AMI23B – LAB

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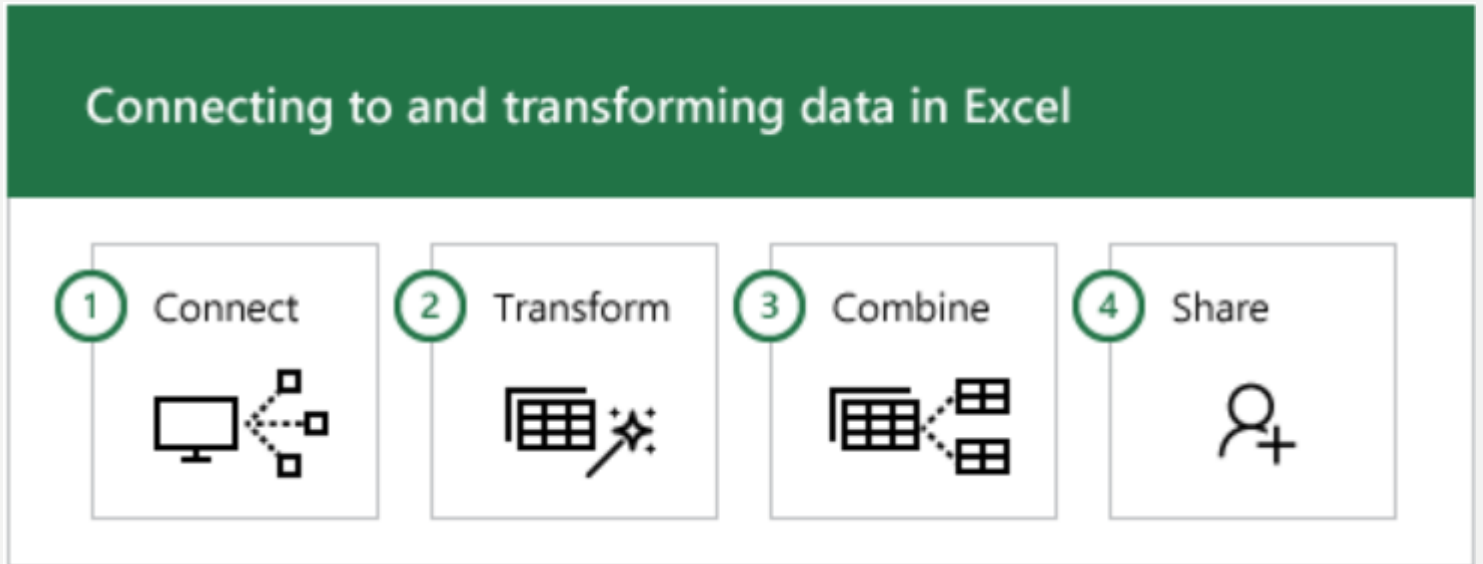# EXCEL RE-DESIGNED FROM THE GROUND UP

POWER QUERY

Power Query is a data discovery and query tool, good for shaping and mashing up data even before you've added the first row of data to the workbook. Thus you can:

- Import data

- Merge data

- Bring the result into Excel as a single table for:

    - Visualizing in Power Map and Power View.

    - Further analysis and modeling in Power Pivot.

- Share queries to the Power BI data catalogue .

- "Unpivot" source data from a PivotTable or matrix format to a flat table.

POWER QUERY

Connecting to and transforming data in Excel

① Connect ② Transform ③ Combine ④ Share

- **Connect** – make connections to data sitting in the cloud, in a service, or locally
- **Transform** – shape the data to meet your needs; the original source remains unchanged
- **Combine** - create a data model from multiple data sources, and get a unique view into the data
- **Share** – once your query is complete, you can save, share or use it for reports

POWER QUERY - BENIFITS

- Data preparation is very time-consuming.

- Power Query allows you to cleanse large amounts of data and make them usable within Excel.

- Power Query is UI based, it's easy to learn.

- Its M-Language, which enables you to write custom scripts to automate data cleansing.

POWER PIVOT

When you put your data in the Excel Data Model, you can continue enhancing it for analytics in Power Pivot. You can:

- Create relationships between tables.

- Add formulas with Data Analysis Expressions (DAX).

- Create key performance indicators (KPIs) in Power Pivot.

- Organize fields in hierarchies.

- Create perspectives.

POWER PIVOT - BENIFITS

- Power Pivot provides advanced data modeling features in Microsoft Excel.

- With Power Pivot, you can structure multiple tables into a star schema, with lookup tables and data tables.

- DAX (Data Analysis Expression) is a language that enables you to analyze data across your entire model.

- DAX is a good choice if you work with large and complex datasets.

HOW POWER QUERY AND POWER PIVOT WORK TOGETHER

- Power Query and Power Pivot complement each other.

- Power Query is the recommended experience for discovering, connecting to, and importing data.

- Power Pivot: Powerful data analysis and data modeling in Excel is great for modeling the data you've imported.

- Use both to mould your data in Excel so you can explore and visualize it with Power Map, Power View, PivotTables, and PivotCharts, and then interact with the resulting workbook in SharePoint, on Power BI sites in Office 365, and in the Power BI Microsoft Store app.

HOW POWER QUERY AND POWER PIVOT WORK TOGETHER

- In short, with Power Query you get your data into Excel (either sheets or the Excel Data Model). With Power Pivot, you add richness to that model.

REFERENCES

- Getting Started with Power Query
https://support.office.com/en-us/article/getting-started-with-power-query-7104fbee-9e62-4cb9-a02e-5bfb1a6c536a

- Get started with Power Pivot in Microsoft Excel
https://support.office.com/en-us/article/get-started-with-power-pivot-in-microsoft-excel-fdfcf944-7876-424a-8437-1a6c1043a80b

- How Power Query and Power Pivot work together
https://support.microsoft.com/en-us/office/how-power-query-and-power-pivot-work-together-a5f52cba-2150-4fc0-bb8f-b21d69990bc0?ui=en-us&rs=en-us&ad=us

- Create a PivotTable to analyze worksheet data
https://support.office.com/en-us/article/create-a-pivottable-to-analyze-worksheet-data-a9a84538-bfe9-40a9-a8e9-f99134456576

- Three Excel Core-Features Even Excel-Pros Don't Know (Article)
https://www.datasciencecentral.com/profiles/blogs/visually-explained-three-excel-core-features-even-excel-pros-don

GETTING STARTED

- Include the Power Pivot add-in for Excel
  https://support.office.com/en-us/article/start-the-power-pivot-add-in-for-excel-a891a66d-36e3-43fc-81e8-fc4798f39ea8

- Power Query is already included in newer versions of Excel (Get&Transform – all you need is in the Data tab).

- Data Analysis Expressions (DAX) Reference
  https://docs.microsoft.com/en-us/dax/