

POWER BI USER GROUP SESSION 4

MARCH 24, 2022

Facilitated by:

Steve Dunlop
Angus McLeod
Roy Vasher



Agenda

- Opening Remarks and Review of Agenda
- Introductions – new attendees only
 - Name, Company, and level of experience with Power BI
- Presentation by Dennis Rausch, VP Information Technology, Rea Magnet Wire Company
 - Enterprise Data Sources
- Presentation by Kyle Smith, IT Supervisor, Nucor
 - Connection to real-time data to display up-to-date information
- Presentation by DCMME, Student Project Team
 - Building Power BI Dashboard from a sketch – Step by Step process
- Google File Sharing vs Teams Option
- Closing Remarks – Next Meeting



PowerBI:

Enterprise Data Sources

Examples from Rea



Microsoft PowerBI Pro - Prerequisites

Versions

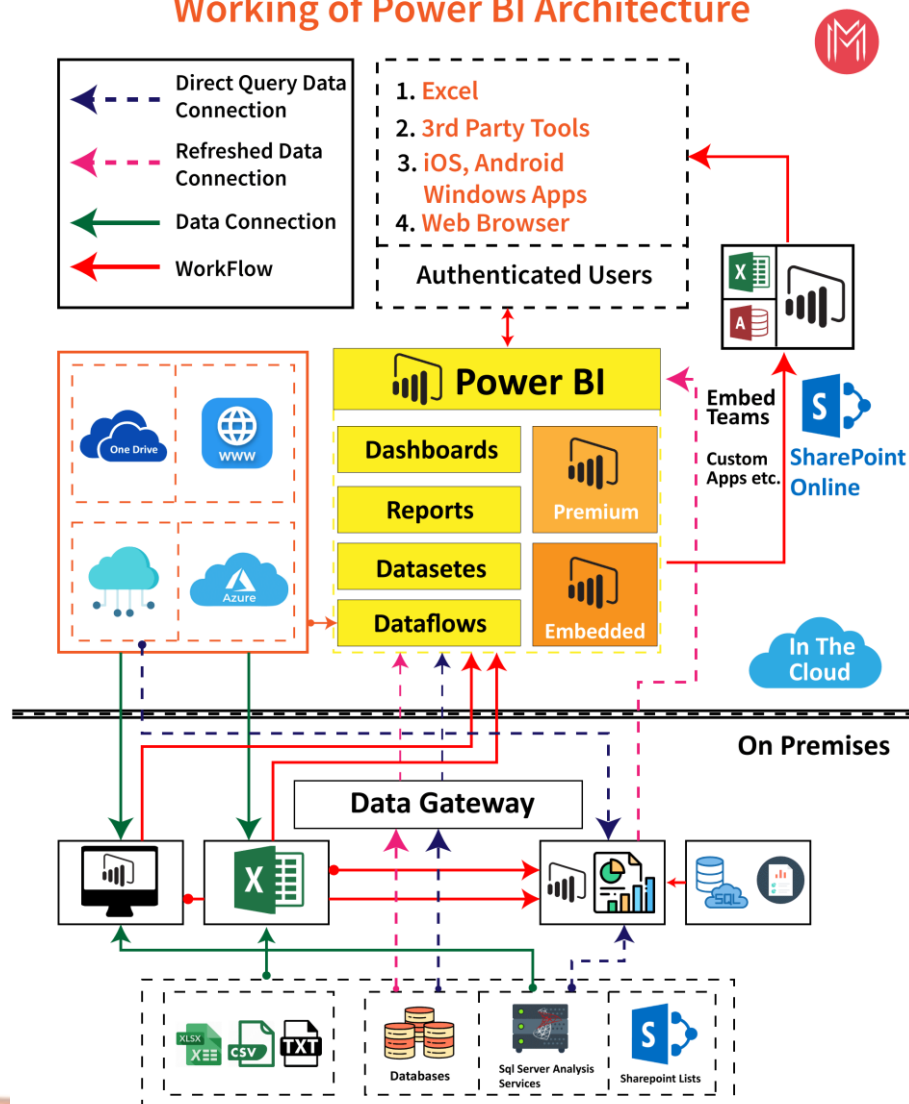
- PowerBI Desktop (Free)
- PowerBI Pro (Cloud) ← This is what I will demonstrate
- PowerBI Premium

Prerequisites

- Azure AD
- Office 365 Suite
- PowerBI Gateway Software installed (free download)

Diagram

Working of Power BI Architecture



■ Demonstration will be focused to the data gateway:

■ Setup the gateway

■ How to connect to these 3 data sources:

- Microsoft SQL
- Typical ODBC Compliant Database
- Excel

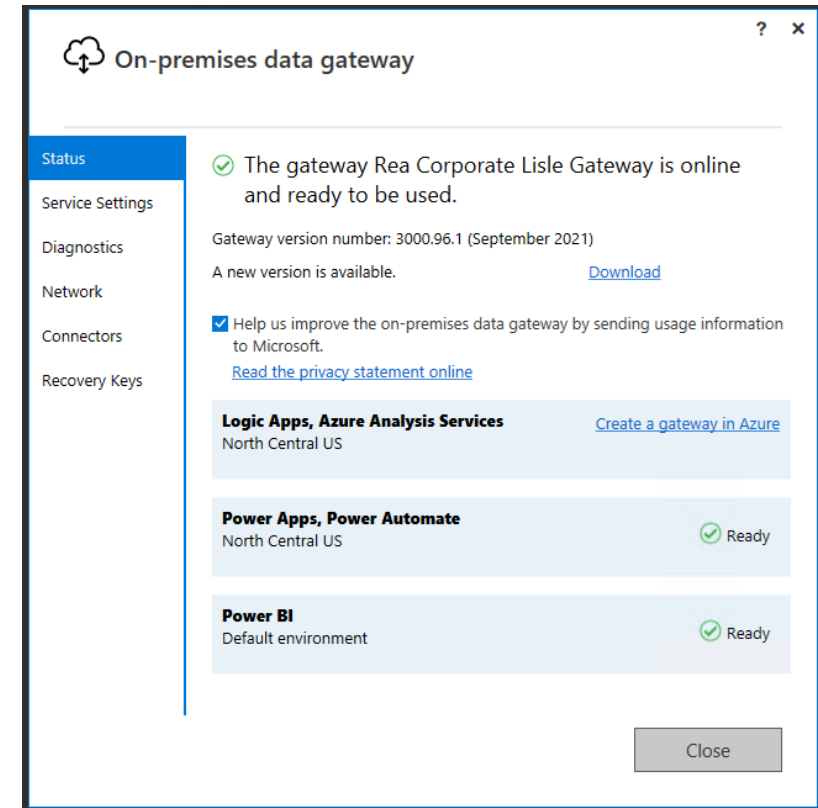
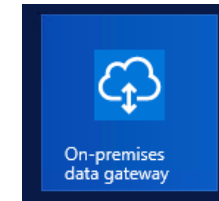
■ Publishing to the cloud (mapping the data)

■ Scheduling a data refresh

Live demo: Setup the Gateway

■ Connect to "Gateway Server"

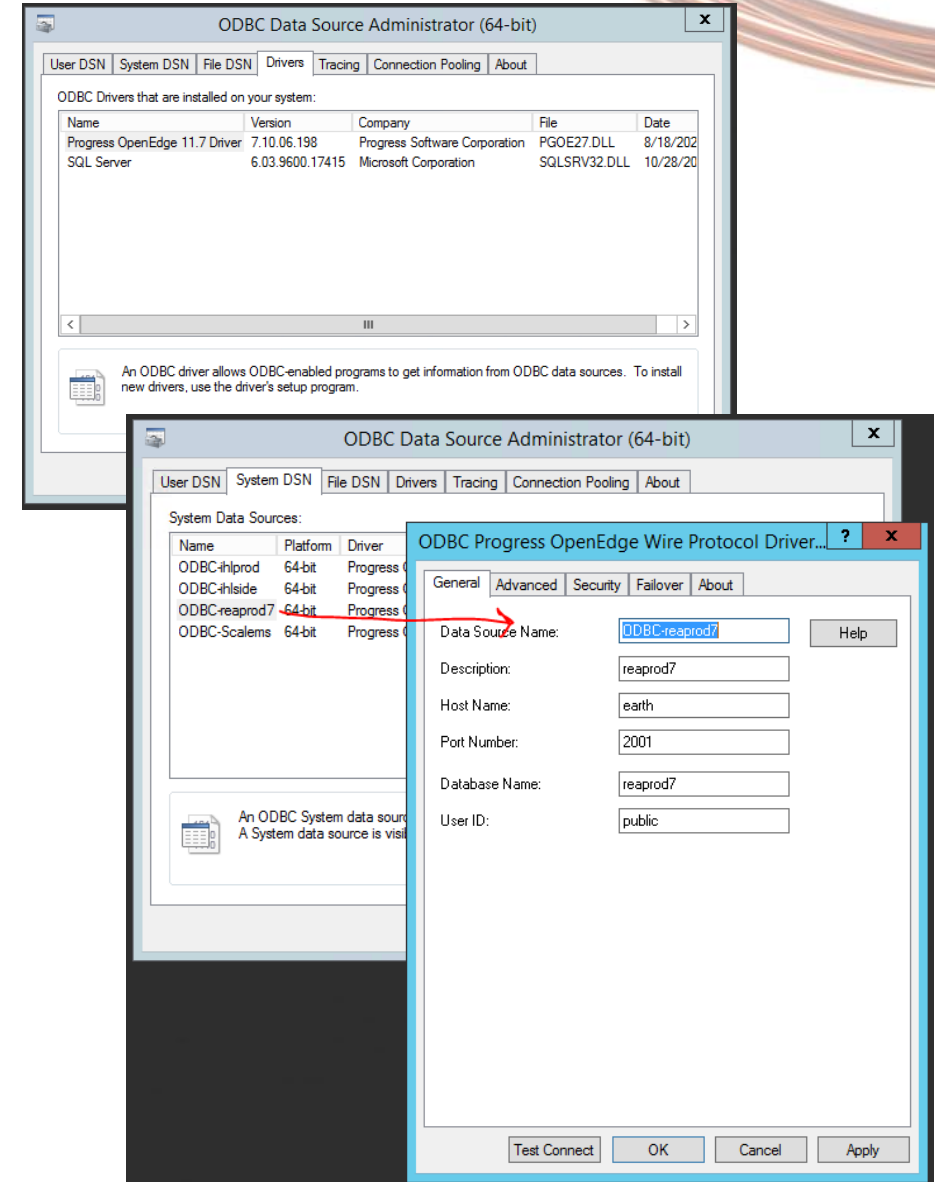
- At Rea, we have the **Azure Gateway** and the **PowerBI Gateway** running on the same server
- Review Installation and Configuration
- Regular Updates
- Gateway runs as a service – consider file permissions to things like Excel files on your Enterprise Network – That service account needs to have at least read privileges



Live demo: Setup the Gateway

Also Installed on the Gateway Server

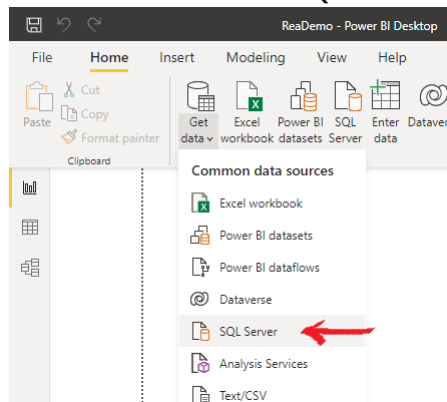
- Install the ODBC Drivers for non-Microsoft SQL databases
- Use ODBC64 (or ODBC32) data source administrator to create a data source
- Provide connection credentials, Test Connection, Save



Live Demo: How to Connect to these data sources

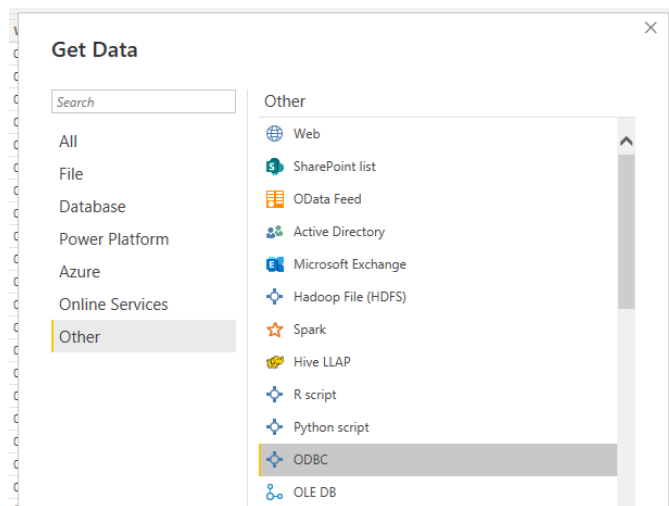
Microsoft SQL Server

Get Data → SQL Server

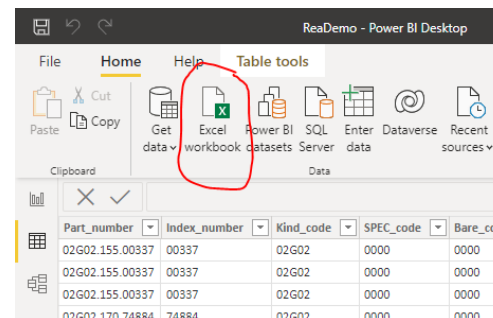


General ODBC Data source

Get Data → more... → other → odbc



Excel File



Change Drive Letter Mapping to UNC Naming Convention

Example:

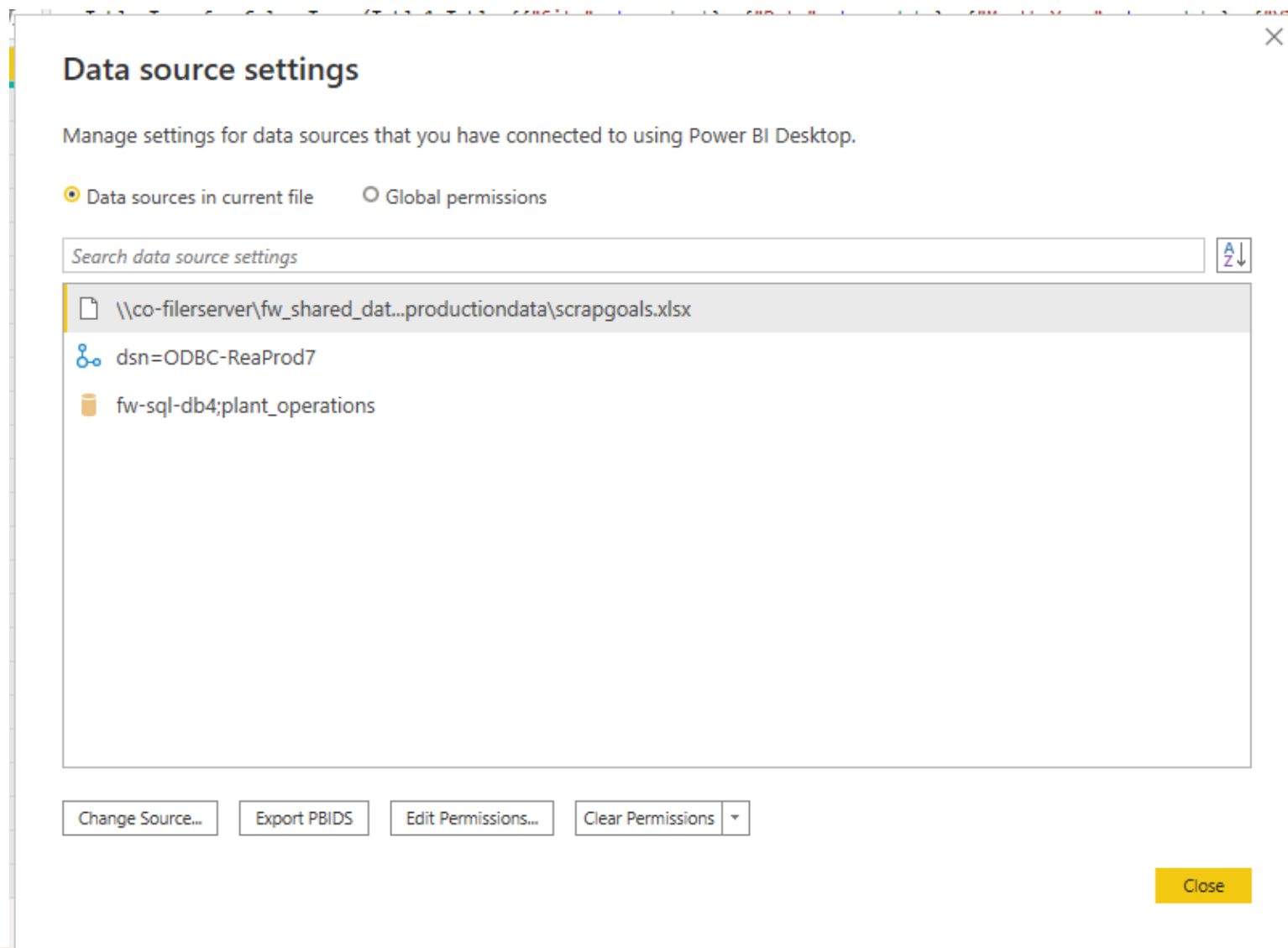
Change this:

`s:\powerbi\productiondata\scrapgoals.xlsx`

to this:

`\\co-fileserver\fw_shared_data\powerbi\productiondata\scrapgoals.xlsx`

Data Source Settings (summary)



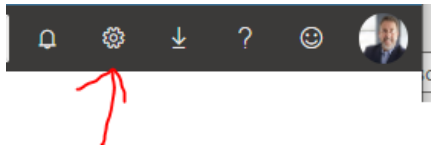
- 3 Examples Shown
 - Excel File
 - ODBC Data source
 - Microsoft SQL database

Live Demo: Manage Gateway (in Cloud)

➤ Navigate to <https://powerbi.com>

➤ Authenticate (as needed)

➤ Go to Settings



➤ Must be an Administrator in PowerBI Cloud

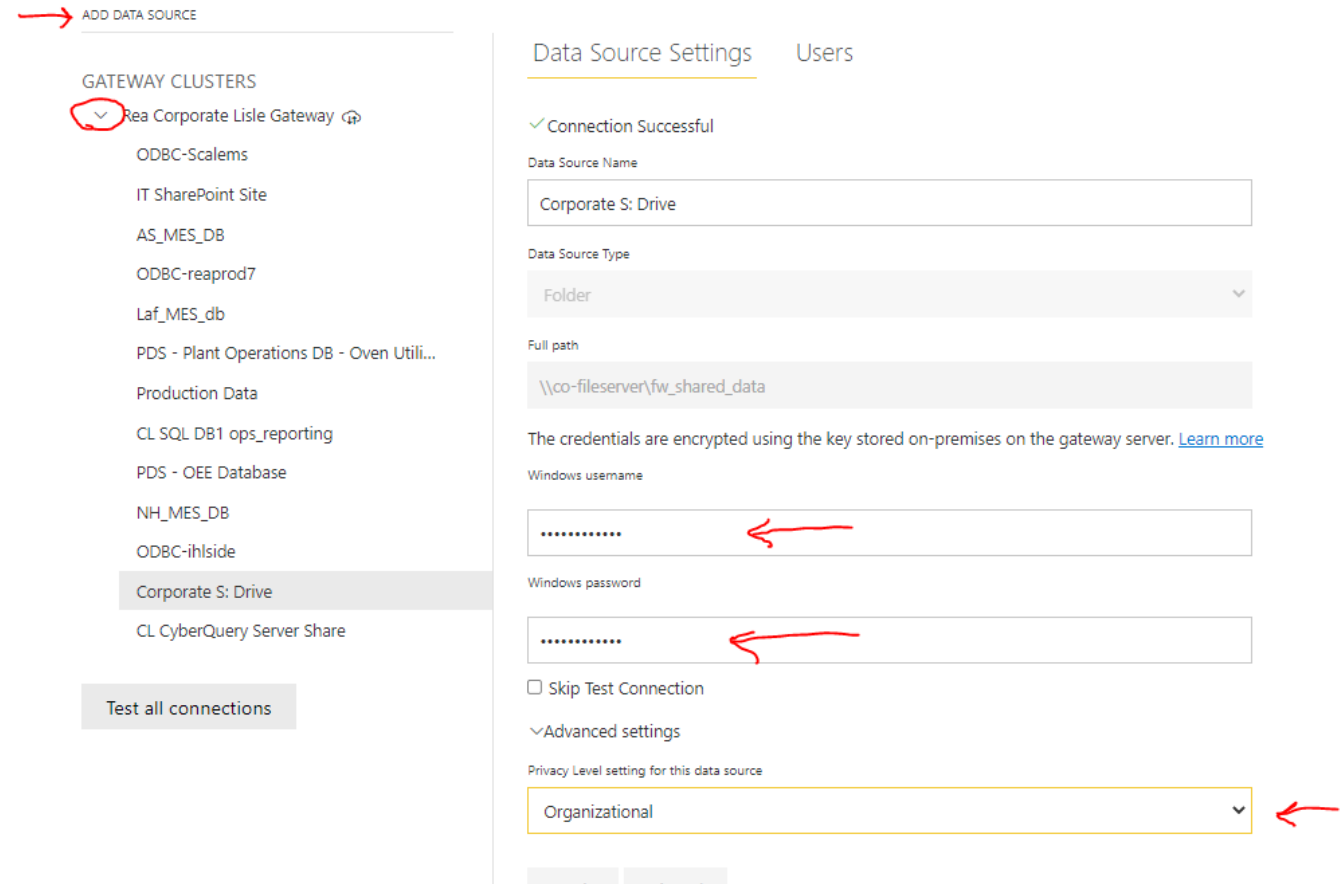
➤ Review Gateways Clusters

➤ Rea just has one Gateway

➤ **Create** your data sources

➤ Names can be the same or different

➤ Provide credentials as needed



ADD DATA SOURCE

GATEWAY CLUSTERS

- Rea Corporate Lisle Gateway
- ODBC-Scalems
- IT SharePoint Site
- AS_MES_DB
- ODBC-reaprod7
- Laf_MES_db
- PDS - Plant Operations DB - Oven Utili...
- Production Data
- CL SQL DB1 ops_reporting
- PDS - OEE Database
- NH_MES_DB
- ODBC-ihlside
- Corporate S: Drive
- CL CyberQuery Server Share

Test all connections

Data Source Settings Users

✓ Connection Successful

Data Source Name

Corporate S: Drive

Data Source Type

Folder

Full path

\\co-fileserver\fw_shared_data

The credentials are encrypted using the key stored on-premises on the gateway server. [Learn more](#)

Windows username

.....

Windows password

.....

☐ Skip Test Connection

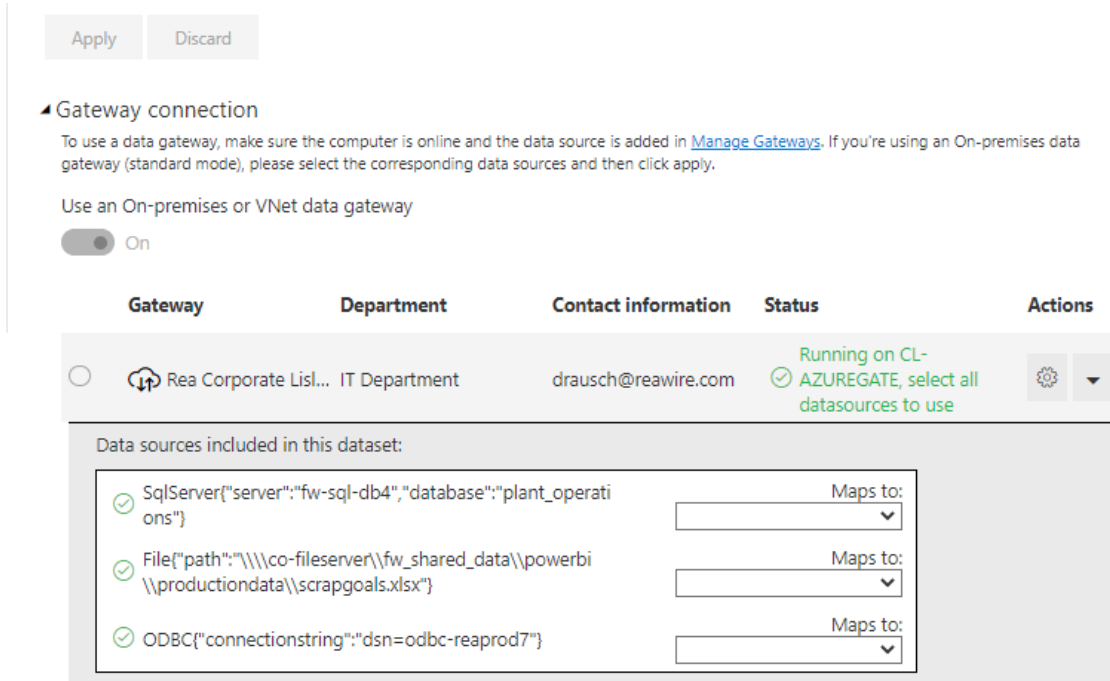
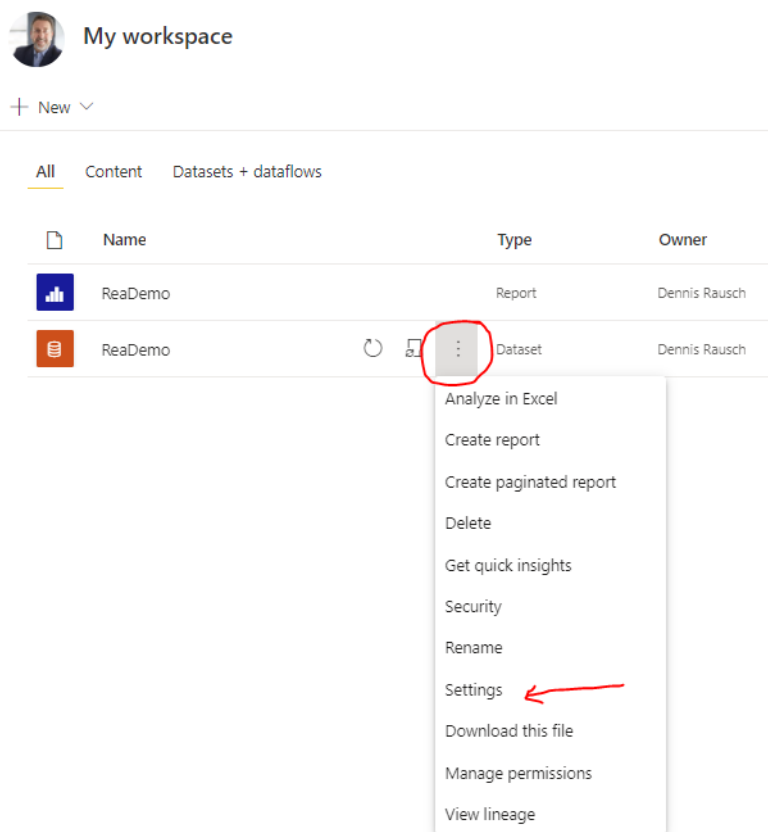
Advanced settings

Privacy Level setting for this data source

Organizational

Live Demo: Mapping Data sources

- Navigate to <https://powerbi.com>
- Authenticate (as needed)
- Go to the workspace



Map each data source



Live Demo: Schedule a Data Refresh

- Navigate to <https://powerbi.com>
- Authenticate (as needed)
- Go to the workspace

My workspace

+ New ▾

All Content Datasets + dataflows

	Name	Type	Owner
	ReaDemo	Report	Dennis Rausch
	ReaDemo	Dataset	Dennis Rausch

⋮

- Analyze in Excel
- Create report
- Create paginated report
- Delete
- Get quick insights
- Security
- Rename
- Settings ←
- Download this file
- Manage permissions
- View lineage

⚡ Scheduled refresh

Keep your data up to date

☒ On

Refresh frequency

Daily ▾

Time zone

(UTC-05:00) Eastern Time (US and Ca ▾

Time

3 ▾ 00 ▾ AM ▾ ✕

[Add another time](#)

Send refresh failure notifications to

☒ Dataset owner

☐ These contacts:

Enter email addresses

Apply

Discard



Questions





KYLE M. SMITH, PMP – IT SUPERVISOR



INTRODUCTION



NUCOR STEEL INDIANA
NUCOR CORPORATION (NUE)
CRAWFORDSVILLE, INDIANA

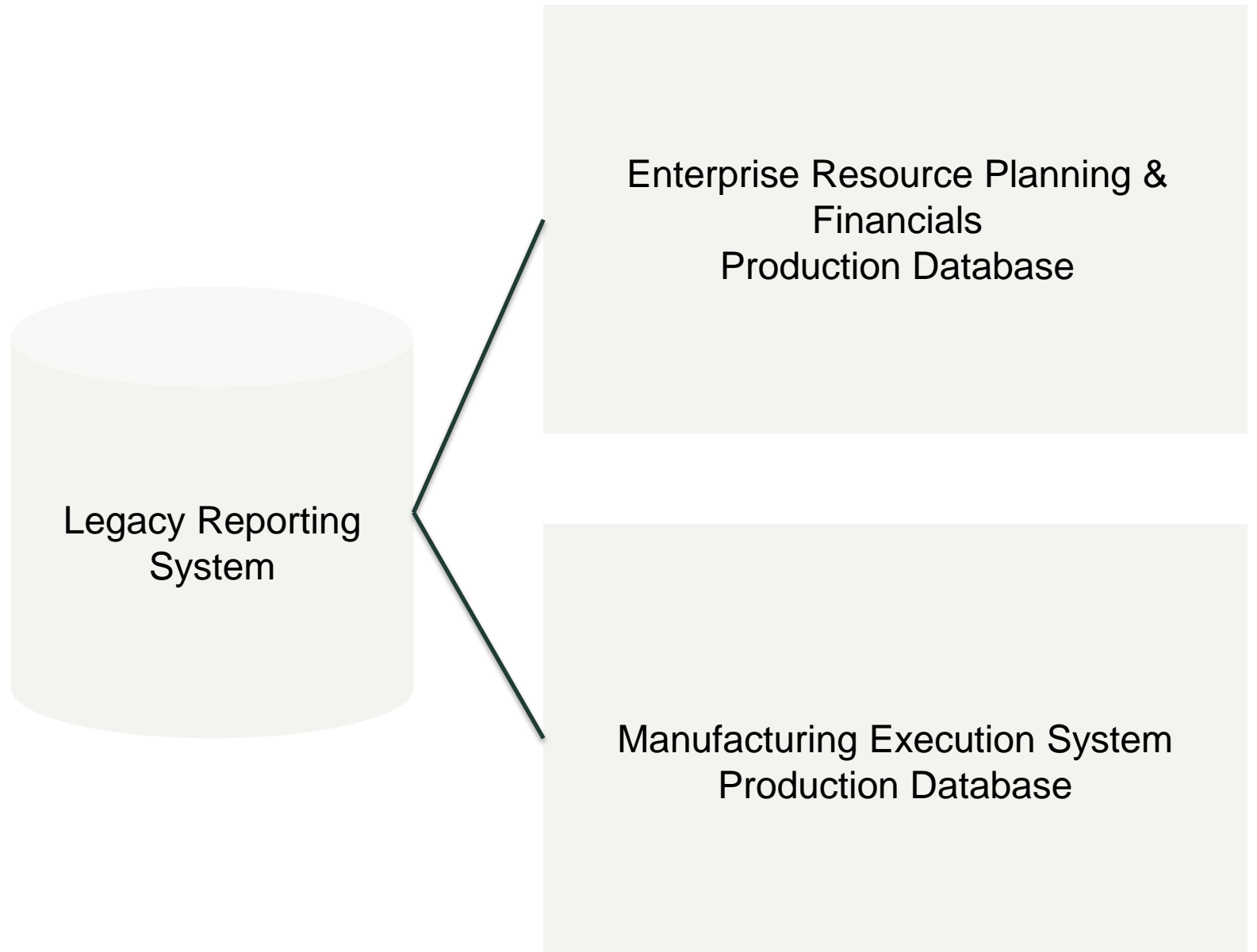
https://nucor-my.sharepoint.com/:v:/p/kyle_smith/EZL-9fJpbwNLmX8_A0Wat3MBvMDvhiiSpqdgUqyW8HvwjA?e=V84s1g



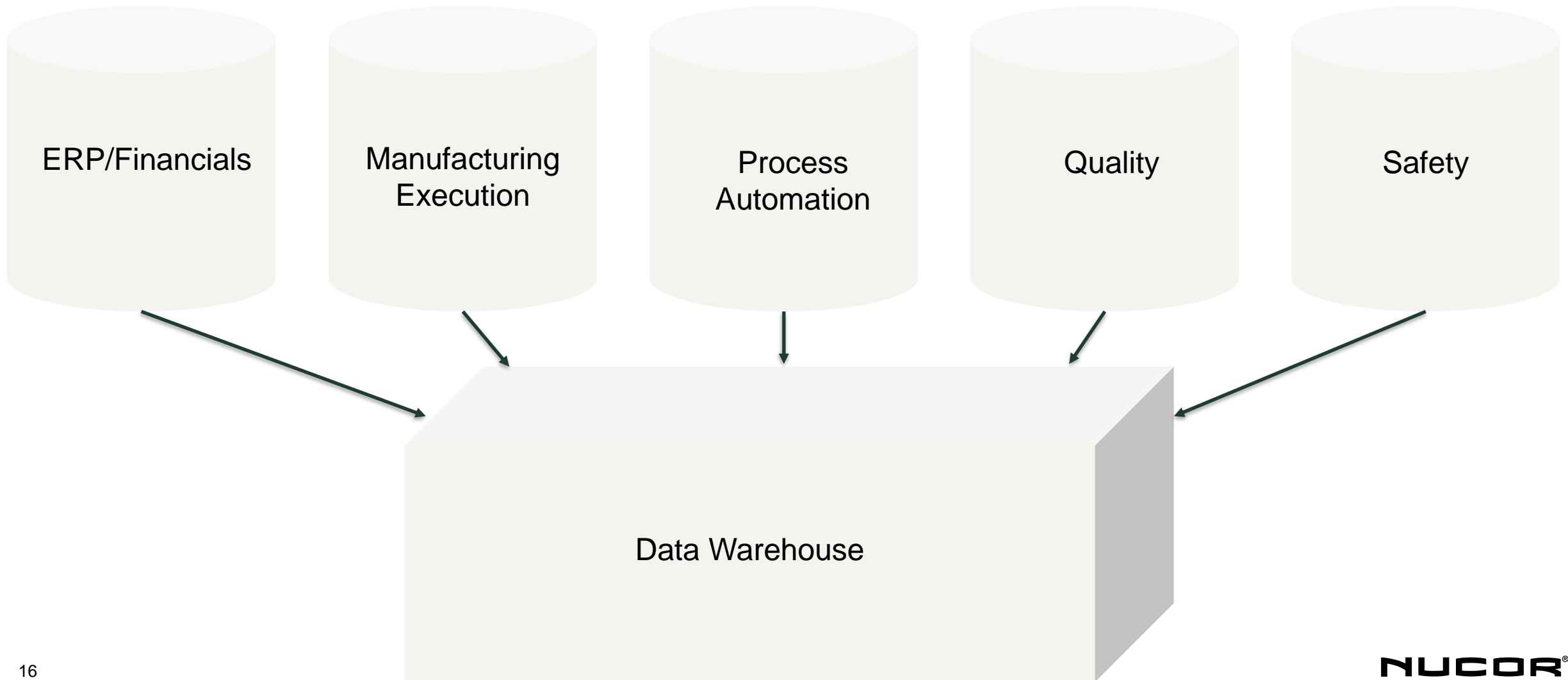
NUCOR®

THE CHALLENGE

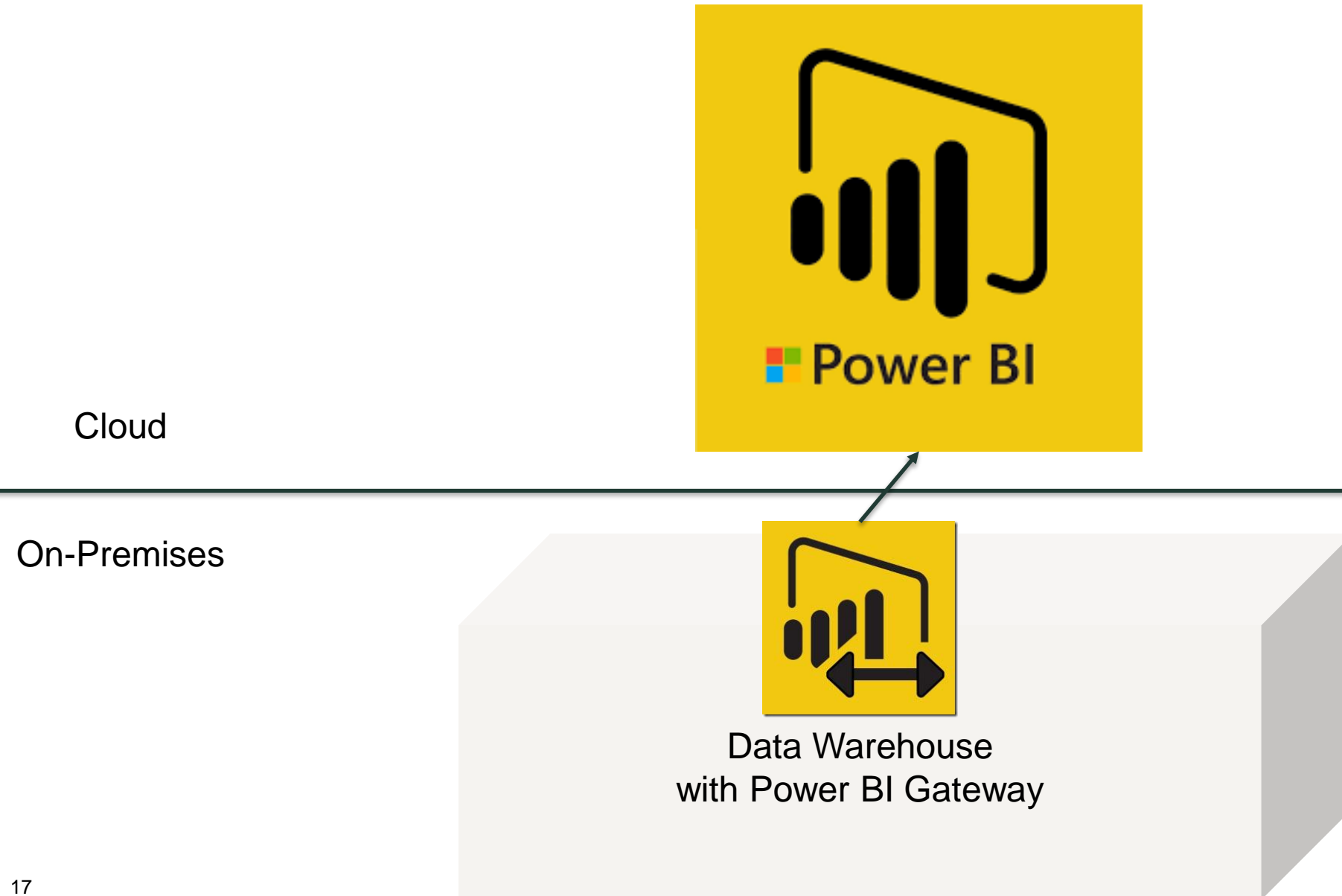
- Reactive data
- IT produces everything
- Traditional paginated reports
- Poor user experience
- Performance issues



CHANGING THE MODEL: DATA REPLICATION



CHANGING THE MODEL: NEW REPORTING TOOL



BUILDING THE TEAM – IDENTIFYING NEEDS

- Database Administrator
- Developer – focus on ETL (extract, transform, load) development
- Developer – focus on BI development in Power BI Desktop and Power BI Paginated Report Builder
- Data replication tool
- Data warehouse infrastructure
- Power BI gateway
- Office 365 licensing



MICROSOFT LICENSING FOCUS



Every teammate licensed
under the E5 plan



Using a premium per
capacity (P1) license for the
enterprise to **consume**
information



Assign a Power BI
Professional license to
publishers only.

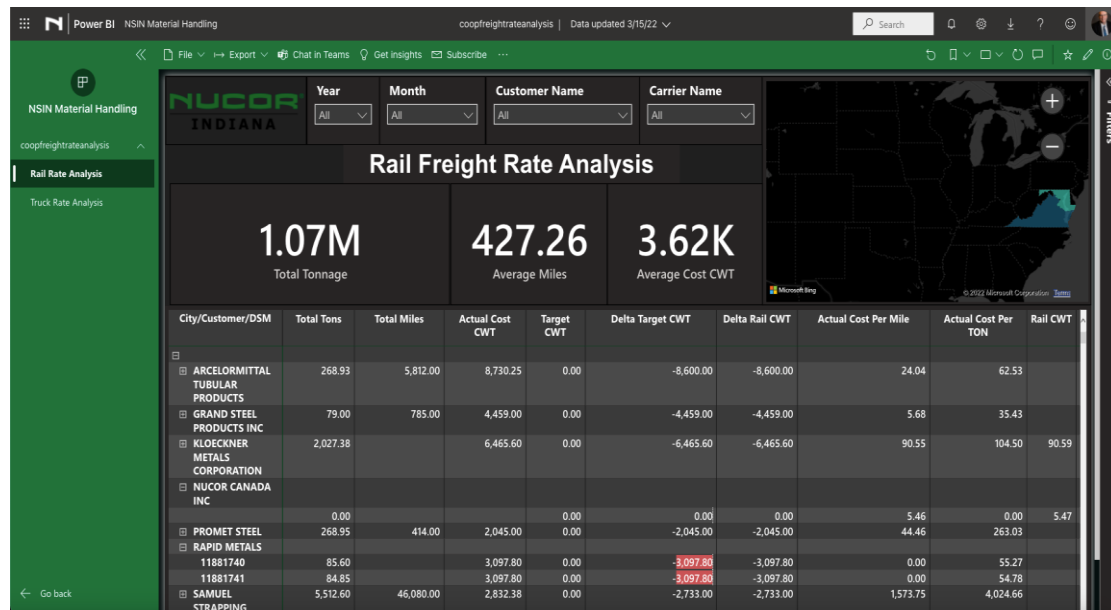
PREPARING AND CREATING WORKSPACES

- Ask questions
 - Who will consume this data?
 - Who should not see the data?
 - Who will need to publish updates?
- Create workspaces with deployment pipelines (Dev, Test, QA, Prod)
- Set permissions with Active Directory accounts and security groups
- Convert workspace to Premium Per Capacity



PUBLISHING

- Publish to production workspace
- Use a Power BI Published App
- Setup e-mail notifications to alert consumers



Apps

- NSIN Cold Mill**
Last published: a month ago
- NSIN Hotmill**
Last published: 5 days ago
- NSIN Maintenance**
Last published: 22 hours ago
- NSIN Managers**
Last published: 25 days ago
- NSIN Material Handling**
Last published: a month ago
- NSIN Meltcast**
Last published: 14 days ago
- NSIN Purchasing**
Last published: a month ago
- NSIN Quality**
Last published: 5 days ago
- NSIN Safety**
Last published: 19 days ago
- NSIN Sales**
Last published: a month ago

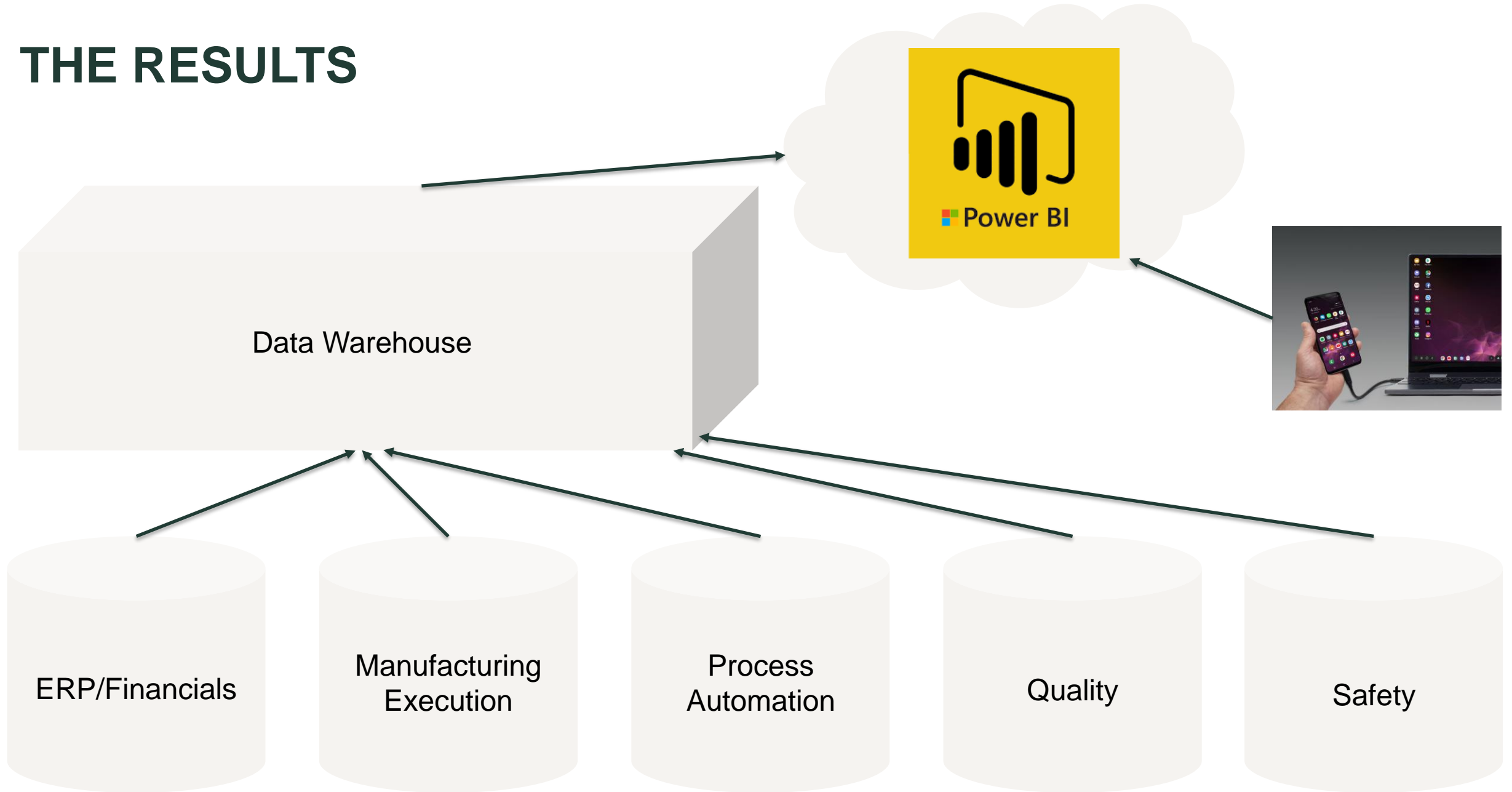
Rail Freight Rate Analysis

1.07M Total Tonnage, 427.26 Average Miles, 3.62K Average Cost CWT

City/Customer/DSM	Total Tons	Total Miles	Actual Cost CWT	Target CWT	Delta Target CWT	Delta Rail CWT	Actual Cost Per Mile	Actual Cost Per TON	Rail CWT
ARCELORMITTAL TUBULAR PRODUCTS	268.93	5,812.00	8,730.25	0.00	-8,600.00	-8,600.00	24.04	62.53	
GRAND STEEL PRODUCTS INC	79.00	785.00	4,459.00	0.00	-4,459.00	-4,459.00	5.68	35.43	
KLOECKNER METALS CORPORATION	2,027.38		6,465.60	0.00	-6,465.60	-6,465.60	90.55	104.50	90.59
NUCOR CANADA INC	0.00						5.46	0.00	5.47
PROMET STEEL INC	268.95	414.00	2,045.00	0.00	-2,045.00	-2,045.00	44.46	263.03	
RAPID METALS 11881740	85.60		3,097.80	0.00	-3,097.80	-3,097.80	0.00	55.27	
11881741	84.85		3,097.80	0.00	-3,097.80	-3,097.80	0.00	54.78	
SAMUEL STRAPPING	5,512.60	46,080.00	2,832.38	0.00	-2,733.00	-2,733.00	1,573.75	4,024.66	

To get a larger view of this report, rotate your phone to landscape orientation

THE RESULTS



THE RESULTS



- Proactive data
- Publishers build and produce reports
- Real-time visual reports or paginated reports
- AMAZING user experience
- No performance issues
- IT empowering business process experts

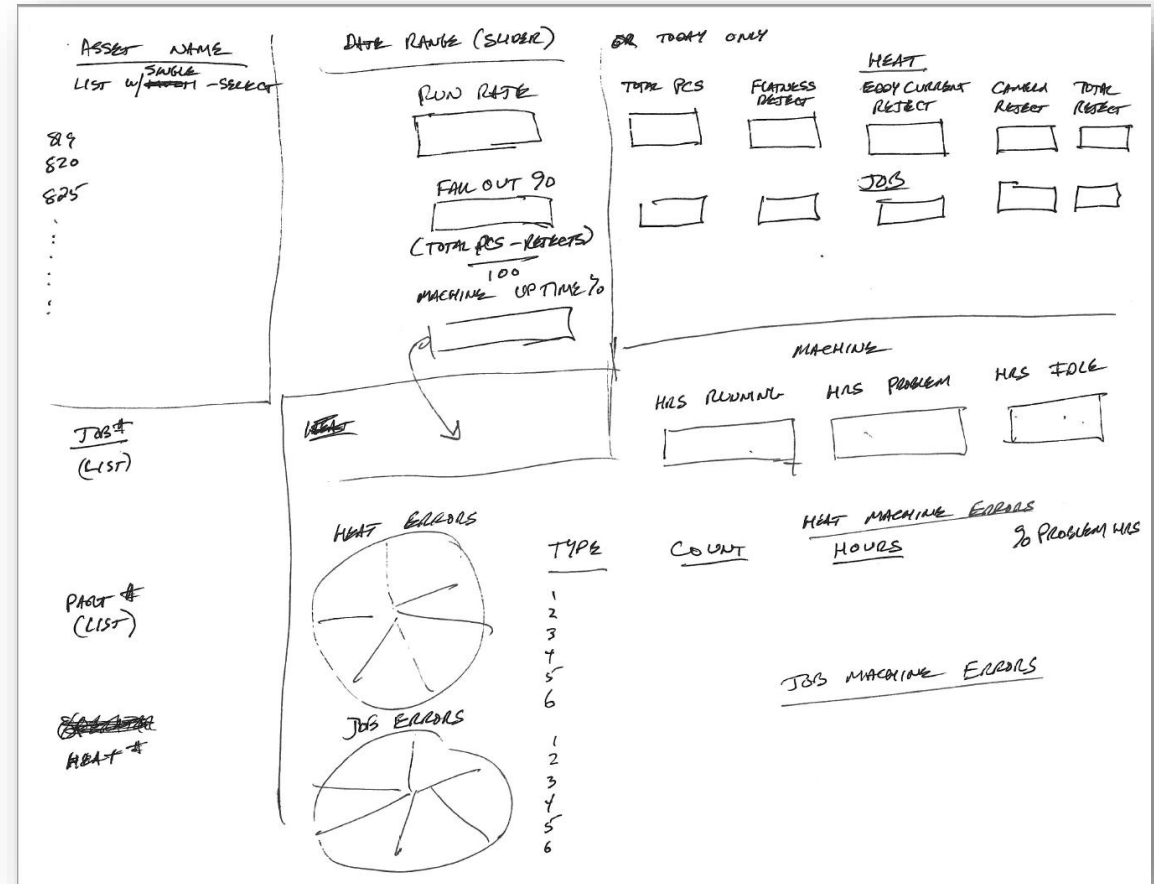
POWER BI FOR DATA VISUAL DASHBOARDS

Project: Power BI IIoT Analytics Dashboard

Purdue Student Presentation for MPI

The start

- Data coming from different databases, over 15 tables each running into multiple thousands of rows
- How data from multiple sources is related
- A paper sketch of data visuals expected from this data
- A meeting with the client to understand data and expectations



Power BI vs. Excel

Key Differences

- Visualizations
- Data Discovery:
 - Excel stores data in tabular form
 - Power BI store data in tables
- Automation: ETL (Extract, Transform, Load)

Excel

Popular Spreadsheet tool

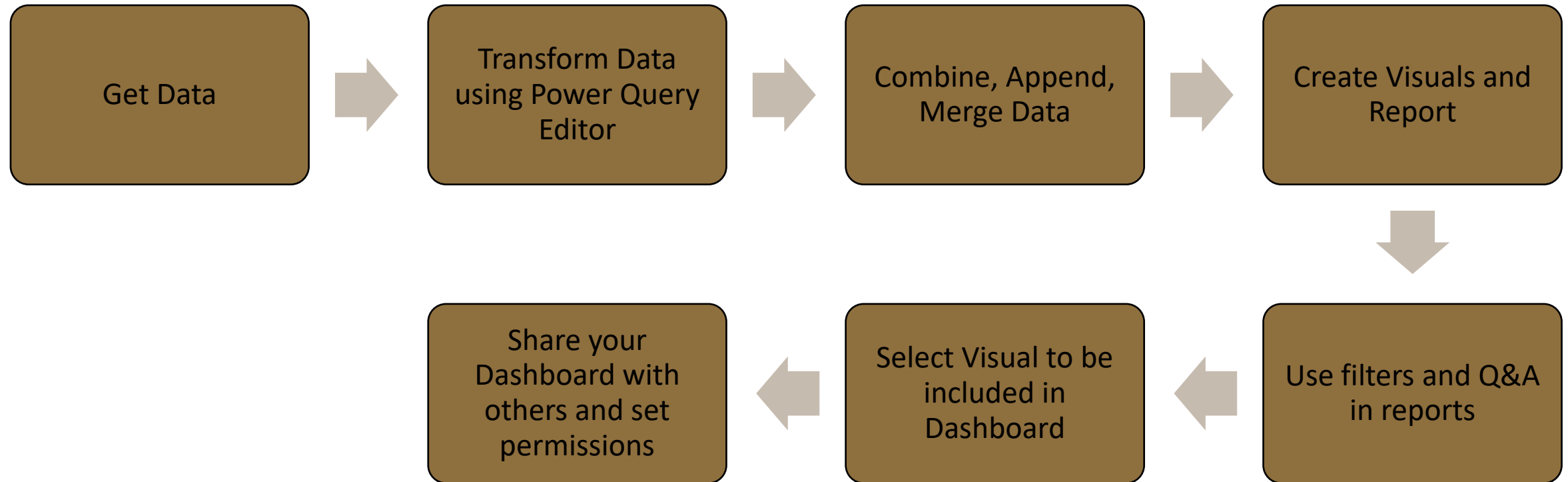
Power BI

Business Intelligence tool

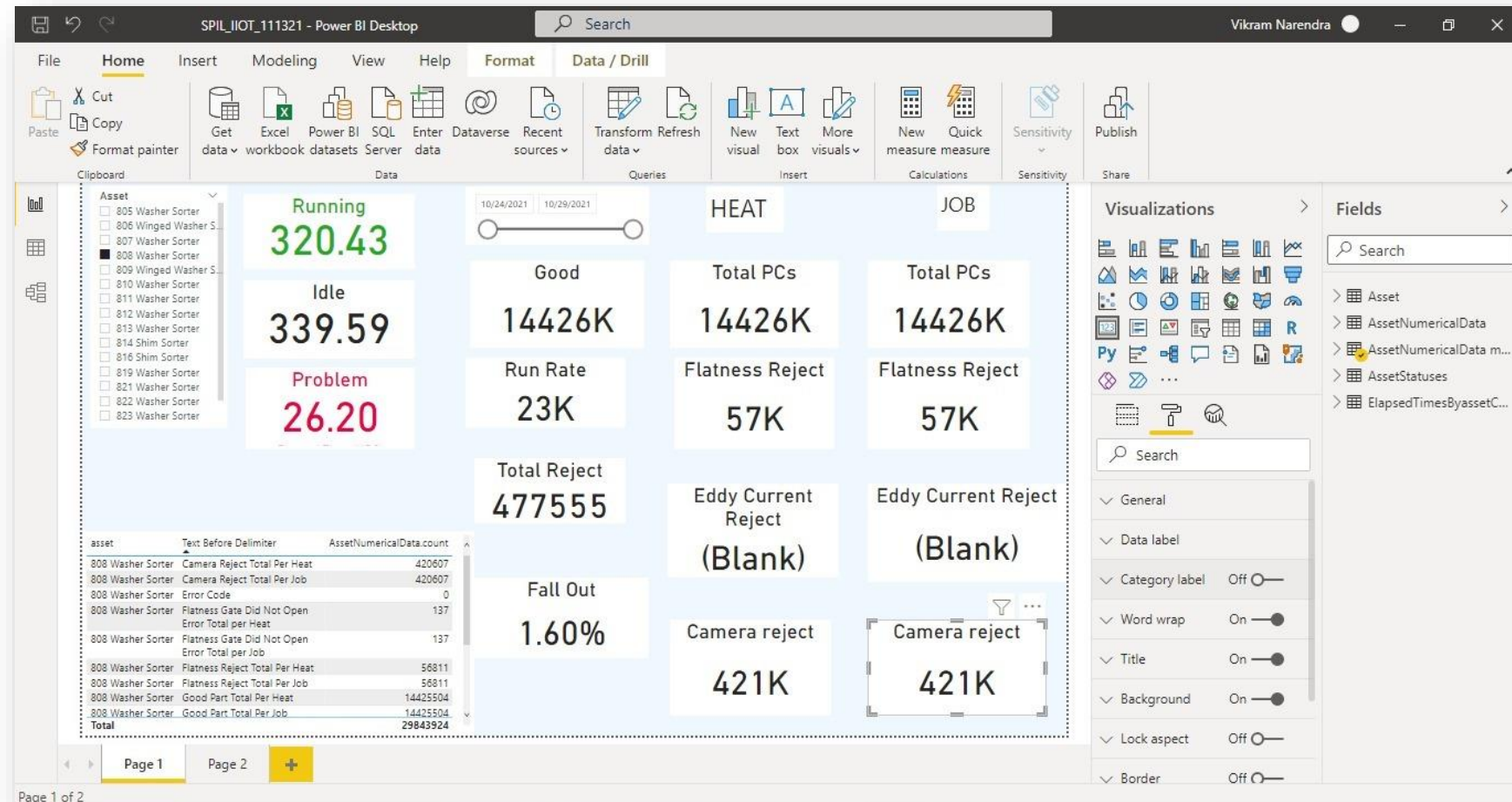
Power BI query editor lets you record each step used to manipulate your data set

Excel is a powerful tool, but Power BI is superior for data visualization and discovery

Steps followed



The dashboard



THANK YOU

**Vikram
Narendra**



MS GLOBAL SUPPLY CHAIN MANAGEMENT,
PURDUE UNIVERSITY, 2021

MICRO MASTERS IN SUPPLY CHAIN,
MASSACHUSETTS INSTITUTE OF TECHNOLOGY,
(MIT) 2010

6+ YEARS OF EXPERIENCE IN DEMAND
PLANNING AND NETWORK OPTIMIZATION

**Rajinder
Budhiraja**



MS GLOBAL SUPPLY CHAIN MANAGEMENT,
PURDUE UNIVERSITY, 2021

MBA (FINANCE), *INSTITUTE OF CHARTERED FINANCIAL
ANALYSTS OF INDIA (ICFAI UNIVERSITY), 2009*

10+ YEARS OF EXPERIENCE ACROSS IT, RETAIL,
DISTRIBUTION AND HOSPITALITY

Power BI Group – Shared ‘DRIVE’ Resources

- Idea: Provide a file sharing option for Power BI Users to share resources
 - Option 1: Teams shared folders
 - Option 2: Google Drive see example below

When invited to Join this group (Google DRIVE email) you will be linked to:

<https://drive.google.com/drive/folders/12qs8OWnUlq7VedGehch1dcNEDZITAhSB?usp=sharing>

- You will see a number of named folders that include information files, links, videos, white papers etc., for example:
 - Use Applications (Cases)
 - Starter Resources
 - Intermediate Resources
 - Advanced Skills Resources
 - Glossary of Terms...

Wrap Up

- Open Discussion
- Volunteers for Presenting at next meeting
- Next Meeting – June-July?

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