

Best Practice Document

This is a compact guide containing some key elements of best practice. Further investigation is strongly advised for EUC designers or where the terminology used is unknown to the reader.

1. GIVE CONSIDERATION BEFORE CREATING A NEW SPREADSHEET

Before creating a new workbook, it should be established if similar data is available elsewhere, or there is already a similar tool in existence. Assuming a new workbook is required, time invested in the consideration of the spreadsheet's use, design, and limitations BEFORE proceeding is time well spent. The full process of how the EUC will be used should be thoroughly investigated and transparent, and for larger tools it should be documented and pre-approved. Other areas such as expected lifetime and data source consistency should also be clearly defined.

2. DESIGN WITH AN APPROPRIATE LEVEL OF COMPLEXITY

In general, the complexity of a workbook should always be minimised for any required level of functionality. Macros should only be used if they are understood and more complex functionality such as Pivots, Array Formulae and Advance Filters should only be implemented if they are well understood by the developer AND likely future owners..

3. SEPARATE INPUT, CALCULATIONS & OUTPUT

A common feature in all well designed workbooks is the clearly defined separation of input data from calculations, and calculations from output. Ideally these three completely different aspects of every workbook should be held on different worksheets, although for very simple workbooks the use of bordered or coloured separate ranges may be adequate.

4. INCLUDE A SUITABLE LEVEL OF DOCUMENTATION & TESTING

Large, complex & critical workbooks require dedicated time and resource in order to be fully documented and tested, and for user instructions to be written. However a small, simple system may only require the briefest of notes or instructions held on a summary sheet at the front of the workbook. Brief updates and notes to reflect changes, assumptions or known errors should be appended throughout the lifetime of the workbook.

5. TAKE CARE WITH DATA SOURCES

Linking workbooks is simple and tempting, but can cause long term issues for the unwary. If the source workbook names are inconsistent or the files are not under direct control, consideration should be given to other options. Cut & Paste may be a basic and time consuming option, but the probability of positively identifying a significant change in the source document when data is manually opened and copied should be weighed against the likelihood of incorrect linking caused by unknown or inconsistent changes in the source data. Consideration may also be given for the use of macros or database connectivity in these circumstances.

6. BUILD SIMPLE CHECKS INTO THE WORKBOOK STRUCTURE

Simple checksums employed as a matter of course in all spreadsheets make it simple to spot many of the basic calculation or input mistakes. For example a cell containing a COUNT() formula can be used to ascertain if the number of inputs is always the same, or if the columns total should always be equal to the rows total, a SUM(rows)-SUM(columns) formula can be used to check if it is zero. Conditional formatting can be utilized to highlight unexpected results.

7. USE RANGE NAMES, ESPECIALLY IN COMPLEX WORKBOOKS

Range names are a useful utility that promote a more meaningful approach to referencing cells. Their usefulness increases substantially with the complexity of the formulae and workbook. Both developers and users should tend towards using them wherever feasible. Even relatively advanced users can benefit from some of the more powerful features available when the various types of range are well understood, such as relative named ranges, dynamic named ranges, and the difference between worksheet scope and workbook scope names.

8. MAKE WORKBOOKS INTUITIVE TO USE

Nothing makes it easier for new users to understand spreadsheets than an intuitive user interface. A simple set of instructions should always be included; even a few lines may be sufficient for simple workbooks. Consistent colouring for sheet tabs and cell ranges to denote the type of data should be employed, and liberal use made of cell notes to explain complex formulae, functionality or to explain anomalies or exceptions.

9. CONTROL CHANGES AND PREVENT ACCIDENTAL ALTERATIONS

Accidental changes are a key source of spreadsheet errors. Most can be easily avoided with some basic controls. Key cells that are not expected to change should be protected, and protecting the structure of the worksheets so users can't accidentally insert/delete rows or columns should be considered. If appropriate, Data Validation can be used to prevent erroneous data inputs from users, and consider saving the workbook as 'read only recommended' so by default the user is unable to make permanent alterations. When structural changes are deliberately made to a workbook, a change log should ideally be completed and the workbook re named to include a new version number.

10. DON'T KEEP EXTENDING THE FUNCTIONALITY OF A WORKBOOK

Many workbooks simply get more and more convoluted and complex throughout their life. Typically, functionality is added, exceptions are calculated or legacy data and functionality left in. This poses an ever-increasing danger of error and owners should be aware of the warning signs. These warnings may take many forms but typical are the slowing of calculation times, users having to re read the instructions each time before use and manual intervention to previously automated functions. As soon as possible, time should be allocated for an appropriate action such as data cleansing, purging of legacy data or functionality, the re design of the file or possibly the movement of the spreadsheet into a centrally managed application.