

# IT Regularly

September 2015

## Office 2016 released

Office 2016 was released on 22<sup>nd</sup> September 2015. Although the changes to the Office interface, such as the restoration of 'proper' case for the ribbon tab headings and the introduction of a 'Tell me what you want to do...' search box in the ribbon, are relatively minor, Excel sees some significant changes and additions.

Accordingly, this issue is an Excel 2016 'special' with Insider Comment looking at the long term importance of 'Get and Transform' and Sucked and Seen and IT Clinic covering the 2016 changes.

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# Insider Comment

## Excel – no longer a spreadsheet

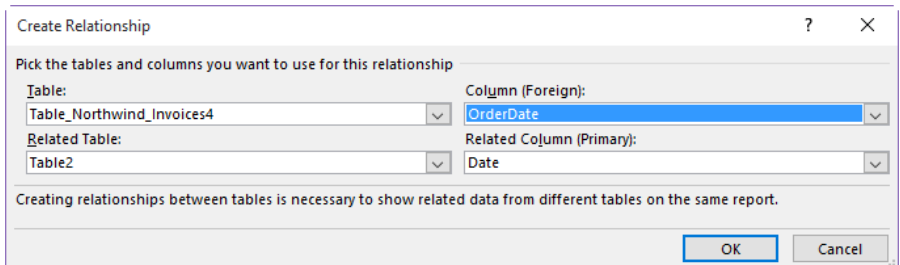
### Introduction

Elsewhere in this edition we look at the main changes to Excel in some detail. However, perhaps the most significant change is the inclusion of the 'Get and Transform' set of tools on the Data ribbon. The significance is not so much in the tools themselves, but the implications for what sort of application Excel now is.

### The slippery PivotTable slope

Of course, the ending of Excel as a spreadsheet has really been a much more gradual process. Until the introduction of PivotTables in the mid 1990's, pretty much everything that went on in a spreadsheet revolved around the contents of cells and references to cells. PivotTables introduced the ability to include the results of calculations on data that was not visible on any sheet. However, although Excel could report on the data, it wasn't able to transform and manipulate it in the way that a database application could.

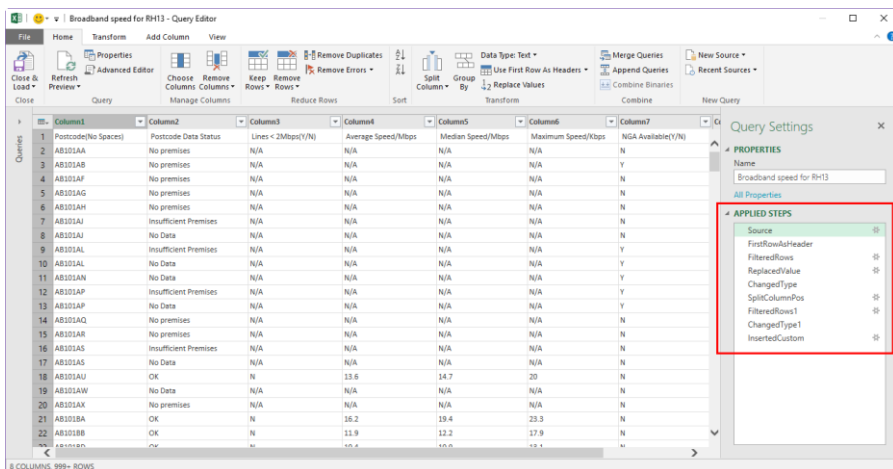
The database functionality that was available was not provided as an integral part of Excel itself but in the form of Add-Ins. Excel could use Microsoft Query to join tables of data from the same data source and carry out some limited database operations. With Excel 2010 came the Power Pivot Add-in with its ability to work with additional data types, larger data sets and to combine data from different sources. Excel 2013 was probably the first version of Excel to directly incorporate database tools in Excel itself. Although Power Pivot was no longer a free Add-In, the workbook data model that Power Pivot used as its data source became an integral part of all editions of Excel. Although the Relationships option that appeared in the Data ribbon allowed tables of data within the workbook data model to be joined for reporting, the feature was fairly restricted:



# Insider Comment

## Power Query

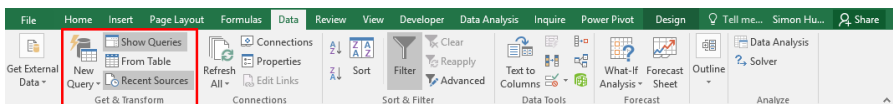
The Excel Power Query Add-In first became available towards the end of 2013 when it was released for Excel 2010 and Excel 2013. Where all the previous features and Add-Ins relied on the source data being already available in a structured and consistent format, Power Query was designed to take a very diverse set of data types, including less well-structured data, and 'shape and transform' it for use within Excel. Power Query uses a set of consecutive procedures or steps that can be repeatedly applied to the same data source to create the end result that you want to work with:



As well as transforming single tables of data, Power Query can combine tables by creating the relationships between them and also append multiple tables with the same columns to create a single table. These capabilities mean that it can be used not only to work with external data sources, but also with existing tables of data held in Excel itself.

## Get & Transform

Where these tools used to be part of an optional Add-In, in Excel 2016 they become a native part of all editions of Excel as a new group in the Data ribbon:



So, Excel is no longer just a spreadsheet but now a database/spreadsheet hybrid. Given that as I write this it is Ada Lovelace Day, perhaps it should be renamed: 'Excel Analytical Engine'.

# At your service

## Buy online

Following the enormous success of our '100 ways to save time with Microsoft Office' and 'IT Clinic' CDs, we have the facility to pay online on our website. Payments are made using PayPal but there is no need to have, or to set up, a PayPal account to pay online.

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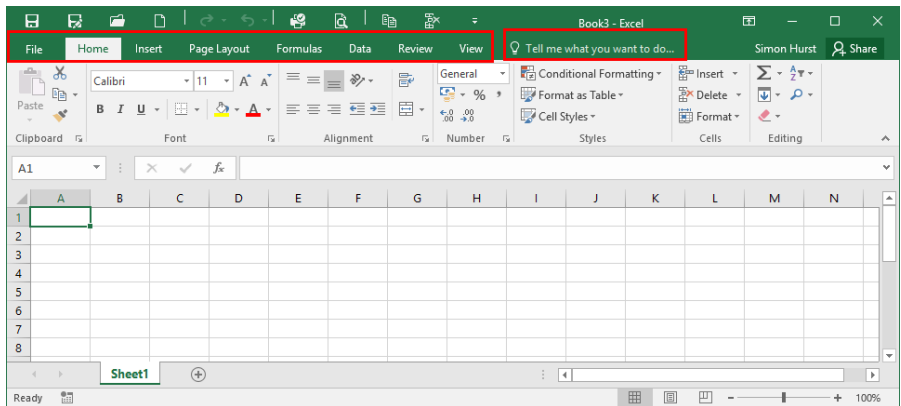
## IT Clinic introduction

September 22<sup>nd</sup> saw the general release of Office 2016. There are some general changes to the Office interface and to the background features and capabilities but these are relatively minor. Similarly, the changes in the main Office applications are small. However, Excel does include some significant additional features as well as some important changes in direction.

## General changes

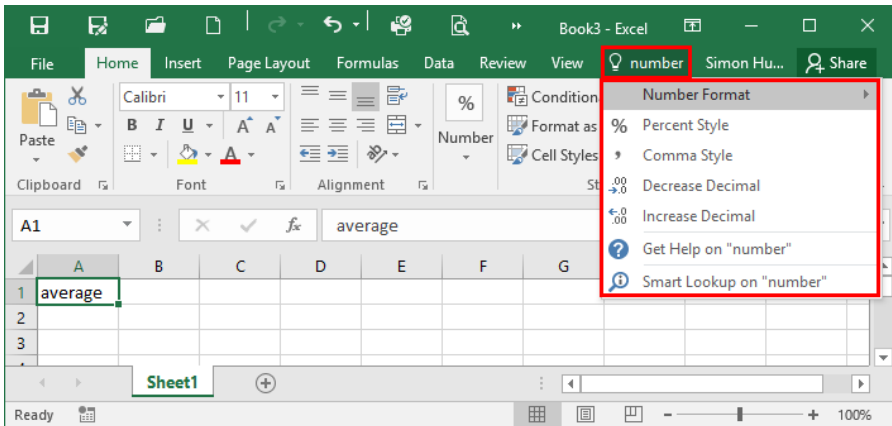
### Ribbon interface

The most obvious change to the Office 2016 interface is the restoration of proper case to the ribbon tabs. Mercifully, the experiment with upper case headings for all the ribbon tabs only lasted for one version and they have now been returned to a combination of upper and lower case:



The ribbon also includes an even more significant change. The 'Tell me what you want to do...' box allows you to enter a search term and the Office application will display a list of relevant options which can be accessed directly from the list. Although the search methodology is fairly basic, and the list of commands that it returns is far from comprehensive, it should help to find elusive ribbon items. Had 'Tell me what you want to do...' been included in the ribbon from the outset in Office 2007, it might have reduced the outbreaks of 'ribbon rage' that accompanied the change from menus and toolbars:

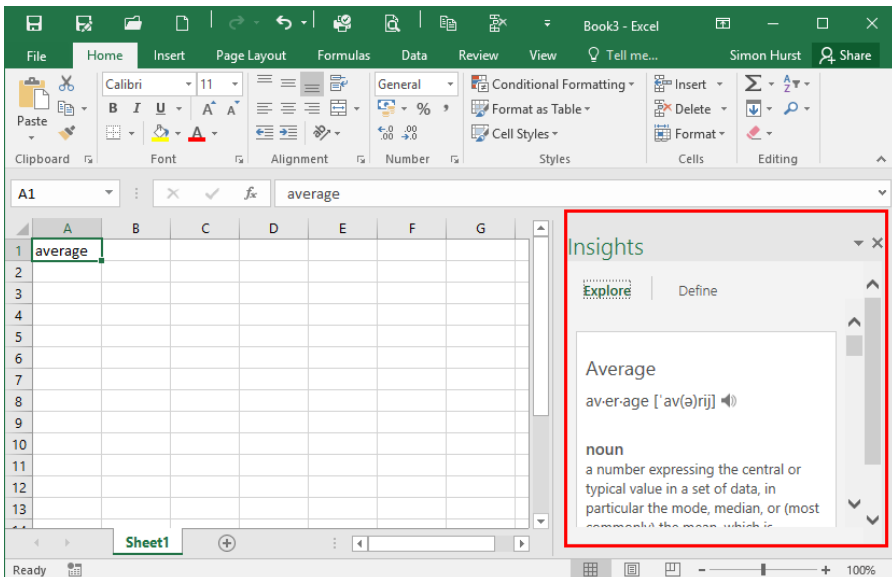
# IT Clinic



## Smart Lookup

This feature uses Microsoft's Bing search engine to provide information about the selected content in a pane within the application. It is an extension of the existing 'Look up' feature.

Here we have right-clicked on a cell containing the word 'average' and used the Smart Lookup option to display the Insights pane:

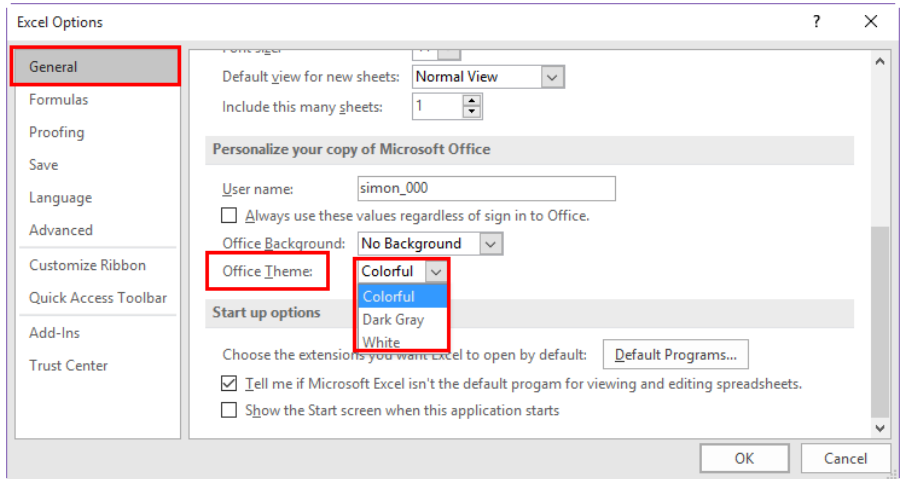




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## Office Themes

The default appearance of Office 2013 was particularly minimalist and 'flat'. This could make it difficult to distinguish between different elements of the interface. Office 2016 introduces a more distinctive 'Colourful' Office theme:



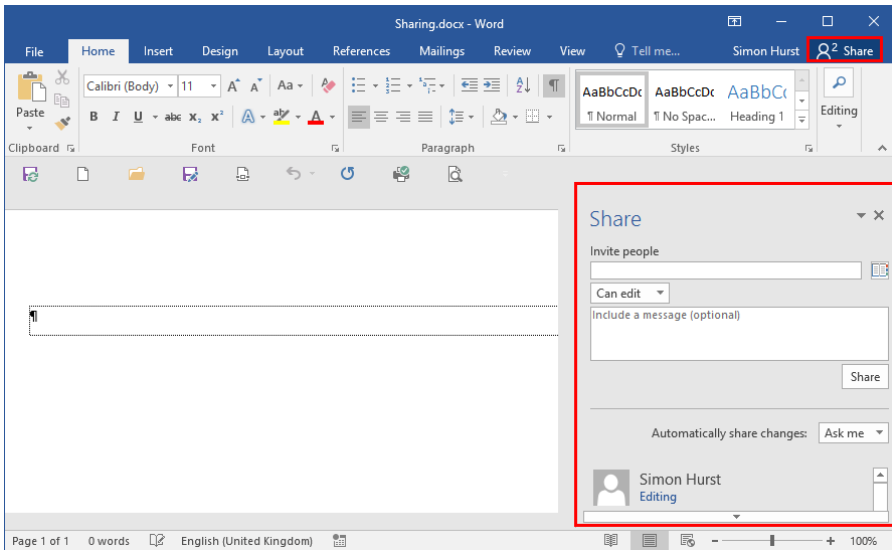
As well as increasing the definition of all the interface elements within each application, this theme also applies the application's particular colour to the ribbon area.

## Sharing

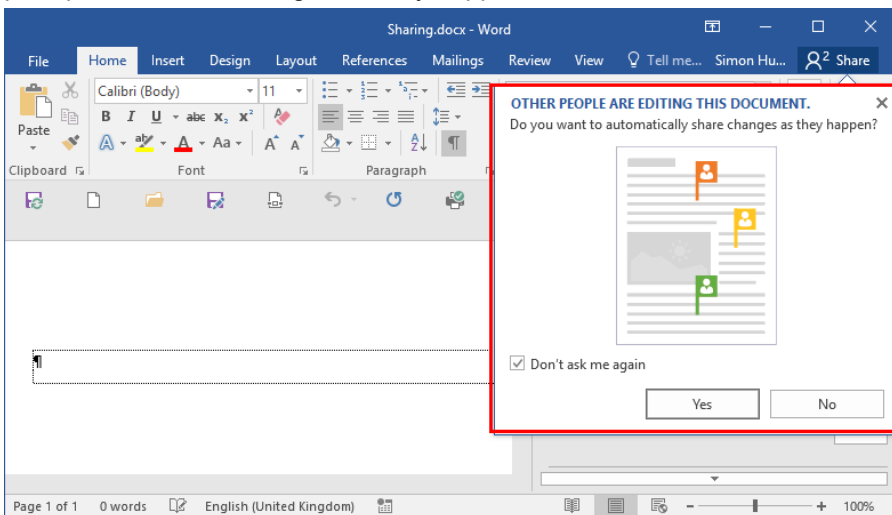
One of the obvious ways in which Office has changed over recent versions has been the move towards saving documents to the Cloud and collaborating online. Office 2013 saw Microsoft's Cloud storage, OneDrive, become the default save location and Office 2016 sees several additional changes to make sharing and collaboration easier.

A 'Share' command in the ribbon opens the Share task pane, making it easy to save a document to OneDrive or SharePoint and invite others to collaborate on the document:

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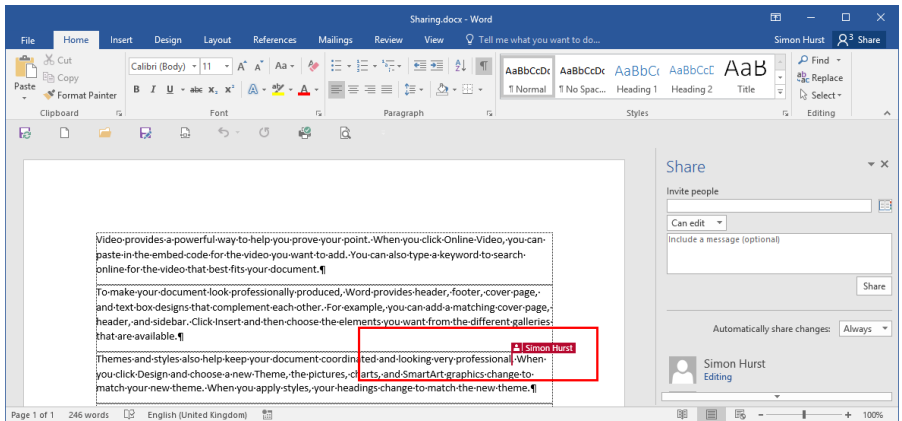


Once the document is shared, Word and PowerPoint now support ‘real-time co-authoring’. When someone else opens the document you are prompted to ‘share changes as they happen’:



If you opt to do so, then you will see ‘real time’ changes made by others with an indication of the author:

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## Version history

For files saved to OneDrive for Business or SharePoint, Office maintains a version history allowing previous versions to be compared or restored using the new File, Info, Manage Document command.

## Excel 2013 changes

### Introduction

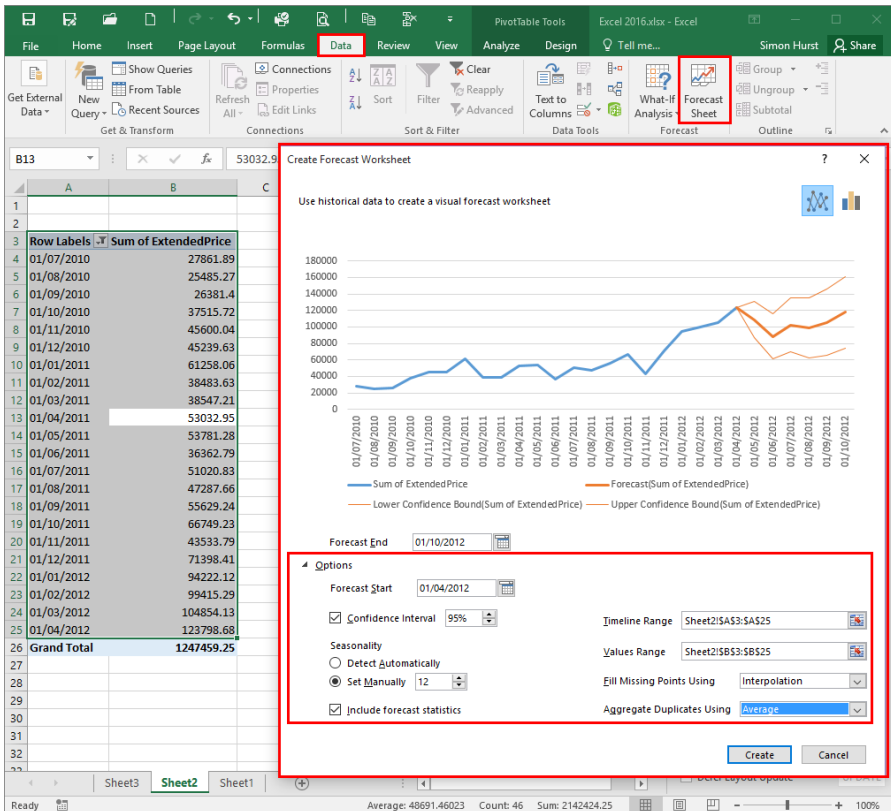
As well as incorporating the general changes described above, Excel 2016 incorporates several specific enhancements and new features.

### One-click forecasting

Perhaps one-click might be pushing it a bit, but the new Data ribbon tab, Forecast group, Forecast Sheet option does make it very quick to add a sheet to a workbook that contains a set of forecast figures showing confidence intervals and a chart.

In the following example, we have a PivotTable (it could equally well be an ordinary range or an Excel Table) containing a consecutive time series and associated figures. We can click any cell within our block of data and then click the Forecast Sheet option. This will display a preview of the chart that will appear on the new sheet together with a proposed Forecast End date and an Options button that can be expanded to show more detailed options for producing the Forecast Sheet:

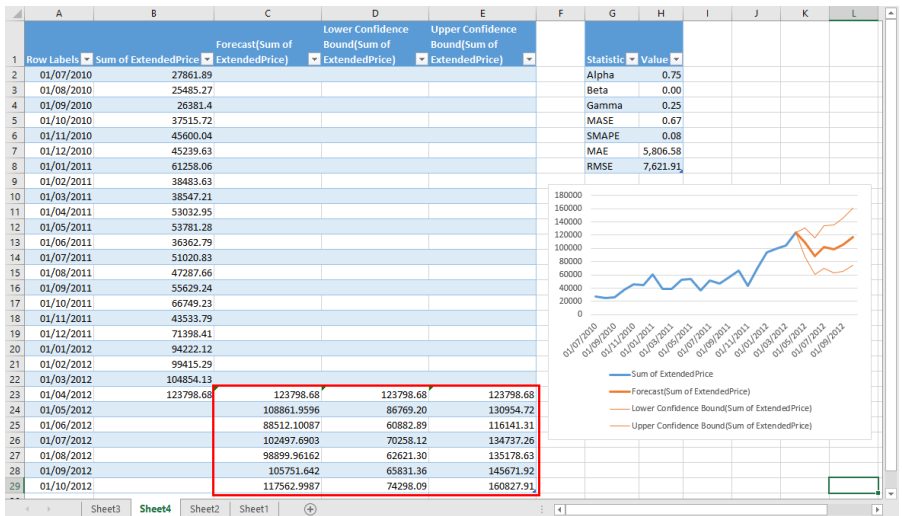
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As you can see, the Options are quite extensive. You can set the Confidence interval percentage; allow for Seasonality either using automatic detection or by setting the interval between items manually; and also choose to display a table of key forecast statistics as part of the new sheet. In addition, you can review and change the ranges used for the Timeline and the Values, as well as deciding how to deal with Missing Points and Duplicates.

Once you have set the Options to the required values, clicking the Create button will add a new sheet to your workbook containing the forecast as an Excel Table and a line chart based on that Table. Here, we have just rearranged the sheet slightly to wrap the headings in row 1 and positioned the chart beneath the Forecast Statistics Table:

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Apart from the last actual row, the figures in the forecast columns are based on two new forecast functions. The Forecast column itself uses the FORECAST.ETS() function:

**Function Arguments**

**FORECAST.ETS**

**Target\_date** A24 = 41030

**Values** \$B\$2:\$B\$23 = {27861.89;25485.27;26381.4;37515.72;45600.04;45239.63;61258.06;38483.63;38547.21;53012.95;53781.28;36362.79;51020.83;47287.66;55629.24;66749.23;43533.79;71398.41;94222.12;99415.29;104854.13;123798.68}

**Timeline** \$A\$2:\$A\$23 = {40360;40391;40422;40452;40483;40514;40545;40576;40607;40638;40669;40700;40731;40762;40793;40824;40855;40886;40917;40948;40979;41010;41041;41072;41103;41134;41165;41196;41227;41258;41289;41320;41351;41382;41413;41444;41475;41506;41537;41568;41599;41630;41661;41692;41723;41754;41785;41816;41847;41878;41909;41940;41971;42002;42033;42064;42095;42126;42157;42188;42219;42250;42281;42312;42343;42374;42405;42436;42467;42498;42529;42560;42591;42622;42653;42684;42715;42746;42777;42808;42839;42870;42901;42932;42963;42994;43025;43056;43087;43118;43149;43180;43211;43242;43273;43304;43335;43366;43397;43428;43459;43490;43521;43552;43583;43614;43645;43676;43707;43738;43769;43800;43831;43862;43893;43924;43955;43986;44017;44048;44079;44110;44141;44172;44203;44234;44265;44296;44327;44358;44389;44420;44451;44482;44513;44544;44575;44606;44637;44668;44699;44730;44761;44792;44823;44854;44885;44916;44947;44978;45009;45040;45071;45102;45133;45164;45195;45226;45257;45288;45319;45350;45381;45412;45443;45474;45505;45536;45567;45598;45629;45660;45691;45722;45753;45784;45815;45846;45877;45908;45939;45970;46001;46032;46063;46094;46125;46156;46187;46218;46249;46280;46311;46342;46373;46404;46435;46466;46497;46528;46559;46590;46621;46652;46683;46714;46745;46776;46807;46838;46869;46900;46931;46962;46993;47024;47055;47086;47117;47148;47179;47210;47241;47272;47303;47334;47365;47396;47427;47458;47489;47520;47551;47582;47613;47644;47675;47706;47737;47768;47799;47830;47861;47892;47923;47954;47985;48016;48047;48078;48109;48140;48171;48202;48233;48264;48295;48326;48357;48388;48419;48450;48481;48512;48543;48574;48605;48636;48667;48698;48729;48760;48791;48822;48853;48884;48915;48946;48977;49008;49039;49070;49101;49132;49163;49194;49225;49256;49287;49318;49349;49380;49411;49442;49473;49504;49535;49566;49597;49628;49659;49690;49721;49752;49783;49814;49845;49876;49907;49938;49969;49999;50030;50061;50092;50123;50154;50185;50216;50247;50278;50309;50340;50371;50402;50433;50464;50495;50526;50557;50588;50619;50650;50681;50712;50743;50774;50805;50836;50867;50898;50929;50960;50991;51022;51053;51084;51115;51146;51177;51208;51239;51270;51301;51332;51363;51394;51425;51456;51487;51518;51549;51580;51611;51642;51673;51704;51735;51766;51797;51828;51859;51890;51921;51952;51983;52014;52045;52076;52107;52138;52169;52200;52231;52262;52293;52324;52355;52386;52417;52448;52479;52510;52541;52572;52603;52634;52665;52696;52727;52758;52789;52820;52851;52882;52913;52944;52975;53006;53037;53068;53099;53130;53161;53192;53223;53254;53285;53316;53347;53378;53409;53440;53471;53502;53533;53564;53595;53626;53657;53688;53719;53750;53781;53812;53843;53874;53905;53936;53967;53998;54029;54060;54091;54122;54153;54184;54215;54246;54277;54308;54339;54370;54401;54432;54463;54494;54525;54556;54587;54618;54649;54680;54711;54742;54773;54804;54835;54866;54897;54928;54959;54990;55021;55052;55083;55114;55145;55176;55207;55238;55269;55300;55331;55362;55393;55424;55455;55486;55517;55548;55579;55610;55641;55672;55703;55734;55765;55796;55827;55858;55889;55920;55951;55982;56013;56044;56075;56106;56137;56168;56199;56230;56261;56292;56323;56354;56385;56416;56447;56478;56509;56540;56571;56602;56633;56664;56695;56726;56757;56788;56819;56850;56881;56912;56943;56974;57005;57036;57067;57098;57129;57160;57191;57222;57253;57284;57315;57346;57377;57408;57439;57470;57501;57532;57563;57594;57625;57656;57687;57718;57749;57780;57811;57842;57873;57904;57935;57966;57997;58028;58059;58090;58121;58152;58183;58214;58245;58276;58307;58338;58369;58400;58431;58462;58493;58524;58555;58586;58617;58648;58679;58710;58741;58772;58803;58834;58865;58896;58927;58958;58989;59020;59051;59082;59113;59144;59175;59206;59237;59268;59299;59330;59361;59392;59423;59454;59485;59516;59547;59578;59609;59640;59671;59702;59733;59764;59795;59826;59857;59888;59919;59950;59981;60012;60043;60074;60105;60136;60167;60198;60229;60260;60291;60322;60353;60384;60415;60446;60477;60508;60539;60570;60601;60632;60663;60694;60725;60756;60787;60818;60849;60880;60911;60942;60973;61004;61035;61066;61097;61128;61159;61190;61221;61252;61283;61314;61345;61376;61407;61438;61469;61500;61531;61562;61593;61624;61655;61686;61717;61748;61779;61810;61841;61872;61903;61934;61965;61996;62027;62058;62089;62120;62151;62182;62213;62244;62275;62306;62337;62368;62399;62430;62461;62492;62523;62554;62585;62616;62647;62678;62709;62740;62771;62802;62833;62864;62895;62926;62957;62988;63019;63050;63081;63112;63143;63174;63205;63236;63267;63298;63329;63360;63391;63422;63453;63484;63515;63546;63577;63608;63639;63670;63701;63732;63763;63794;63825;63856;63887;63918;63949;63980;64011;64042;64073;64104;64135;64166;64197;64228;64259;64290;64321;64352;64383;64414;64445;64476;64507;64538;64569;64600;64631;64662;64693;64724;64755;64786;64817;64848;64879;64910;64941;64972;65003;65034;65065;65096;65127;65158;65189;65220;65251;65282;65313;65344;65375;65406;65437;65468;65499;65530;65561;65592;65623;65654;65685;65716;65747;65778;65809;65840;65871;65902;65933;65964;65995;66026;66057;66088;66119;66150;66181;66212;66243;66274;66305;66336;66367;66398;66429;66460;66491;66522;66553;66584;66615;66646;66677;66708;66739;66770;66801;66832;66863;66894;66925;66956;66987;67018;67049;67080;67111;67142;67173;67204;67235;67266;67297;67328;67359;67390;67421;67452;67483;67514;67545;67576;67607;67638;67669;67700;67731;67762;67793;67824;67855;67886;67917;67948;67979;68010;68041;68072;68103;68134;68165;68196;68227;68258;68289;68320;68351;68382;68413;68444;68475;68506;68537;68568;68599;68630;68661;68692;68723;68754;68785;68816;68847;68878;68909;68940;68971;69002;69033;69064;69095;69126;69157;69188;69219;69250;69281;69312;69343;69374;69405;69436;69467;69498;69529;69560;69591;69622;69653;69684;69715;69746;69777;69808;69839;69870;69901;69932;69963;69994;70025;70056;70087;70118;70149;70180;70211;70242;70273;70304;70335;70366;70397;70428;70459;70490;70521;70552;70583;70614;70645;70676;70707;70738;70769;70800;70831;70862;70893;70924;70955;70986;71017;71048;71079;71110;71141;71172;71203;71234;71265;71296;71327;71358;71389;71420;71451;71482;71513;71544;71575;71606;71637;71668;71699;71730;71761;71792;71823;71854;71885;71916;71947;71978;72009;72040;72071;72102;72133;72164;72195;72226;72257;72288;72319;72350;72381;72412;72443;72474;72505;72536;72567;72598;72629;72660;72691;72722;72753;72784;72815;72846;72877;72908;72939;72970;73001;73032;73063;73094;73125;73156;73187;73218;73249;73280;73311;73342;73373;73404;73435;73466;73497;73528;73559;73590;73621;73652;73683;73714;73745;73776;73807;73838;73869;73900;73931;73962;73993;74024;74055;74086;74117;74148;74179;74210;74241;74272;74303;74334;74365;74396;74427;74458;74489;74520;74551;74582;74613;74644;74675;74706;74737;74768;74799;74830;74861;74892;74923;74954;74985;75016;75047;75078;75109;75140;75171;75202;75233;75264;75295;75326;75357;75388;75419;75450;75481;75512;75543;75574;75605;75636;75667;75698;75729;75760;75791;75822;75853;75884;75915;75946;75977;76008;76039;76070;76101;76132;76163;76194;76225;76256;76287;76318;76349;76380;76411;76442;76473;76504;76535;76566;76597;76628;76659;76690;76721;76752;76783;76814;76845;76876;76907;76938;76969;76999;77030;77061;77092;77123;77154;77185;77216;77247;77278;77309;77340;77371;77402;77433;77464;77495;77526;77557;77588;77619;77650;77681;77712;77743;77774;77805;77836;77867;77898;77929;77960;77991;78022;78053;78084;78115;78146;78177;78208;78239;78270;78301;78332;78363;78394;78425;78456;78487;78518;78549;78580;78611;78642;78673;78704;78735;78766;78797;78828;78859;78890;78921;78952;78983;79014;79045;79076;79107;79138;79169;79200;79231;79262;79293;79324;79355;79386;79417;79448;79479;79510;79541;79572;79603;79634;79665;79696;79727;79758;79789;79820;79851;79882;79913;79944;79975;80006;80037;80068;80099;80130;80161;80192;80223;80254;80285;80316;80347;80378;80409;80440;80471;80502;80533;80564;80595;80626;80657;80688;80719;80750;80781;80812;80843;80874;80905;80936;80967;80998;81029;81060;81091;81122;81153;81184;81215;81246;81277;81308;81339;81370;81401;81432;81463;81494;81525;81556;81587;81618;81649;81680;81711;81742;81773;81804;81835;81866;81897;81928;81959;81990;82021;82052;82083;82114;82145;82176;82207;82238;82269;82300;82331;82362;82393;82424;82455;82486;82517;82548;82579;82610;82641;82672;82703;82734;82765;82796;82827;82858;82889;82920;82951;82982;83013;83044;83075;83106;83137;83168;83199;83230;83261;83292;83323;83354;83385;83416;83447;83478;83509;83540;83571;83602;83633;83664;83695;83726;83757;83788;83819;83850;83881;83912;83943;83974;84005;84036;84067;84098;84129;84160;84191;84222;84253;84284;84315;84346;84377;84408;84439;84470;84501;84532;84563;84594;84625;84656;84687;84718;84749;84780;84811;84842;84873;84904;84935;84966;84997;85028;85059;85090;85121;85152;85183;85214;85245;85276;85307;85338;85369;85400;85431;85462;85493;85524;85555;85586;85617;85648;85679;85710;85741;85772;85803;85834;85865;85896;85927;85958;85989;86020;86051;86082;86113;86144;86175;86206;86237;86268;86299;86330;86361;86392;86423;86454;86485;86516;86547;86578;86609;86640;86671;86702;86733;86764;86795;86826;86857;86888;86919;86950;86981;87012;87043;87074;87105;87136;87167;87198;87229;87260;87291;87322;87353;87384;87415;87446;87477;87508;87539;87570;87601;87632;87663;87694;87725;87756;87787;87818;87849;87880;87911;87942;87973;88004;88035;88066;88097;88128;88159;88190;88221;88252;88283;88314;88345;88376;88407;88438;88469;88500;88531;88562;88593;88624;88655;88686;88717;88748;88779;88810;88841;88872;88903;88934;88965;88996;89027;89058;89089;89120;89151;89182;89213;89244;89275;89306;89337;89368;89399;89430;89461;89492;89523;89554;89585;89616;89647;89678;89709;89740;89771;89802;89833;89864;89895;89926;89957;89988;90019;90050;90081;90112;90143;90174;90205;90236;90267;90298;90329;90360;90391;90422;90453;90484;90515;90546;90577;90608;90639;90670;90701;90732;90763;90794;90825;90856;90887;90918;90949;90980;91011;91042;91073;91104;91135;91166;91197;91228;91259;91290;91321;91352;91383;91414;91445;91476;91507;91538;91569;91600;91631;91662;91693;91724;91755;91786;91817;91848;91879;91910;91941;91972;92003;92034;92065;92096;92127;92158;92189;92220;92251;92282;92313;92344;92375;92406;92437;92468;92499;92530;92561;92592;92623;92654;92685;92716;92747;92778;92809;92840;92871;92902;92933;92964;92995;93026;93057;93088;93119;93150;93181;93212;93243;93274;93305;93336;93367;93398;93429;93460;93491;93522;93553;93584;93615;93646;93677;93708;93739;93770;93801;9

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arguments that implement the Seasonality and Missing Values options in the Forecast Sheet creation screen.

The Confidence Interval columns use a variant of this function to calculate the upper and lower confidence bounds based on the %age in the sheet creation options:

Function Arguments

FORECAST.ETS.CONFINT

Target_date	A24	=	41030
Values	\$B\$2:\$B\$23	=	{27861.89;25485.27;26381.4;37515.7...
Timeline	\$A\$2:\$A\$23	=	{40360;40391;40422;40452;40483;40...
Confidence_level	0.95	=	0.95
Seasonality	12	=	12

= 22092.75975

Returns a confidence interval for the forecast value at the specified target date.

**Target\_date** is the data point for which Microsoft Excel predicts a value. It should carry on the pattern of values in the timeline.

Formula result = 86769.20

[Help on this function](#)

OK Cancel

For the Lower Confidence Bound the result of the function is subtracted from the forecast value and for the Upper Confidence Bound it is added to it.

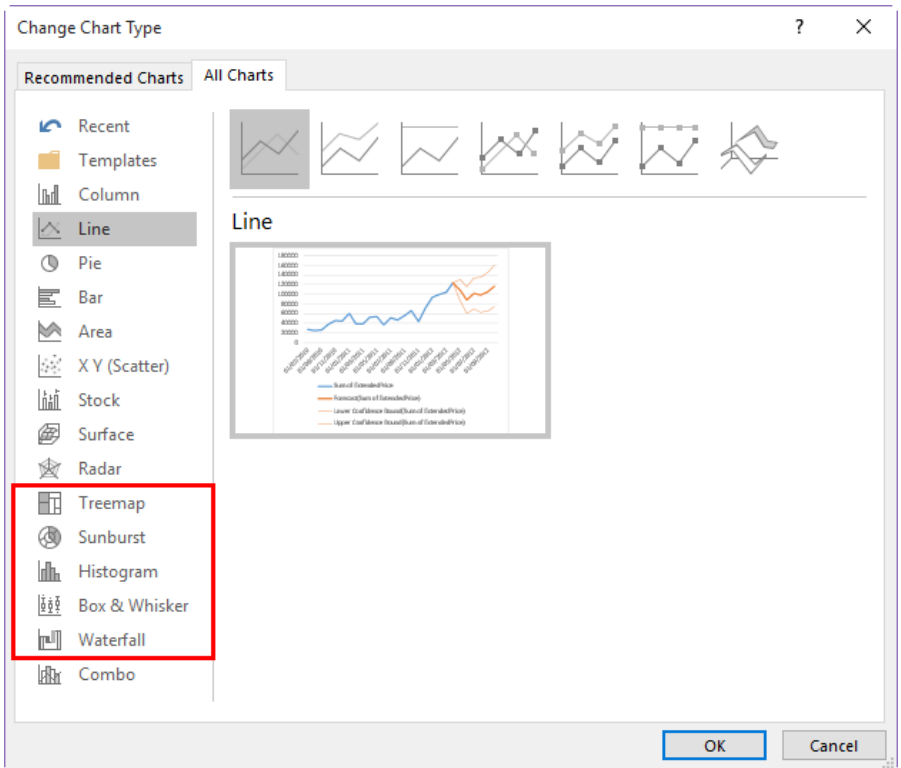
## New Chart Types

Before covering the new charts themselves, it's worth mentioning that the 2013 Power Map Add-in for presenting data with a geographic component graphically is now included as an integral part of Excel and has been renamed as 3D Map. This can be found in its own 'Tours' group next to Charts on the Insert ribbon.

Many of the new features added to Excel since Excel 2007 have been to do with data analysis and the presentation of data. Apart from the introduction of Sparklines in Excel 2010 and the ability to animate bubble charts in the Power View add-in in Excel 2013, the presentation improvements didn't expand the range of chart types available. Excel 2016 addresses that omission by making several new chart types available.

We can see the additional chart types in the Insert ribbon tab, Charts group or in the Change Chart Type dialog:

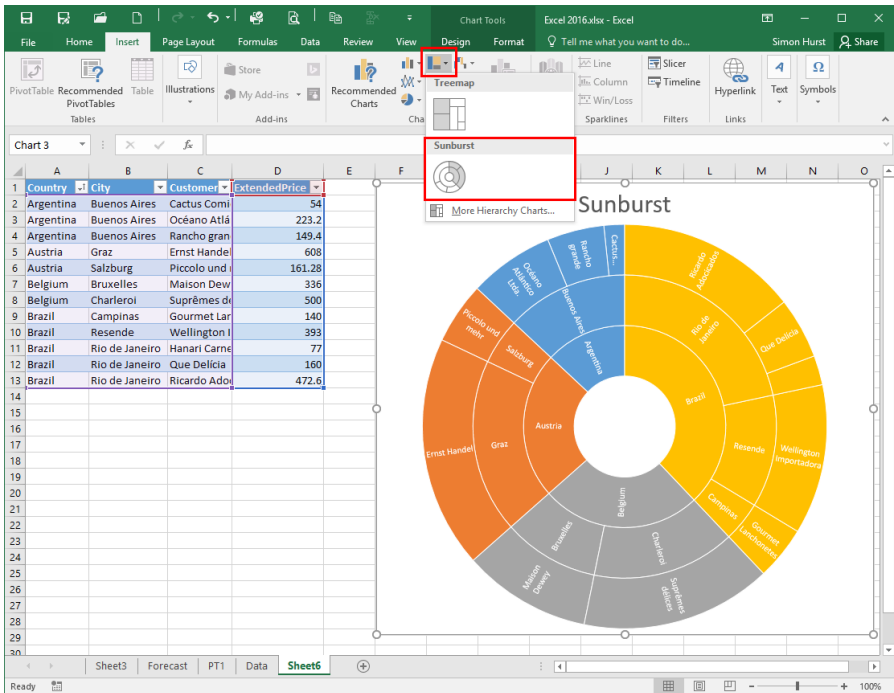
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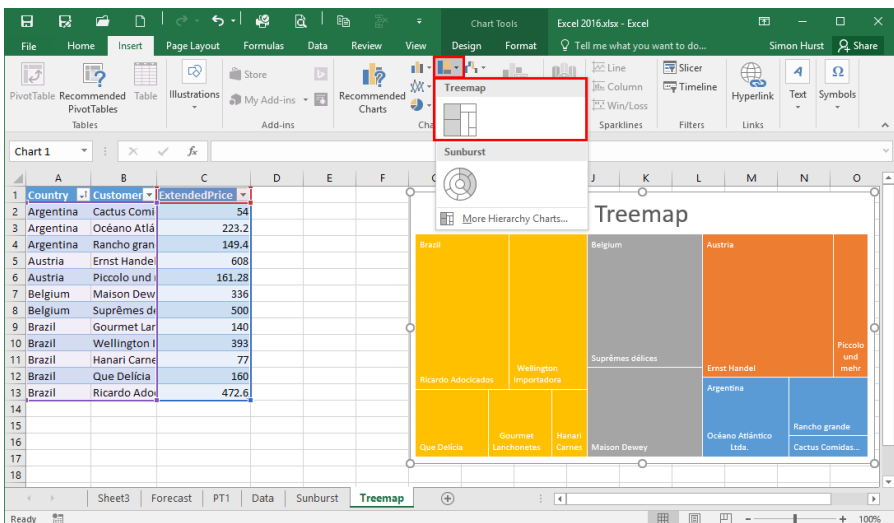
## Treemap and Sunburst

The Treemap and Sunburst charts are used with hierarchical data. A Sunburst is similar to a 'doughnut' chart and works with several levels in the hierarchy. In this example we have used a Sunburst chart to show the proportions of data analysed by three attributes: Country, City and Customer. The inside ring of the chart compares the proportions by country, the middle section by city within country and the outside ring by customer within city within country:

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The Treemap chart is similar but based on rectangles rather than rings and it can only cope with two levels:

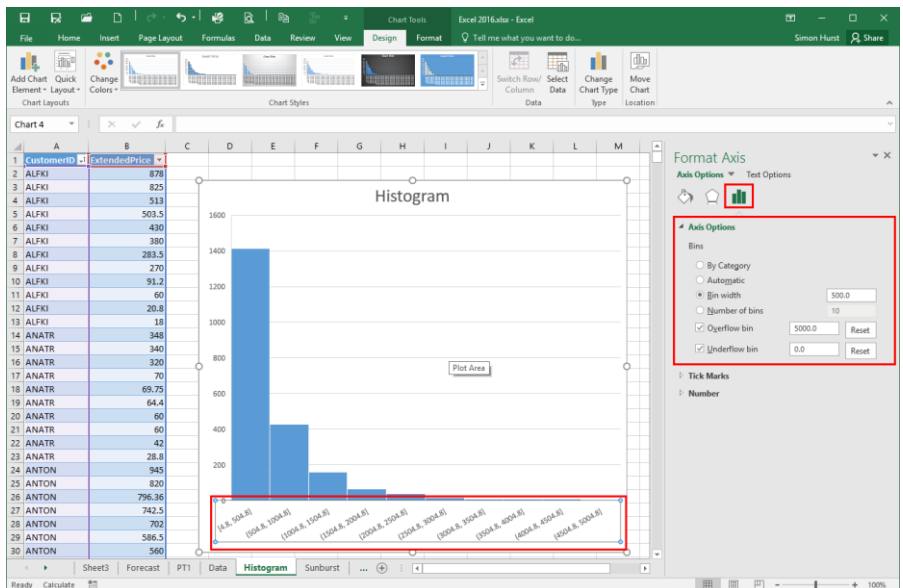




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## Histogram and Pareto

A Histogram is used to compare frequency of values in a set of data. In this example our data shows a list of customers and individual invoice amounts. A histogram will show how many invoices there are in different amount 'bins'. We have selected an individual cell in our block of data and then used the Recommended Charts command in the Insert Ribbon tab, Charts group. Because of the structure of our data, Excel will recommend a Histogram or a sorted Histogram, also known as a Pareto chart. We will look at the Histogram first:



If we leave it to Excel, the number and 'width' of the bins will be chosen automatically. If we want to control this, we need to select the horizontal axis and change the Axis Options in the Format Axis pane. Here we can set the Bin width so, if we choose 500, our invoices will be counted in groups of the lowest value to the lowest value + 500 and so on. In our case this makes the first few bins:

4.8 – 504.8

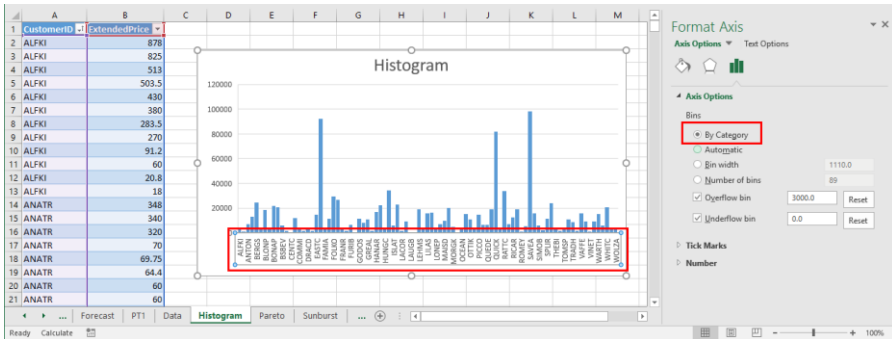
504.8 – 1004.8

Up to: 4504.8 to 5004.8

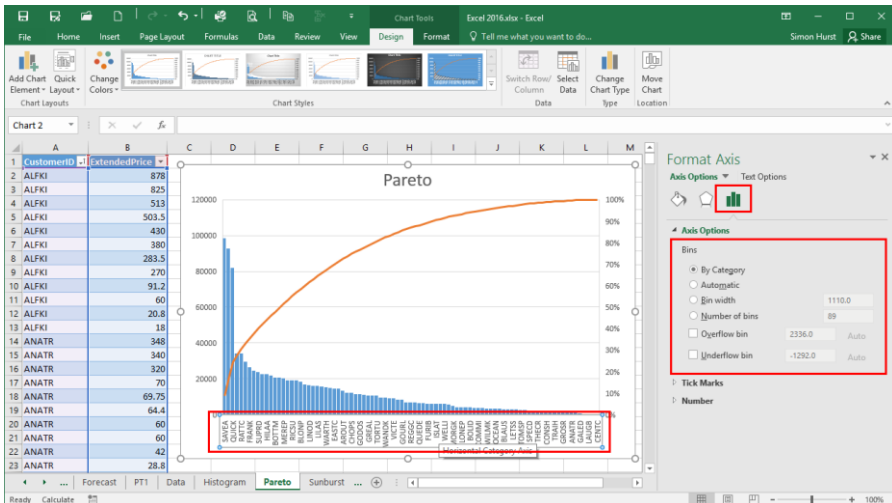
We can also set a value for an 'Overflow' bin so that all values in excess of the value will be lumped together in the overflow bin and an 'Underflow' bin that deals in a similar way with values beneath the underflow value.

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We can also choose to organise our bins by Category, in our case showing number of invoices by customer:



As an alternative, we can show our data as a Pareto chart or Sorted Histogram. This is another option in our Recommended Charts screen. As you can see, it automatically chooses to group into bins by category and sorts the bins by largest to smallest. In addition a line chart is added showing the cumulative totals by bin as a percentage:

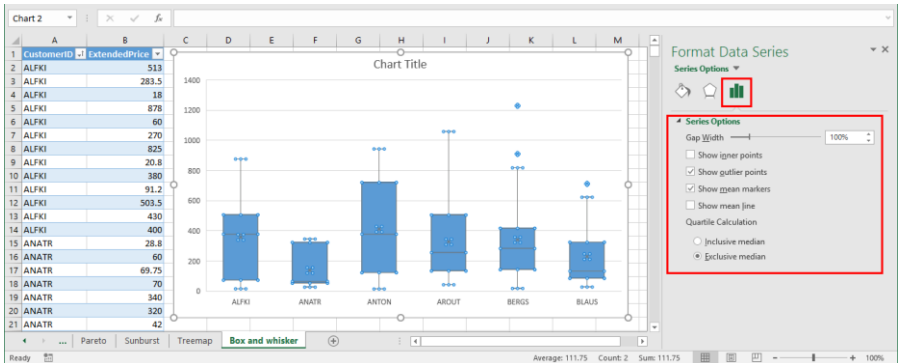


## Box and Whisker

The Box and Whisker chart shows the distribution of values by quartile and can also highlight mean values and outlier values. The boxes show the number of values in the first and third quartiles while the line in the box shows the median and the crosses show the mean. The whiskers are used to show the variability outside of the quartiles shown in the boxes, with

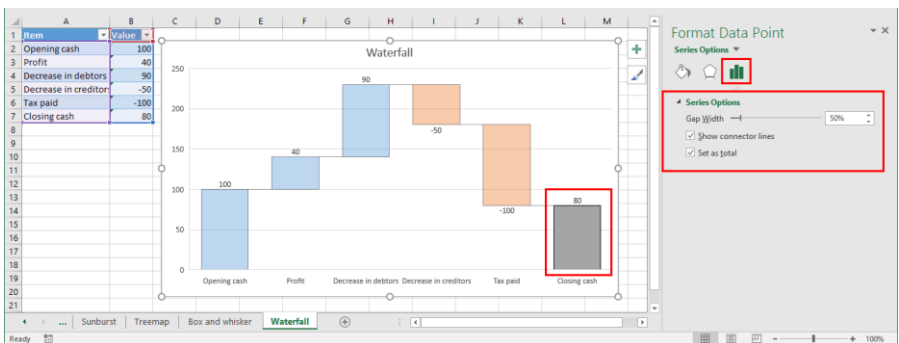
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outliers being values beyond even those limits. The Format Axis, Axis Options allow the various elements of the chart to be turned on or off. We'll use a list of invoice values by Customer ID again to demonstrate:



## Waterfall

Waterfall charts are often used with financial data to show how we get from an opening position to a closing position. In this case we are looking at how the cash movements in an accounting year move us from our opening cash balance to our closing bank balance. We can click anywhere in our set of values and choose the Waterfall Chart option from the Insert ribbon tab, Charts group. We can select whether or not to show the lines that connect our columns and, if we select a single data point, we can choose to mark it as a total as we have done below with our closing balance value:



As you can see, the Waterfall chart shows the items that increase our balance as floating columns building up to the highest point of the waterfall and then shows the items that decrease our cash balance tumbling down towards the column that shows the final cash balance.

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## PivotTable enhancements

### Automatic relationship detection

Where a data model includes multiple tables, and joins are required between the tables that provide the data for a PivotTable, Excel will report the need to create the links and will then build the relationships automatically.

### Custom measures

Custom measures can now be accessed directly from the PivotTable fields list making it quicker and easier to add additional calculations to a PivotTable.

### Automatic grouping of time and date fields

Typically, data will contain full dates but will need to be analysed by month and year and possibly quarter rather than by day. Prior to Excel 2016, dates could be grouped manually by right-clicking and choosing from the Group options or, for PivotTables based on OLAP data, by adding columns to the underlying data tables. In Excel 2016, dates are automatically grouped and can be dragged to the PivotTable to allow analysis through the hierarchy of dates.

### PivotTable search

A new Search box in the PivotTable Fields pane allows you to search for all fields containing a particular text string.

### Smart rename

Renaming tables or columns in the workbook Data Model now updates related content throughout workbooks including in worksheets and DAX functions.

### PivotChart drill-down buttons

Plus/Minus buttons are now shown in PivotCharts when multiple fields are included in the Axis area to enable drilling down and up directly in the chart.

### Other usability improvements

PowerPivot in particular seems to have benefitted from some minor but useful changes such as direction arrows in diagram view.

# Keeping up

## Online content roundup

The Excel Community referred to below is free to existing members of the IT Faculty but, for others, membership of the Community costs £60 until December 2016:

<http://www.icaew.com/en/technical/information-technology/excel/excel-community>

## IT Counts

[www.ion.icaew.com/itcounts/blog](http://www.ion.icaew.com/itcounts/blog)

Or, for TKB articles only:

<http://www.ion.icaew.com/blog/SimonHurst/site/posts>

[Twenty Principles for Good Spreadsheet Practice – principle 18](#)

[Twenty Principles for Good Spreadsheet Practice – principle 17](#)

[Twenty Principles for Good Spreadsheet Practice – principle 16](#)

[Twenty Principles for Good Spreadsheet Practice – principle 15](#)

[Twenty Principles for Good Spreadsheet Practice – principle 14](#)

[Twenty Principles for Good Spreadsheet Practice – principle 13](#)

[Twenty Principles - one year on](#)

## Excel Community

[Why ‘turn it off and then turn it back on again’ is no longer the solution for most IT issues](#)

[Using FORMULATEXT\(\) and conditional formatting to find forbidden functions – part 2](#)

[EuSpRIG 2015 conference - papers and presentations](#)

[Using FORMULATEXT\(\) and conditional formatting to find forbidden functions – part 1](#)

[Excel – know your options](#)

[Power BI transformation](#)

[EuSpRIG 2015 conference follow up](#)

[2015 European Spreadsheet Risk Interest Group Conference - part 4, so long and thanks for all the risks](#)

[2015 European Spreadsheet Risk Interest Group Conference - part 3](#)

[2015 European Spreadsheet Risk Interest Group Conference - part 2](#)

[2015 European Spreadsheet Risk Interest Group Conference](#)

# Keeping up

## AccountingWeb

<http://www.accountingweb.co.uk/excel>

[Give your reports more oomph 4: Interactivity](#)

[Give your reports more oomph 3: Sparklines](#)

[Give your reports more oomph 2: Conditional formats](#)

[Give your reports more oomph 1: Number formats](#)

## In other news...

### Windows 10

It has now been just over two months since the release of Windows 10. Many people have summoned up the courage to install the update but many others are still wondering whether or not to take the risk.

The November (!?) issue of PCPro conducted a 'Reader's poll' about a month after the release date and found that 49% of those responding were already using Windows 10 as their 'primary' operating system, 20% were still using Windows 7 and just 1% Windows XP. Perhaps the most surprising figure is the one for Windows 8 and Windows 8.1 – these accounted for only 4%.

I'm not sure that these figures are representative of the wider picture. An article on the ICAEW IT Counts site prompted 31 comments, mostly critical, and with many stories of woe and disaster:

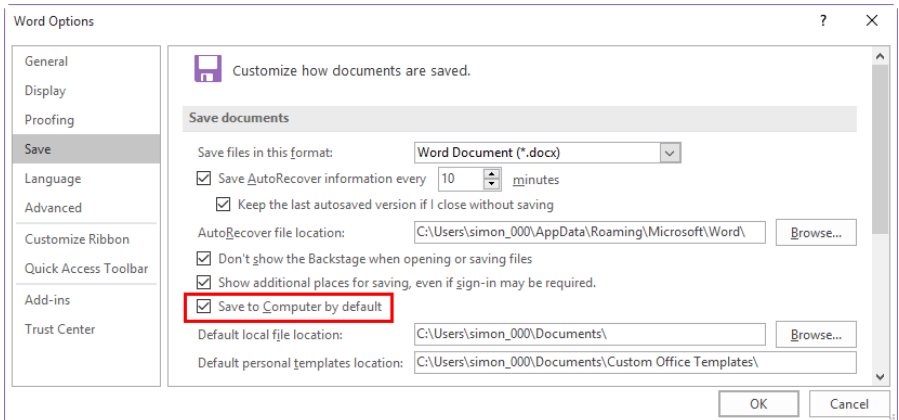
<http://www.ion.icaew.com/itcounts/post/How-was-the-Windows-10-update-for-you->

I have upgraded three computers so far. My desktop was running the Windows 10 preview anyway and the upgrade was reasonably seamless. Out of two notebooks, one refused to update in spite of pre-downloading the update. After a bit of Google research, I deleted the downloaded files and started the download again and the update worked. The second notebook updated smoothly first time. In operation, Windows 10 has been generally fine. My older notebook, which had disk space issues requiring some rather draconian deletions, now works well but Office 2013 refuses to acknowledge that it is licensed and also refuses to be uninstalled and reinstalled. I suspect this is more to do with some of the swathes of files and folders I had to delete to make room, rather than being solely the fault of Windows 10. It would certainly be sensible to exercise caution over the upgrade: make sure you have adequate back ups and a recovery plan if a key device or application fails to work.

# I Don't Believe IT

## Not quite so Safe Harbour

One of the IT themes of the past decade has been the move to storing data in 'the Cloud'. This is not just something that affects larger organisations, all sorts of applications save data online as the default. In particular, over the last three versions, Microsoft Office has moved to making online the default location for file storage. There is now an option that needs to be set if you want to save locally as the default:



There is a lot that is useful about saving online – the ability to access the same documents wherever you are using any device, the ease with which you can share and collaborate on online documents, and potentially improved back up and security. However, there has been a continuing discussion about privacy and confidentiality, particularly in view of the differences between US and European law on data protection. The fear is that as soon as the data ends up on US territory it is open to interception under the provisions of the Patriot Act. Even if the data is stored in Europe, the likes of Facebook, Google and Microsoft are US companies and may process the data in the US, even if it is stored in Europe.

A 'Safe Harbour' agreement seemed to have helped resolve the issue. US companies were able to self-certify that their data protection procedures were adequate. On October 6<sup>th</sup> the European Court of Justice ruled that these measures did not give European consumers adequate protection from the intervention of the US intelligence agencies.

Work to agree a new pact is apparently continuing:

<http://www.bbc.co.uk/news/technology-34452813>

# I Don't Believe IT

## Dirty fork

Regular readers will know of my interest in Hi Fi and my preference for higher quality audio files rather than compressed MP3 versions. For a variety of reasons I subscribe to Amazon Prime and Amazon have recently added a streaming music service as one of the justifications for forking out £79 per year.

Regrettably, this service currently only provides MP3 versions of each music file. For me, providing the files at a quality at least equivalent to CD quality would make Prime Music much more attractive. Accordingly, I used Amazon's feedback form to send a polite request to consider a move from MP3 to a non-compressed, 'lossless' format such as FLAC. The response was decidedly Pythonesque and I'm still not sure whether it was generated by a human or AI. Here are a few choice morsels:

*I'm sorry for the inconvenience you've experienced with Prime music service.*

*I understand that you are interested in accessing Prime music in FLAC format rather than MP3.*

*I can imagine this may be extremely inconvenient to you. That's definitely not we want our customers to experience. Please accept my sincere apologies.*

And:

*'After reading your email, I can understand your situation and the phase you're going through. I'm really lack of words right now to apologies because no apology can rectify this situation instantly.'*



I still keep looking over my shoulder for the chef with a cleaver...

For younger readers: [https://en.wikipedia.org/wiki/The\\_Dirty\\_Fork](https://en.wikipedia.org/wiki/The_Dirty_Fork)