Excel Data Analysis Best Practices

This document is for participants who have attended Dr Nitin's session.

If anything is not clear, send a mail to nitin@maxoffice.co

Best Practices

1. Get data and look at its format
2. Check if it is GOOD (use the checklist)
    a. If it is GOOD continue to step 3
    b. If it is BAD
        i. Ask the source to give it in GOOD format
            1. Send them a GOOD data sample
            2. Explain the benefits of the GOOD format
            3. There is a high chance that the source will agree to provide GOOD data, if technically feasible
        ii. If source cannot provide GOOD data
            1. Look at the GOOD data checklist items which failed and clean the data. You can use:
                a. Power Query (Get and Transform)
                b. Flash Fill
                c. Pivot Table – Repeat All Item Labels
                d. Pivot Table (Old)- Consolidation of cross-tab
                e. and many more techniques
3. Consider where to import the data
    a. Excel sheet
        i. If using Get and Transform table is automatically created
        ii. Convert to Table (Ctrl T or Insert – Table) Why use Tables?
            1. Make sure all rows and columns are included
            2. Ensure that the grand total row is NOT included

3. If it is GOOD data, table creation is easy

iii. Change the default name of the Table

b. Data model (Power Pivot)

i. Data model is suitable if

1. You want to combine multiple tables using Relationships
2. Data is larger than 1 million row limit of Excel
3. Excel based data analysis is very slow
4. Excel based data file is very large

4. Summarize data using

a. Pivot Table

i. Try relevant Show Values as options

ii. Include conditional formatting in Pivot Tables as well

iii. Power Pivot if data is in data model

iv. Remember to specify names to Pivot Tables and Pivot Charts

b. Power View Dashboard

i. Try to combine multiple discrete reports into a single dashboard

ii. DO NOT try to recreate existing Excel reports using Power View

iii. Use Multiples and Drill down effectively

iv. Use Maps for locational data

c. Power Map

i. Plot locational data

ii. Use hierarchy if possible (e.g. Country, State, City)

iii. Use Time based animation to understand the dynamics

iv. Create a story by using multiple scenes

d. The Insights feature

i. See all insights (not just the featured ones)

   ii. Add the relevant insights into the Excel sheet
   iii. Remember to run Insights when data changes

5. Once summarized
   a. Think of the business context
   b. Determine the standard report expected to be created
   c. Create the expected reports
      i. Enhance the existing reports
         1. Use conditional formatting
         2. Use charts (specify names for charts)
         3. Add Slicers
         4. Add Timeline filter
   d. Now your REAL work starts
      i. Think of the business context and the available data
      ii. Use ALL methods available to you for analyzing information and find out useful and actionable information from the data
      iii. Note down your findings
      iv. Along with each finding – also note down the most appropriate action plan
      v. Attach these additional findings to your standard reports
6. Visualizing information for easy interpretation
   a. Use ALL the above methods
      i. Data bars
      ii. Icon Sets
      iii. Color Scale
      iv. Sparklines
7. Share the reports. DO NOT send reports by mail
   a. Save them to OneDrive, SharePoint or Teams and share the link

i. Use Browser View Options to

1. Make only the report sheets visible or
2. Choose the pivots and charts to show on browser

8. While presenting reports
   a. Use static copy-pasted images from Excel into PPT for reference
   b. But use the LIVE Power View reports during discussion
   c. Spend time showing data from different points of view
   d. Use the meeting to generate ideas and finalize action items
   e. Do not be myopic and constrain yourselves only to standard or statutory reporting formats

GOOD data checklist

Check input data against these 11 rules.

1.	Each column must have a heading (not data)	Heading cannot contain data. For example, Jan, Feb are NOT headings.
2.	No blank headings	Excel table automatically inserts generic column headings
3.	No duplicate headings	Excel table automatically renames duplicate headings
4.	No formulas in headings	Why? Because in Tables, heading name can be used in calculated column formulas.
5.	No merged cells	This is INPUT data. Why do we need merged cells here? Do all that in the Output (report).
6.	No grand or sub-totals	Same as above.
7.	NO formatting instead of data	Why? Because analysis cannot be done based on formatting.
8.	One column, One Meaning	Be very careful. Most common problem. More columns mean better analysis.
9.	One column, one data type	Check by looking at alignment. Very important for dates.
10.	Data grows vertically (not horizontally)	More data should be appended at the bottom of existing data.
11.	Data in single sheet	If Good data comes from different locations, append them to one table. Add extra column for the location.

Efficiency Best Practices

Understand that you are inefficient. Why? Because we learnt Excel (and Office) by trial and error. As long as the work is getting done, we never checked whether there is a better way.

The idea is to:

1. Detect Inefficiency and then to
2. Find the BEST way to do that job

Detecting inefficiency

1. Repetition = Inefficiency
2. UNDO = Inefficiency
3. You helping Excel = Inefficiency
4. Hands used excessively – Brain Idle = Inefficiency
5. Small data – less time, large data – much more time = Inefficiency

Finding the best way

1. Look
    a. Look at all options
    b. Do not ignore inactive options
    c. Open every drop-down
    d. Scroll every scroll bar
    e. For visual features (like conditional formatting, sparklines, chart types, etc.) VIEW all options when you are learning. Just reading the captions is not enough. Build a visual vocabulary.
    f. Do not be afraid to click on buttons like **More** and **Advanced**
    g. Do not run away by pressing Escape – have the courage to explore
2. Classify the objective as Global or Local
    a. If it is a local problem

    Examples: Changing something for a column in a table, Customizing the series in a chart, modifying a shape

        i. Right Click at the area of interest

   ii. Read all options
   iii. You should find the answer easily
   iv. If not, just eliminate the options that are not relevant
   v. This process of elimination will help you shortlist the answer

b. If it is a global problem, look at the menu on top (ribbon)

   Examples: Changing the look of the entire pivot table, Cropping a picture, Changing colors in SmartArt

   i. Ribbon has groups of icons
   ii. Read the group names first
   iii. Identify the one which looks useful
   iv. Then read the actual button names
   v. See the tooltip if required
   vi. Find the answer directly or by process of elimination

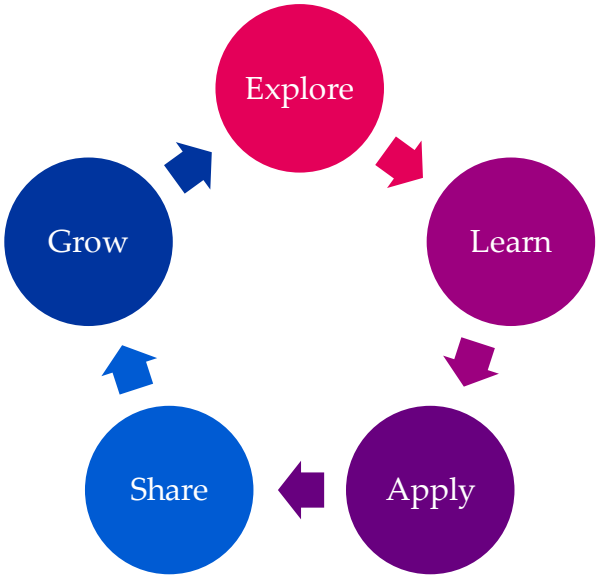
3. Mapping the features to work context
   a. Do not just learn features
   b. Find out what that feature was designed for
   c. Discover the need behind the feature
   d. Find the practical business scenario where the feature will be useful
   e. If you find one practical use, do not stop thinking.
      There may be more uses for the same feature.
4. Sharing
   a. If you find something useful – share it with your team
   b. Divide the work of learning amongst your team members and teach each other

Blog Articles

Here are some useful blog articles I have written.

1. Data Analytics (50+ articles)
2. Knowledge Pack – Excel Tables (12 articles)
3. Knowledge Pack: Green Marks in Excel (5 articles)
4. Show Values As: Knowledge Pack (6 articles)
5. Knowledge Pack: Data Accuracy in Excel (13 articles)
6. Weekend Reading: Copy Paste Knowledge Pack (21 articles)
7. Macros Knowledge Pack (7 macros)

Continued Learning



This is a continuous process. Once you start benefiting from this extra effort, you will be tempted to do it more often. Soon it will become a subconscious habit.

Finally, if you do not understand anything send a mail to nitin@maxoffice.co
Dr Nitin will make every effort to address all queries.