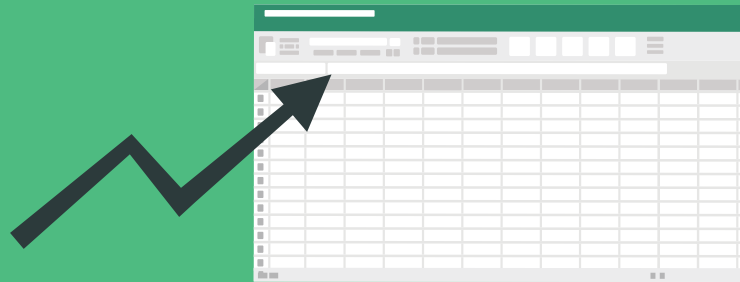# The Visual Guide to Good Spreadsheet Practice

XLS

Spreadsheets have become ubiquitous with modern business in recent years. With the advent of inexpensive and extremely powerful spreadsheet software and the constant need for accessible, versatile and collaborative data management, the use of spreadsheets for businesses has grown exponentially.

However, the use of spreadsheets comes with risks.

A shocking 80% of spreadsheets contain mistakes, and 65% of Microsoft Excel users are self-taught.

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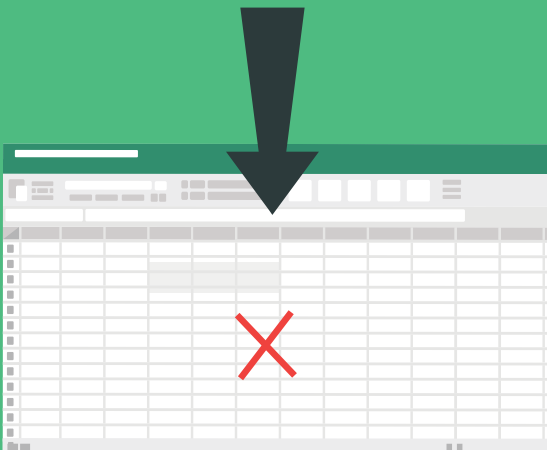
As a result, poor processes and ill conceived guidelines for the use of spreadsheets have become the norm, often resulting in costly mistakes for business of all sizes.

To combat this, many organisations now implement spreadsheet guidelines, hoping to minimise the risks associated with their use. These guidelines are relatively uncommon, however, with the majority of businesses still using spreadsheets without any clear processes.

This guide, based on advice from ICAEW, provides a series of principles for good spreadsheet practice, aimed at reducing risks, mistakes and inefficiencies associated with their ongoing use.

Spreadsheets within the business
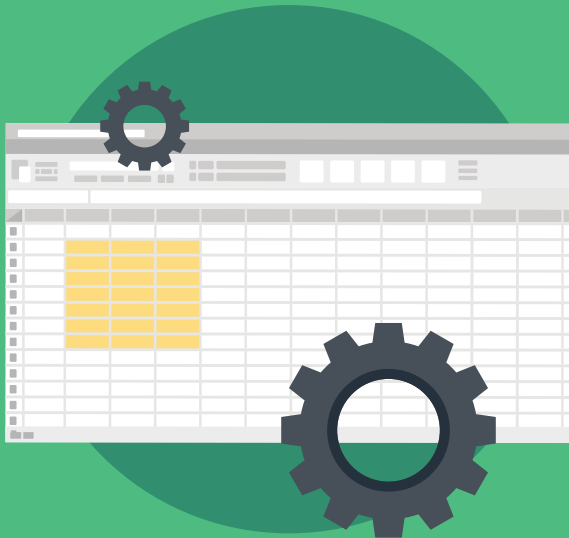
1. **Understand the role of spreadsheets within the business**

You need to consider the current (and future) role of spreadsheets within the business and determine how you can create best practices around this usage. Which departments make use of spreadsheets? What are they used for? Which software is being used? Is there any formal training available?

2. **Adopt a standard and enforce it throughout the organisation**

Ensure you standardise how spreadsheets are used in your business, including both micro and macro elements. Decide when a spreadsheet should be used to present information (and when it shouldn't), and put together a list of conventions for things like cell formatting, formulae, etc. Once the standard has been adopted, ensure it is consistently enforced throughout every level of the organisation.

Spreadsheets within the business cont.

3. **Ensure appropriate training and competence**

Any piece of software is only as good as the person using it, and different levels of knowledge among organisational users can result in a lack of consistency and an increased risk of mistakes. Invest in training for everyone who will use spreadsheets to ensure a minimum level of technical competency, and an understanding of the importance of reviews, checks and standardisation.

**4.** **Implement peer reviews and a collaborative environment**

Mistakes are common in spread-sheets, so it's important that they're regularly reviewed before they're shared. Employ a rigorous peer review system to catch mistakes and ensure spreadsheets meet your organisational standard. Encouraging a collaborative environment can also help ensure mistakes are corrected before any data is used as the basis for organisational decision-making.

Design and Build

1. **Understand appropriate use**
When employees are comfortable with spreadsheets, they often use them in place of more suitable, dedicated software. Ensure team members understand when spreadsheet software should be used and that they only use it for the applications it is designed for.
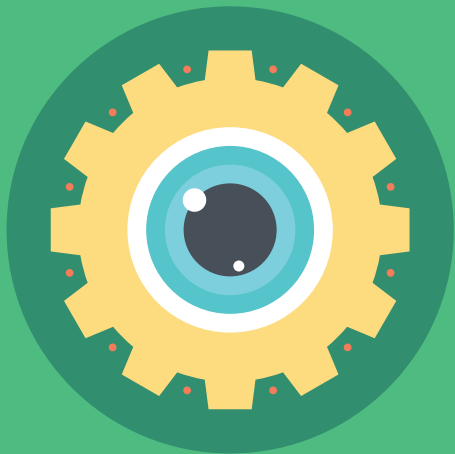
2. **Identify the audience**
It's important to understand who any given spreadsheet is intended for, and to take their level of understanding and technical competency into account. Try and make the experience of using and interacting with spreadsheets as clean and simple as possible, including explanatory notes wherever they may be required.

3. **Implement introductory sheets**
Few people consider usability when building a spreadsheet, but often they can make a huge difference in how a dataset is used, understood and shared. Along with providing notes on formatting or explanations of complex areas, it's worth including an introductory sheet as standard with all spreadsheets. This introduction could include the organisation name, the creator's name, version number, explanation of the purpose of the spreadsheet and a basic guide on how to find and update key calculation inputs.

Design and Build cont.

4. **Focus on the goal**
Anyone building a spreadsheet should have a clear understanding of the purpose of the sheet, as well as the outputs that achieve that purpose. Upon review, be sure to remove any diagrams, calculations, notes or data that don't add anything to the main message or detract from the purpose of the spreadsheet.

5. **Separate inputs and outputs**
It's important to separate inputs and outputs so that users are clear how to edit a model's assumptions, tweak calculations or use the spreadsheet as intended. As well as physically separating the input and output cells, implement formatting keys to visually identify each element.

6. **Implement consistent structures**
It's important to keep a consistent structure in your spreadsheets, both within individual documents and across all spreadsheets in your organisation. It's advisable to design and implement standard layouts and templates, as this not only makes it easier for users to understand individual spreadsheets but facilitates easier review and sharing of work.
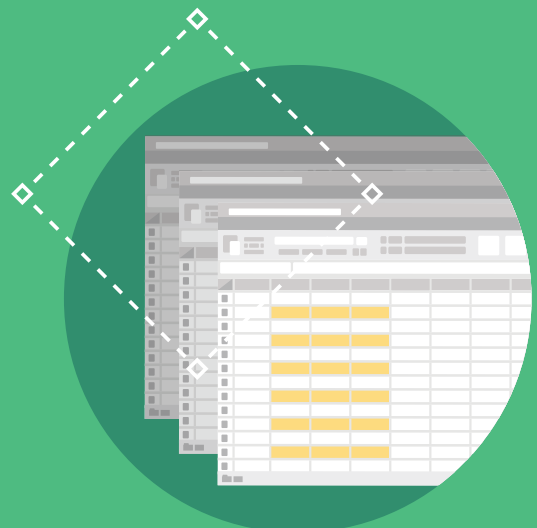
Design and Build cont.

7. **Implement consistent formulae**
In the same way consistency can aid understanding and collaboration of overall spreadsheets, the same is true of formulae within the document. Design and implement a standardised way of approaching different formulae and functions and ensure a consensus within the organisation. As a general rule, any single worksheet should use the smallest practical number of different formulae and they should be kept as short and simple as possible.

8. **Do not duplicate calculations**
Instead of calculating the same value in several different places, it's much safer to build the calculation once and use a named range or direct cell reference to pull the number through to other areas of the worksheet. This aids review and checking of calculations and will minimise the risk of mistakes.

9. **Carefully consider the use of advanced features**
While it can be tempting to use particularly complex features for advanced users, this can result in a worksheet being unusable to others or increase the risk of mistakes being made during review and collaboration. If a simpler feature can be used to achieve the same result, then you should take this option. Where complex features are used, ensure you include a documentation worksheet or include prominent warning messages or instructions where appropriate.

Risks and Controls

1. **Implement backup and version control systems**
Review saving protocols, auto-saving settings, alternative backup options and version number systems and ensure they are adhered to throughout the organisation. Losing data can result in significant delays or lost revenue, yet they can be easily avoided with strong backup and version control systems.

2. **Rigorously test workbooks**
It's important that all workbooks are tested to ensure they work as intended, but this is particularly true of business-critical documents. Ensure all significant documents go through rigorous testing and peer review systems and that you're confident all inputs and outputs are accurate before acting on, publishing or sharing any data.

3. **Implement checks and controls**
It's vital to incorporate checks, controls and alerts from the outset and during the course of spreadsheet construction, including error checks, data validation, user alerts and error-proofing features. These checks and controls should be continually revisited and improved and should be standard throughout the organisation.

Risks and Controls cont.

4. **Implement workbook protections**
Before sharing documents that have been through the peer review and validation system, employ workbook protection features to prevent users from changing things they're not meant to (whether deliberately or accidentally). This might include locking cells, protecting formulae or restricting user inputs.

Sources

Thanks to the following resources for help in putting this guide together:

- https://www.icaew.com/technical/technology/excel/twenty-principles

- https://www.icaew.com/en/technical/technology/excel/spreadsheet-competency-framework

- http://www.ssrb.org/standards

- https://www.aatcomment.org.uk/20-principles-for-good-spreadsheet-practice/