Excel Best Practices

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1. Purpose

At Meritus Intelytics Private Limited ("Merilytics"), our mission is to **consistently deliver high quality and advanced analytical solutions that lead to superior returns to clients.**

To achieve this, Merilytics needs all its employees to ensure that all the outputs delivered to the client have consistent structure and follow all the best practices and guidelines laid out in this document.

Note – If the client has any specific format requirements, those requirements will supersede the guidelines in this document.

2. Structure and Formatting

File Name:

At Merilytics, we follow the following file name convention which has 3 components - Date, Body, Version

Example: **20190601 Excel Best Practices v1.0**

Points to Note –

- Date must be in YYYYMMDD format
- The file name must be intuitive, and the analysis name should be included
- Version Numbers should be in the format of v0.1, v0.2, v0.9, v0.10 etc. for WIP versions and the final version that is shared with the client should be v1.0
- For revisions on a client output, the WIP versions should continue from the last shared client version as v1.1, v1.2 etc.
- For WIP versions, you may also include your initials at the end of the file name so that it is easier for team members to know who is working on it.

Example: **20190601 Excel Best Practices v0.2_SK**

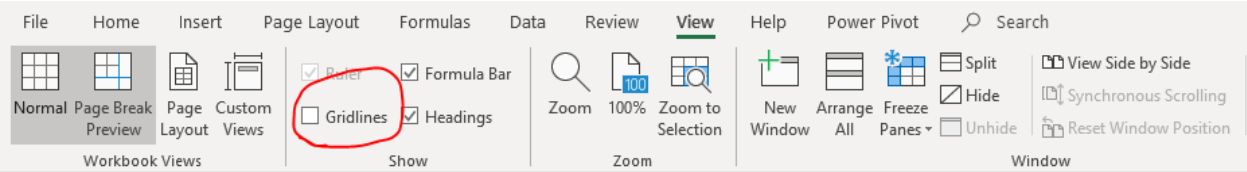
Excel Structure:

All client and non-client outputs on Excel should have the following tabs in that order –

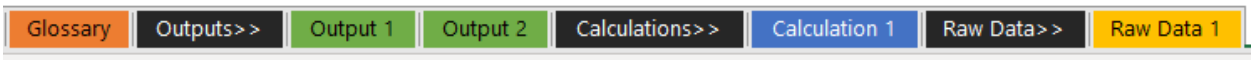
1. **Glossary/Legend** – This tab should include a high-level description of the analysis and definitions of key metrics used in the analysis. For modeling outputs, this tab should also contain a description of all the individual sheets in the model.
2. **Outputs –** The output tabs should contain the final summary of the analysis along with any notes/caveats clearly highlighted at the beginning of the sheet.
3. **Calculations –** These are intermediate tabs used to calculate the relevant metrics that are summarized in the output tabs.
4. **Raw Data** – These tabs will have the raw data used for the analysis.

Formatting:

All worksheets should be in white background (default Excel background) and gridlines should be hidden (Excel Ribbon → View → Gridlines)



Tab Formatting: The tabs should follow the following color code and each section should be separated as shown in the screenshot below.



RGB Codes: *Glossary* – (237,125,49)

Tab separators – (38,38,38)

Output – (68,114,196)

Calculation – (112,173,71)

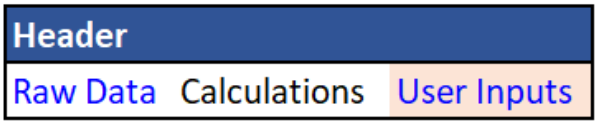
Raw Data – (255,192,0)

Table Formatting: All data tables in the Excel including raw data, calculation, output and glossary tables should include the following components –

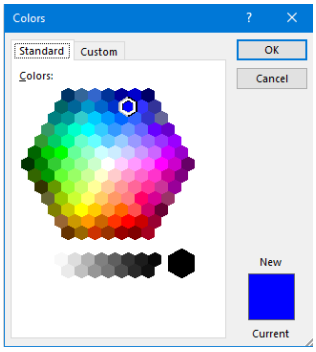
1. **Table Description** – A brief description of the contents of the table.
2. **Column Headers** – Description of the column in the table. The column names should be concise and intuitive such as “FY19 Sales ($)” or “FY19 YoY Growth (%)” etc. as opposed to “Sales” or “Growth”. For columns that have numbers, include the units in parentheses like ($), (#), (‘000s $) etc.
3. **Borders** – The entire table, table description row and column header row should have “Thick Outside Borders”, as shown in the screenshot below.
4. **Column Alignment –** The data in each column should be aligned with the column header. For example, the “Product Code” and “Category” columns below should be left-aligned with the corresponding data, while “FY19 Sales ($)” and “FY19 Units (#)” headers will be right-aligned with the numbers.

FY19 Sales and COGS by Product and Region					
Product Code	Category	Region	FY19 Sales ($)	FY19 COGS ($)	FY19 Units (#)
QTJTL2	Haircare	Europe	$68,815.9	$14,706.6	1,349
QTJTL2	Haircare	North America	$19,013.9	$12,745.2	373
QTJTL2	Haircare	South America	$29,252.3	$16,006.9	573
QTJTL2	Haircare	Middle East	$87,659.4	$68,991.4	1,718

Cell Formatting: Cells containing data should largely fall into the following categories and should be formatted as below.

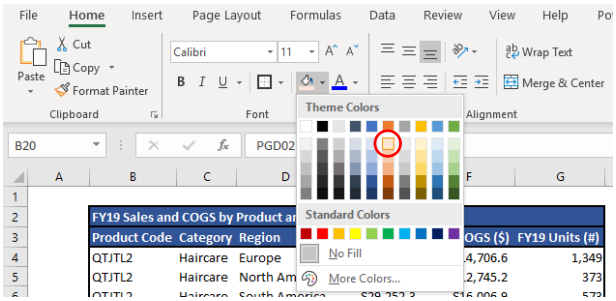


1. **Raw Data** – Value pasted data from the raw data files received from the client. All raw data values should be blue font (RGB – 0,0,255) and white/no background.

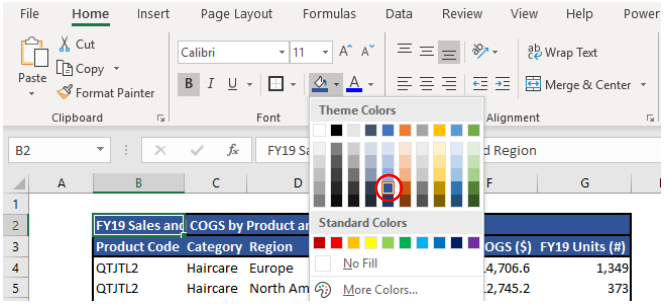


2. **Calculations** – All values generated through Excel formulae should be in default/black font with white/no background.

3. **User Inputs** – These values are input by the user and can be changed to generate alternate outputs. The cells should have blue font (RGB – 0,0,255) and a light orange background (RGB – 252, 228, 214).



4. **Headers** – These are table/column headers that should be in white font and dark blue background (RGB – 48, 84, 150)



Additional Points to Note:

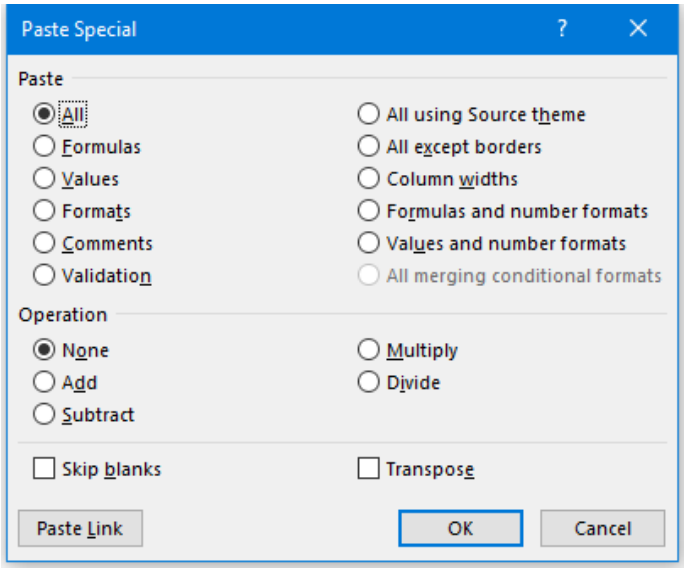
1. Please leave the first row and first column of all worksheets as blank and start your worksheet from cell “B2”
2. Use “Calibri” font and size 11 throughout the Excel
3. Use appropriate number formatting for numerical values such as $, #, % etc.
4. All numbers should have comma separators for thousands, millions etc.
5. Worksheet zoom should be 100% by default. Use appropriate judgement to change it on content heavy worksheets but do not go below 80%.
6. All notes/caveats should be in *italics* and at the top of the sheet for ready reference.
7. Save your workbook every 10mins and “Save As” a new version every 2 hours so that you can do not lose valuable work in case of power failures or file corruption issues.
8. While sharing outputs with the end user/client, always navigate to the first cell of the sheet (“A1”) in every tab and save the file on the “Glossary/Legend” tab. This ensures that the end user does not open the spreadsheet in the middle of the worksheet and has to navigate his way back.
9. DO NOT edit the raw data values. In case any of the data needs clean up, create additional columns/tabs to capture the cleaned-up data instead of editing the raw data values.
10. Add a note wherever data entry is required to make it easy to understand.
11. Avoid merging cells unless necessary. Use 'Center Across Selection' (in Format Cells -> Alignment) instead.
12. Use data validation where possible (mainly user inputs), to minimize data entry errors.
13. Reduce Used Range by going to last cell of each sheet and deleting all the unused rows and columns. Use CTRL + END to keep an eye on the last row and column of the tab.
14. While writing formulae, use full row or column references such as ‘C:C’ or ‘2:2’ as opposed to fixed ranges (C1:K20, A4:A30, etc.) wherever possible so that the formulae are scalable when the data increases.
15. In models where using full row or column references is not feasible, provide a reasonable buffer in the formula ranges to future proof the models.
16. Avoid showing errors in cells as #N/A, #VALUE etc. Use IFERROR to substitute the error with a relevant value.

17. Use conditional formats prudently as these operations are heavy and slow down the calculations
18. Ensure there are no formula dependencies before deleting entire rows/columns. Otherwise, you may get #REF errors that will have to be manually fixed by writing the formulae again.
19. Include columns with formulae in tables while sorting data as formula references can get scrambled if you sort the raw data columns without including the formula column
20. Do not use links to external Excel files to the extent possible. If you must use external references, ensure that the references are working fine every time you save the Excel as a new version.
21. If there are pivot tables in the output, ensure to refresh them before summarizing the outputs so that the latest values are generated by the pivot tables.
22. When using pivot tables, to ensure formatting is consistent when filters are applied, use pivot table formatting instead of individual cell formats and disable “Autofit Column Width on Update” option.
23. Avoid hardcoding numbers in formulas such as VLOOKUP, INDEX, OFFSET etc. and prefer setting a reference cell with a suitable description to enter the number so that it is easier for the end user to follow the formulae.
24. Spot check the outputs from any formula by picking a random cell in the range and validating the value to ensure that the ranges are working as expected.
25. Avoid dragging/copying formulae/formats all the way to the end of the column/row. Doing so will increase the working area of the spreadsheet and increase the file size unnecessarily.
26. Avoid dragging/copying formulae/numbers on filtered tables as the values could overwrite the hidden cells as well. To paste a value into a filtered column, use “Alt + ;” to select only visible cells and then use paste special to paste values.
27. Avoid array formulae to the extent possible. If you must use array formulae, lock the cells after writing the formula to prevent end users changing it to a regular formula and get wrong results.

3. Keyboard Shortcuts

Navigation	
Select the entire row based on the current cell/cells	**SHIFT + SPACE**
Select an entire column based on the current cell/cells	**CTRL + SPACE**
Move from the top to the bottom of a block of data	**CTRL + DOWN ARROW**
Move from the bottom to the top of a block of data	**CTRL + UP ARROW**
Move from the left to the right of a block of data	**CTRL + RIGHT ARROW**
Move from the right to the left of a block of data	**CTRL + LEFT ARROW**
Move to the First cell of the sheet	**CTRL + HOME**
Move to the last affected cell in the sheet	**CTRL + END**
Move up/down by one page	**Page Up/Page Down**
Move Right/Left by one page	**Alt + Page Up/Page Down**
Navigate between tabs	**CTRL + Page Up/Page Down**

Data Manipulations	
Copy a cell or a group of cells	**CTRL + C**
Paste copied cell(s)	**CTRL + V**
Paste Special – Use ALT + E + S (or) CTRL + ALT + V to get a list of Special Paste options	
Paste Values only	**ALT + E + S + V**
Paste Formulae only	**ALT + E + S + F**
Paste Format (Number Formats, Font types, Background colors etc.)	**ALT + E + S + T**
Transpose and paste (Can be combined with other paste options also)	**ALT + E + S + E**



Formatting	
Cell Height and Width	
AutoFit column width	**ALT + H + O + I**
AutoFit row height	**ALT + H + O + A**
Set row height	**ALT + H + O + H**
Set column width	**ALT + H + O + W**
Text Formats	
Bold Text	**CTRL + B**
Italic Text	**CTRL + I**
Cell background color	**ALT + H + H**
Font color	**ALT + H + F + C**
Right align	**ALT + H + A + R**
Left align	**ALT + H + A + L**
Centre align	**ALT + H + A + C**
Decrease indent	**ALT + H + 5**
Increase indent	**ALT + H + 6**
Borders	
Thick outer border	**ALT + H + B + T**
Outer border	**ALT + H + B + S**
Top border	**ALT + H + B + P**
Bottom border	**ALT + H + B + O**
Right border	**ALT + H + B + R**
Left border	**ALT + H + B + L**
Number Formats	
Integer (with 2 decimals)	**CTRL + SHIFT + 1**
Currency (based on system currency)	**CTRL + SHIFT + 4**
Percentage	**CTRL + SHIFT + 5**
Date	**CTRL + SHIFT + 3**

Selection	
Select a set of cells one at a time	**SHIFT + UP/RIGHT/DOWN/LEFT ARROW**
Select all consecutive cells in the row	**CTRL + SHIFT + LEFT/RIGHT ARROW**
Select all consecutive cells in the column	**CTRL + SHIFT + UP/DOWN ARROW**
Select the working area of the sheet	**CTRL + SHIFT + END**
Select entire row	**SHIFT + SPACE**
Select entire column	**CTRL + SPACE**
Select entire sheet	**CTRL + SHIFT + SPACE**