POWER BI USER GROUP SESSION 4

MARCH 24, 2022

Facilitated by:
Steve Dunlop
Angus McLeod
Roy Vasher

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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

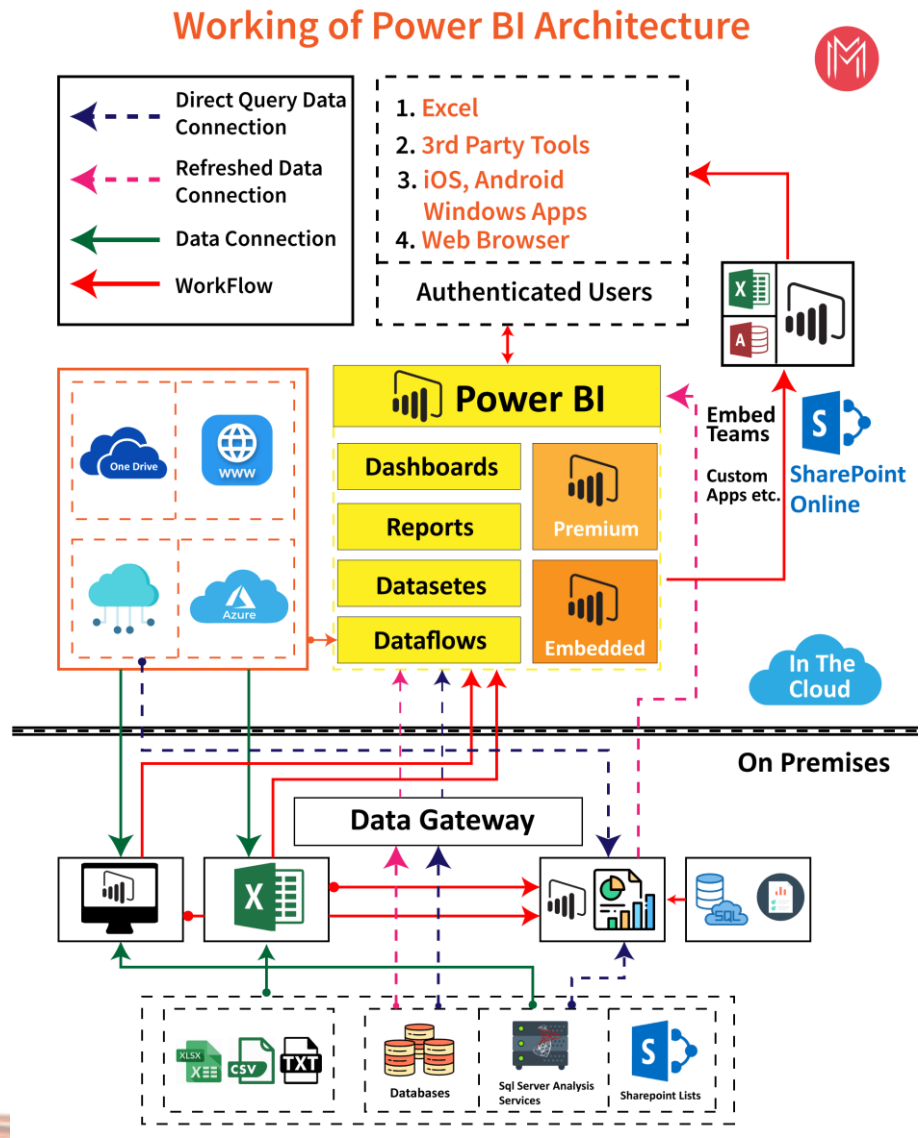
Versions

- 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)

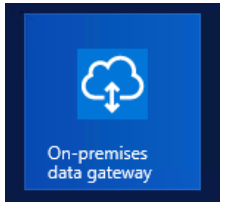
Diagram

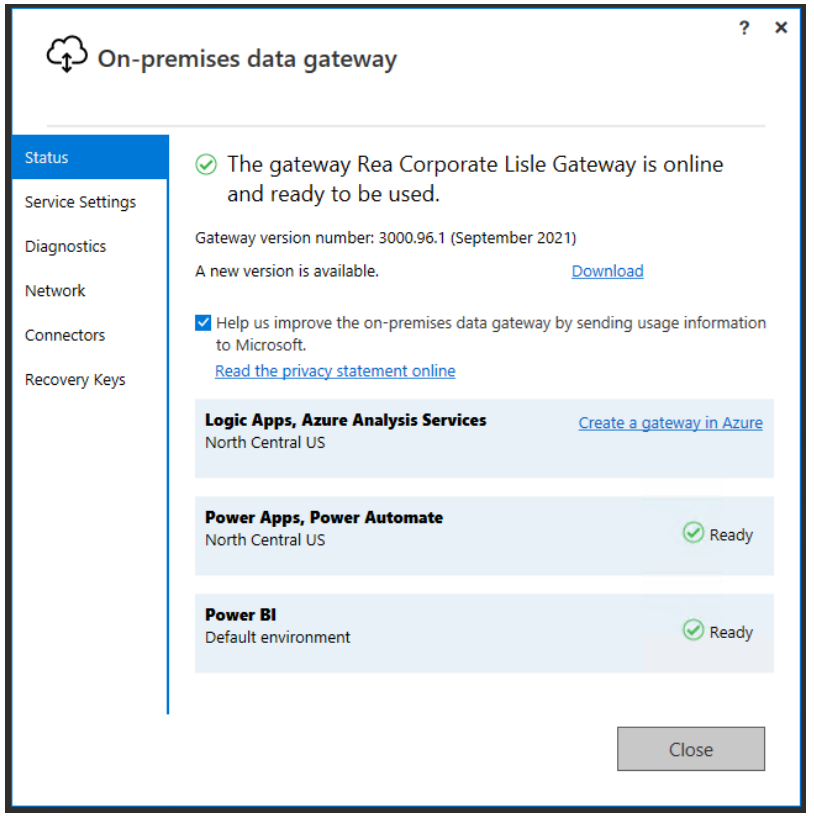


- Demonstration will be focused to the data gateway:
  - Setup the gateway
  - How to connect to these 3 data sources:
    - Microsoft SQL
    - Typical ODBC Compliant Database
    - Excel
  - Publishing to the cloud (mapping the data)
  - Scheduling a data refresh

Live demo: Setup the Gateway

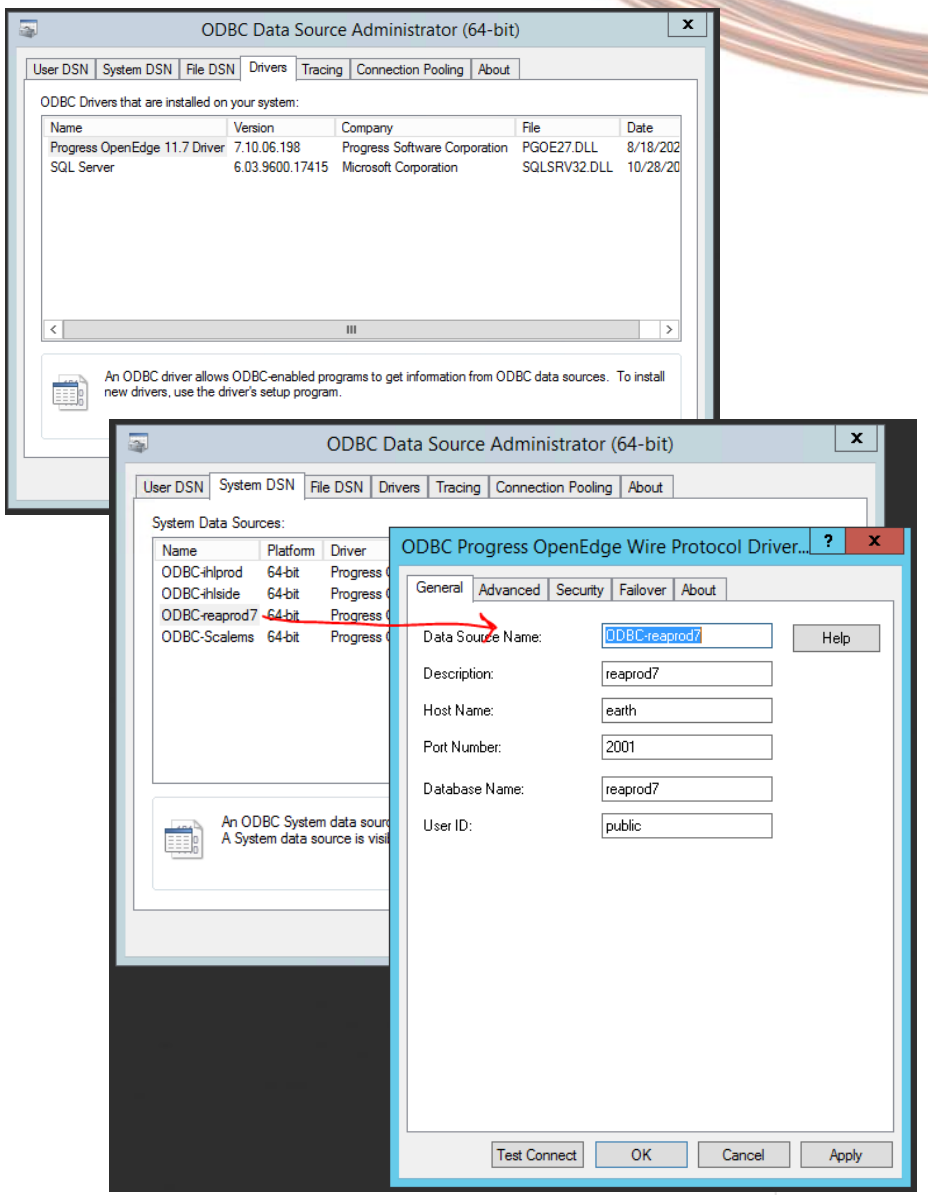
- Connect to “Gateway Server”
  - At Rea, we have the **Azure Gateway** and the **PowerBI Gateway** running on the same server
  - Review Installation and Configuration
  - Regular Updates
  - Gateway runs as a service – consider file permissions to things like Excel files on your Enterprise Network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





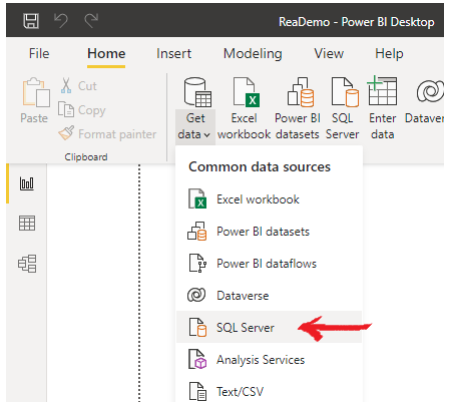
Live demo: Setup the Gateway

- 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

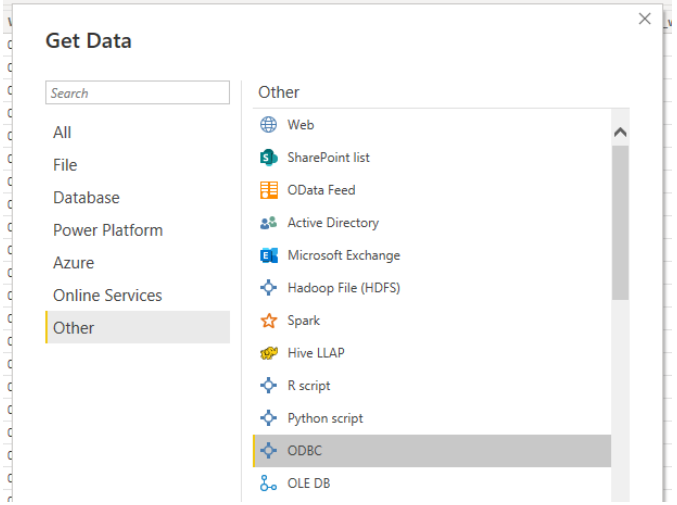


Live Demo: How to Connect to these data sources

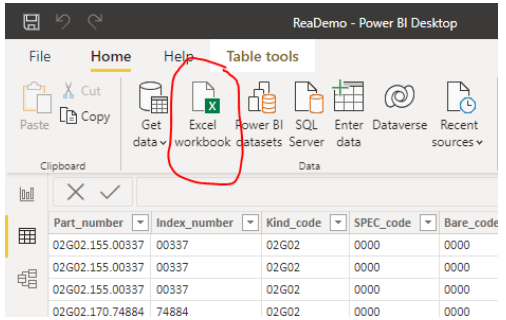
- Microsoft SQL Server
  - Get Data → SQL Server



- General ODBC Data source
  - Get Data → more… → other → odbc



- Excel File

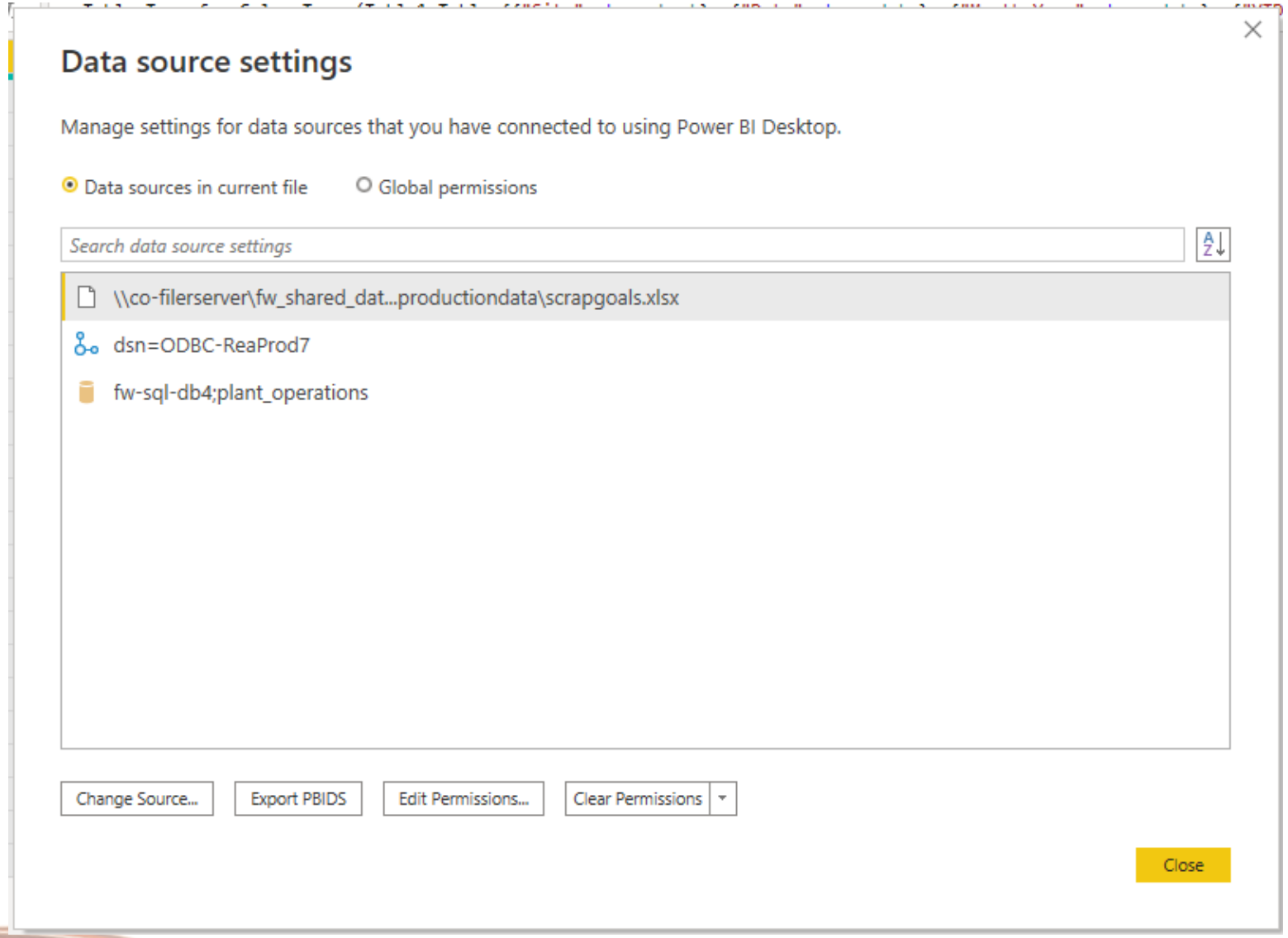


Change Drive Letter Mapping to UNC Naming Convention

Example:
Change this:
s:\powerbi\productiondata\scrapgoals.xlsx

to this:
\\co-fileserver\fw_shared_data\powerbi\productiondata\scrapgoals.xlsx

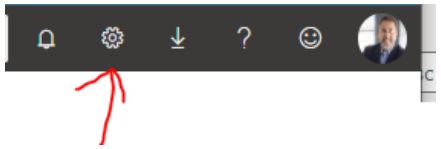
Data Source Settings (summary)



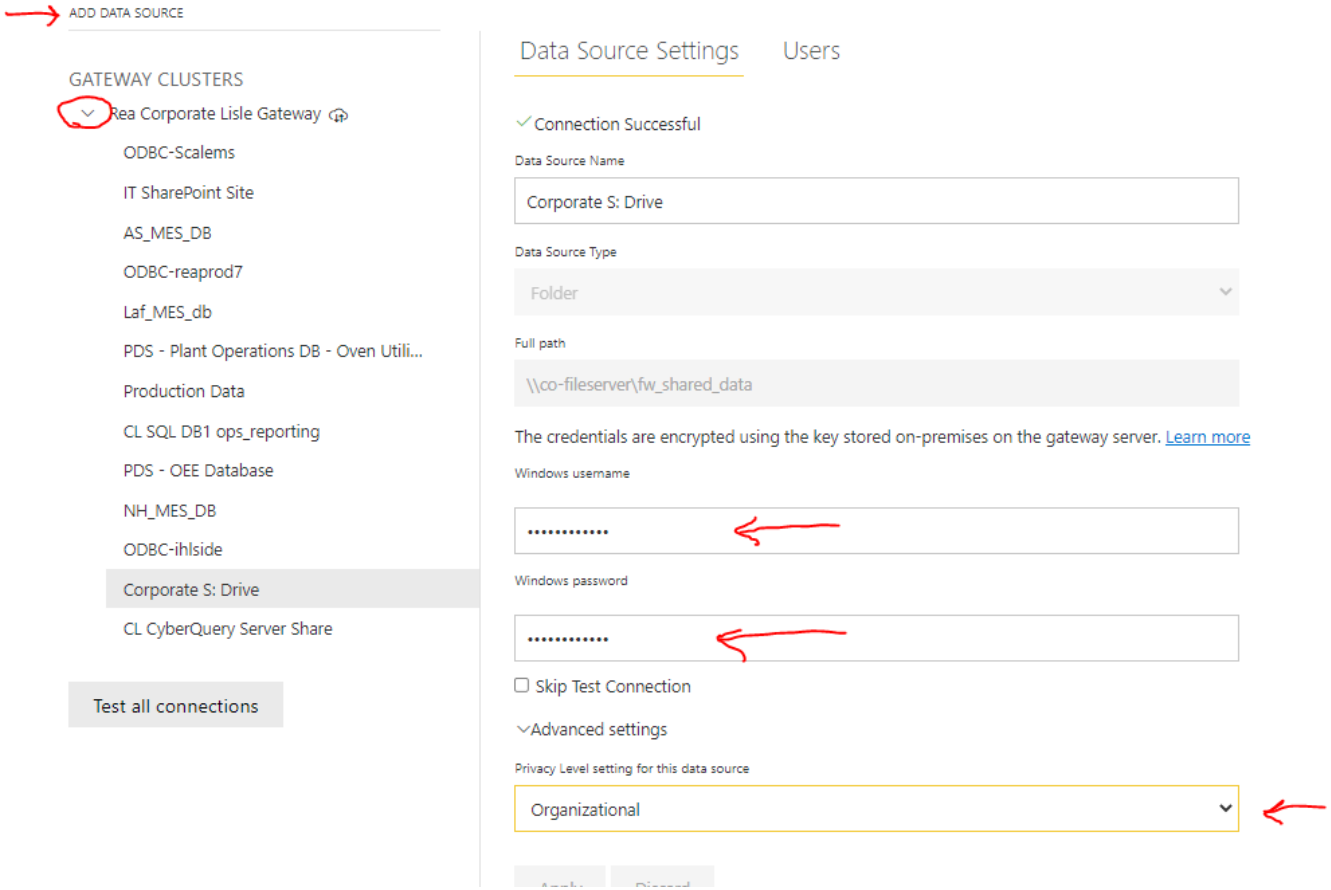
- 3 Examples Shown
  - Excel File
  - ODBC Data source
  - Microsoft SQL database

Live Demo: Manage Gateway (in Cloud)

- Navigate to https://powerbi.com
- Authenticate (as needed)
- Go to Settings

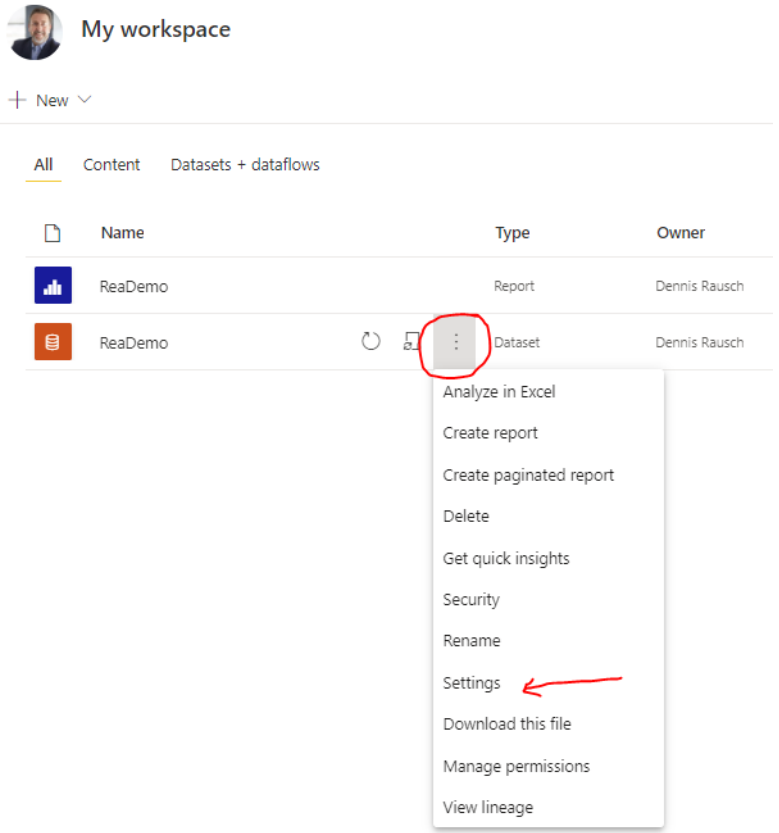


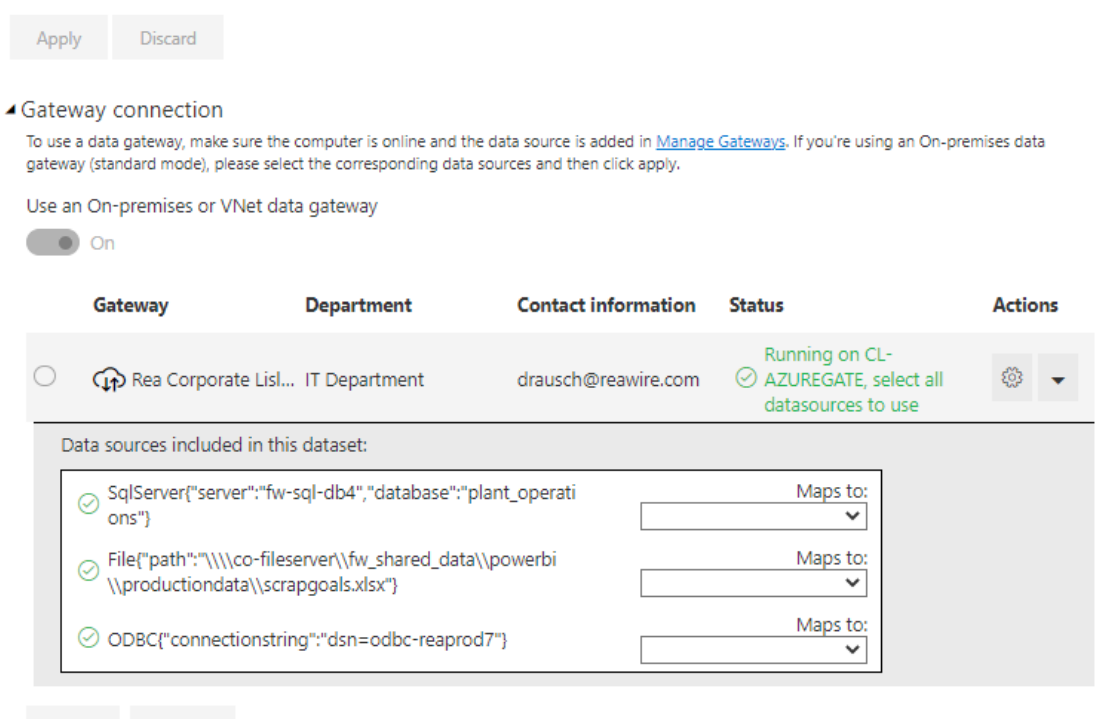
- Must be an Administrator in PowerBI Cloud
- Review Gateways Clusters
  - Rea just has one Gateway
  - **Create** your data sources
  - Names can be the same or different
  - Provide credentials as needed



Live Demo: Mapping Data sources

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

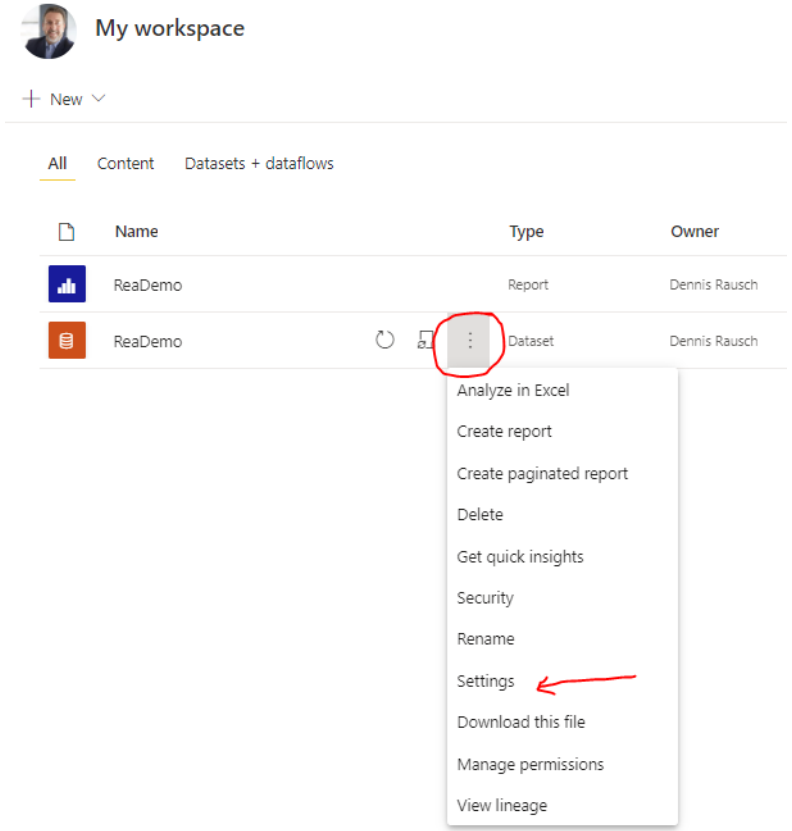


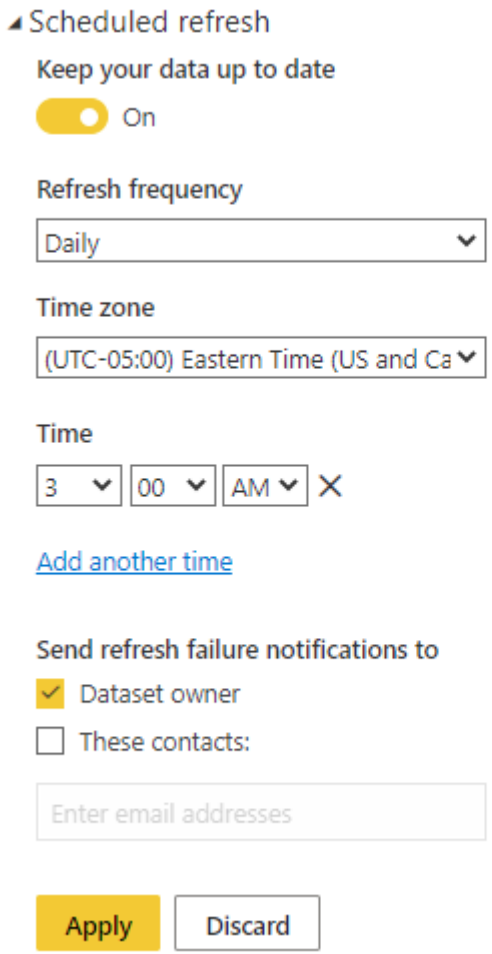


Map each data source

Live Demo: Schedule a Data Refresh

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





Questions

KYLE M. SMITH, PMP – IT SUPERVISOR

SCAN ME

INTRODUCTION

NUCOR STEEL INDIANA
NUCOR CORPORATION (NUE)
CRAWFORDSVILLE, INDIANA

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

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THE CHALLENGE

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

Legacy Reporting System

Enterprise Resource Planning & Financials
Production Database

Manufacturing Execution System
Production Database

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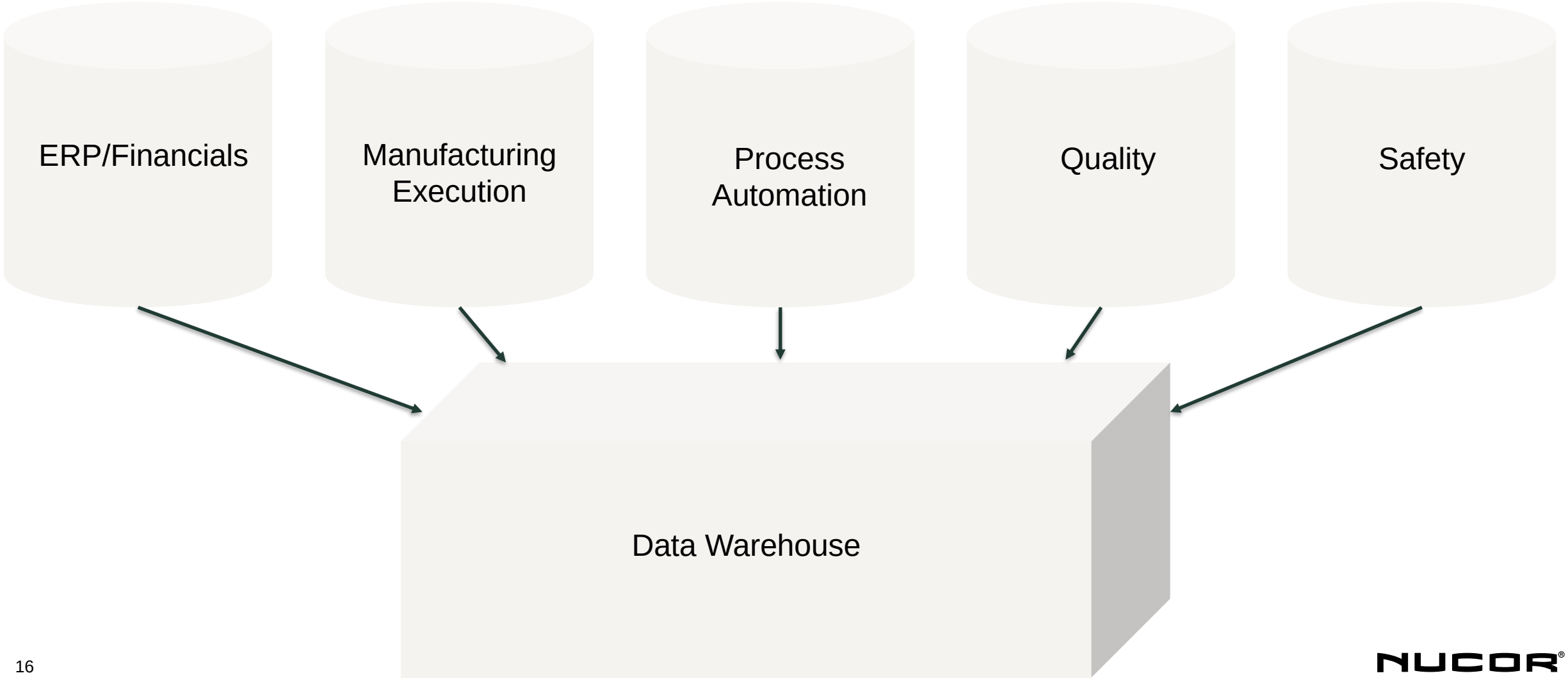
CHANGING THE MODEL: DATA REPLICATION



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CHANGING THE MODEL: NEW REPORTING TOOL

Cloud

On-Premises

Data Warehouse
with Power BI Gateway

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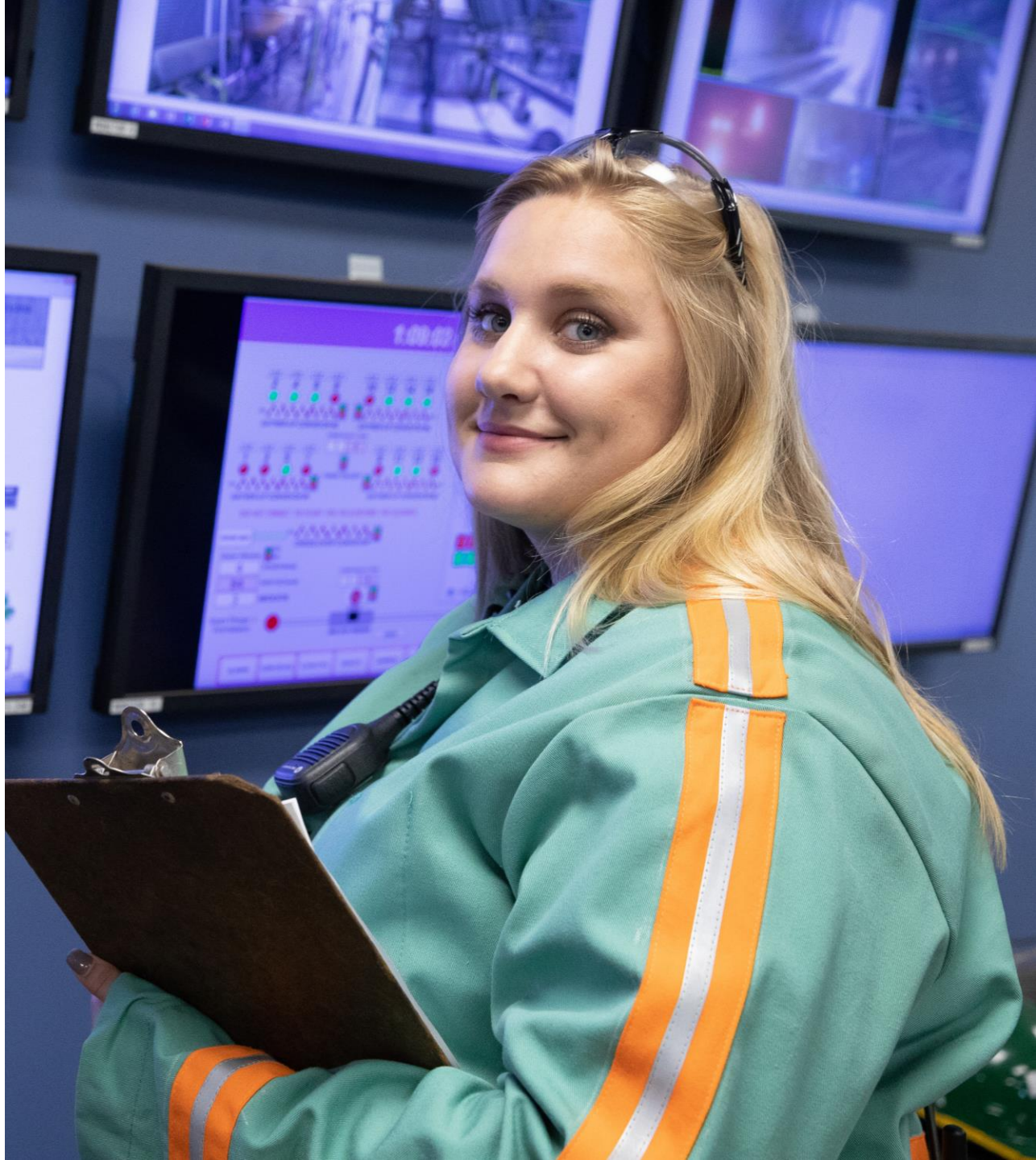
BUILDING THE TEAM – IDENTIFYING NEEDS

- 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

Microsoft 365

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.

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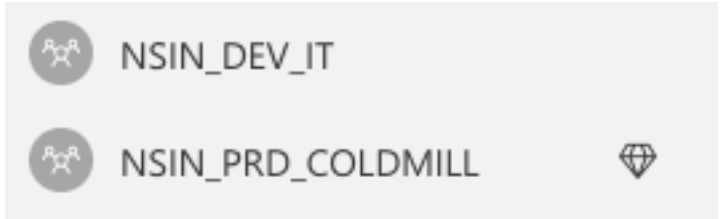
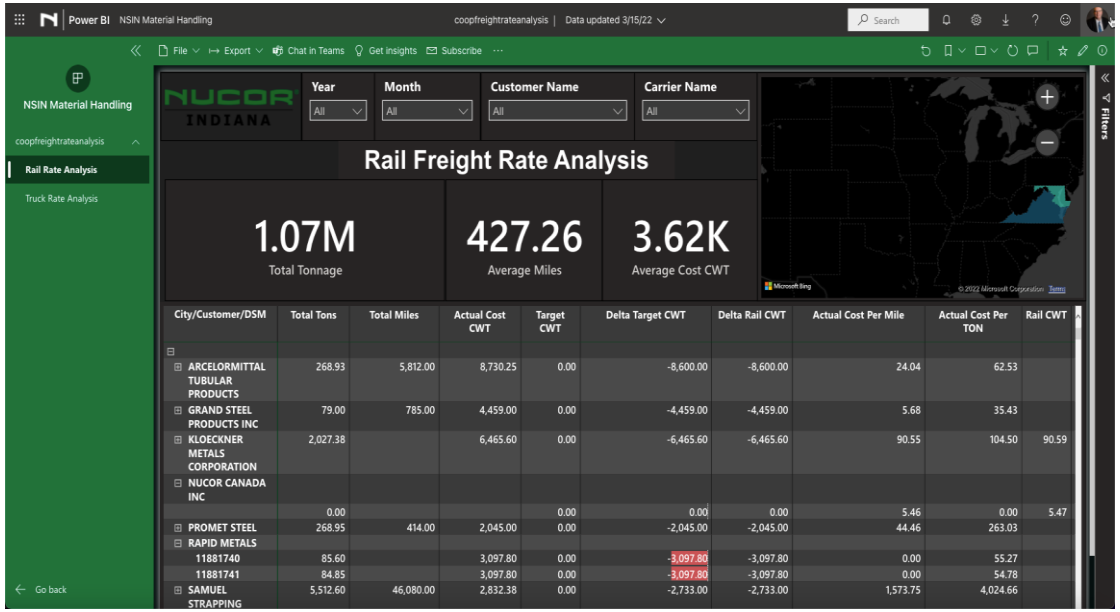
PREPARING AND CREATING WORKSPACES

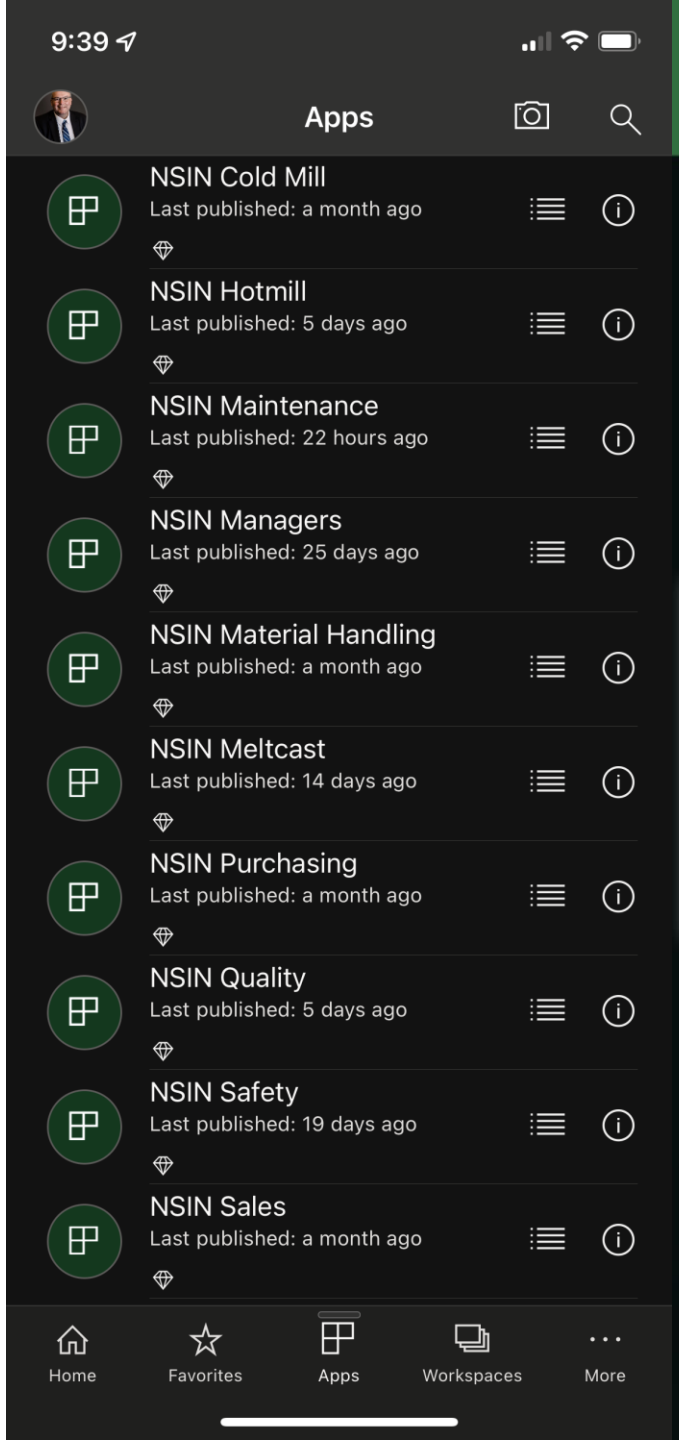
- Ask questions
  - Who will consume this data?
  - Who should not see the data?
  - Who will need to publish updates?
- Create workspaces with deployment pipelines (Dev, Test, QA, Prod)
- Set permissions with Active Directory accounts and security groups
- Convert workspace to Premium Per Capacity

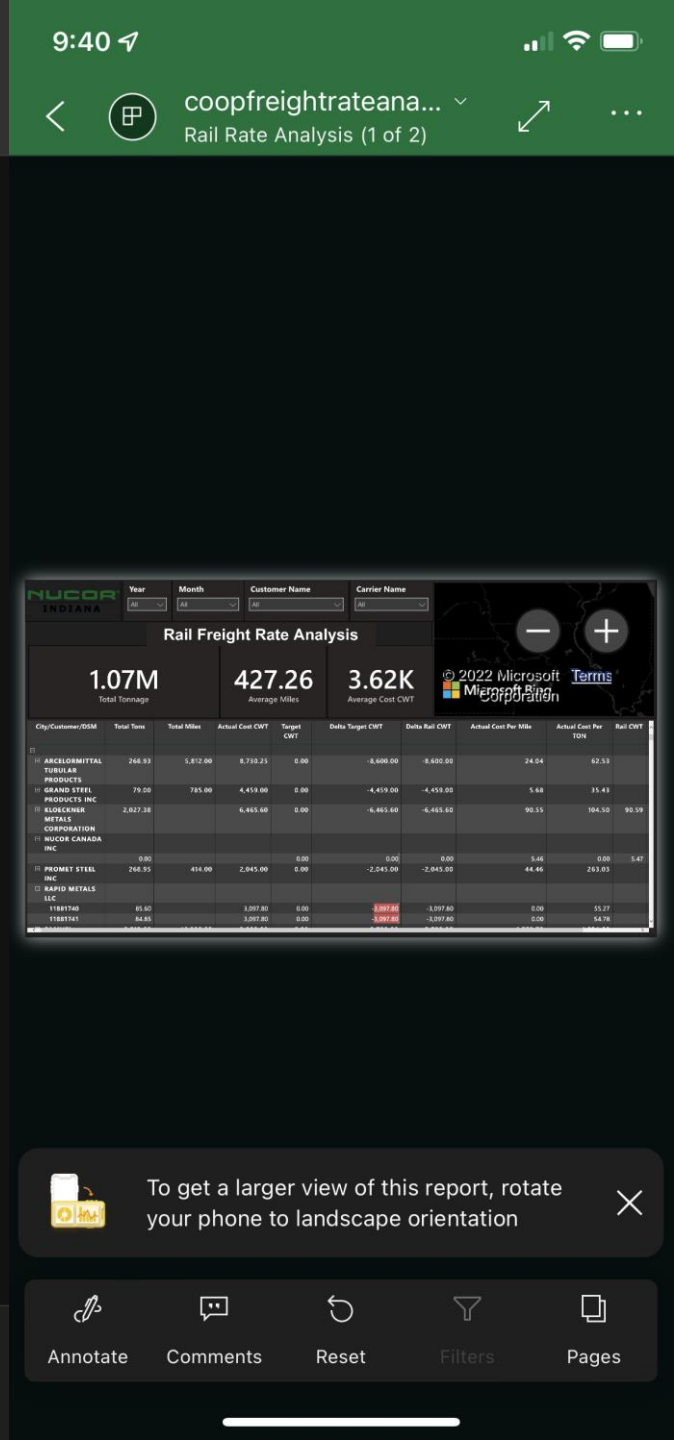


PUBLISHING

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







THE RESULTS

Power BI

Data Warehouse

ERP/Financials

Manufacturing Execution

Process Automation

Quality

Safety

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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

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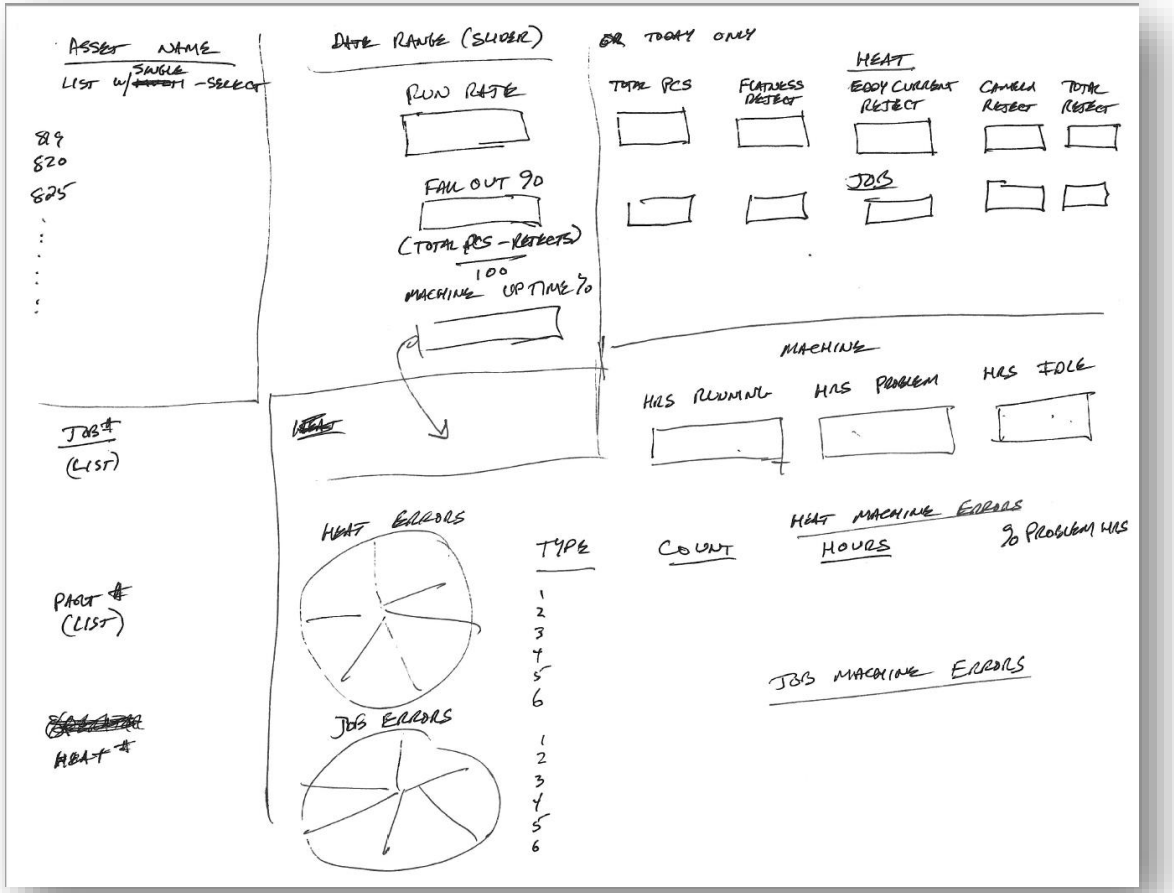
Purdue Student Presentation for MPI

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

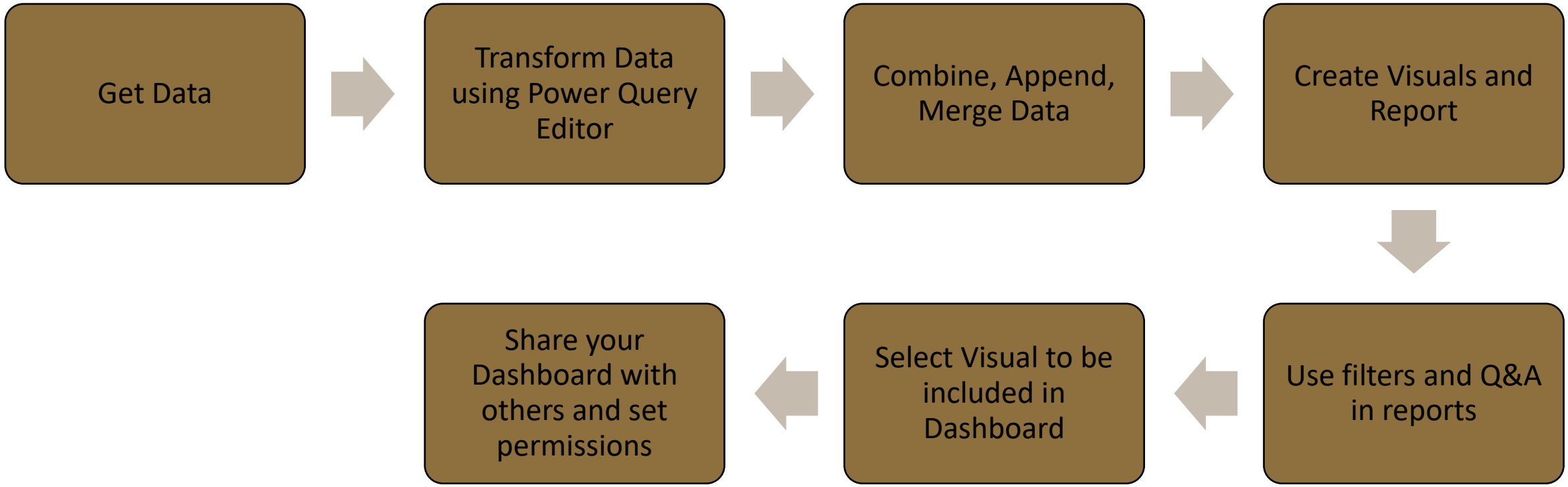
Power BI

Business Intelligence tool

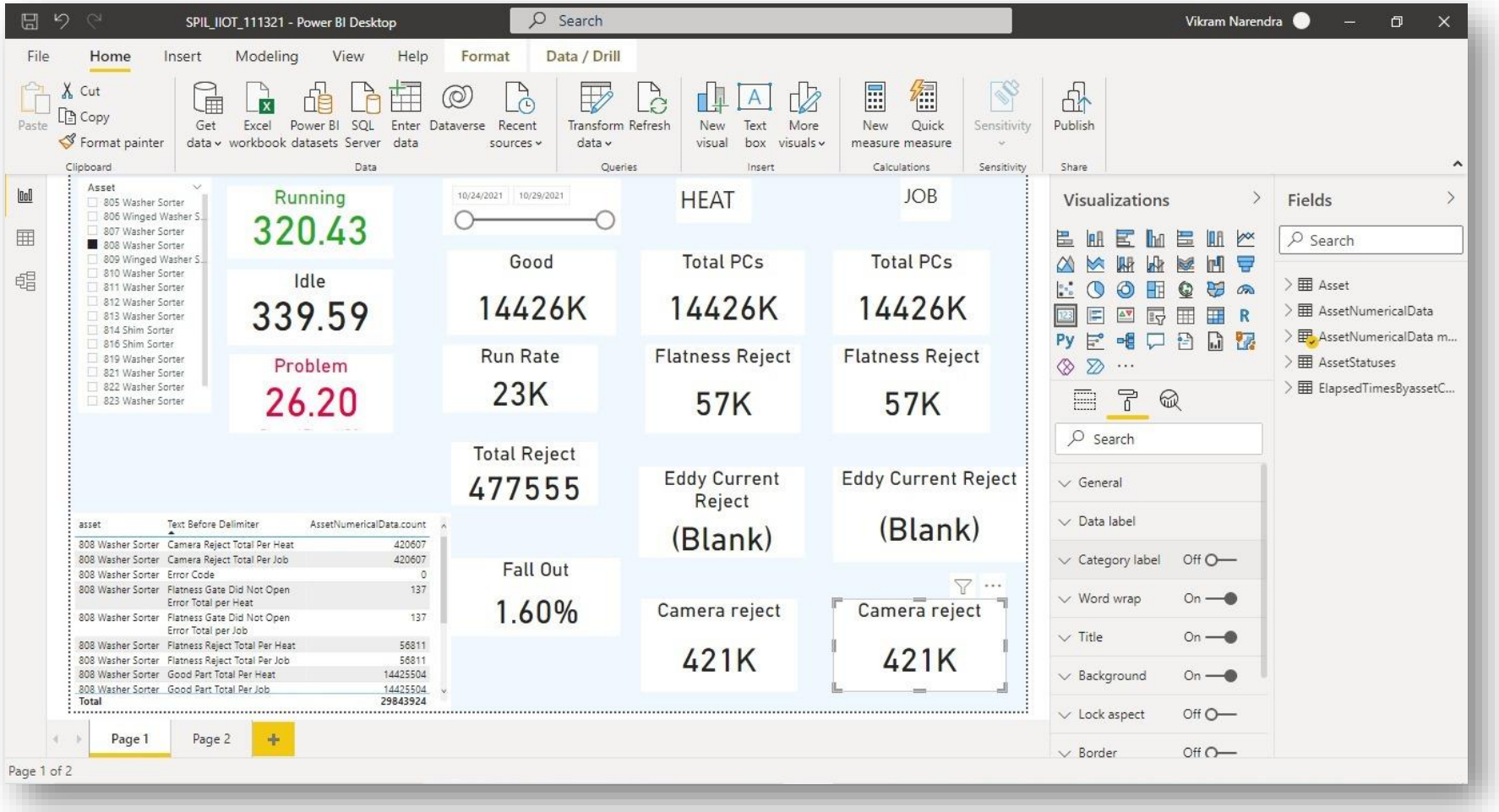
Power BI query editor lets your record each step used to manipulate your data set

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

Steps followed



The dashboard



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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

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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/12qs8OWnuIq7VedGehch1dcNEDZITAhSB?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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