



Implementing AI in Excel

Using AI to improve spreadsheet analysis,
formulas, reporting, and repeatable financial
operations while keeping review in the workflow.

WORKS WITH THE ASSISTANTS TEAMS ALREADY USE



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AT A GLANCE

Using AI to improve spreadsheet analysis, formulas, reporting, and repeatable financial operations while keeping review in the workflow.



Spreadsheets run a large share of business decisions, and most of them are built by one person, edited by many and checked by nobody. AI can write formulas, clean messy exports, explain inherited workbooks and draft analysis in minutes. It can also produce a formula that looks right and is quietly wrong. This playbook shows where AI fits in spreadsheet work, how to ask for help in a way that can be checked, how to protect the data you paste, and how to measure whether the effort pays off.

WHO IT IS FOR

Analysts, finance and operations staff, and team leads who build or depend on workbooks and want a safe, repeatable way to use AI with them.

TIME TO USE

60 minutes to read; one team session to apply



What you will have at the end

- A task map showing which spreadsheet jobs suit AI help and where a human must sign off
- Request templates for formulas, cleaning, analysis and workbook review that you can use tomorrow
- A verification routine that catches wrong formulas before they reach a report
- Clear rules for what data may and may not be pasted into an assistant
- A simple baseline and metrics table to prove time saved without losing accuracy

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EXECUTIVE BRIEF

What AI changes in spreadsheet work, and what it does not

01



AI makes it much faster to write, explain and clean spreadsheet logic. It does not make the result correct, and the person who owns the workbook still owns the numbers.

Most spreadsheet time is not spent on thinking. It is spent on recalling syntax, reshaping exports, hunting for the cell that breaks a total and rebuilding last month's report with this month's columns. These are the tasks where an AI assistant helps most, because the work is well defined, the output can be tested, and a first draft saves real minutes.

The risk is specific to spreadsheets. A formula that returns a plausible number looks the same as one that returns the right number. An assistant will often produce confident logic that mishandles blanks, text stored as numbers, duplicate keys or mismatched date formats. Nothing flags the error. The cell just shows a value, and the value flows into a report.

- Use AI to draft formulas, explain unfamiliar ones, clean data, suggest checks and describe findings in words.
- Do not use AI as the calculator of record. Let the spreadsheet calculate and let AI help you build and review the logic.
- Test every AI-written formula on rows where you already know the answer before you fill it down.
- Keep sensitive and personal data out of tools your organization has not approved.
- Record what the assistant was asked to do on any workbook that feeds a decision or a filing.

THE CORE RULE

AI proposes, the spreadsheet calculates, a person verifies. If you cannot explain in one sentence what a formula does and how you checked it, it is not ready to use.



Done well, this is a modest and reliable gain: faster builds, fewer syntax errors, better documentation of inherited files and more time left for judgment. Done carelessly, it multiplies hidden errors at the speed of copy and paste. The rest of this playbook is about the difference.

WORKING QUESTION

Which workbook in your team would hurt most if one formula in it were quietly wrong, and who last tested it?

THE WORK MAP

Which spreadsheet tasks suit AI
and where a person decides

02

Match the task to the level of risk. Drafting and explaining are low risk. Anything that changes reported numbers needs a named checkpoint.

TASK	GOOD FIT FOR AI	HUMAN CHECKPOINT
Writing a lookup, conditional or text formula	Strong: syntax is the slow part	Test on known rows; check blanks and duplicates
Cleaning an export (dates, names, stray spaces)	Strong: pattern work on a copy	Compare row counts and spot-check 20 rows
Explaining an inherited workbook	Strong: reads formulas and describes flow	Owner confirms the description matches intent
Building a pivot or summary structure	Good: suggests layout and fields	Reconcile totals to the source
Writing analysis commentary from a table	Good as a draft	Analyst rewrites claims and confirms every figure
Reconciling two lists or ledgers	Moderate: use as a helper, not the answer	Reviewer inspects every unmatched and every matched-with-difference item
Final figures for a board pack, filing or customer	Weak: do not delegate	Accountable owner calculates, reviews and signs off

Notice the pattern. AI is strongest where the output is something you can run and test, such as a formula or a cleaning step. It is weakest where the output is a number nobody can independently reproduce. If the assistant states a total from a pasted table, treat it as a guess until the spreadsheet confirms it.



Two ways to use an assistant

- Inside the spreadsheet: a built-in or add-in assistant that sees your sheet. Fast and convenient, but check what it can read, what it sends out and whether it can change cells without asking.
- Outside the spreadsheet: a chat tool where you describe the structure and paste a small, anonymized sample. Slower, but you control exactly what leaves your environment.
- Mixed: ask outside for the formula using a synthetic sample, then paste the formula into the real workbook and test it there.

For sensitive workbooks the mixed approach is often the best default. You describe columns and show five made-up rows, the assistant writes the logic, and the real data never leaves your controlled environment.



WORKING QUESTION

For your three most-used workbooks, which tasks sit in the strong rows of this table and which sit in the final row?



SETTING UP SAFELY

Information rules and approved tools before anyone pastes a table

03

Spreadsheets hold payroll, customer lists, pricing and forecasts. Decide what may be shared with which tool before habits form.

Most spreadsheet data leaks are not attacks. They are a well-meaning person pasting a customer export into a free chat tool to fix a date column. A short rule set, written in plain words and placed where people work, prevents most of it. Check your own policies and any legal requirements that apply to personal, financial or regulated data, and ask your security or legal contacts where the rules are unclear.

DATA TYPE	DEFAULT RULE	SAFER ALTERNATIVE
Personal data (names, emails, IDs, pay)	Do not paste into unapproved tools	Replace with fake values or row numbers
Customer or supplier names and contracts	Approved tools only	Use codes such as Customer A
Unpublished financial results or forecasts	Approved tools only, limited access	Share structure and a scaled sample
Public or already-published figures	Generally fine	Still cite the source in the workbook
Credentials, keys, connection strings in cells	Never	Remove them from the file first

Before using an assistant on a workbook

- The tool is on the approved list, or approval has been requested
- You know whether the vendor keeps or trains on what you submit, from your organization's agreement and settings
- Sensitive columns are removed, masked or replaced with synthetic values
- You are working on a copy, not the only version of the file

- Version history or a dated backup exists so you can roll back
- The workbook owner knows an assistant is being used

A simple masking routine



01 Copy

Save a working copy named with the date and the word draft. Never experiment in the master file.

02 Strip

Delete columns the task does not need. Fewer columns means less exposure and a clearer request.

03 Mask

Replace names with codes and amounts with scaled or invented values that keep the same format, including the odd cases such as blanks, negatives and text in number cells.



04 Sample

Share five to ten rows that include the awkward cases, not the whole table.

05 Restore

Bring the finished formula back into the real workbook and test it there on the real data.

COMMON MISTAKE

Masking so cleanly that the sample no longer contains the messy rows. The assistant then writes a formula that works on tidy data and fails on yours. Keep the ugly cases in the sample.



WORKING QUESTION

If someone on your team pasted a payroll sheet into a chat tool today, would they know that was against the rules?



TASK PLAYBOOKS

Formulas, cleaning and workbook explanation, step by step

04

Good requests state the structure, the goal, the edge cases and the format of the answer. That makes the result testable.

Playbook 1: writing a formula

01 Describe the layout

Name the sheet, the columns and what each holds, including data types. Say which cell the formula goes in and which version of the spreadsheet product you use.

02 State the rule in plain words

Say what should happen, then add the exceptions: blanks, duplicates, text in number columns, no match found.

03 Ask for explanation and tests

Request a step by step explanation and three test cases with expected results that you can try.

04 Run the tests

Enter the test cases in a scratch area. If a result differs from expected, send back the cell, the result you got and the result you expected.

REQUEST TEMPLATE: FORMULA

I use [spreadsheet product and version]. Sheet Orders has columns A Order ID, B Customer code, C Order date (real dates), D Amount (numbers, some blanks). In Sheet Summary cell B2 I want the total Amount for the customer code in A2 within the month in B1. Treat blanks as zero. Give the formula, explain each part, and list 3 test cases with expected results, including one with no matching rows.

Playbook 2: cleaning an export

01 Profile first

Ask the assistant to list likely problems from a sample: mixed date formats, trailing spaces, numbers stored as text, inconsistent capitalization, duplicate keys.

02 Clean in new columns

Ask for formulas or a repeatable recipe that writes to new columns, so the original stays untouched and every change is traceable.

03 Reconcile counts

Compare row counts, distinct key counts and a control total before and after. They should match unless you removed rows on purpose.

04 Spot-check

Pull 20 random rows and compare raw to cleaned by eye. Include every row the assistant flagged as ambiguous.

REQUEST TEMPLATE: CLEANING

Here are 8 masked rows from a supplier export. Columns: Date (mixed formats), Supplier (inconsistent spelling), Amount (some with currency symbols). List the problems you see. Then give formulas, to be placed in new columns, that produce a real date, a standardized supplier name using the lookup table on sheet Names, and a numeric amount. Say what each formula does with a value it cannot parse.

Playbook 3: explaining an inherited workbook

Inherited workbooks are where assistants earn their keep. Paste a handful of the key formulas, or export the formula text for a sheet, and ask for a plain description of what flows where. Then ask for a list of risks: hard-coded numbers inside formulas, ranges that stop short of the data, volatile functions, links to other files and circular references. Treat the output as a reading aid. The workbook owner must confirm the description matches what the workbook is meant to do.

REQUEST TEMPLATE: REVIEW

Below are the formulas from sheet Forecast, with their cell addresses. Describe in plain English what the sheet calculates and how inputs flow to outputs. Then list possible risks: hard-coded values, ranges that may miss rows, mixed units, inconsistent formulas across a row, and anything that depends on another file. Mark each risk as certain or possible.

WORKING QUESTION

Which of these three playbooks would save your team the most time next week, and who will try it first on a copy?

ANALYSIS AND REPORTING

Using AI for analysis, pivots and commentary without losing the numbers

05

Let the assistant suggest the structure and draft the words. Keep the arithmetic in the spreadsheet and the claims under human control.

Analysis is where the temptation is highest to paste a table and ask what it says. That can be useful for generating questions, but it is the wrong way to produce answers. Models can misread columns, drop rows from long tables and state sums that are slightly off. The safer pattern is to ask for the method, run it in the spreadsheet, and then use the assistant to help describe what the spreadsheet shows.

01 Define the question

Write the decision the analysis supports and the period, entity and unit. Vague questions yield vague pivots.

02 Ask for the structure

Request the pivot layout, calculated fields or formulas needed, and the checks that should tie out.

03 Build and tie out

Create the summary in the spreadsheet and reconcile it to the source total. A difference means stop and investigate.

04 Draft commentary

Paste the final summary table, not the raw data, and ask for three to five observations with the figures referenced by row and column.

05 Verify every figure

Check each number in the commentary against the table. Delete any claim you cannot trace.

REQUEST TEMPLATE: COMMENTARY

Below is the final summary table for Q3 by region (values in thousands, already reconciled). Draft 4 neutral observations for a management reader. Cite the row and column for every number. Do not infer causes. Add 3 questions an executive might ask that the table cannot answer.

Reconciliations and variance work

For matching two lists, ask the assistant to propose match keys and a tolerance rule, then implement the matching in formulas you can inspect. Review every unmatched item and every pair that matched with a difference. Do not accept a statement that two sets reconcile. The reconciliation is the evidence, and it must live in the workbook with a visible control total.

- Ask for a check row that shows source total, summary total and difference.
- Ask for conditional formatting that highlights any non-zero difference.
- Ask for a list of assumptions, such as how blanks, refunds and timing differences were treated.
- Keep a notes tab stating the data source, extraction date, owner and reviewer.

NEVER DELEGATE

Do not let an assistant decide which items to exclude from a reconciliation, which adjustments to book, or which variance explanations are acceptable. Those are judgments for the accountable person.

WORKING QUESTION

In your last management report, which figures could you trace back to a reconciled source in under five minutes?

VERIFICATION HABITS

How to catch a wrong formula before it reaches a report

06

Verification is a small set of habits applied every time, not a heroic audit after something goes wrong.

The failure modes of AI-written spreadsheet logic are consistent, which makes them checkable. Typical ones include ranges that are one row short, absolute and relative references mixed up so a fill-down shifts, lookups that return the first match when you needed an exact or latest one, text and number type mismatches, date logic that breaks across month ends, and functions that are not available in your version of the product.

FAILURE MODE	HOW IT SHOWS UP	QUICK CHECK
Range stops short or extends too far	Total is slightly off	Compare to a simple SUM of the whole column
Reference drift on fill-down	Row 1 right, later rows wrong	Inspect formula in the last row; test row 50
Duplicate keys in a lookup	Wrong value, no error	Count distinct keys against rows
Number stored as text	Silent exclusion from sums	Compare COUNT to COUNTA on the column
Date and time zone edges	Month-end records vanish or double	Test on the first and last day of the period
Unsupported function	Error or unexpected result	Confirm the function exists in your version

Five-minute verification routine

- Run the assistant's own test cases and two of yours, including a blank and a duplicate
- Inspect the formula in the first, middle and last row
- Tie summary totals to source totals with a visible difference cell
- Compare row and key counts before and after any cleaning
- Have someone other than the builder look at anything that feeds a decision

- Write one line in the notes tab on what the formula does and how it was checked

Independent recalculation

For important figures, recalculate by a different route. If a formula used a lookup, check a sample by filtering and summing manually. If a pivot gave the total, compare it to a SUMIFS. Two independent methods that agree are far stronger evidence than one method that looks tidy. Also ask the assistant to attack its own work: have it list how the formula could fail on your data, then test the top three suggestions.

ILLUSTRATIVE EXAMPLE

A team asks an assistant for a formula that sums the latest price per product. It returns a lookup that takes the first match. Tests pass on the sample because each product appears once. On the real file, products repeat, and old prices are summed. A distinct-key count would have caught it.

WORKING QUESTION

What is the one check your team will make non-negotiable for any AI-written formula that feeds a report?

MEASURING RESULTS

Proving time saved and quality kept

07

Take a baseline before you start, track a few simple metrics, and review them monthly. Feelings of speed are not evidence.

Without a baseline, every team believes it is faster. Pick three to five recurring spreadsheet tasks, such as the monthly report refresh, the weekly data clean or the reconciliation. Time each of them over a few cycles before using AI, using a stopwatch or a simple log. Record also how many errors were found in review. Then repeat the measurement after introducing the new method. Compare like with like and note when the task itself changed.

01 Choose tasks

Select recurring tasks with a clear start and finish and an owner willing to track them.

02 Capture the baseline

Log minutes to complete and number of review corrections for three cycles without AI help.

03 Introduce the method

Apply the templates and verification routine. Log minutes, including time spent verifying.

04 Compare and decide

Keep the method where time falls and quality holds. Change or drop it where it does not.

METRIC	HOW TO MEASURE	WHAT GOOD LOOKS LIKE
Cycle time per task	Minutes from start to reviewed output, verification included	Falls without rising correction counts
Review corrections	Count of changes the reviewer makes per workbook	Flat or falling
Errors found after release	Issues raised by readers after circulation	Zero for material items
Rework rate	Share of AI-assisted outputs redone	Falling over several cycles
Documentation coverage	Share of key workbooks with a notes tab	Rising toward complete
Adoption with approved tools	Share of use on approved tools	Rising; unapproved use falling

ILLUSTRATIVE NUMBERS ONLY

If a monthly refresh took 6 hours and now takes 4 including verification, that is a 2-hour saving per month on that task. These figures are illustrative. Count your own, and count verification time, or the saving is overstated.

Watch quality metrics as closely as time. A rise in speed with a rise in corrections means the checks are being skipped. The goal is not the fastest workbook. It is the same or better accuracy in less time, with a trail that someone else can follow.

WORKING QUESTION

Which one recurring task will you time this month, before changing anything?


TEAM ROUTINES

Sharing what works so quality does not depend on one enthusiast

08



A shared prompt library, a short review rule and a monthly retrospective turn individual tricks into team capability.

In many teams one person becomes the spreadsheet-and-AI expert and everyone else copies their output without understanding it. That is fragile. Spread the skill instead. Keep a small library of tested request templates, each with an example of the structure it expects and the checks that go with it. Review the library monthly and retire what no longer works.

- Template library: formula, cleaning, workbook review and commentary templates with a worked example for each.
- Notes tab standard: purpose, owner, source, extraction date, assumptions, reviewer and an AI-assistance line.
- Two-person rule: any AI-assisted workbook that feeds a decision gets a second pair of eyes.
- Monthly thirty-minute retro: what saved time, what went wrong, what to add to the library.
- Near-miss log: record errors caught in review so the whole team learns from them.



Training the team

Run one short practical session using a real but masked workbook. Have each person write a request, test the result and find a planted error. People remember the error they found themselves. Teach the vocabulary of checks, such as control total, tie-out and edge case, so reviewers have a shared language. Make clear that asking for help with verification is normal and that nobody is penalized for reporting a near miss.



WHAT TO NEVER DELEGATE

Final sign-off on reported figures, decisions on adjustments or exclusions, access control and sharing decisions, and any call about whether a number is fit for an external audience. The assistant can prepare. A named person decides.

Finally, keep the human skill alive. People who never write a formula by hand lose the ability to spot a wrong one. Rotate the work, and keep reviewers practiced at reading logic, not just reading results.

WORKING QUESTION

Who owns your team's template library, and when does it next get reviewed?

PITFALLS

Common failure patterns and one illustrative scenario

09

Most spreadsheet incidents involving AI come from skipped tests, unmasked data and unclear ownership, not from exotic technology problems.

- Trusting a stated total instead of calculating it in the sheet.
- Filling a formula down without testing the last row.
- Pasting raw customer or payroll data into an unapproved tool.
- Letting an in-sheet assistant overwrite cells without a copy or a change log.
- Accepting a reconciliation conclusion instead of inspecting the exceptions.
- Leaving no record of how a figure was produced, so nobody can reproduce it next quarter.

ILLUSTRATIVE SCENARIO (HYPOTHETICAL)

A finance analyst at a fictional mid-sized distributor asks an assistant to build a margin-by-product summary. The formula works on the sample. On the full file, a handful of products carry text in the cost column, so they drop out of the total. Margin looks higher than reality. A reviewer, following the checklist, compares COUNT to COUNTA, finds the gap and fixes it before the pack goes out.

The lesson of the scenario is not that assistants are unreliable. It is that the process caught the problem because a routine existed. Without the count check, the pack would have shipped with an overstated margin and no one would have known why next month's number moved.

A short recovery plan

- 01 Contain**
Stop circulation of the affected file and note who has received it.
- 02 Trace**
Use version history and the notes tab to find what changed and when.
- 03 Correct and communicate**
Fix the logic, reissue the figures and tell recipients plainly what changed.
- 04 Learn**
Add the failure to the near-miss log and update the verification checklist.

Treat incidents as information. A team that reports and learns from small spreadsheet errors will rarely suffer a large one. For regulated or externally reported figures, follow your own policies and consult your qualified professionals on requirements.

WORKING QUESTION

If a number from an AI-assisted workbook were challenged tomorrow, could you show exactly how it was produced?

30 / 60 / 90

A first quarter that produces evidence

10

Start with one workbook, one set of templates and one verification routine, then widen only when the numbers hold.

First 30 days: ground it

- Publish the data rules table and approved tool list for spreadsheet work
- Time three recurring spreadsheet tasks to set a baseline
- Test the formula and cleaning templates on masked copies of two workbooks
- Add a notes tab standard to your five most important workbooks

Days 31 to 60: test it

- Roll out the five-minute verification routine to the whole team
- Start the shared template library with tested worked examples
- Introduce the two-person rule for workbooks that feed decisions
- Re-time the three baseline tasks and compare cycle time and corrections

Days 61 to 90: decide

- Hold a retrospective and retire templates that did not earn their place
- Extend the method to reconciliation and reporting workbooks with named reviewers
- Review near-miss log and update checklists
- Decide which tasks to scale, change or stop, based on the metrics

GLOSSARY

Terms used in this publication

11

TERM	MEANING
Assistant	An AI tool that responds to written requests, either inside a spreadsheet product or in a separate chat window.
Control total	A figure from the source that a summary must match, used to prove nothing was dropped or doubled.
Tie-out	The act of reconciling a summary figure to its source and explaining any difference.
Edge case	An unusual input, such as a blank, a duplicate or a month-end date, where logic is most likely to fail.
Masking	Replacing sensitive values with codes or invented values that keep the same structure.
Synthetic sample	Made-up rows that mirror the shape and awkward cases of real data without exposing it.
Hard-coded value	A number typed directly into a formula instead of held in a labeled input cell.
Lookup	A formula that finds a value in a table using a key, which can fail silently when keys repeat.
Pivot table	A summary that groups and totals rows by chosen fields.
Version history	A saved record of earlier states of a file that lets you roll back a change.
Baseline	A measurement of time and quality taken before a change, used for comparison afterward.
Near miss	An error caught before harm occurred, recorded so the team can learn from it.

A note on use

This playbook offers general working guidance. It is not legal, tax, accounting or financial advice. Check your own policies and current requirements.



TAKE THE NEXT STEP

Take the free Halden assessment at halden.company/assessments, or talk to us at halden.company/contact about turning this into a plan for your organization.

