

Happy New Year!

Let's hope our newsletters start off better than they did this time 12 months ago when we accidentally extolled the virtues of, er, 2014 rather than 2015 (*we have [new?] proof readers this year*).

Faux pas aside, here at SumProduct we wish you all a prosperous 2016 wherever you may be. We thought it opportune therefore to consider some of Excel's date functions this month and revisit Excel 2016 given it is now 2016... Plus, there's details on conferences for over half of the globe; hopefully, something of interest for you!

Until next month.

Liam Bastick, Managing Director, SumProduct



Excel in 2016: Been to the Function..?

Upgraded to Excel 2016 yet? If the answer is no, you are far from alone. SumProduct has been playing with the new software for some months now and we listed the main changes / additional features back in our October newsletter. Our main gripes revolve around side-by-side installations (where you have more than one version of Excel on your machine) and opening files in Protected View.

One thing we didn't discuss in detail back in October was how the Excel functions have been revised. We mentioned there were several new functions:

Function	Description
FORECAST.ETS	Returns a forecasted value for a specific future target date using the exponential smoothing method
FORECAST.ETS.CONFINT	Returns a confidence interval for the forecast value at the specified target date
FORECAST.ETS.SEASONALITY	Returns the length of the repetitive pattern detected for the specified time series
FORECAST.ETS.STAT	Returns the requested statistic for the forecast
FORECAST.LINEAR	Calculates, or predicts, a future value along a linear trend by using existing values

Some functions have been re-categorised, i.e. moved to new function groups, viz.

Function	Description	Category
CEILING	Rounds a number up, to the nearest multiple specified	Previously: Math & Trigonometry Now: Compatibility
FLOOR	Rounds a number down to nearest multiple specified	Previously: Math & Trigonometry Now: Compatibility
FORECAST	Calculates, or predicts, a future value along a linear trend by using existing values	Previously: Statistical Now: Compatibility

But then there's a third group of functions (all from the Text function group) which appear to have been consigned to that great registry in the sky:

Function	Description
ASC	Changes full-width (double-byte) English letters or katakana within a character string to half-width (single-byte) characters [<i>yes, that's what we thought too...</i>]
DBCS	Changes half-width (single-byte) English letters or katakana within a character string to full-width (double-byte) characters [<i>couldn't you just use ASC twice..?</i>]

Function	Description
FINDB	Finds one text value within another (N.B. FIND remains)
LEFTB	Returns the leftmost characters from a text value (N.B. LEFT remains)
LENB	Returns the number of characters in a text string (N.B. LEN remains)
MIDB	Returns a specific number of characters from a text string starting at the position you specify (N.B. MID remains)
PHONETIC	Extracts the phonetic (furigana) characters from a text string <i>[it's all furigana to us]</i>
REPLACEB	Replaces characters within text (N.B. REPLACE remains)
RIGHTB	Returns the rightmost characters from a text value (N.B. RIGHT remains)
SEARCHB	Finds one text value within another (not case-sensitive) (N.B. SEARCH remains)

However, we can still use them like the **DATEDIF** function (i.e. Excel “pretends” they have gone but will still recognise them). Help is still available through the F1 function key.

A New Year: Time to Get a Date?

Dates are commonplace in models and usually run across one of the top rows in an Excel worksheet as part of a time series analysis:

The screenshot shows an Excel spreadsheet with the following content:

Timing
 SP Template Model Example.xlsm

Navigator
 Error Checks:

	Mar 16	Jun 16	Sep 16	Dec 16	Mar 17
Start Date	1 Jan 16	1 Apr 16	1 Jul 16	1 Oct 16	1 Jan 17
End Date	31 Mar 16	30 Jun 16	30 Sep 16	31 Dec 16	31 Mar 17
Number of Days	91	91	92	92	90
Counter	1	2	3	4	5

1. Timing Assumptions

Data (do not change once modelling has commenced)

Model Start Date: 01 Jan 16

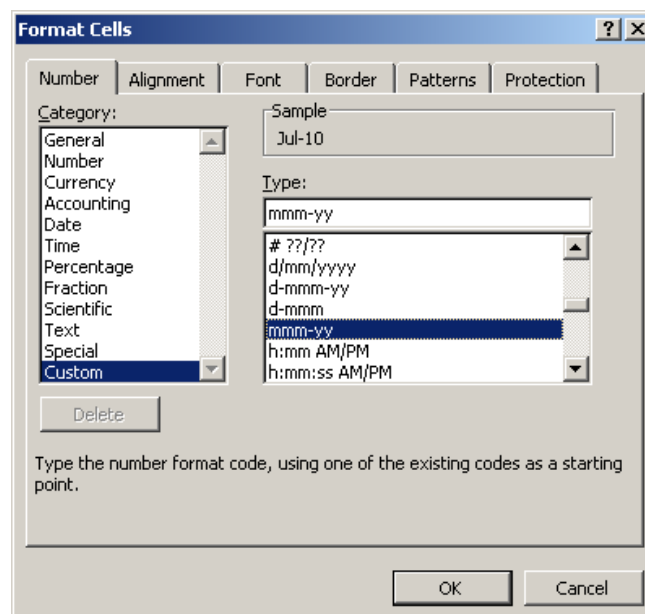
Number of Months in a Full Period: 3

Example Reporting Month: 12 *e.g. 31-Dec-16*

Reporting Month Factor: 3

Months per Year: 12

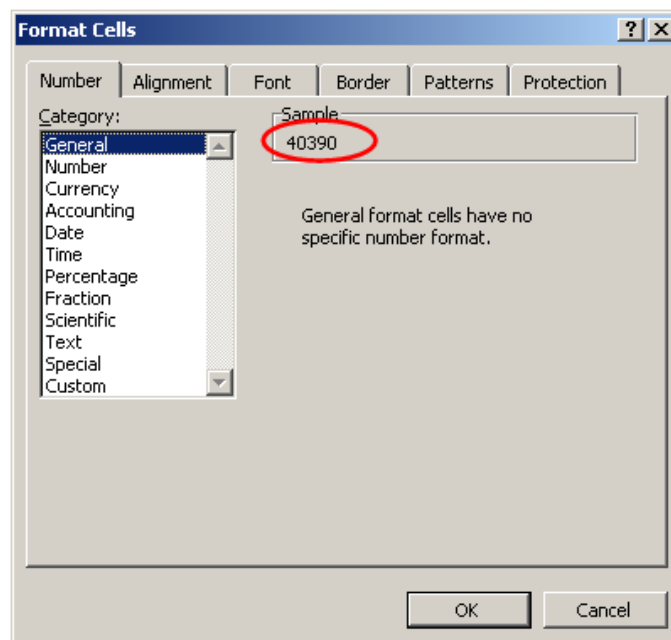
In this example, a monthly model has been constructed starting in January 2016. The dates in cells J5 onwards are formatted to show only the month and year. This can be performed easily by selecting the date (here, 31 March 2016) and then formatting the cell (CTRL + 1 in all versions of Excel).



A comprehensive explanation of how to format dates, numbers and other cell contents can be found at <https://www.sumproduct.com/thought/number-formatting.html>.

More interestingly, if the General category were to be selected instead, we note that the Sample (circled in red) would be displayed as follows.

Custom Date Formatting



In other words, each date is no more than a number in what is known as the 1900 date system (counting from 1 January 1900).

Most modellers are not concerned about how the days are numbered as long as Excel calculates correctly. However, early Macintosh computers used a different start date to prevent issues with the 1900 leap year and used 1 January 1904 as the start date instead. This is known as the 1904 date system and the date values can be calculated as:

=1900 date system value – 1,462

Care has to be taken with Excel files opened on both PCs and Macs, as the date systems may vary.

Clearly, dates are not as easy to manipulate as you might think. Extracting the day, month or even the year from any given date is not straightforward because the date is really a number known as a serial number.

To extract the day, month or a year has to be undertaken using the following three functions:

- **DAY(serial_number)** gives the day in the date (for example, DAY(31/3/16) = 31)
- **MONTH(serial_number)** gives the month in the date (for example, MONTH(31/3/16) = 3)
- **YEAR(serial_number)** gives the year in the date (for example, YEAR(31/3/16) = 2016).

It is just as awkward the other way round. If the day, month and year are already known, the date can be calculated using the following function:

DATE(Year,Month,Day)
(for example, DATE(2016,7,32) = 1 August 2016 etc.).

Since dates are nothing more than serial numbers, they behave just like formatted numbers in Excel, for example, 31-Jul-16 + 128 = 6-Dec-2016.

Time series still cause us problems. If we want to have the month end date in each column, we cannot simply take the previous month's date and add a constant to it, since the numbers of days in months vary. Fortunately, there is a function in Excel that will perform this calculation for us:

EOMONTH(specified_date,number_of_months).

The 'End of month' function therefore calculates the end of the month as the **number_of_months** after the **specified_date**. For example:

- EOMONTH(31-Jul-16,0) = 31-Jul-16
- EOMONTH(3-Apr-05,2) = 30-Jun-05
- EOMONTH(29-Feb-28,-12) = 28-Feb-27

Although the examples use typed in dates, for it to work in Excel, it is best to have the **specified_date** either as a cell reference to a date or else use the **DATE** function to ensure that Excel understands it is a date (otherwise the formula may calculate as #VALUE!).

In some instances (for example, appraisal of large scale capital infrastructure projects), the dates may need to be for the same day of the month (for example, the 15th) rather than for the month end. The DATE function can often be used to calculate these dates – unless it is near the end of the month as problems may arise with February, April, June, September and November.

A function similar to **EOMONTH**, **EDATE**, can be used instead:

EDATE(specified_date,number_of_months).

The 'Equivalent day' function therefore calculates the date that is the indicated **number_of_months** before or after the **specified_date**. For example:

- EDATE(15-Jul-16,2) = 15-Sep-16
- EDATE(3-Apr-05,-2) = 3-Feb-05
- EDATE(29-Feb-28,-12) = 28-Feb-27

If an equivalent date cannot be found (as in the last example), month end is used instead.

Similar to **EOMONTH**, it should be noted that although these examples also use typed in dates, for it to work in Excel, it is best to have the **specified_date** either as a cell reference to a date or else use the **DATE** function to ensure that Excel understands it is a date (otherwise the formula may calculate as #VALUE!).

ModelOff World Finals and Global Training Camp

Congratulations to Australia's Joseph Lau who became 2015's ModelOff world champion (we do keep saying there is some expertise down here you know...). Our own Liam Bastick was fortunate to be able to attend the celebratory dinner alongside many of Microsoft's Excel product team and fellow Excel MVPs in London at the beginning of December:



Not exactly David Bailey, but you get the idea...

Clearly, it was a very well organised affair and whilst we are still not entirely convinced about the attention to speed this event appears to promote (if unintentionally), it would be churlish not to heap praise on a well organised and well attended event. Plus, the food was good too! ModelOff will return no doubt bigger and better next year. Start practicing now!

Excel Summit South Reminder



If ModelOff looked interesting, Antipodeans amongst you are cordially invited to our very own Excel Summit South. Places are starting to fill already and there may still be time to bag a discount. With invited Excel and modelling experts from around the globe, this is a great opportunity to brush up on your Excel skills and learn from some of the best.

Mr. Excel Bill Jelen will be presenting as well as "Mr. Charts" Jon Peltier – two names found regularly when Googling standard Excel issues!

Alongside seven MVPs, there are also guest speakers from PwC, F1F9 and Delft U. With panel discussions and a ModelOff drinks session in the evening too, it should be a pretty Excel-lent two-day event.

There's still time to book at <https://excelsummitsouth.wordpress.com/>.

Amsterdam Excel Summit



...and for those of you in Europe, don't feel left out! The third Amsterdam Excel Summit has also been recently announced.

A one-day event this year (26 May), this event will still be action-packed as attendees can:

- Improve your Power Query skills
- Learn how to customise the Ribbon for your workbooks and add-ins
- Get insights into how to build Excel models based on ranges and positions
- Understand how to create involved array formulae
- Get advice on Best Practice in Power Pivot
- See how to use VBA to customise charts
- Receive Excel Tips and Tricks, documentation and lots of valuable files.

Whilst the full cast list and agenda are still being finalised, it's worth noting that gurus Jon Peltier, Jan Karel Pieterse, Roger Govier and Tony de Jonker will all be in attendance and that the Amsterdam Excel summit also features post-conference training the day after.

For more information and to book, check out <http://topexcelclass.com/index.php/amsterdam-excel-summit/>.

Microsoft Data Insights Summit

Microsoft Data Insights Summit

March 22-23, 2016 • Bellevue, WA

...And don't feel left out if you are in the US either! In a truly global (apologies to South American, African and (Ant)arctic readers edition of the newsletter, there's something for you too.

The inaugural Microsoft Data Insights Summit is a brand new two-day event specifically created to bring together professional business analysts, leading industry experts and Microsoft product teams. The summit will be held in Bellevue, Washington, on March 22-23.

Attendees will receive product insights and hands-on training covering all the favourites – including Power BI and Microsoft Excel, in-depth talks and hands-on demos. We are promised that workshops and sessions will

help get you up to speed on new features. Attendees will also be able to test-drive the latest technology to really get a feel for its potential.

Of particular interest, attendees will be able to schedule one-on-one meetings with the engineering teams or attend Ask-the-Expert sessions to get specific answers to your very own data analysis questions. There's not much on the website yet, but if you fancy registering, please visit <http://www.datainsightssummit.com/>.

For those further afield, don't forget you can still ask us how to get the most out of your data – feel free to contact us at contact@sumproduct.com.

Upcoming SumProduct Training Courses

Location	Course	Date	Duration
Sydney	Excel Tips & Tricks	27th Jan 2016	1 day
Sydney	Financial Modelling	28th - 29th Jan 2016	2 days
Sydney	Power of Power Pivot	1st - 2nd Feb 2016	2 days
Perth	Excel Tips & Tricks	15th Feb 2016	1 day
Perth	Financial Modelling	16th - 17th Feb 2016	2 days
Melbourne	Excel Tips & Tricks	22nd Feb 2016	1 day
Melbourne	Financial Modelling	23rd - 24th Feb 2016	2 days
Melbourne	Introduction to Forecasting	25th Feb 2016	1 day
Melbourne	Valuations Modelling	26th Feb 2016	1 day
Sydney	Excel Tips & Tricks	18th Apr 2016	1 day
Sydney	Financial Modelling	19th - 20th Apr 2016	2 days
Sydney	Mergers & Acquisitions Modelling	21st - 22nd Apr 2016	2 days
Brisbane	Excel Tips & Tricks	16th May 2016	1 day
Brisbane	Financial Modelling	17th - 18th May 2016	2 days
Singapore	Excel Tips & Tricks	23rd May 2016	1 day

Singapore	Financial Modelling	24th - 25th May 2016	2 days
Singapore	Power of Power Pivot	26th - 27th May 2016	2 days
Melbourne	Excel Tips & Tricks	6th Jun 2016	1 day
Melbourne	Financial Modelling	7th - 8th Jun 2016	2 days
Melbourne	Mergers & Acquisitions Modelling	9th - 10th Jun 2016	2 days
Melbourne	Power of Power Pivot	14th - 15th Jun 2016	2 days
Auckland	Excel Tips & Tricks	20th Jun 2016	1 day
Auckland	Financial Modelling	21st - 22nd Jun 2016	2 days

Key Strokes

Each newsletter, we'd like to introduce you to several useful keystrokes you may or may not be aware of. This month we look at some relevant to this month's newsletter:

Keystroke	What it does
CTRL + ; (in formula bar)	Format as a number (comma separated) to two decimal places
CTRL + SHIFT + 3	Format as a time
CTRL + SHIFT + `	Format as a date
F1	Format as a currency

There are over 540 keyboard shortcuts in Excel. For a comprehensive list, please download our Excel file at <https://www.sumproduct.com/thought/keyboard-shortcuts>. Also, check out our new daily **Excel Tip of the Day** feature on the www.sumproduct.com homepage.

Our Services

We have undertaken a vast array of assignments over the years, including:

- **Business planning**
- **Building three-way integrated financial statement projections**
- **Independent expert reviews**
- **Key driver analysis**
- **Model reviews / audits for internal and external purposes**
- **M&A work**
- **Model scoping**
- **Project finance**
- **Real options analysis**
- **Refinancing / restructuring**
- **Strategic modelling**
- **Valuations**
- **Working capital management**

If you require modelling assistance of any kind, please do not hesitate to contact us at contact@sumproduct.com.

Link to Others

These newsletters are not intended to be closely guarded secrets. Please feel free to forward this newsletter to anyone you think might be interested in converting to "the SumProduct way".

If you have received a forwarded newsletter and would like to receive future editions automatically, please subscribe by completing our newsletter registration process found at the foot of any www.sumproduct.com web page.

Any Questions?

If you have any tips, comments or queries for future newsletters, we'd be delighted to hear from you. Please drop us a line at newsletter@sumproduct.com.

Training

SumProduct offers a wide range of training courses, aimed at finance professionals and budding Excel experts. Courses include Excel Tricks & Tips, Financial Modelling 101, Introduction to Forecasting and M&A Modelling.

Check out our more popular courses in our training brochure:



Drop us a line at training@sumproduct.com for a copy of the brochure or download it directly from <http://www.sumproduct.com/training>.

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