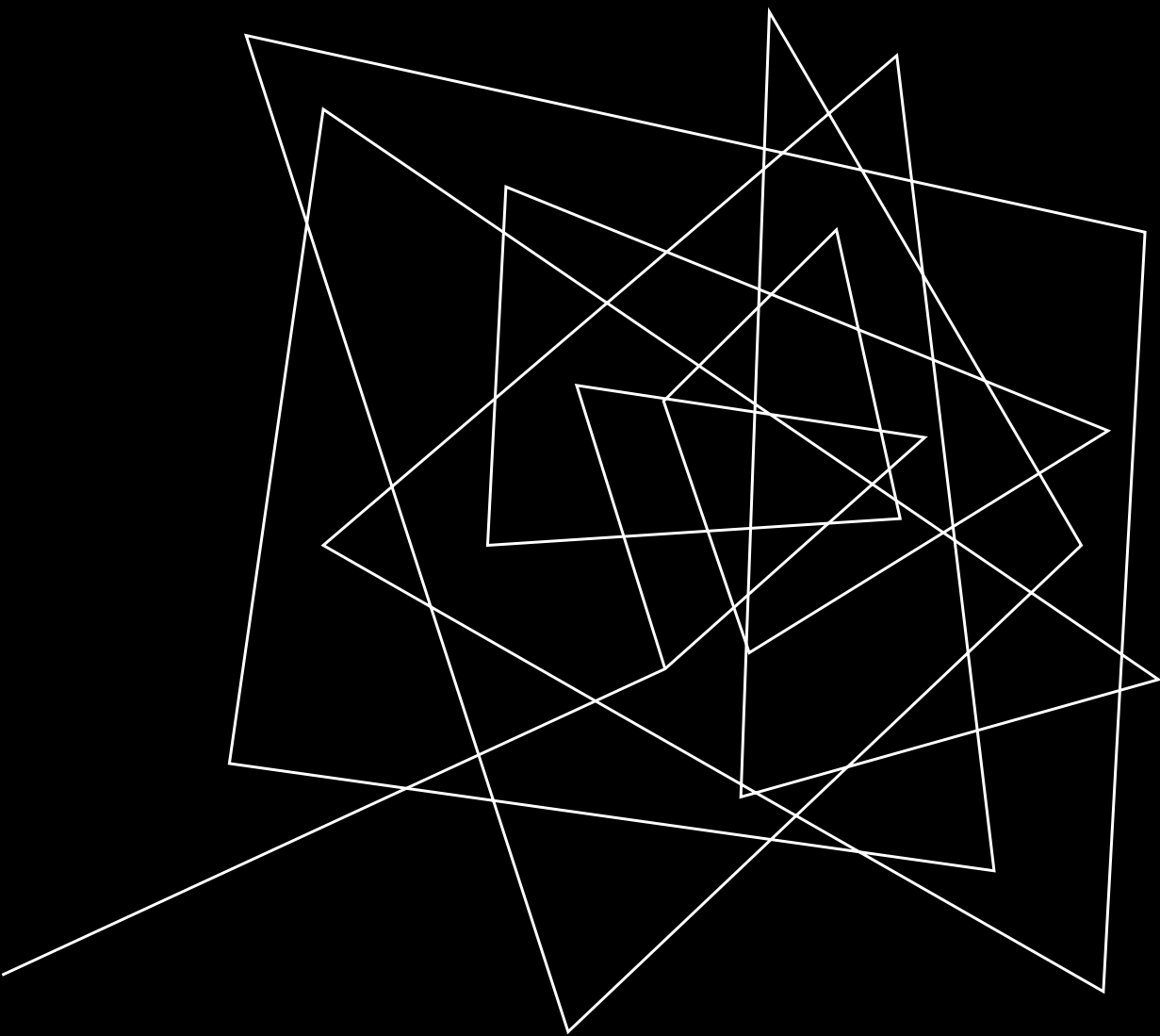
Strategic tool for corporate reporting needs
(excluding Data Analytics/Science experiments)

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

DESIGN A COCKPIT

**FACILITATE
CONVERSATIONS**

**ENABLE HIGH
QUALITY WORK**

**INTRODUCED EARLY
IN TRAINING**

**STIMULATE, NOT
ENFORCE**

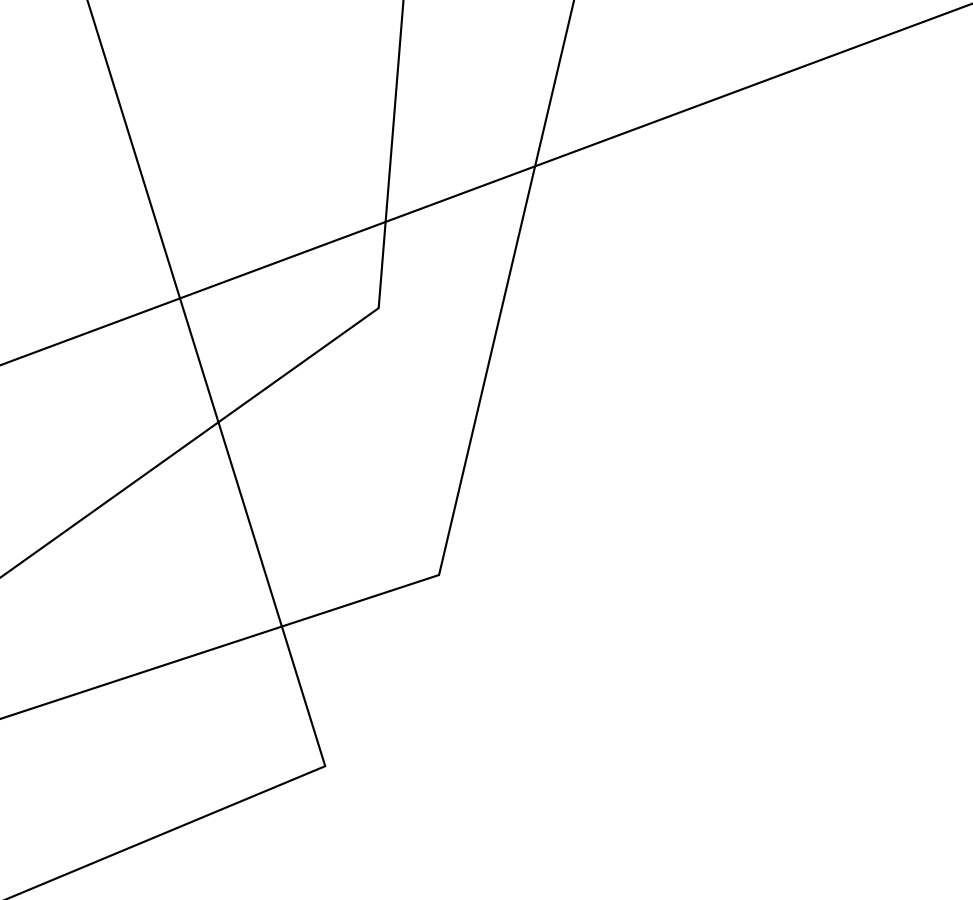


TARGET AUDIENCE

**DATA
STEWARDS**

**FUNCTIONAL
BUSINESS OWNERS**

**DATA ANALYTICS
TEAM**



**INITIAL
BRAINSTORM**

GET DATA

TRANSFORM DATA

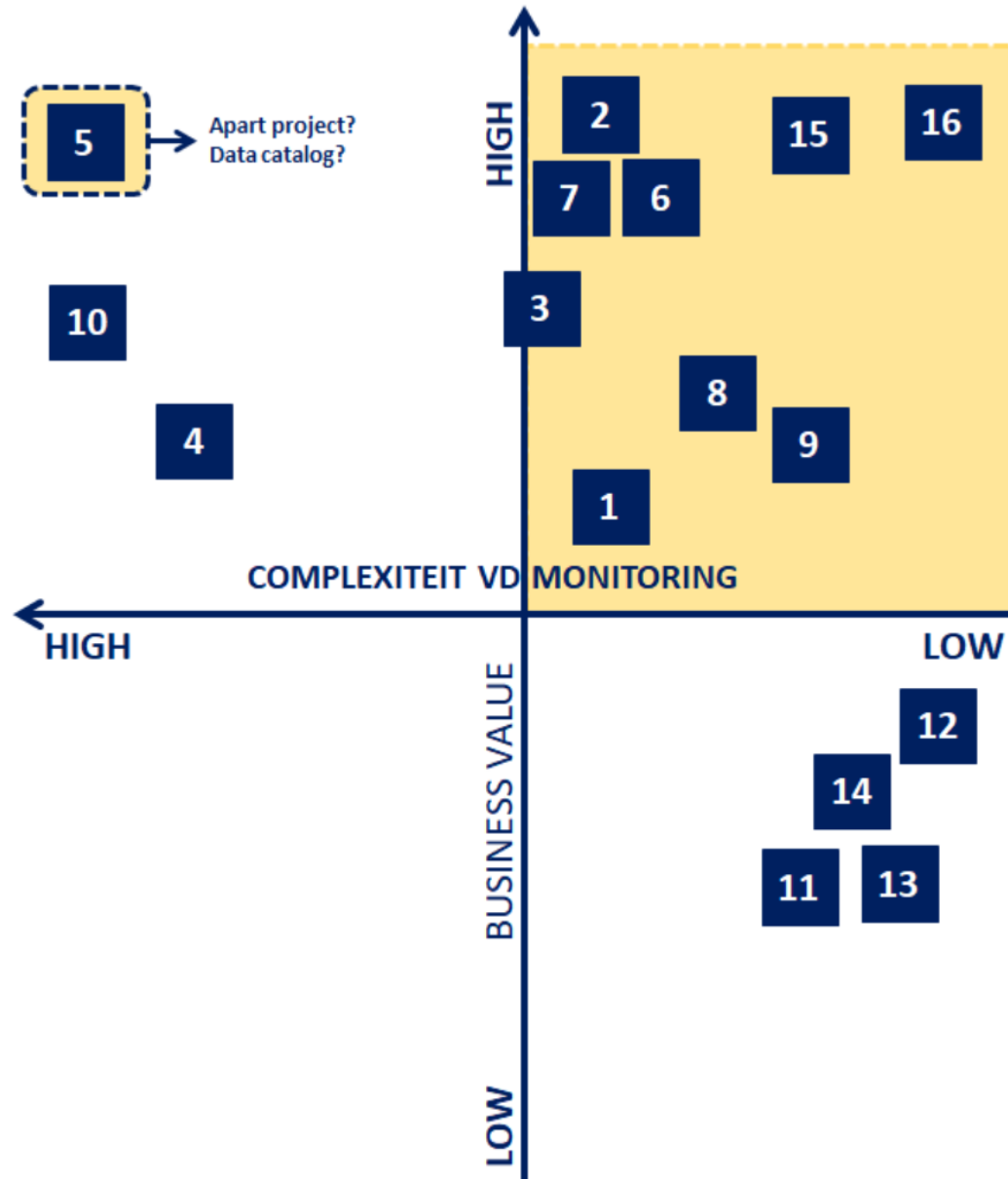
MODEL DATA


BUILD REPORTS

PUBLISH AND SHARE

Outcome

Priority / Complexity Quadrant



| 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  Template |
| 16 | Every content creator takes the Power BI Training |

PHASE 1 (5 DAYS)

Extract data through PowerShell

Setup Generic Model

Build v1 for Power BI dataset & Report

PHASE 2 (2 DAYS)

Automate extraction of Scanner APIs

Extend Model, Dataset & Report

PHASE 3 (TBD)

Automate extract of Tabular Editor Best Practice Analyzer

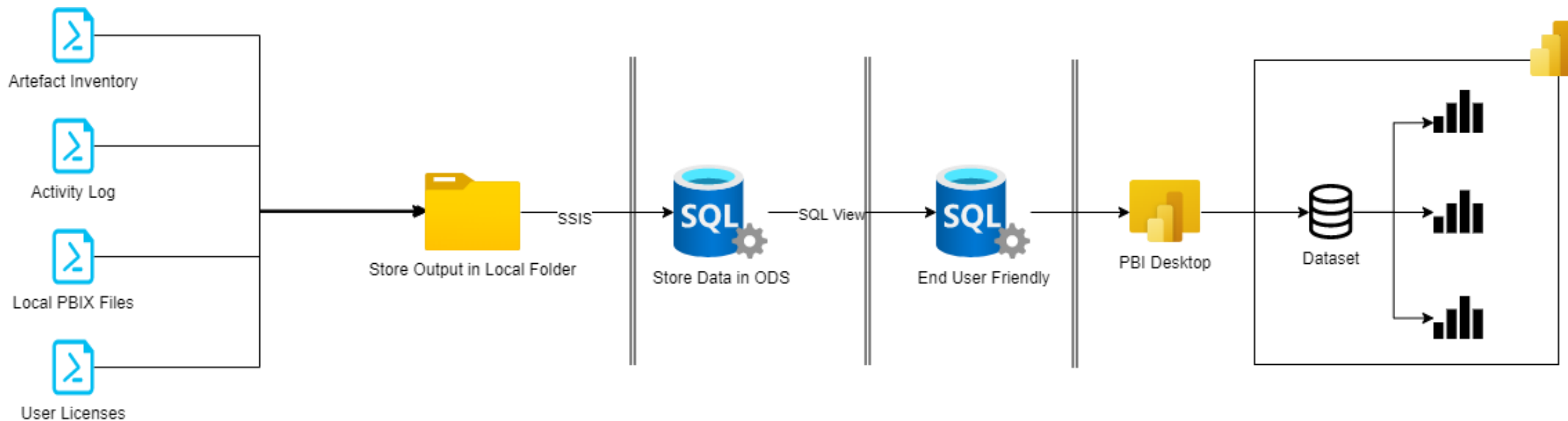
Extend Model, Dataset & Report

PHASE ..

Incorporate new developments in Admin APIs

- Tap into Capacity Usage Metrics
- Artefact Access, Subscriptions
- Oversharing / Information Protection
- Pipelines
- ..

PLANNED APPROACH



SOLUTION ARCHITECTURE

SOLUTION ARCHITECTURE

PowerShell scripts

Authenticate through Service Principal + App Registration

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

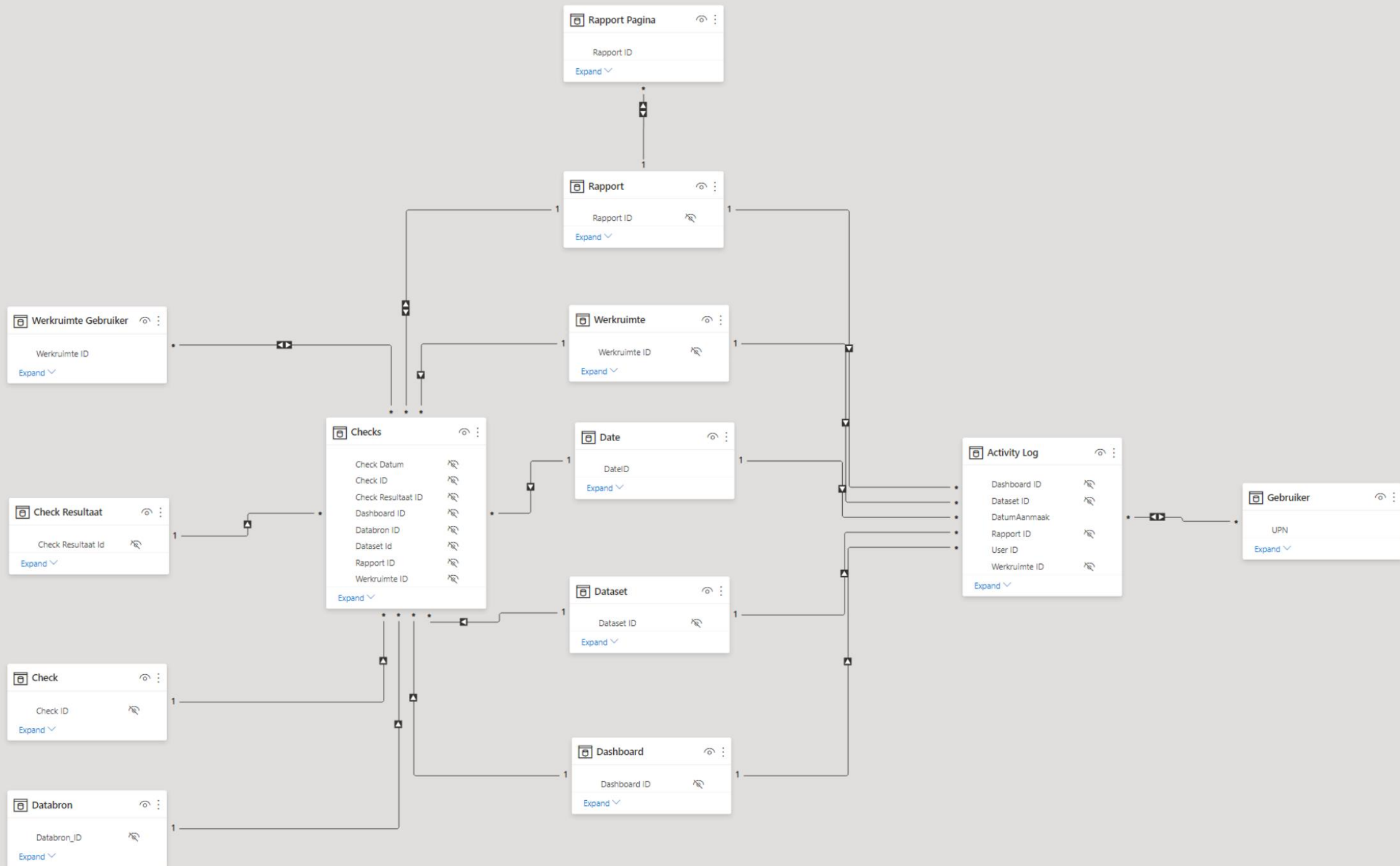
SOLUTION ARCHITECTURE

SQL Server Integration Services

Lands CSV Data in ODS (Staging and Consumption)

Executes the SQL Scripts for the actual Checks

```
, 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

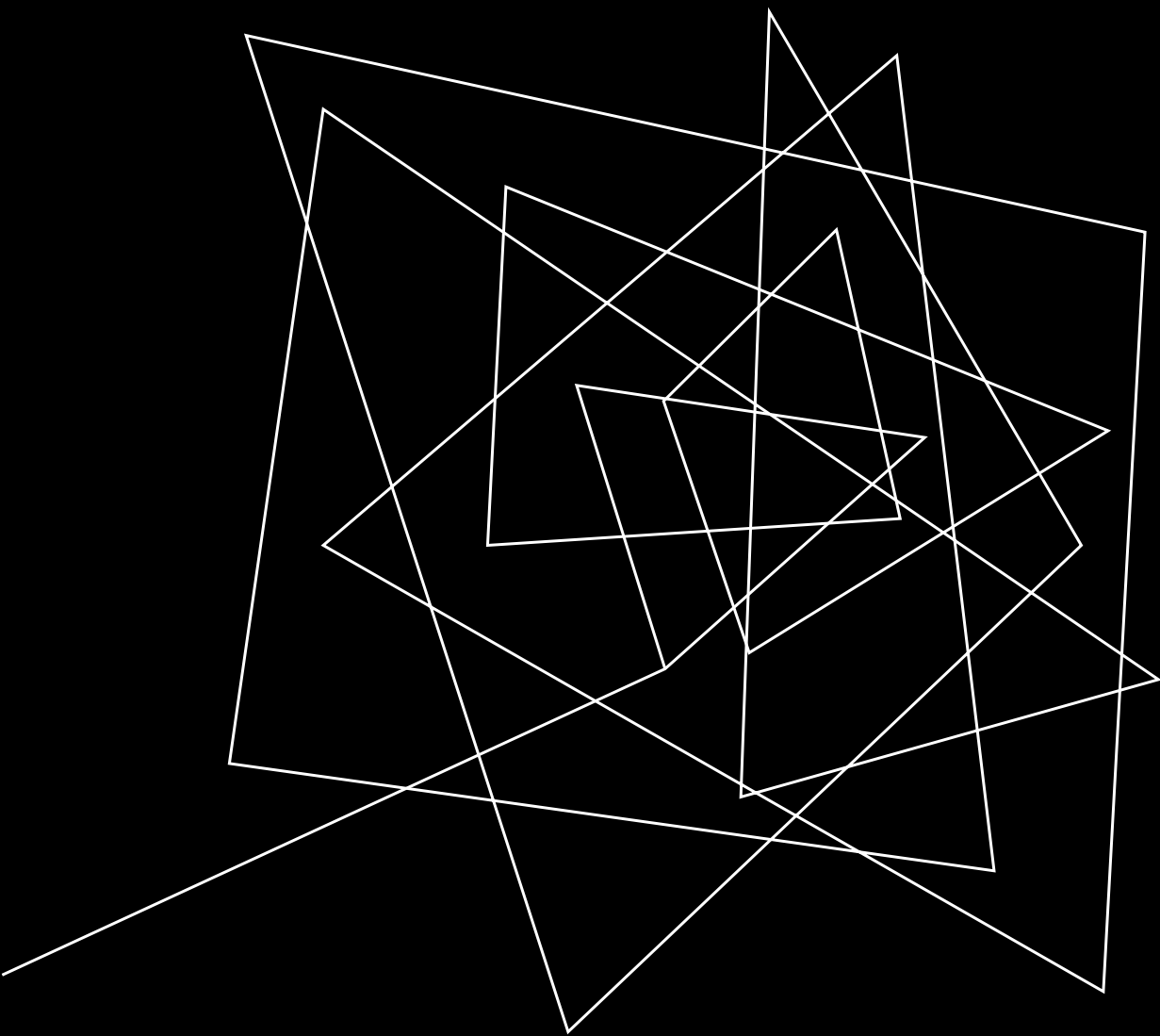
- Trend Graph

- Detail List

- Explanation of Guideline

- Link to Confluence

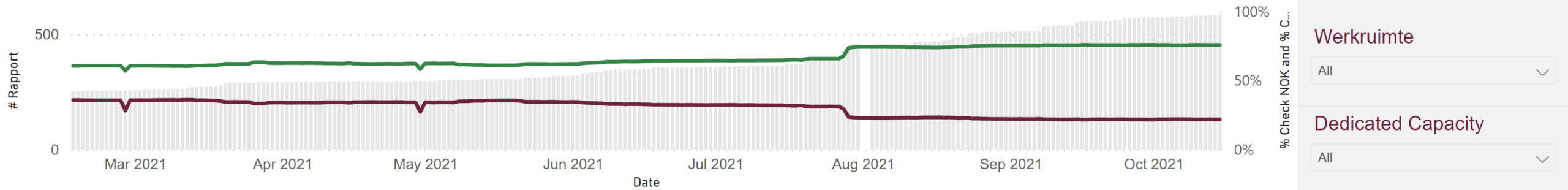
About Page



SELF-SERVICE BI GUIDANCE

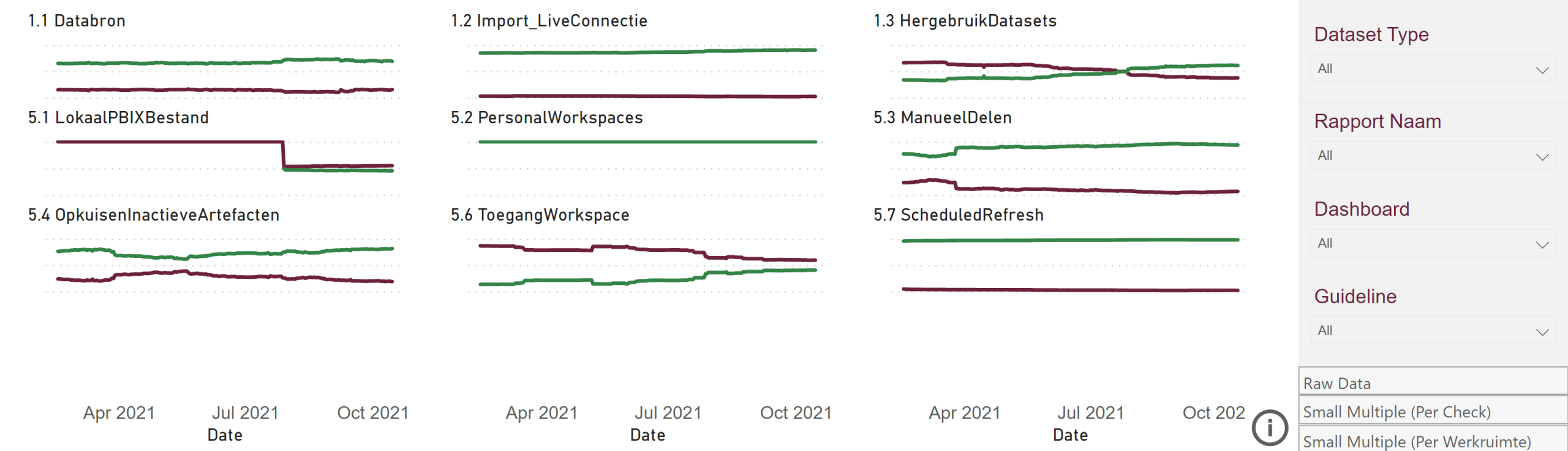
Trend Rapporten en Checks

Rapport % Check NOK % Check OK



Trend per Check

% Checks Failed % Checks Successful



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)



76%

% Check OK

22%

% Check NOK

2%

% Check Aandacht

5133

Check

9

Guideline

Datum

This

-

Day

10/15/2021 - 10/15/2021

Werkrumimte Type

Workspace

Werkrumimte

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 Werkrumimte)

Trend Rapporten en Checks

Rapport

% Check NOK

% Check OK

Rapport

% Check NOK and % C...

500

100%

0

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%

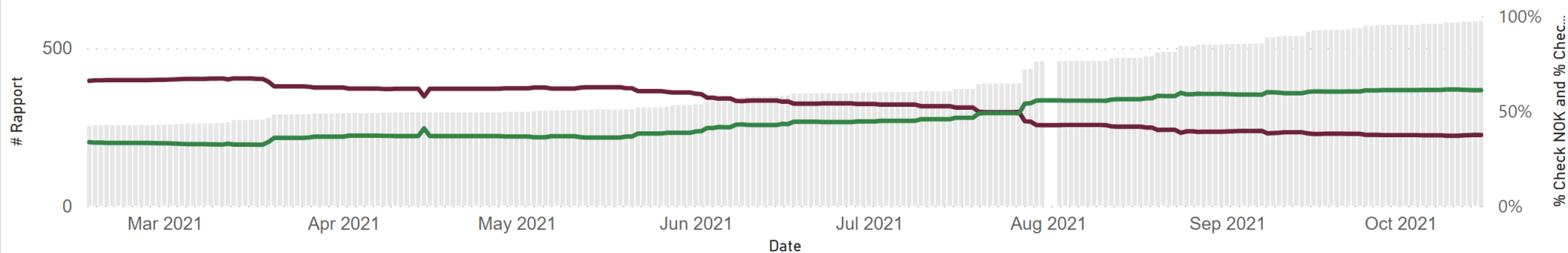
% Check NOK

2%

% Check Aandacht

Trend Rapporten en Checks

Rapport ● % Check NOK ● % Check OK



| Rapport werkruimte | Rapport Naam | Dataset werkruimte | Dataset Naam | Dataset Opge... |
|--------------------|--------------|--------------------|--------------|-----------------|
| Total | | | | |

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

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



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

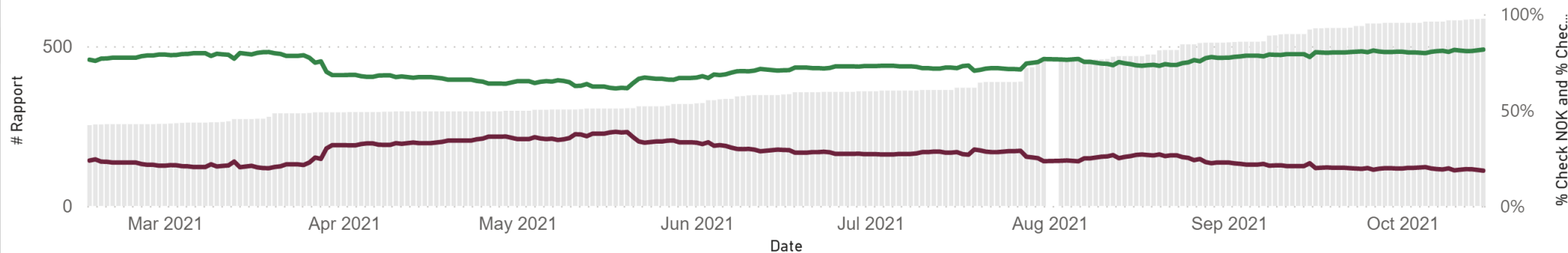
Guideline Topic

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 |
| Total | | | | 1 |

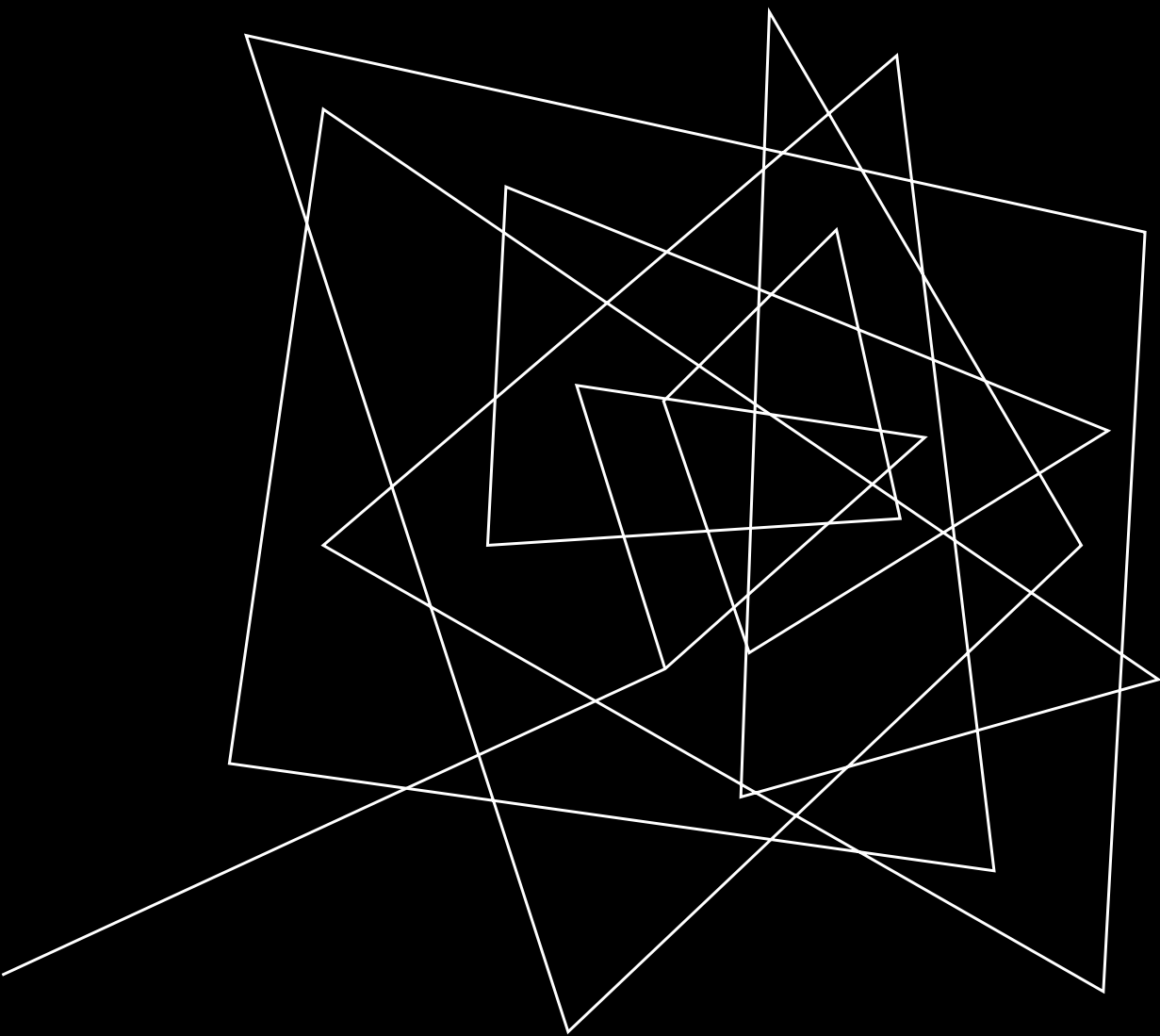
5.4 - Kuis niet meer gebruikte rapporten en datasets op

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

Add a 'whitelist' for artefacts

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

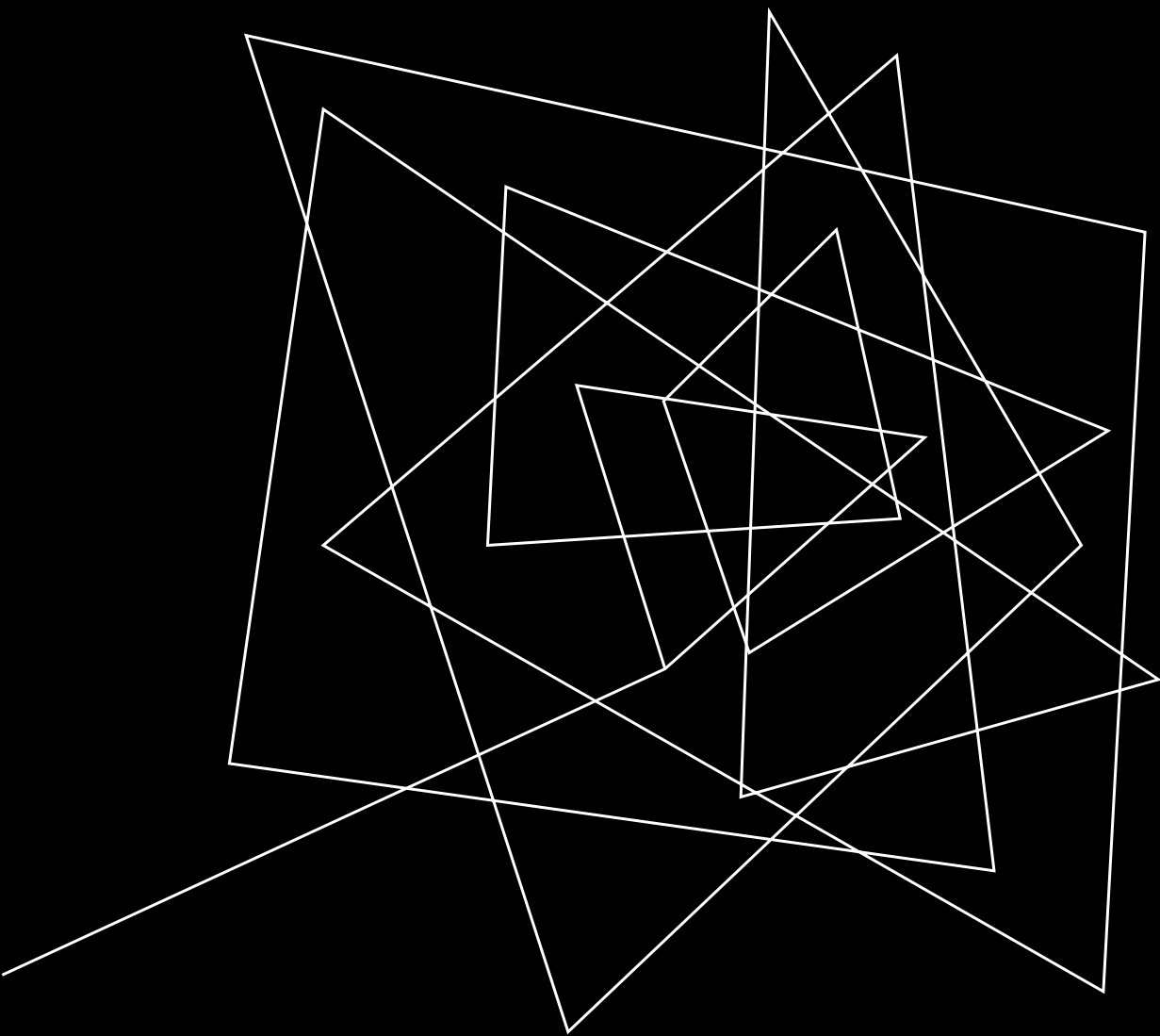
Include the automated extraction of

Tabular Editor Best Practice Analyzer

Azure Monitor (Log Analytics)

Whatever other insights may rise up

Open Source?



LESSONS LEARNED

LESSONS LEARNED

Experiment, gone right!

Enabling and promoting a strategic Data Culture pays off

MSFT Docs had some gaps to fill 😊

Strategic gaps in APIs are being filled

Try it!

A series of white, thin, overlapping geometric lines on a black background, forming a complex, abstract shape on the left side of the slide.

THANK YOU!