Understanding Excel Add-Ins

Add-ins are used to add functionality to Excel. Some are supplied with the product, and there are many others available for purchase or for free download.

By Mike Lewis

Microsoft Excel is an extremely sophisticated program but it can't meet the needs of all its users all the time. Some users will find certain tasks difficult to accomplish, and others will want to achieve things which the product is simply not capable of doing. There will probably also be times when you wished you had a way of extending the program's functionality to meet some special need.

In all these cases, the solution might lie in an add-in. Excel add-ins are small programs, written either by Microsoft or third parties, which extend and enhance Excel in various ways. They work inside Excel and, if designed properly, will be more or less transparent to the user - they will look and feel just like part of the main program.

Add-ins can be written in languages such as C and compiled to a DLL, or they can be Excel macros, written in VBA or the older macro language, and saved in a special add-in format. Either way, the source code is hidden from the user and so cannot be tampered with.

Around a dozen add-ins are supplied with Excel, and several others are available for download from Microsoft's Web site. There is also a thriving market for third-party add-ins. Some of these are sold as commercial products; others are shareware or freeware. If there is a particular feature which you feel Excel lacks, a Web search for a suitable add-in might well provide the solution.

So what exactly do these add-ins do? Some are Excel functions - the type you use when writing formulae. These typically perform specialised calculations such as statistical, financial or engineering functions. Others are wizards which generate formulae or macros. And some are more like mini applications in their own right. There are add-ins which create business plans, perform risk assessments, appraise investments, generate reports, provide links with proprietary data sources, and reach out to the Internet to retrieve share prices and company data. Surprisingly, even the auto-save function in Excel 2000 is implemented as an add-in.

Installing And Activating

The add-ins that are supplied with Excel are not installed by default. In Excel 2000 and XP the supplied add-ins are all flagged for install on first use. Users who attempt to use an add-in for the first time might be discouraged by the need to hunt for the installation CD or connect to the appropriate server, and many might decide not to bother. In the case of Excel 97, a few of the add-ins are installed with the typical setup but most of them must be installed manually with a custom setup.

Given that there is virtually no performance penalty in installing an add-in - other than the very small amount of disk space that it occupies - it would make sense to change your installation parameters so that all the add-ins that your users are likely to need are always installed on their hard disks.

After you have installed an add-in, it is not immediately available to the user. Before it can be used, you need to activate it. You do that by selecting the appropriate item in the Add-Ins dialog (see Figure 1), which you reach from the Tools menu. Once you have done that, the add-in will be loaded each time you launch Excel. This will add to the time it takes Excel to load, and will also reduce the amount of memory available to the program.

For add-ins which you don't use every day, it is more efficient to activate them only

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when they are needed and to deactive them before quitting Excel. Deactivating an add-in does not release its memory in the current session, but it does prevent it from being loaded the next time you launch Excel. If you want to check which add-ins have been installed, look for files with extensions DLL, XLA or XLL in either the Library or Profiles folders within the main Office directory. If an add-in has been installed but is not visible in the Add-Ins dialog, click on the Browse button in that dialog, navigate to the above folders, and select the appropriate file.

Troubleshooting

If you do load add-ins automatically when you launch Excel (that is, if you leave the appropriate items selected in the Add-Ins dialog), you could find that a buggy add-in will prevent Excel from loading. And if you can't launch the program you will have no way of getting to the Add-In dialog to deactivate the add-in. The solution is to launch Excel with ∕automation as a command-line parameter. This prevents the add-ins from loading. You can then try to activate each add-in in turn until you have identified the culprit.

Available Add-Ins

For the rest of this article, we will look at some of the add-ins which you might come across, starting with those which are supplied with the Excel (and Office) package. Unless otherwise stated, all these add-ins come with all recent versions of Excel (97 to 2002). You can find more information about them in the Excel help file.

Access Links

When you activate this add-in, it adds three commands to the Data menu. "MS Access Form" uses the Access form wizard to create a form. You can then use the form to enter data into an Excel list. "MS Access Report" uses the Access report wizard to create a report based on the data in an Excel list. "Convert to MS Access" launches a wizard which converts an Excel list to an Access table.

After creating a form or report, the relevant wizard will place a button in the worksheet. You can use this to recall the form or report. For the third command, the wizard adds a message to the worksheet to remind you that a copy of the data now resides in an Access database.

Of the three commands, the reporting option is probably the most useful. If you want to enter data via a form, Excel's built-in Forms tool (on the Data menu) will be faster, although the Access version gives you more control over the layout. For converting data, Access's import feature works just as well.

The Access Links add-in requires Access to be installed. The add-in is supplied with Excel 97 and 2000, but Excel 2002 users must download it from Microsoft's Web site at **http://office.microsoft.com**.

Analysis ToolPak

This add-in provides 15 specialist engineering and statistical functions such as correlation analysis, exponential smoothing, Fourier analysis, and rank and percentile analysis. You access the functions by selecting Data Analysis from the Tools menu. In each case, the add-in prompts you for the input parameters (see Figure 2) then writes the results to a specified range in the worksheet.

AutoSave

In Excel 97 and 2000, you need to activate this add-in if you want to tell Excel to automatically save your workbook every so-many minutes. You do this by selecting AutoSave from the Tools menu. In Excel 2002 this function has been replaced by the Auto Recovery feature.

Conditional Sum Wizard

Suppose your worksheet contains two columns: a column of figures, such as turnover or salaries; and a column containing the categories (departments, regions, or something similar) to which the figures apply. You want to create a summary showing, say, turnover per department. This add-in will do just that. It launches a wizard (see Figure 3) which prompts you for the required information. It then generates a formula (essentially a nested IF() function) which in turn performs the necessary calculations. You launch the wizard from the Tools menu.
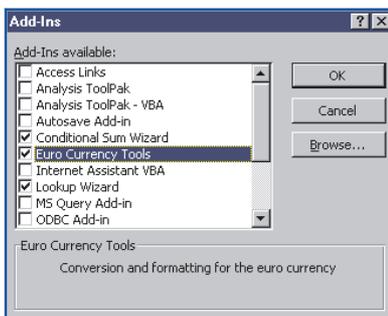
Figure 1 - Use this dialog to activate your add-ins.

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Euro Currency Tools

Activate this add-in if you want to use Excel's EUROCONVERT() function. This function converts between member currencies and euros using a built-in table of fixed exchange rates, in accordance with the EU triangulation rules. You pass three parameters: the amount to be converted, and the ISO currency codes of the source and target currencies. The function saves you having to manually enter exchange rates, which is time-consuming and error-prone.

In addition, the add-in places a euro button on the formatting toolbar. This button formats values in the euro style, that is, rounded to two decimal places, with a euro symbol, and with decimal and thousands separators as specified in the regional settings (euro font support is required to display the euro symbol). The add-in was not supplied with Excel 97, but users of that version can download a separate euro button add-in from Microsoft's Web site.

Lookup Wizard

This is a handy tool for worksheets which contain lookup tables. If you have a table of, say, product codes and corresponding product descriptions, the wizard will generate a formula which returns the description for a specific code. You could, of course, write the formula yourself, using the INDEX() and MATCH() functions, but the wizard greatly simplifies the process. You access the wizard from the Tools menu.

Report Manager

This add-in is useful if you want to print multiple worksheets in one batch. It lets you create a report which consists of a series of worksheets in a specified sequence. You can't choose a print range within a sheet, but the report respects any page breaks and headers and footers already present. The add-in also supports views and scenarios. The report can only be printed to paper - there is no preview feature.

You access the Report Manager from the View menu. The report parameters are saved with the workbook, and can be recalled and edited at any time. You will probably find the reporting features of the Access Links add-in (described above) more flexible, but the Report Manager is faster and more convenient. The add-in is supplied with Excel 97 and 2000, but if you use Excel 2002 you must download it from Microsoft's Web site.

Solver

This add-in greatly simplifies the task of setting up goal-seeking models. You use it to find the optimum value of a cell, based on varying values in dependent cells. For example, in a manufacturing company, an increase in production will add to the costs of labour, raw materials and storage, which will in turn reduce the net profit. But it will also decrease the number of stock-outs, which in turn means higher sales

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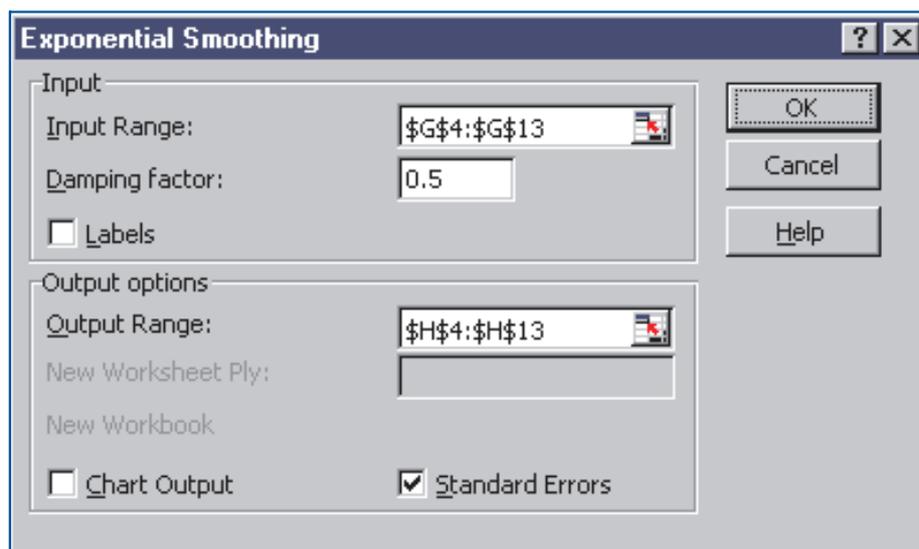

Figure 2 - One of the specialist tools in the Analysis Toolpak.

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and therefore an increased net profit. You need to find the monthly production levels which will lead to the optimum (that is, maximum) profit figure.

To achieve this, you start by creating a spreadsheet which shows all the monthly figures (for production level, labour costs, sales etc) and the resulting profit figure. You enter your best guesses for the production levels. You then launch the solver, which will proceed to adjust the values in the production level cells, checking the resulting profit figure each time. The values of the production level which lead to the highest net profit are the ones that will be retained.

The whole thing is done in a simple dialog (see Figure 4), which you access from the Tools menu. As well as specifying the target and the varying cells (net profit and production levels respectively, in this example), you can impose one or more constraints (for example, you might stipulate the maximum production level which the factory can support). You can also specify the maximum time that the solver should spend on the problem, a convergence figure (the solver will stop when the relative changes in the target figure in the last five iterations are less than this figure), and several other parameters.

Template Wizard With Data Tracking

The Template Wizard with Data Tracking allows you to set up a simple Excel-based front end to a central database. Using a data entry form within a worksheet, users can add new records to the database and update existing records. The database can be an external Access or .DBF file, or it can be a list within another Excel workbook.

You start by setting up a data entry form. This consists of a simple range within the worksheet, with a cell for each of the fields within the record and another for each of the field labels. You then launch the wizard from the Data menu. The wizard prompts you to identify the input cells and their labels, the name and location of the database, and a few other items. On completion, the wizard will generate a template, which you then distribute to the users.

When a user creates a new workbook based on the template, they will see the data entry form which you have set up. The user can now fill in the form and save the workbook, at which point a new record is inserted into the database. If the user edits the same cells, Excel will ask them whether they want to insert another record or update the existing one.

The add-in offers a very easy way of linking worksheets to a database but it is not intended to provide a full set of data-handling tools. It has no way of searching, filtering or sorting the data, nor can you use it to delete a record. Nevertheless, it does serve as a good starting point. You can extend the template with your own macros to provide any additional functionality that you need, although you might find it easier to use the tools provided by the database instead. The add-in is supplied with Excel 97 and 2000, but Excel 2002 users must download it from Microsoft's Web site.

Redundant Add-Ins

There are few Microsoft add-ins which you might come across which are provided only for backward compatibility purposes. In most cases you can probably ignore these. The Query add-in lets you convert external data ranges in Excel 97 and later to Excel 95/5.0 format, and also allows VBA macros that use MS Query to work with older versions of Excel. The Internet Assistant VBA add-in has been superseded by the Web folders feature. The Template Utilities add-in contains utilities used internally by certain third-party templates supplied with Office 97. And the Update Add-in Links add-in provides support for those rare old-style macros that cannot be automatically converted to VBA. All these add-ins are available with Excel 2000 but have been dropped in Excel 2002.

More Microsoft Add-Ins

The add-ins described above are all supplied with the Excel (or Office) package. However, there are other add-ins available for download from the Office Web site (**http://office.microsoft.com**). It's worth keeping an eye on this site, as new add-ins (for all Office applications, not just Excel) are being added all the time. Here are some of the more interesting downloadable ones.
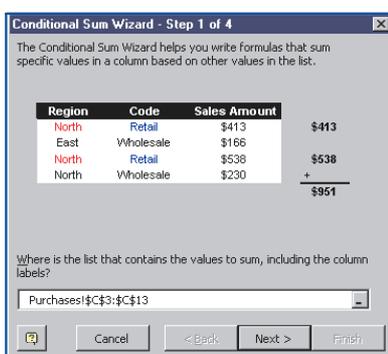

Figure 3 - The Conditional Sum Wizard.

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MSN Money Central Stock Quotes

If you use Excel to analyse market prices of shares or other securities, this add-in will automatically update the prices in your worksheet. It does this by obtaining real-time quotes from major markets around the world via the MSN Money Central Web site. When you activate the add-in, it installs a new toolbar. Click the "Insert stock quotes" button to enter a list of the securities you are interested in. To retrieve the latest prices, click the "Insert quotes" button. For this to work, you must already have launched your browser and be connected to the Internet.

Expanded Help File

The Excel 2002 help file supports a type of expandable link which is incompatible with most screen reading programs. This add-in provides an alternative help file in which the links are pre-expanded. The file has exactly the same content as the normal help file, and, apart from the expanded links, works in just the same way. The only snag is that the add-in will overwrite the existing help file, so if you need to revert to the old file, you will have to remove the new one manually, then run the Office Setup program again.

Microsoft Visual Keyboard

Strictly speaking, this is not an add-in, nor is it specific to Excel, but it is worth mentioning because it provides a useful solution to an irritating problem. If you ever need to type in more than one language on the same computer, you will know that you can easily install multiple keyboard layouts and switch between them via a button in the system tray. The problem is that, when you select a language other than the one corresponding to your physical keyboard, the characters that you type will no longer match the ones printed on the key caps.

The Microsoft Visual Keyboard solves the problem by displaying an image of a keyboard on the screen. You can either use the image as a guide to help you locate the keys on the physical keyboard, or you can click directly on the keys on the screen. When you use the system tray button to switch to a different language, the image on the screen will change accordingly. Clearly, this tool won't be suitable for high-volume multi-lingual data entry, but it should appeal to users who just need to enter some occasional text in another language.

Third-Party Add-Ins

We'll finish by looking at a few of the many Excel add-ins available from third-party vendors. This is just a taste of what's available. Run a Web search for Excel add-ins or check your favourite shareware sites to find more.

EuroZap

Despite its slightly off-putting name, this add-in will appeal to users who need to convert entire worksheets from a member currency to euros or vice versa. The best way to use it is to let it create a so-called mirror sheet. This is an exact copy of an existing sheet, but with all the currency amounts converted to the target currency. The new sheet can include an optional update link to the old one. You can also choose to generate a table of differences between the old and new.

Alternatively, you can use the add-in to generate mirror ranges within a sheet - again, with an optional update link between the old and new ranges - or to leave the currency cells in place but to display the converted amounts in a comment. The add-in supports a number of formatting and filtering options, and is controlled through a simple toolbar. It is available from InttraSoft (**http://www.inttra-soft.com**).

Financial Genome

This is a sophisticated tool which will generate a variety of financial models, including cash-flow statements, final accounts, cost-of-capital analyses, profit analyses and several others. Its aim is to hide the detailed structure of the model from the users by letting them work with familiar financial terms which they pick from a dictionary. When you activate it, it adds an Analysis menu and toolbar; these are used to control all aspects of the program.

The add-in generates all the formulae which make up the model, and updates them as you refine your requirements. It automatically inserts dependent calculations,

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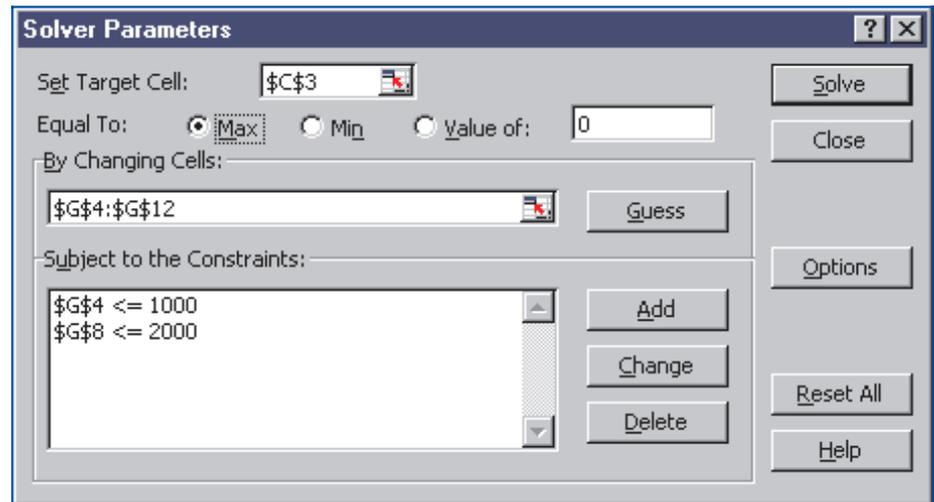
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Figure 4 - This dialog prompts for parameters for the Solver.

relates duplicated terms and totals, substitutes user-specified names, and maps financial statements to a simple database format. This is a particularly attractive tool for users who are at home in the world of financial analysis and management accounts but who are less familiar with the finer points of Excel. It is published by Modernsoft (**http://www.modernsoft.com**).

Spheresoft Modeller

This add-in lets you do two things: enter a single value and multiple formulae in the same cell; and enter formulae which are part of a circular reference. Why would you want to do that? To create a model in which the user can enter all the known values and which then calculates all the unknown values. To take a simple example, cell A1 might contain a formula which converts the value in cell A2 from British pounds to euros, and cell A2 might contain a formula which does the reverse. The user can enter a value in either cell and immediately see the converted value in the other cell. According to Spheresoft, this is "a more intuitive interface paradigm, as it allows users to work forwards and backwards in a problem".

An important point about this technique is that the formulae are completely hidden from the end-user, and are not overwritten when values are entered in the same cells. Conditional formatting is used to help distinguish calculated values from those which the user has entered. The program also lets the spreadsheet author specify default values.

Spheresoft Modeller also supports back-solving. This is similar to the Microsoft Solver add-in described above. It is useful in cases where you can write a formula which converts A to B, but there is no corresponding formula to convert B to A. In these cases, the back-solver will iteratively test different values for A until it finds one which satisfies B. For further information about the add-in, see **http://www.spheresoft.com**.

Summing up

There are add-ins available which can extend and enhance Excel in all kinds of interesting ways. Some of them provide shortcuts to things which, with a little effort, users could do for themselves. Others let you do things which would otherwise be difficult or impossible. If Excel support is an important part of your work, spend some time getting to know these add-ins. They can play a valuable role in helping your users get the most from their spreadsheets.

"There are add-ins available which can extend and enhance Excel in all kinds of interesting ways."

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