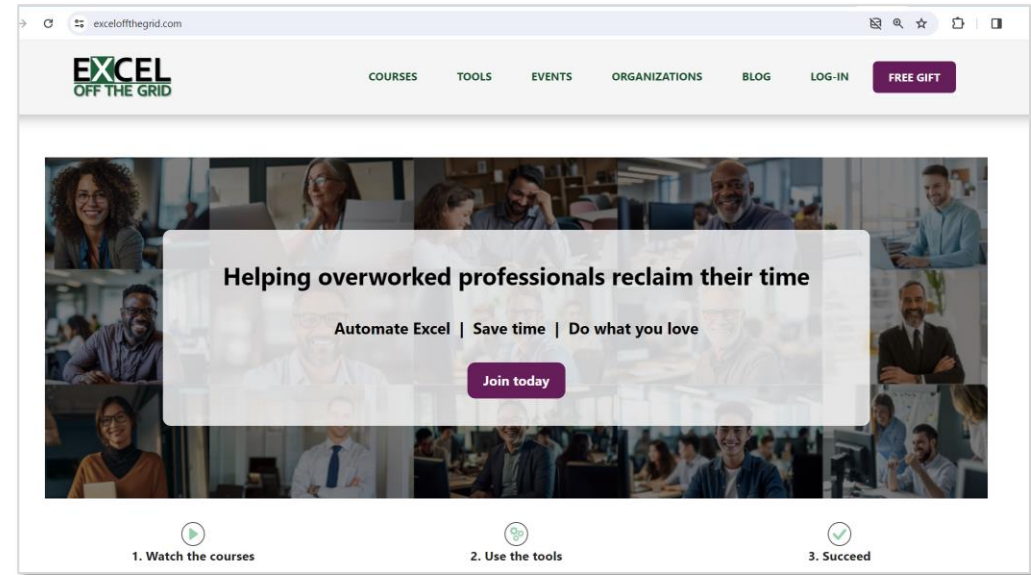


Build dynamic dashboards with Power Pivot

ICAEW Excel Community
5th March 2024

Mark Proctor




*Reclaim your time
by automating Excel.*



 exceloffthegrid.com

 [@exceloffthegrid](https://www.youtube.com/@exceloffthegrid)

 Email list + free stuff:
<https://exceloffthegrid.com/insiders>





Agenda

#1 The problem with PivotTables

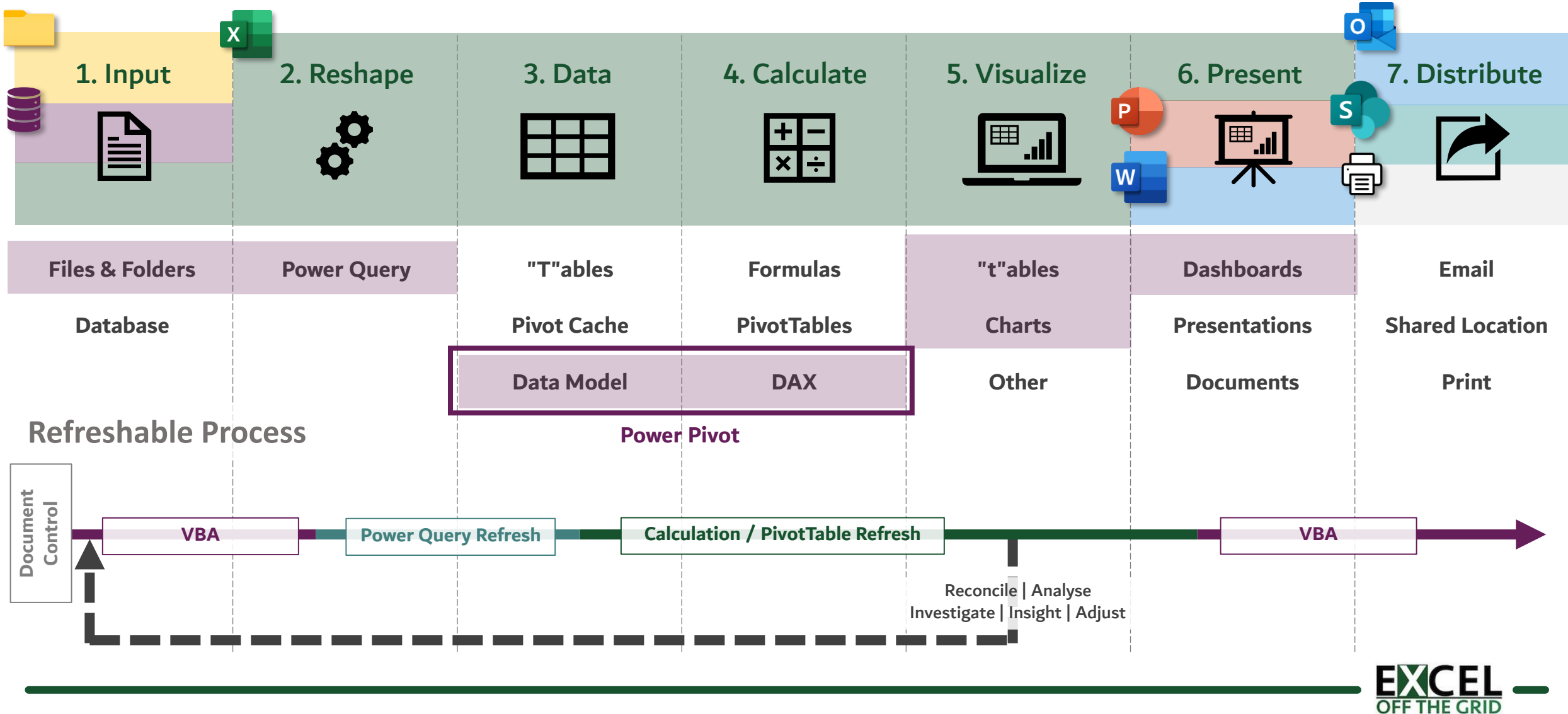
#2 Pivot concepts

#3 Installing Power Pivot

#4 Power Pivot Demo

- Loading data into Power Pivot
- Creating relationships
- Basic DAX calculations
- Changing Filter Context with CALCULATE
- Cube functions

Reporting & analysis blueprint





#1

The problem with PivotTables



The problem with PivotTables

- 👎 Single source (lots of lookups)
- 👎 Every of every problem (lots of unnecessary columns)
- 👎 Rigid filter context (lots of forced calculations)
- 👎 Basic calculation engine (e.g. Period & YTD together)
- 👎 Explicit filter selections
- 👎 GETPIVOTDATA requires PivotTable to exist
- 👎 Limited to 1,048,576 rows



#2

Pivot concepts

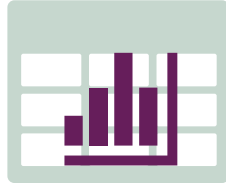
Pivot concepts

Worksheets

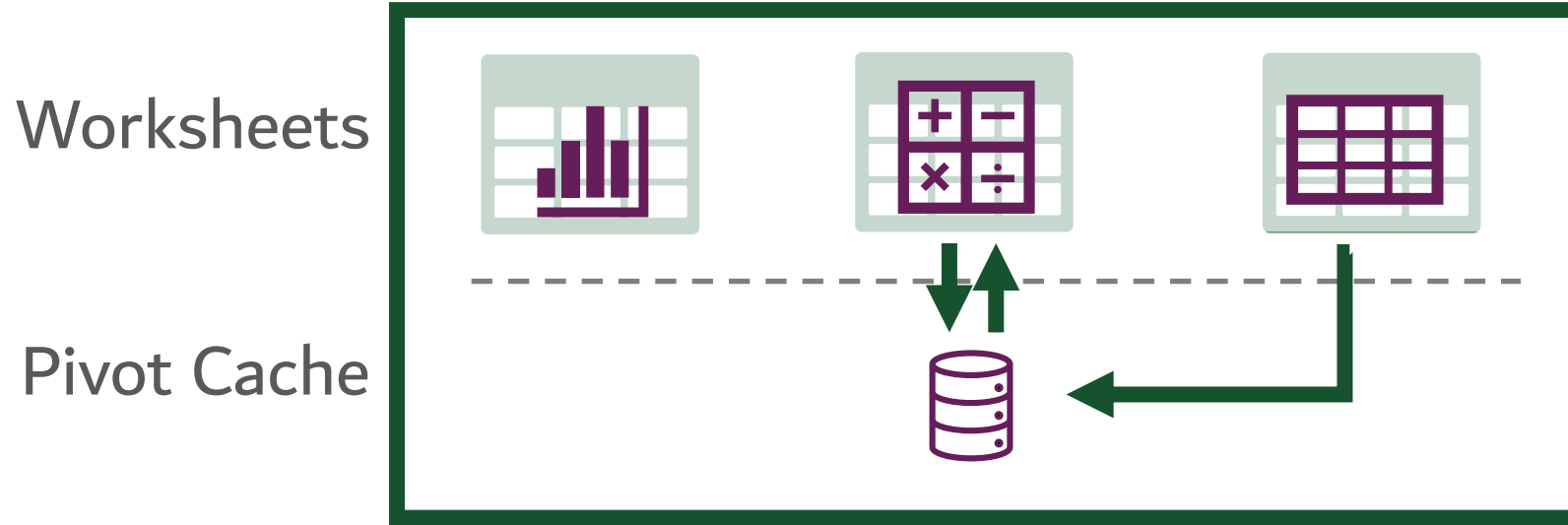


Pivot concepts

Worksheets



Pivot concepts



Role of the Pivot Cache



Source
Data

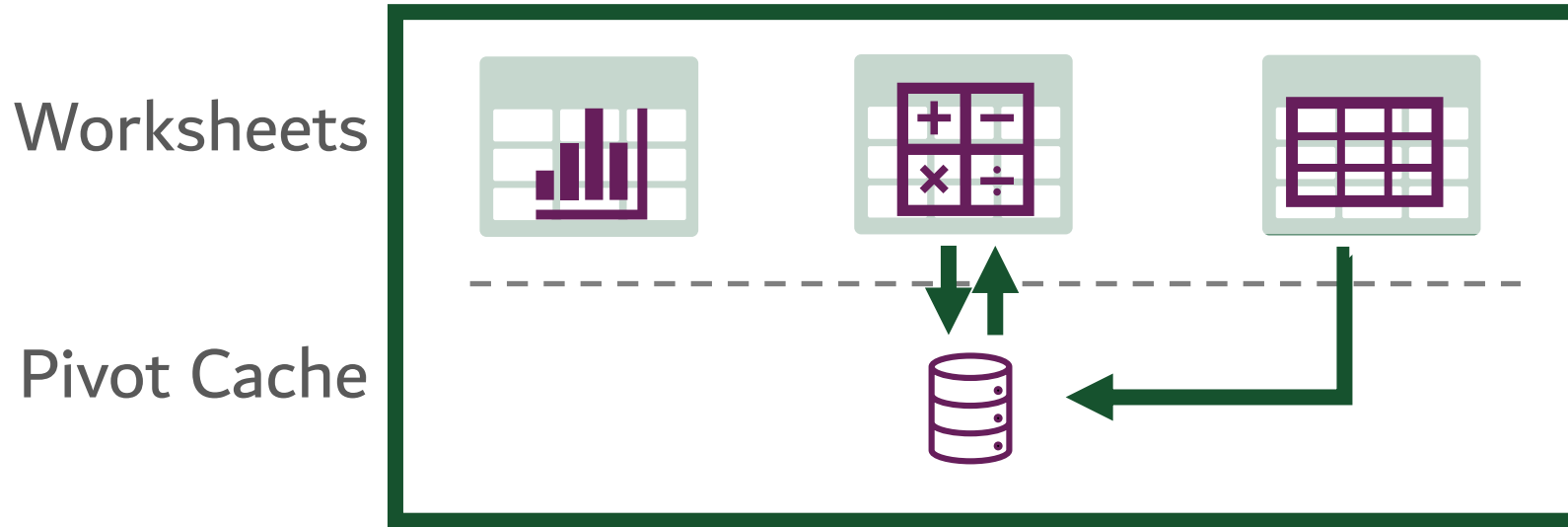
Pivot
Cache
Holds Data
Calculation Engine

PivotTable or
PivotChart
Provides Filter Context
Displays Result



Example

Pivot concepts



Filter Context Example:

- 1) Pivot provides filter parameters to Pivot Cache
- 2) Pivot Cache filters the data
- 3) Pivot Cache performs the calculation on filtered rows
- 4) Pivot Cache feeds value back into Pivot Table for display



#3

Installing Power Pivot



Demo



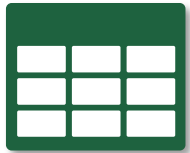
#4

Power Pivot Demo

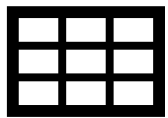
Project



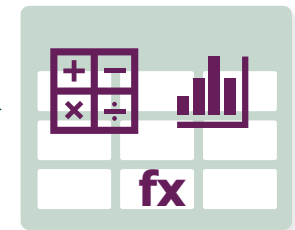
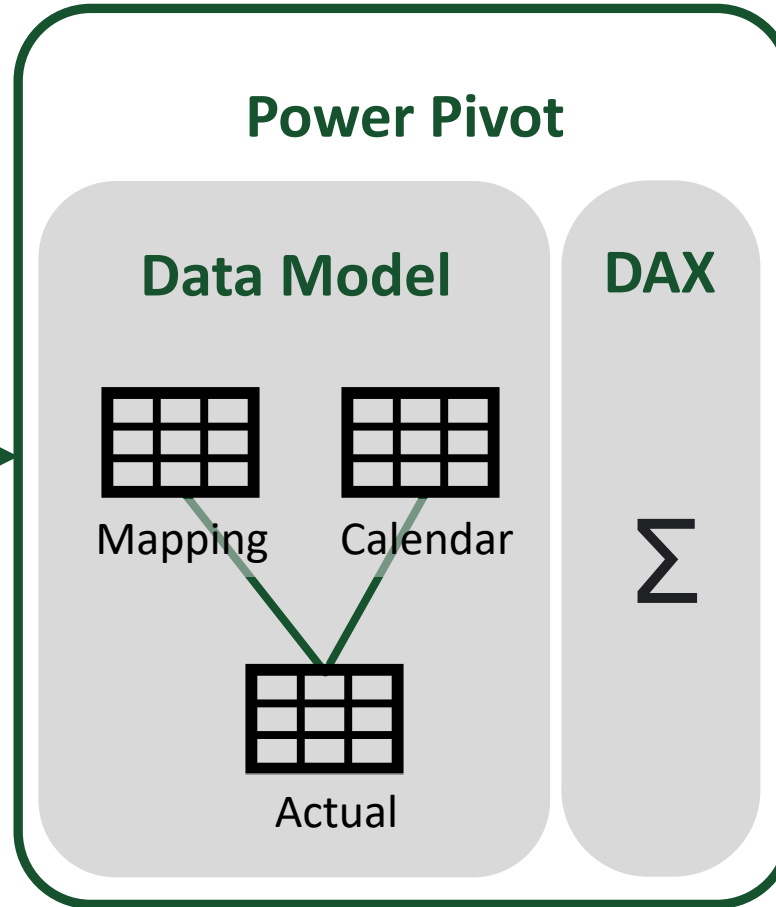
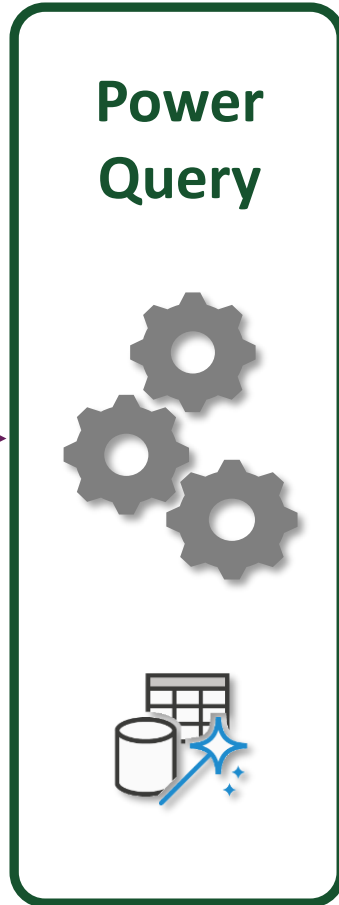
Folder with Reports
(Jan 2022 – Jun 2023)



Mapping Table



Calendar Table





Demo

Normalization

- ✓ Process to improve the efficiency databases.
- ✓ Reduces duplication and improves integrity.

First Normal Form

Date	Code	Value	Year	Month
31/01/2023	200	500.00	2023	1
31/01/2023	210	320.00	2023	1
31/01/2023	220	400.00	2023	1
31/01/2023	230	360.00	2023	1
28/02/2023	200	520.0	2023	2

About the event

About the date

Second Normal Form

Relationship

Date	Year	Month	Date	Code	Value
31/01/2023	2023	1	31/01/2023	200	500.00
28/02/2023	2023	2	31/01/2023	210	320.00
			31/01/2023	220	400.00
			31/01/2023	230	360.00
			28/02/2023	200	520.0



Why use Power Pivot?

- 👍 Load data from different sources via Power Query
- 👍 Use relationships rather than using lookup formulas
- 👍 Flexible calculation engine
- 👍 Unlimited number of rows
- 👍 Optimize data with normalization
- 👍 Update with Data > Refresh All
- 👍 Same skills as Power BI



Q&A