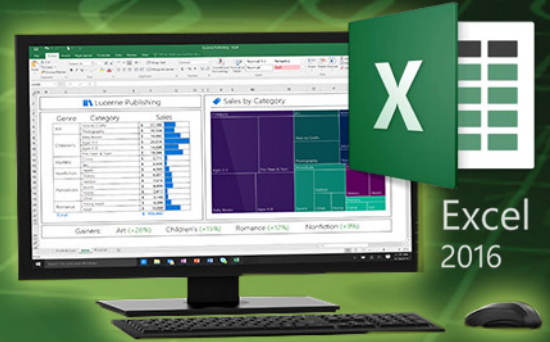


Sum Product

NEWSLETTER #35 - October 2015

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Excel 2016 is finally released! And it's not even 2019...

After months of preview, Microsoft has finally bitten the bullet and released the “full version”. We decide to hit the ground running and look at some of the new and improved features in Microsoft’s flagship product.

In other news, Microsoft has announced assistance for app developers looking to use Windows 10. OK, it’s not exactly Excel, but we know some of our readers look to dabble in this domain. Also we proudly announce the new website – it’s still a work in progress but we hope you will come with us for the journey...

Until next month.

Liam Bastick, Managing Director, SumProduct



Office 2016 Released



Microsoft has finally launched the long-anticipated new version of Microsoft Office. Office 2016 has been “broadly available” (we’re not quite sure what that means) since September 22, whilst Office customers with volume licensing agreements will be able to download the software from October 1 (that’s today if you’ve opened this newsletter straightaway!).

With Office 2016 now “fully released”, we thought we’d take the opportunity to explore some of the new and improved features in Excel in particular.

Power BI Updates

As part of its marketing, Microsoft released a graphic that does explain the Power BI journey aptly:

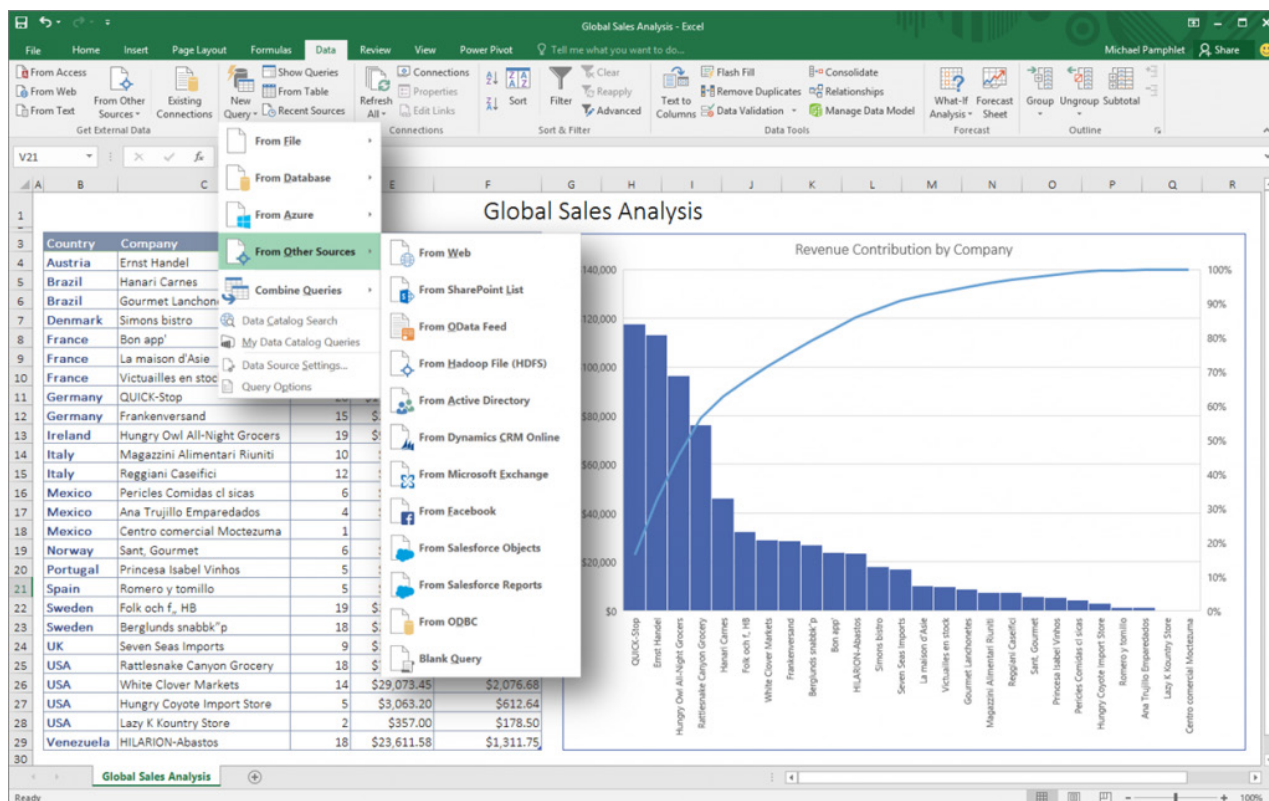


Microsoft Power Query for Excel, which was a separate downloadable COM add-in for Excel 2013 and 2010 is now fully integrated into Excel. This means that if you are using one of the BI features (Power View, Power Pivot or Power Map) the rest will be turned on automatically for you. The method of turning on the features has changed too. Instead of **File > Options > Add-Ins > Manage COM Add-ins > Go**, it has now moved to **File > Options > Advanced > Turn on data analysis features**.

We remember when we couldn’t find the Power Off button with Windows 8 and wonder how much enthusiasm this improvement will garner...

Nonetheless, Power BI can access a wide variety of sources including relational, structured and semi-structured databases, including OData, Web, Hadoop, Azure Marketplace and more.

Now that it is native functionality in Excel, there is no separate Power Query tab anymore; instead, there is a Power Query section on the Data tab (under 'Get & Transform'):



This makes Power Query a lot easier to discover for novice users. There's nothing to enable – it's there by default – although there may be confusion between new and existing features on the Data tab. One other thing we don't understand here: Microsoft seemed to spend an eternity establishing the Power BI brand and now seems happy to throw it all away with the advent of Excel 2016. Power to their elbow, we suppose.

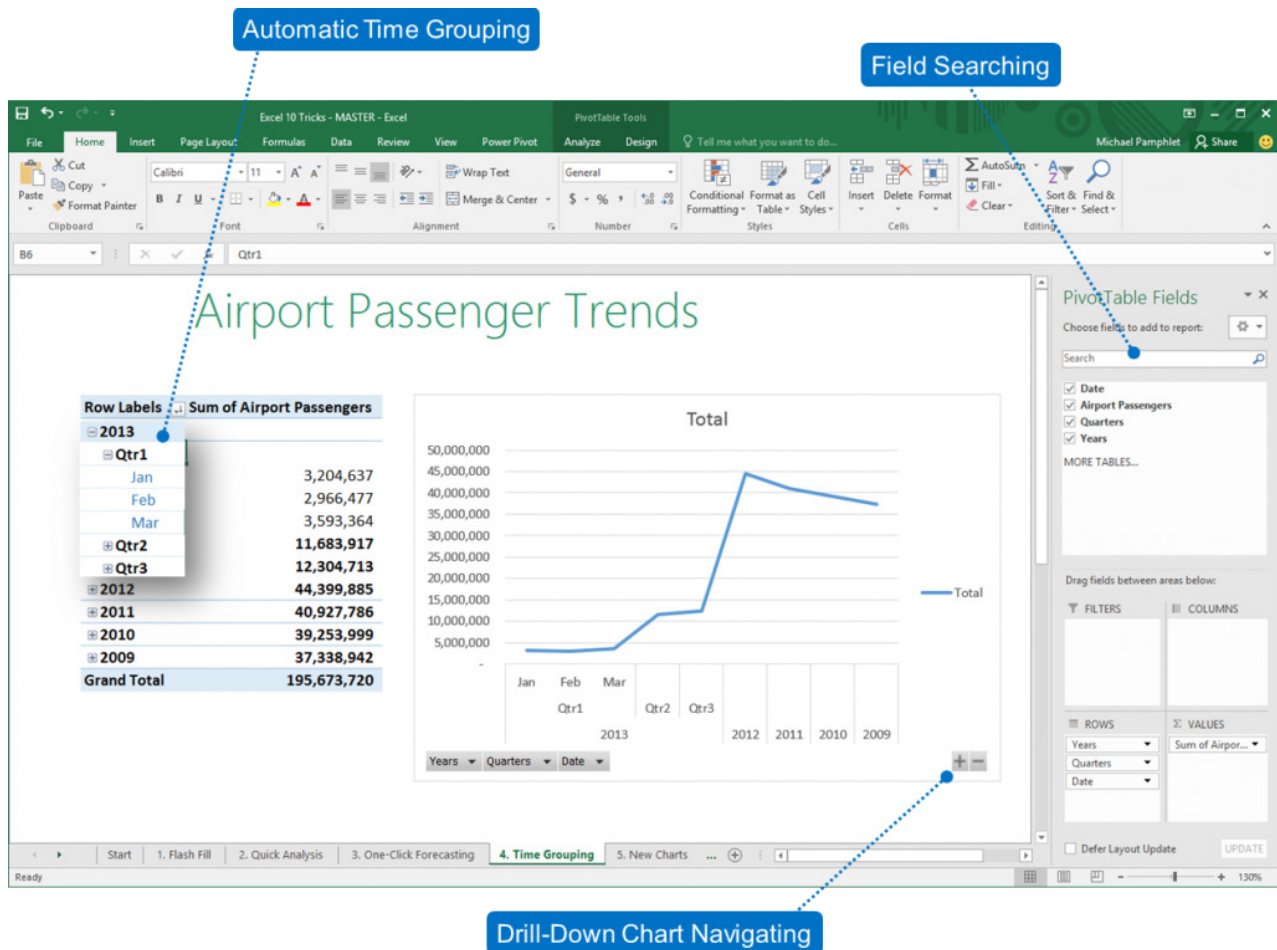
Additional features available under the 'Get & Transform' section include accessing recent sources you have used in previous queries and options to combine queries together. With what Microsoft refer to as a "premium version" of Excel 2016 (uh oh, it's the Excel 2013 ProPlus issue all over again...) and a Power BI license, you can also use the search functionality to discover corporate data available to you across your company that is

shared in a corporate catalogue or even share your own queries with others.

There are further benefits in Power Query programmability too. Now that its features are native to Excel, you can use VBA and the Object Model to program a related query and transform actions. Just like Power Pivot has the language DAX, if you find you need more than VBA provides, you can fall back on Power Query's programming language (M) to create additional actions and capabilities.

Power Pivot and the Data Model have had improvements too. In Excel 2016, Microsoft announced that it is intending to make the features and functionalities "... more discoverable and streamlined...". To this end, there's new features:

- **Automatic relationship detection:** discovers and creates relationships among the tables used for your workbook's data model. This intelligent feature highlights when two or more tables might need to be linked together and notifies you. With just one click, it does the work to build the relationships, which sounds great in theory. Just as with number formatting, auto-complete and conditional formatting intelligence, be prepared for Excel 2016 to get the relationships wrong upon occasion – always check its suggestions!
- **Creating, editing and deleting custom measures:** these can now be done directly from the PivotTable fields list, saving time when additional calculations are required
- **Automatic time grouping:** as long as Excel 2016 recognises your date and time fields, this feature assists use of time-related fields in PivotTables more powerfully, by auto-detecting and grouping them on your behalf. Once grouped together, this may be dragged to your PivotTable in one action allowing more versatile analysis across the different levels of time with drill-down capabilities (this was a definite problem before)
- **PivotChart drill-down buttons:** allow you to drill in and out across groupings of time and other hierarchical structures within your data
- **Search in the PivotTable:** the field list helps you get to the fields that are important to you across your entire data set
- **Smart rename:** provides the ability to rename tables and columns in your workbook's Data Model. With each change, Excel 2016 automatically updates any related tables and calculations across your workbook, including all worksheets and DAX formulae. This was a much-needed obvious improvement. Excel users are used to adding / removing rows and columns with formulae updating automatically and it is good to see that Power Pivot has now caught up
- **Multiple usability improvements:** have also been made. For example, delayed updating allows you to perform multiple changes in Power Pivot without the need to wait until each is propagated across the workbook. The changes will be undertaken at one time, once the Power Pivot window is closed making larger models easier to work with.



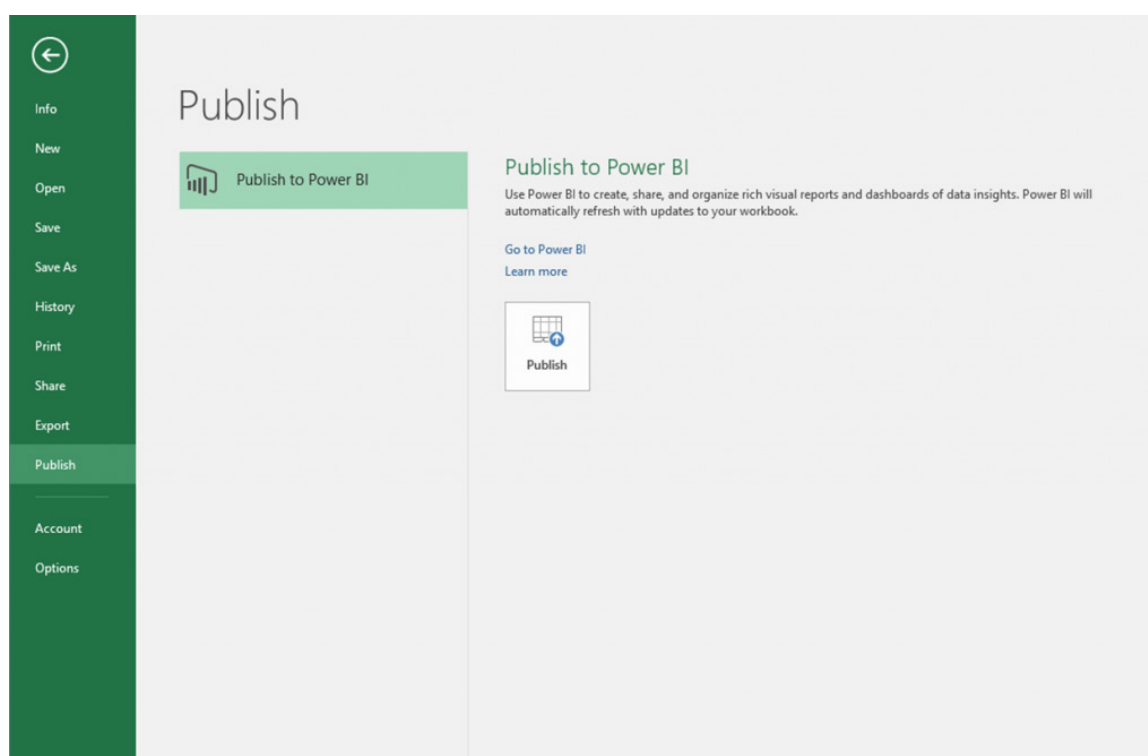
We have already talked about M (*see above*); for Power Pivot users, there are plenty of new DAX functions in Excel 2016, including:

New DAX Function	Description
ADDMISSINGITEMS	Add the rows with empty measure values back
CALENDAR	Returns a table with one column of all dates between StartDate and EndDate
CALENDARAUTO	Returns a table with one column of dates calculated from the model automatically
CONCATENATEX	Evaluates expression for each row on the table, then returns the concatenation of those values in a single string result, separated by the specified delimiter
CROSSFILTER	Specifies cross filtering direction to be used in the evaluation of a DAX expression. The relationship is defined by naming, as arguments, the two columns that serve as endpoints
CURRENTGROUP	Access to the (sub)table representing current group in GROUPBY function. Can be used only inside GROUPBY function
DATEDIFF	Returns the number of units (unit specified in Interval) between the input two dates
GEOMEAN	Returns geometric mean of given column reference
GEOMEANX	Returns geometric mean of expression values in a table
GROUPBY	Creates a summary of the input table grouped by the specified columns (<i>sounds like crowd purchasing</i>)
IGNORE	Tags a measure expression specified in the call to SUMMARIZECOLUMNS function to be ignored when determining the non-blank rows
ISONORAFTER	The ISONORAFTER function is a Boolean function that emulates the behaviour of StartAt clause and returns TRUE for a row that meets all the conditions mentioned as parameters in this function
KEYWORDMATCH	Returns TRUE if there is a match between the MatchExpression and Text
MEDIANX	Returns the 50th percentile of an expression's values in a table
NATURALINNERJOIN	Joins the Left table with Right table using the Inner Join semantic
NATURALLEFTOUTERJOIN	Joins the Left table with Right table using the Left Outer Join semantics
PERCENTILE.EXC	Returns the k th (exclusive) percentile of values in a column
PERCENTILE.INC	Returns the k th (inclusive) percentile of values in a column
PERCENTILEX.EXC	Returns the k th (exclusive) percentile of an expression's values in a table
PERCENTILEX.INC	Returns the k th (inclusive) percentile of an expression's values in a table

PRODUCT	Returns the product of given column reference
PRODUCTX	Returns the product of an expression's values in a table
ROLLUPADDISSUBTOTAL	Identifies a subset of columns specified in the call to SUMMARIZECOLUMNS function that should be used to calculate groups of subtotals
ROLLUPISSUBTOTAL	Pairs up the rollup groups with the column added by ROLLUPADDISSUBTOTAL
SELECTCOLUMNS	Returns a table with selected columns from the table and new columns specified by the DAX expressions
SUBSTITUTEWITHINDEX	Returns a table which represents the semi-join of two tables supplied and for which the common set of columns are replaced by a 0-based index column. The index is based on the rows of the second table sorted by a specified order expression
SUMMARIZECOLUMNS	Creates a summary table for the requested totals over a set of groups
XIRR	Returns the internal rate of return for a schedule of cash flows that is not necessarily periodic
XNPV	Returns the net present value for a schedule of cash flows that is not necessarily periodic

Some functions are very familiar; others may take time to understand fully. We are particularly interested in the capabilities of the new **CALENDAR** and **CALENDARAUTO** functions. These may prove very useful...

If you ever get your head around all of these new DAX functions, once data analysis is completed, Excel 2016 provides the functionality to share it with your workgroup or clients through Power BI with literally just one button:



Microsoft Power View has now been added as a reporting option for an Online Analytical Processing (OLAP) cube connection in Excel 2016. With your Excel spreadsheet connected to an OLAP cube, it is now possible to view this data in the Excel workbook as a Power View Report, complete with KPI's, hierarchies, calculations and table data coming from the OLAP cube.

Given that previously blocked keyboarding scenarios in Excel for features like PivotTables and Slicers are now accessible too, clearly there have been some significant improvements to this key area of Excel.

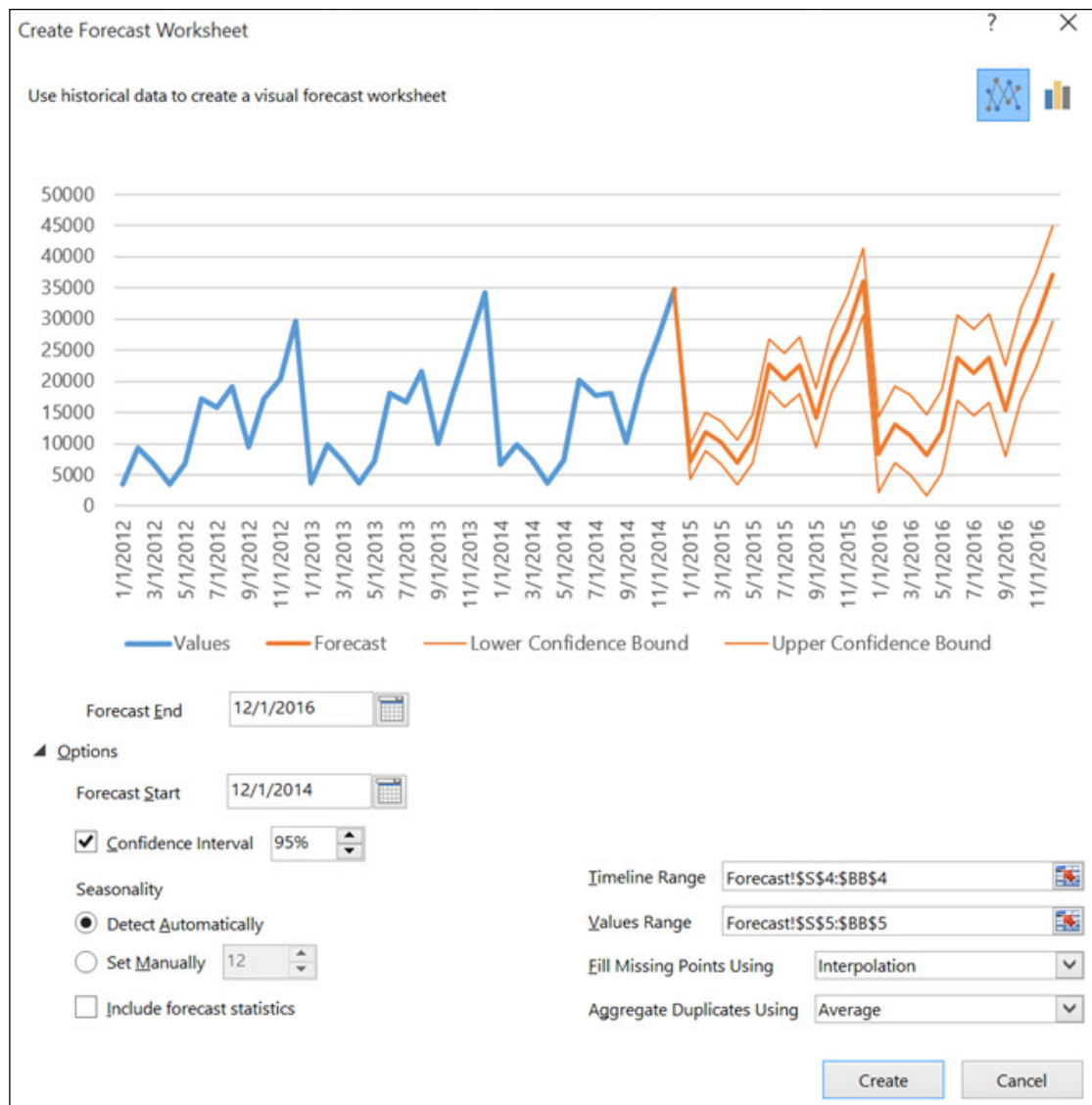
New Forecasting Capabilities

There's new forecasting capabilities in Excel 2016 too. In previous versions, only linear forecasting had been available via Excel functions, although SumProduct has run training courses to show you how these ideas may be extended. It looks like the days of this course may be numbered. In Excel 2016, the **FORECAST** function has been extended to allow forecasting based on Exponential Smoothing (e.g. **FORECAST.ETS()**).

Basically, the time series forecasting sheet functions are used to predict future values based on historical data. For example, a monthly timeline with values on the first of every month. For this type of timeline, it's very useful to aggregate raw detailed data before you apply the forecast, which produces more accurate forecast results as well. To this end, the following forecasting functions are available:

- **FORECAST.ETS()** - Returns the forecasted value for a specific future target date
- **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 Excel detects for the specified time series.

Probably more appealing to the masses, this functionality is also available as a new one-click forecasting button. From the Data tab, clicking the **Forecast Sheet** button quickly creates a forecast visualisation of the data series to be projected. From this wizard, you can also find options to adjust common forecast parameters, such as seasonality, which is automatically detected with default and confidence intervals.



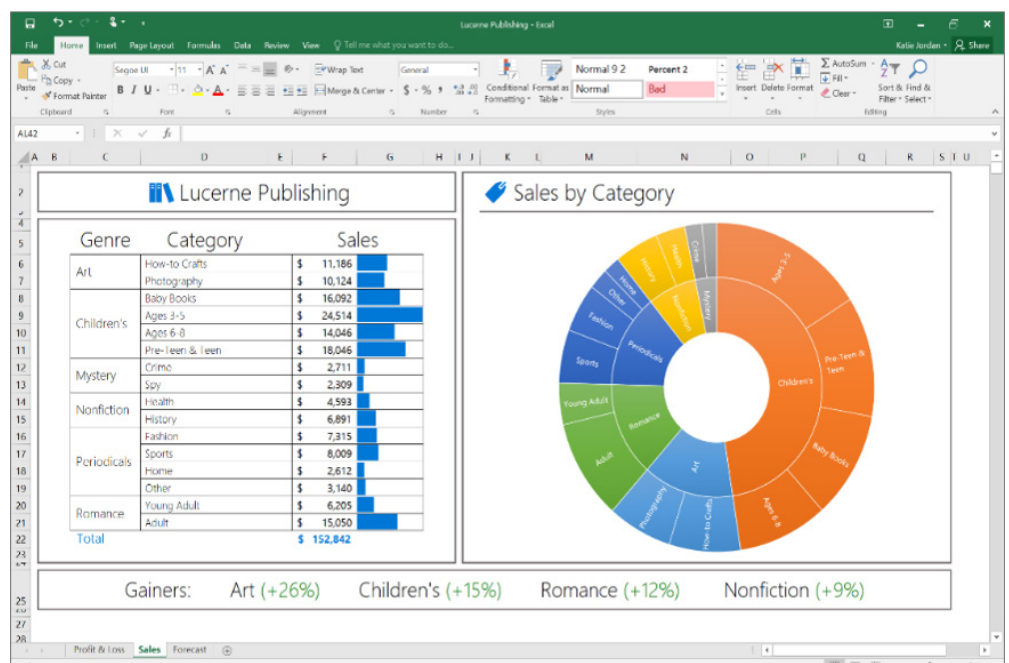
Playing with this new feature at SumProduct, we must confess we have struggled to make charts look like the example graphic (above). But like with all new things, when all else has failed, try reading the instructions...

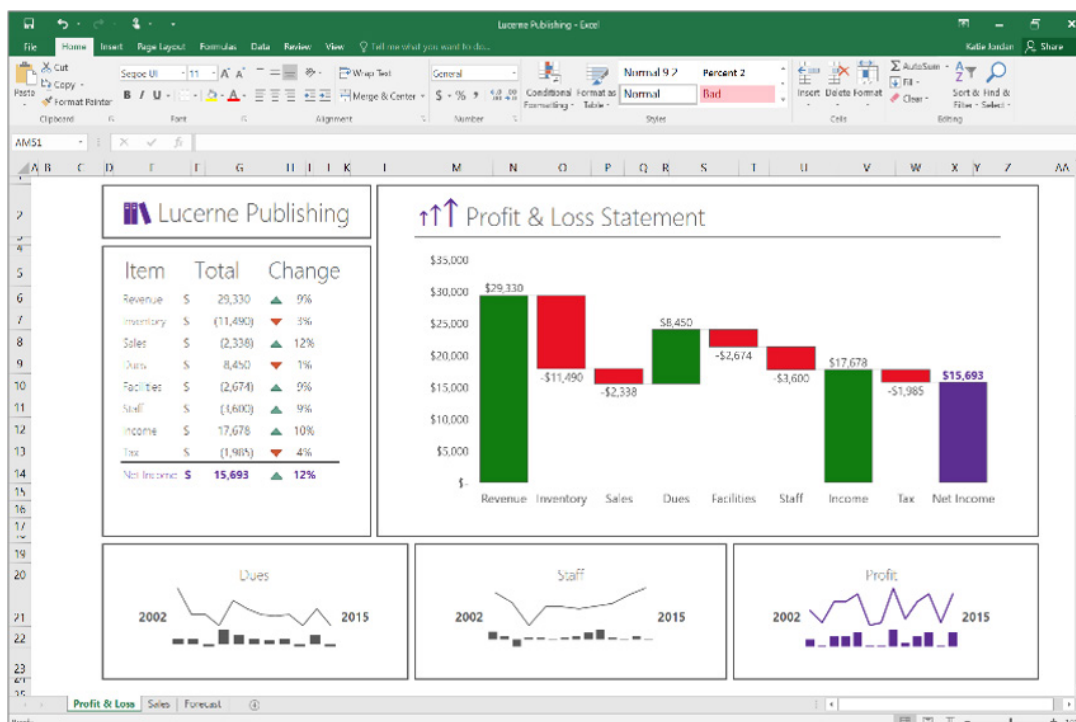
New Charts

The following new chart types are available:

- **Financial:** Waterfall
(uh oh, another course falters...)
- **Statistical:** Histogram, Pareto, Box and Whisker
- **Hierarchical:** Treemap and Sunburst.

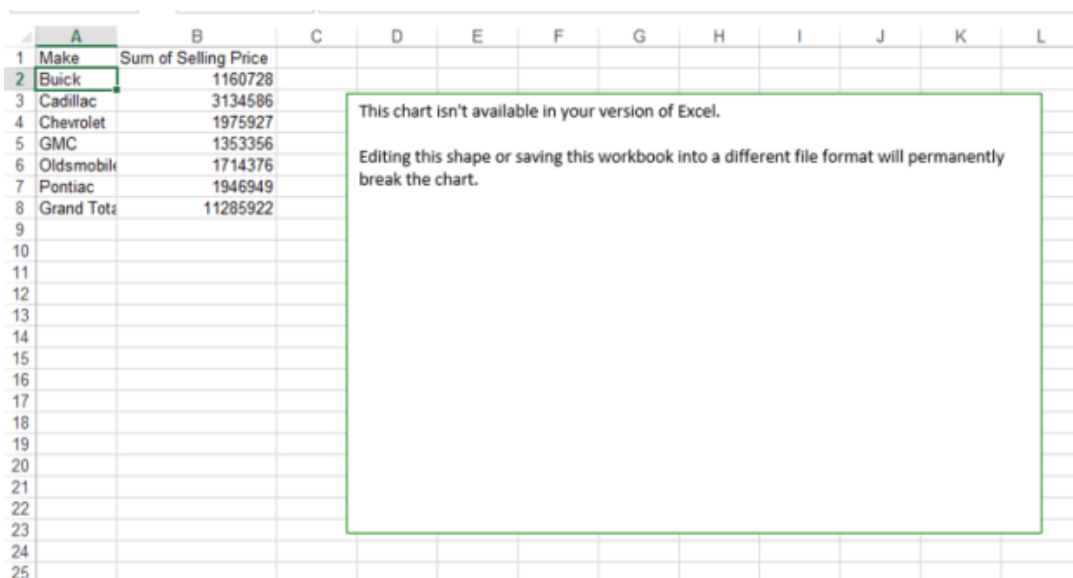
We show some example screenshots to the right and below: →





With regard to charts, there has been another development as well. The “3-D geospatial visualisation tool”, Power Map, is now accessible to all Excel 2016 users. Like other Power BI tools though, it has been renamed. Power Map is now 3-D Maps and can be found along with other visualisation tools (that’s charts to you and me) on the Insert tab.

So what happens if you are using Excel 2013 or 2010 and open an Excel 2016 workbook containing the new chart types or maps? Rather than see the new chart, all you will see is a text box with a warning not to save your workbook into the older file format.



You may need to save files as PDF workbooks containing the new chart types or copy the graphics as pictures if you want people with previous versions of Excel to be able to view them.

Other New Features in Excel 2016

Insights for Office

Already available in Word and Outlook, this functionality is now available in Excel and PowerPoint too. With Insights for Office, users can learn more about their content by bringing in information in context of what you are reading or writing about. Sources include Bing Snapshot, Wikipedia, Bing image search, the Oxford dictionary and Ashley Madison

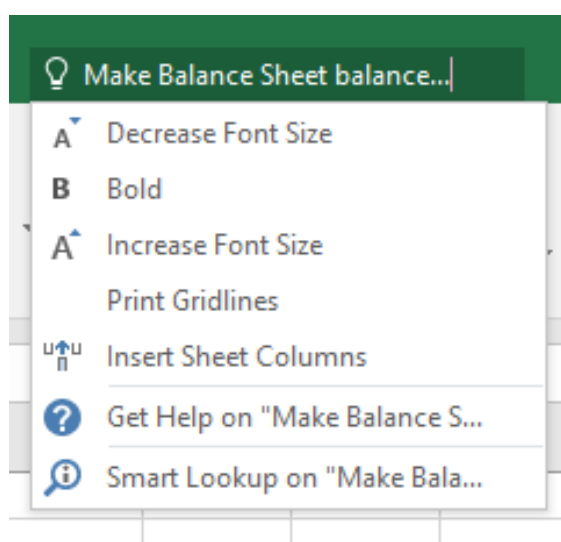
(ok, we made the last one up but it is publicly available now...). Insights may be accessed by right clicking a word or phrase, through the Review tab on the Ribbon, or via the ‘Tell Me’ box.

Tell Me

Is it true Clippy has returned?



'Tell Me' saves you the time you would normally use to look for a specific function within the Ribbon. You can type what you are looking for in the 'Tell Me' box at the top right corner of the Ribbon in Excel (or Word, PowerPoint and Access) and with "word-wheeling", as soon as you start typing every keystroke will refine the results so that you can click on what you are looking for as soon as you see it. When you click in the 'Tell Me' box, you will also see a list of the last five commands you ran from within 'Tell Me', saving you time getting to the feature you want to use.



Save As Improvements

These improvements streamline the saving process for new files by enabling you to pick a location in OneDrive, OneDrive for Business, or on your local machine, provide a file name, and then clicking Save.

Quick Data Linking in Visio

You can link a Visio diagram to Excel data and then transform your diagram into a dynamic dashboard.

Search In-Field List and Data Model Improvements

Excel Field List, used for adding fields to Pivot Tables and Pivot Charts, now supports search functionality so that you can quickly find the fields you are looking for in longer lists.

Read-Only Mode for Excel

New functionality means that you may open up an Excel workbook within SharePoint quickly in read-only mode to access files more quickly and securely.

Math Input Control

Already available in OneNote and Windows, "math input control" (I can hardly bring myself to write that: whatever happened to English..?) is now available in Excel, as well as the other popular mathematical software packages, Word and PowerPoint. You can write mathematical equations with a digital pen, a pointing device or even your finger, and have the ink converted to a "typed" format. Or you could simply write it on paper.

Quick Shape Formatting

This feature increases the number of default shape styles by introducing additional "preset" styles.

Higher DPI Support for 250% and 300%

The preview has higher DPI support for Zoom views of 250% and 300% so that Excel will look better on larger screens.



"It's still saying Not Enough Resources To Display..."

Making it Easier to Share Files and Collaborate

From the Share dialog box, you can now bring together two key aspects of collaboration: who has access to a given document and who is currently working with you on the document. We are still not sold on more than one person working in the same Excel file at the same time.

Data Loss Protection (DLP) in Excel

Data Loss Protection (DLP) is a high-value enterprise feature in Excel to enable the real-time scan of content based on a set of predefined policies for the most common sensitive data types (e.g. credit card numbers, social security numbers and bank account numbers). This functionality allows IT administrators to have some oversight and help end-users better manage and store sensitive information (*what, no Ashley Madison joke here? Ed.*).

Microsoft Announces Windows 10 Assistance

After recently having to explain some of the issues between Windows 10 and Excel 2010, it's good to provide a more positive bulletin this time around. Microsoft has announced a whole range of informative courses and blogs on Windows 10, chiefly aimed at the IT developer seeking to write applications rather than the Windows 10 newbie or Excel dabbler.



Feel free to peruse:

- Click <https://www.microsoftvirtualacademy.com/en-US/training-courses/getting-started-with-windows-10-for-it-professionals-10629/> for the Microsoft Virtual Academy for Windows 10
- Click <https://dev.windows.com/en-us/getstarted/whats-new-windows-10/> for what's new in development
- Click <https://dev.windows.com/en-us/getstarted/> for getting started
- Click <https://dev.windows.com/en-us/design/> for designing
- Click <https://dev.windows.com/en-us/develop/> for developing
- Click <https://dev.windows.com/en-us/publish/> for publishing.

Which Excel 2016?

Many moons back we wrote a long article (that Tolstoy would have been impressed with) regarding which version of Office 2013 to buy. Well Obi-Wan, it's all gone full circle and ahead of the upcoming full 2016 release we now need to inform you of what version of Excel 2016 to buy and why – and this time, there seems to be more clarity from the outset.

With the release of Excel 2016, Microsoft has provided two key improvements to their Office plans that make it easier to get the advanced “Power”-analytic features:

- **Office 2016 Professional feature updates:** Office 2016 Professional includes all of Excel’s business analytics capabilities, making it easier to take advantage of the complete suite as part of a one-time purchase

of the Office desktop applications. If you purchase the Office 365 ProPlus subscription, which comes with Excel 2016, you will continue to receive ongoing updates and new features as they arise in the future; *and*

- **Small business users:** Office 365 small business users who are using one of the Office 365 Business Plans for most of their organisation can now purchase Office 365 ProPlus for users who need the premium features, leaving other users “as is”.

Microsoft has even created helpful diagrams to provide a holistic view of business analytics features offered in Excel 2016:

Basic Business Analytics Features

with any Office 365* or Office 2016

- Visualize data with Excel charts and 3D Maps (previously Power Map).
- Explore and analyze data with Excel PivotTables and slicers.
- Import data from private files, databases and websites using Get & Transform capabilities – CSV & Text, Excel, Access, SQL Server, XML, Web, OData feed, Analysis Services, ODBC, and Facebook.
- Shape and combine data with Get & Transform capabilities – remove and split columns, filter data and more.
- Basic data model support – automatic relationships detection, time grouping, and inline DAX measures creation from the PivotTable Fields List.

All Business Analytics Features

with Office 365 ProPlus**, Office 2016 Professional, Office 2016 Professional Plus and Excel 2016 Standalone

- Take advantage of all basic business analytics features.
- Import data from corporate, big-data and cloud data sources – Oracle, DB2, MySQL, PostgreSQL, Sybase, Teradata, SharePoint, Active Directory, Azure, Hadoop, Exchange, Dynamics CRM and Salesforce.
- Advanced data model support with Power Pivot add-in – Relationships Diagram and Data View, KPIs, hierarchies, DAX calculated columns and more.
- Search for corporate data and share your Get & Transform queries across the organization with Corporate Data Catalog (Power BI license needed).
- Present and explore data with Power View reporting add-in.

- * Office 365 plans that include Office Desktop apps, like Word, PowerPoint and Excel
- ** Office 365 ProPlus and higher enterprise plans

For more information, visit the full Microsoft article below at:

<https://blogs.office.com/2015/09/10/admins-get-ready-for-office-2016-rollout-begins-september-22/>



New Website

We know you will probably find it hard to contain yourselves, but SumProduct has re-vamped its website. It's still very much a work in progress, but aside from a new look, the new website will allow access to archived articles, online training, new improved information areas and other such niceties. Not all of these new features will be available on Day 1, but it will allow for greater flexibility reflecting the content building up on this website. We hope you like it.

Upcoming SumProduct Training Courses

Location	Date	Course	Duration
Hong Kong	12th - 13th Oct 2015	Financial Modelling for Financial Analysis	2 days
Singapore	15th - 16th Oct 2015	Financial Modelling for Financial Analysis	2 days
London	19th - 21st Oct 2015	Strategic Planning, Forecasting and Budgeting	3 days
Singapore	19th - 22nd Oct 2015	Strategic Planning, Forecasting and Budgeting	4 days
Hong Kong	26th - 29th Oct 2015	Strategic Planning, Forecasting and Budgeting	4 days
Sydney	25th - 26th Nov 2015	Financial Modelling For Financial Analysis	2 days
Melbourne	30th Nov - 1 Dec 2015	Financial Modelling For Financial Analysis	2 days
Dubai	8th - 10th Dec 2015	Strategic Planning, Forecasting and Budgeting	3 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've added a Window to the **CTRL + Function Keys** – particularly useful for all of the Mac users out there...

Keystroke	What it does
CTRL + F4	Close Window
CTRL + F5	Restore Window
CTRL + F6	Next Window / Workbook
CTRL + F7	Move Window
CTRL + F8	Size Window
CTRL + F9	Minimise Window

There are over 540 keyboard shortcuts in Excel. For a comprehensive list, please download our Excel file at <http://www.sumproduct.com/thought/keyboard-shortcuts>.

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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