POWER BI USER GROUP SESSION 3

DECEMBER 9, 2021

Facilitated by:
Steve Dunlop
Angus McLeod
Roy Vasher

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Agenda

- Opening Remarks
- Introductions (new attendees)
- Recap of 1st two meetings Presentation
- Date Dimensions in Power BI- Vienna Kraay– Oscar Winski
- Predictive Analytics and Power BI– John Dill– Wabash
- Start a Power BI project from Scratch – Students– Purdue/DCMME
- Open discussion and next meeting

Introductions – New Members

- Name, company, position
- Power BI knowledge and experience
- What do you want to get out of user group?

No.	Type of User	Description
1	New	Never used, interested in learning how to use
2	Novice	Started to use but not created any business reports yet
3	Experienced User	Used for some time and developed business reports/dashboards
4	Power User	Expert user and/or IT Developer
5	Senior Manager	Interested in Capabilities for Business Reporting/Dashboards

Recap of Presentations To-Date

- **June 10, 2021**
  - Power BI Capabilities and Cost – Tom Cunningham - Evonik
  - Evonik Corporation Power BI Visual Management Solutions – Tom Cunningham - Evonik
  - New Users: How to get started – Roy Vasher – Purdue/DCMME
- **September 16, 2021**
  - Super User Development Cycle - Thomas Heltzel – Wabash National
  - Getting Data to the People That Need it Most– Bob Bierwagen – MPI
  - Import Analytics/EV Analytics – Steve Dunlop – Purdue/DCMME

Date Dimensions in Power BI

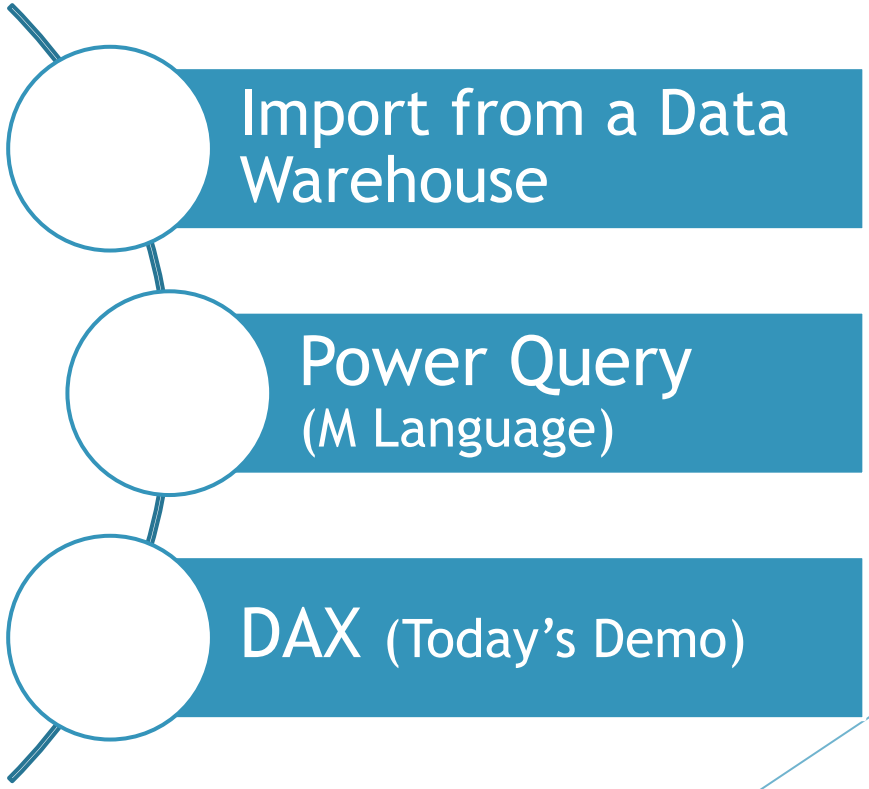
Vienna Kraay

Senior Accountant/Analyst

December 9, 2021

Creating a Date/Calendar Table/Dimension

- What is it:
  - A table containing a record for every day; descriptive columns about each date are included.
- Why you need it:
  - More Power in Analysis
  - Consistency in Reporting
  - Use of Time Intelligence



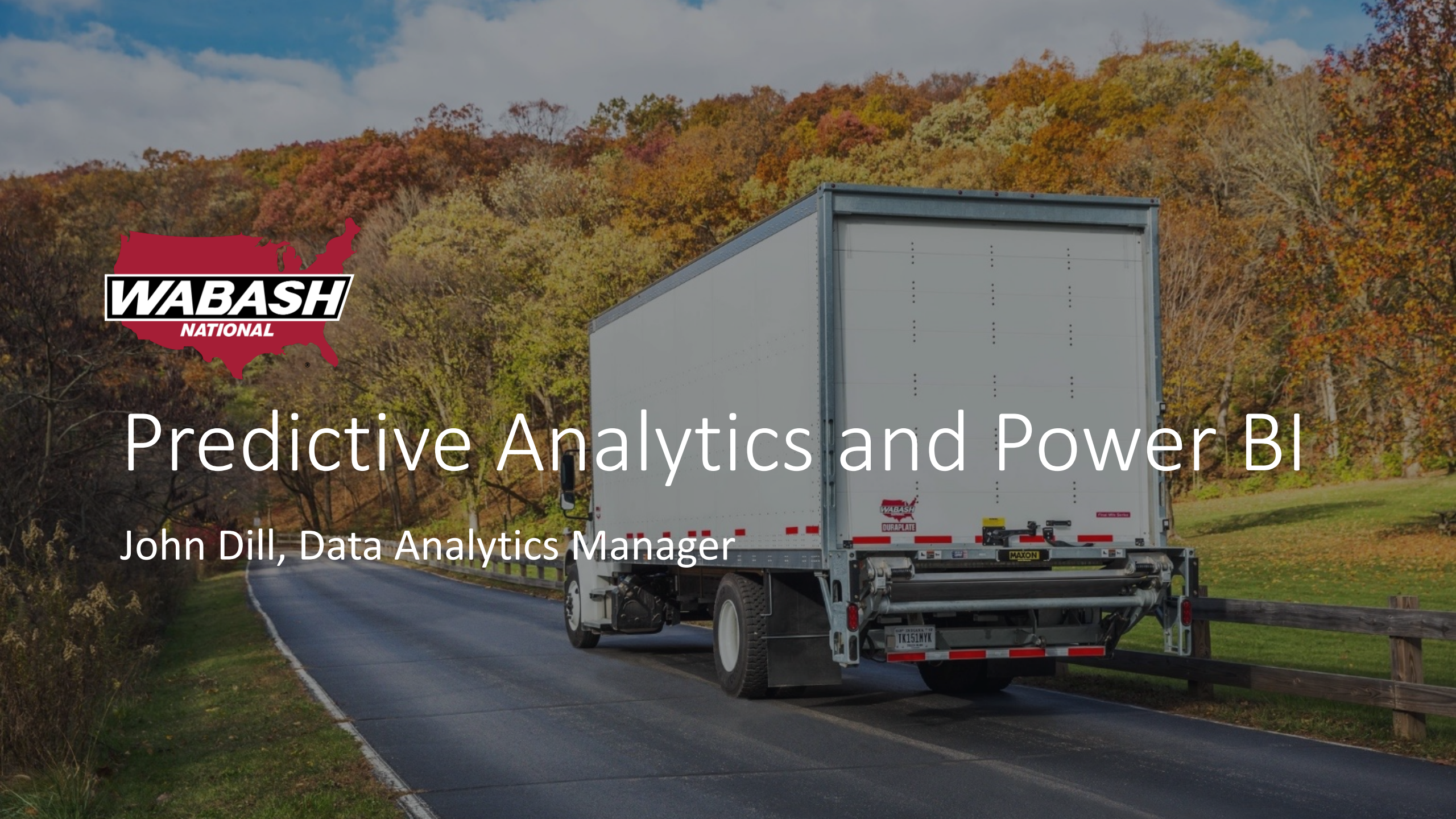
Live Demo!!

DAX – Date Dimension Script

- ```
  Calendar = ADDCOLUMNS(CALENDAR(Date(2015,1,1),DATE(2035,12,31)),
  "MonthNum", MONTH([Date]), "Month", FORMAT([Date], "MMM"),
  "MonthLong", FORMAT([Date], "MMMM"), "Day", DAY([Date]), "Quarter",
  "Q"&FORMAT([Date], "Q"), "Year", YEAR([Date]), "WeekdayNum",
  WEEKDAY([Date], 1), "Weekday", FORMAT([Date], "DDD"), "YearOffset",
  INT(YEAR([Date]) - YEAR(NOW())), "MonthOffset", INT((YEAR([Date]) -
  YEAR(NOW())) * 12 + (MONTH([Date]) -
  MONTH(NOW()))),"QuarterOffset", INT((YEAR([Date]) - YEAR(NOW())) *
  4 + FORMAT([Date], "Q") - FORMAT(NOW(), "Q")), "DayOffset",
  DATEDIFF([Date],NOW(),DAY)*-1,
  "FiscalMonthNum",IF(MONTH([Date])>6,MONTH([Date])-
  6,MONTH([Date])+(12-6)),"FiscalMonth",FORMAT([Date],
  "MMM"),"FiscalMonthLong",FORMAT([Date], "MMMM"),"FiscalQuarter",
  "FQ"&ROUNDUP(IF(MONTH([Date])>6,MONTH([Date])-6,MONTH([Date])+(12-
  6))/3,0),"FiscalYear",
  IF(MONTH([Date])>6,YEAR([Date])+1,YEAR([Date])))
  ```
- ```
  Workdays =
  IF(ISBLANK(RELATED(Holidays[Date]))=FALSE(),0,IF(OR('Calendar'[Week
  dayNum]=1,'Calendar'[WeekdayNum]=7),0,1))
  ```
- ```
  Remaining Workdays =
  IF(AND([Date]>=TODAY(),'Calendar'[Workdays]=1), 1, 0)
  ```
  ```

Power BI Learning Resources

- Global User Group - https://community.powerbi.com/
- PowerPlatformUG Summit - https://www.summitna.com/
  - Independent User Conference for Microsoft ERPs and Power Platform
- Power BI Summit - https://globalpowerbisummit.com/
  - Largest Power BI Conference (Virtual) - $99 per user includes access to all recordings
- RADACAD - https://radacad.com/blog
- Guy In A Cube - https://guyinacube.com/
  - Weekly Videos
  - Live stream Q&As on YouTube
- Microsoft Resources
  - Microsoft Learn - https://docs.microsoft.com/en-us/learn/
  - Microsoft Ignite - https://myignite.microsoft.com/home



Predictive Analytics and Power BI

John Dill, Data Analytics Manager

The basics of predictive analytics

In plain terms, some basic things you need to know about predictive analytics

Tips for identifying opportunities

Improve odds of success by selecting an achievable target

Power BI demonstration

Train a predictive model using tools we have today

Basics of predictive analytics

At its core predictive analytics is just training a computer to answer a very specific question.

Computers learn by observing what humans have done and trying to replicate it.

Estimating a number (regression)

How much is my house worth?

Assigning a category (classification)

Is this email spam?

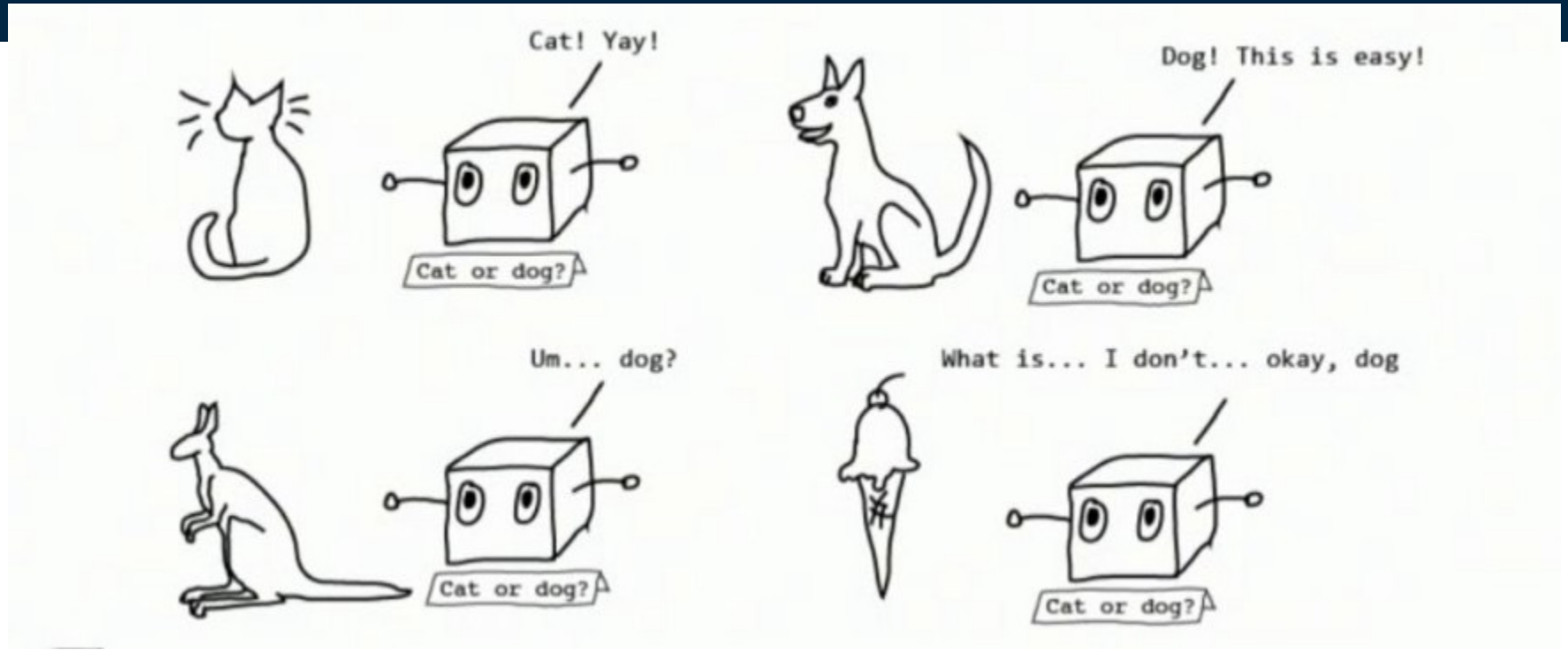
A couple of considerations

- **Computers make mistakes**

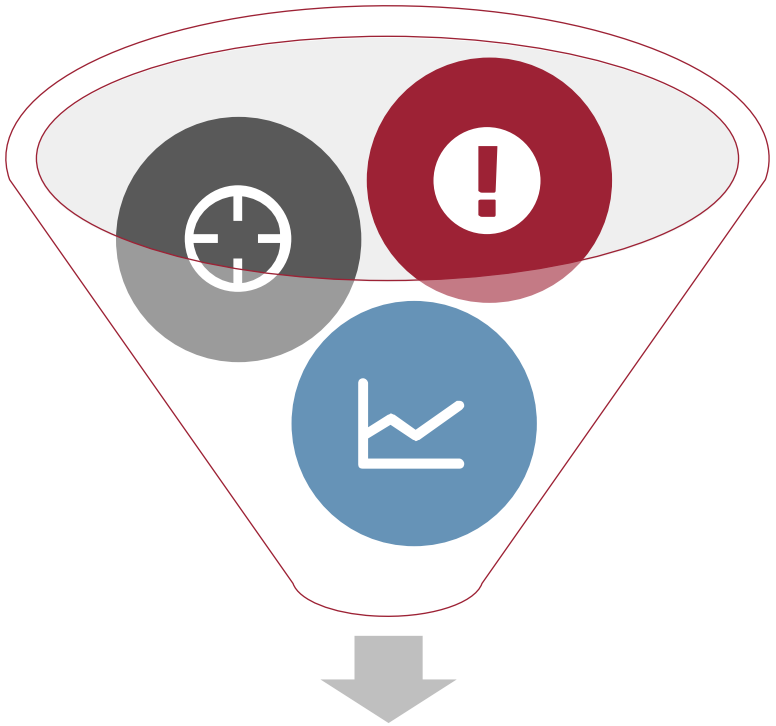
  Predictive models are not perfect. There is an element of risk, but models can learn from these mistakes and improve over time.

- **Garbage in, garbage out**

  Models only know what they've been trained.



Identifying opportunities for predictive analytics



Is it predictable?

- Involves estimating number or category
- Does not require a lot of deep thought
- Consistent output given same inputs

Is risk acceptable?

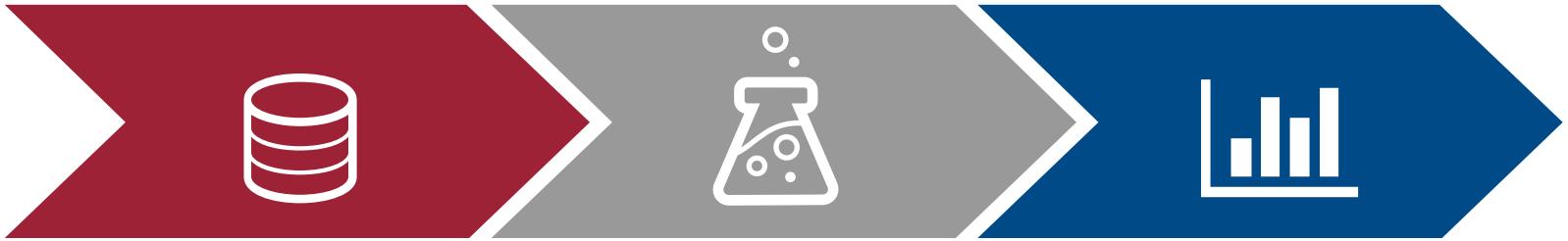
- How does this change the process?
- What's the worst that could happen?
- What level of accuracy is required?

Do we have data?

- How long have we been doing this activity?
- Do we have a historical record of inputs and outputs?
- What would it take to start collecting data?

Link HBR Article: https://hbr.org/2017/10/how-to-spot-a-machine-learning-opportunity-even-if-you-arent-a-data-scientist

Power BI – Auto ML Demonstration



Get data

Create a query to load product sales data from SharePoint into a Power BI Dataflow

Create/train model

Create a model that will predict which customers will buy the product

Review outcome

Explore the training report created by Auto ML to evaluate model performance

POWER BI FOR DATA VISUAL DASHBOARDS

Project: Power BI IIoT Analytics Dashboard

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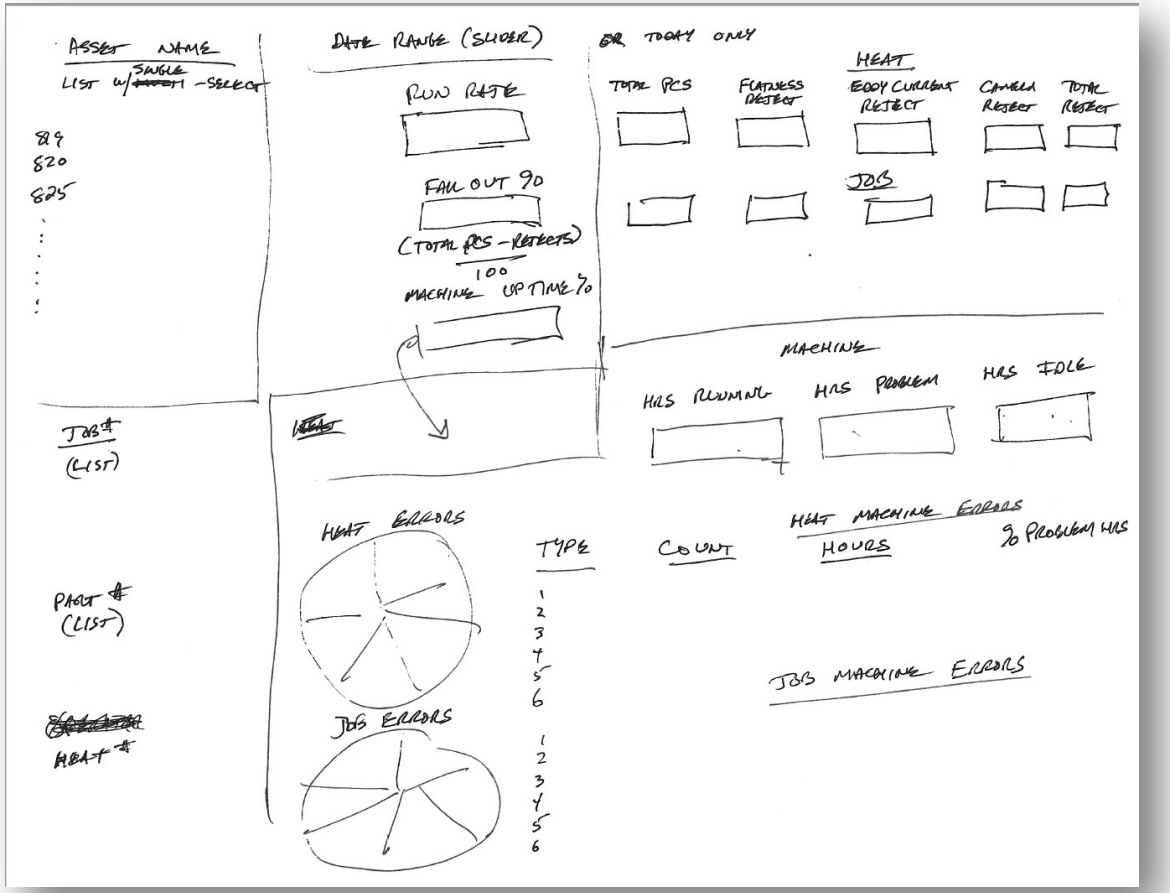
The start

- 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

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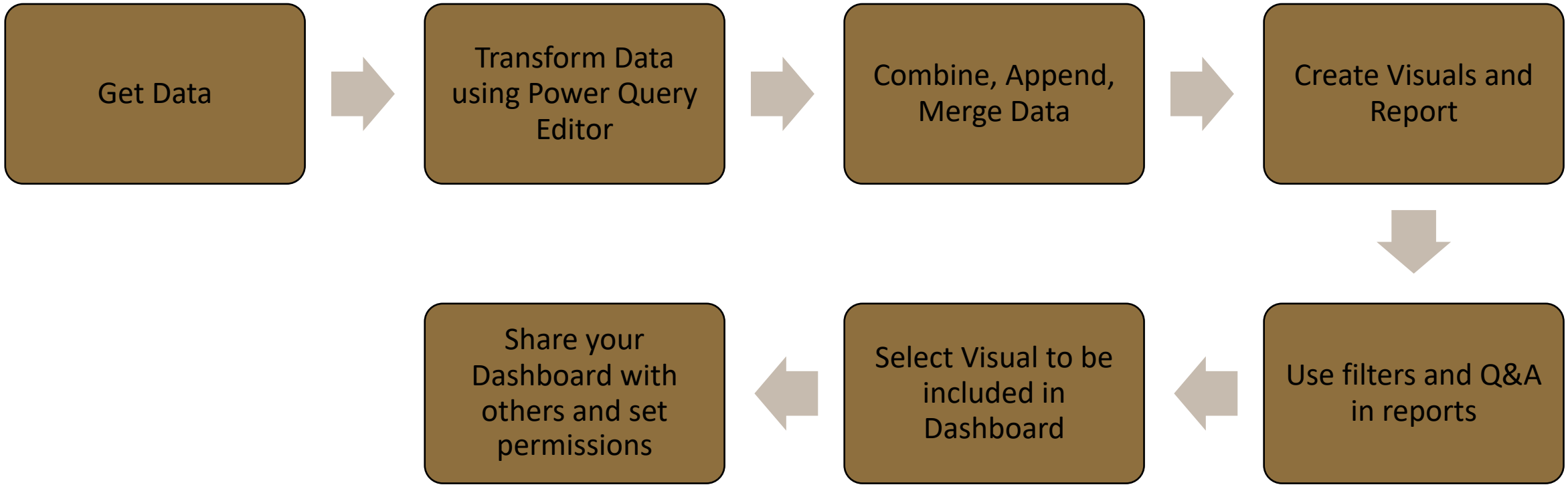
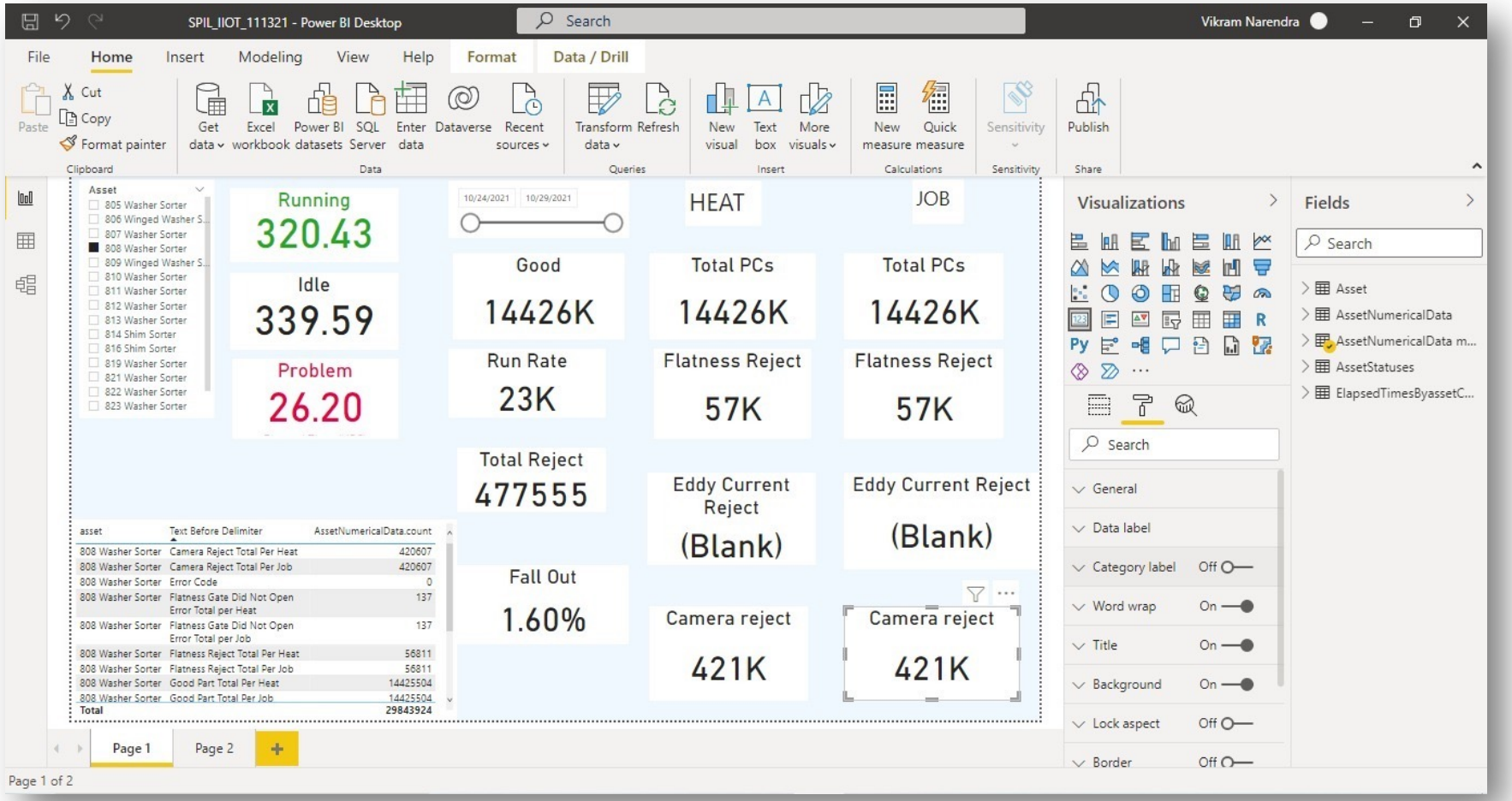
Steps followed



The dashboard



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Weekly Meeting towards MPI Power BI Project - Zoom

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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Wrap Up

- Open Discussion
- Volunteers for Presenting at next meeting
- Next Meeting – March 3rd

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