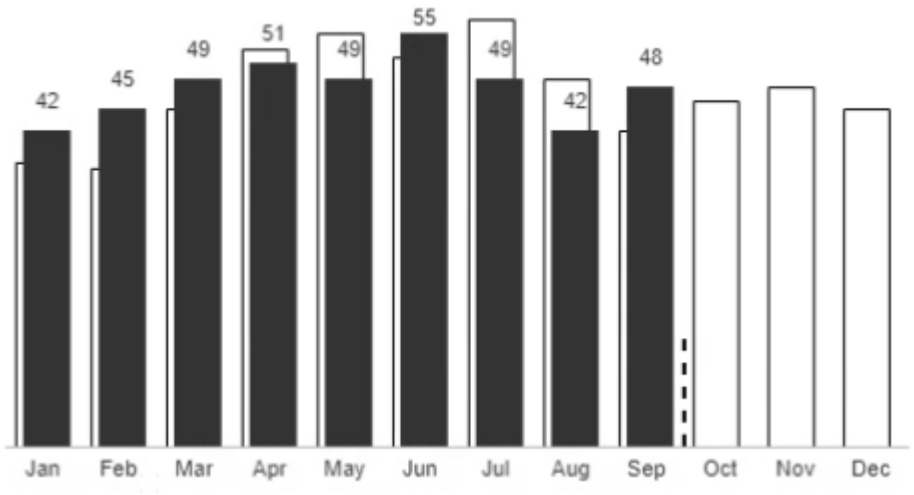
XLCubed 10:
Finance focused charting and tables

XLCubed
by Fluence Technologies

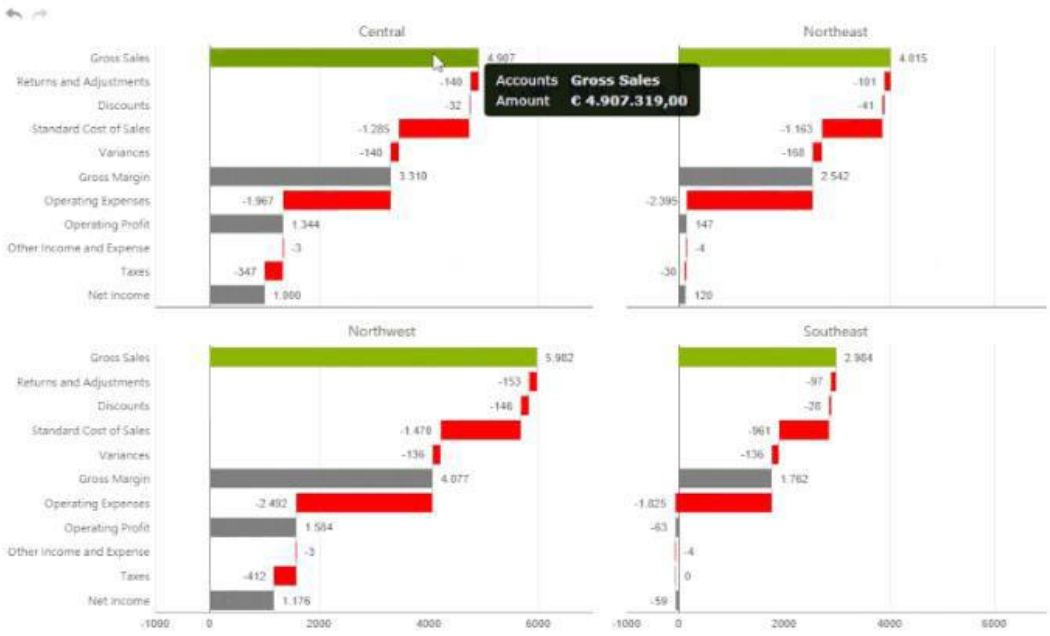
Contents

Interactive charts with a focus on financial data

XLCubed 10 offers a wide range of financial visualisations based on the best practice approach set by IBCS (International Business Communications Standards). XLCubed charts are fully interactive, allowing the user to see and further explore the underlying data if necessary. New chart types in v10 include waterfalls, variance charts, business comparisons, trends and structure visualisations.



Finance specific charts, layout and formatting usability improvements, and best practice guidelines make effective financial reporting more accessible than ever before.



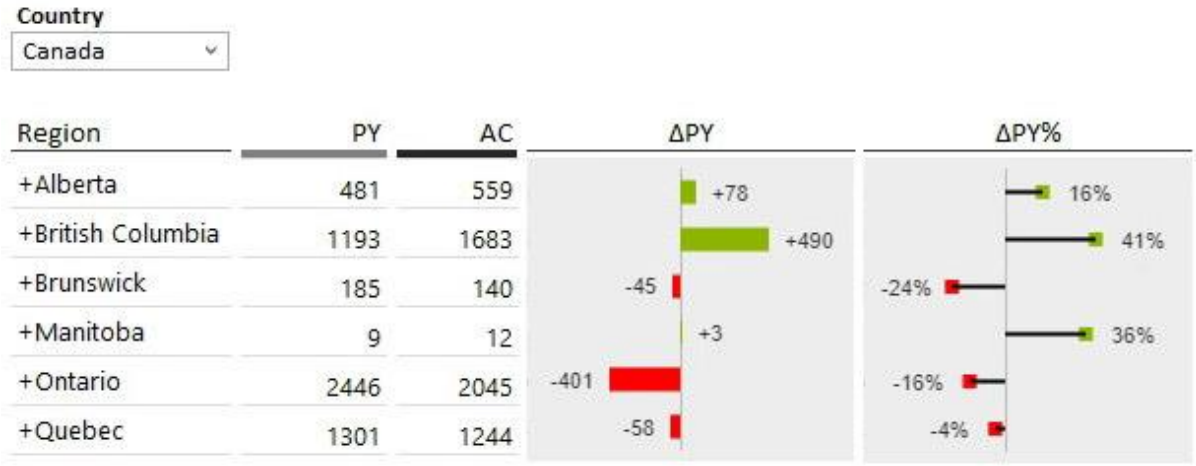
More examples of the different chart types and use cases are available on the website https://www.fluencetech.com/xlcubed/chart-gallery-and-use-cases.

Variance Analysis

Variance analysis is one of the simplest but most fundamental concepts in corporate reporting. It is essentially an investigation of the discrepancies between what happened and what was planned, or between the current and previous period.

Many companies devote large amounts of manpower and resources to developing and executing forecasts for the next year. A key part of improving future planning is re-evaluating the accuracy of previous versions and results, identifying significant discrepancies and then investigating them further to determine and understand the underlying causes.

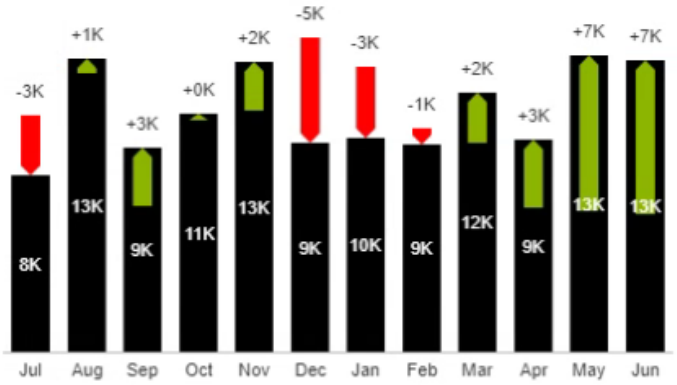
XLCubed offers a set of interactive charts specifically designed for variance analysis. These were developed to provide a clear and consistent visualisation of where variances are arose and how large they are.



Revenue variance between current and previous year by region

The charts offer complete flexibility in formatting, by default, they follow the IBCS best practice recommendations. In the variance by region example above, we represent the absolute variance as bars, the relative (percentage) variance as lollipops, with red being used to indicate underperforming items and green overperforming. The charts can easily be integrated into tables to provide a detailed overview of figures and variances.

Alternatively, actuals and variances can be plotted on the same chart as an integrated variance chart:



Actual values by month with superimposition of Variances.

In integrated variance charts, the black column or bar represents the actual value, and the variance is represented by integrated bars, with green representing an improvement and red a deterioration.

Another method for analysing variance is trend comparison. As the name implies these charts are focused on underlying trends, the line charts below display the periodic or cumulative variance.
The current period or actual values are shown as a solid line and the previous period or plan values are shown as a dashed line.
If the current period or actual value is larger, the variance is displayed in green, if it is lower, the value is displayed in red. This is an effective method for analysing the variance over time.

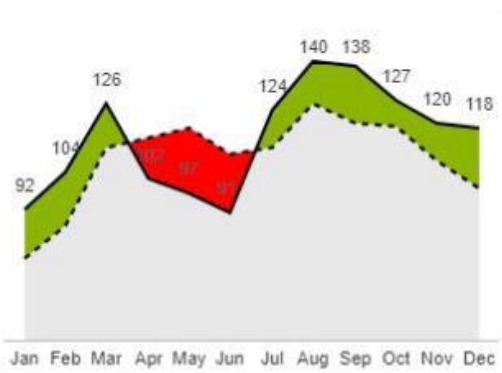


Fig. 1: Monthly Variance

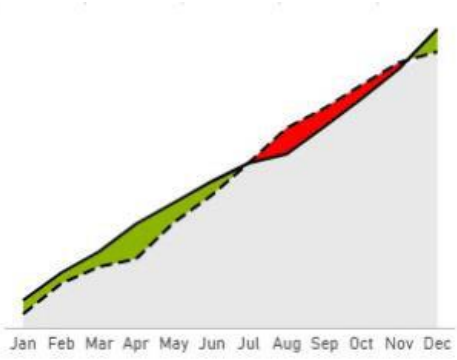


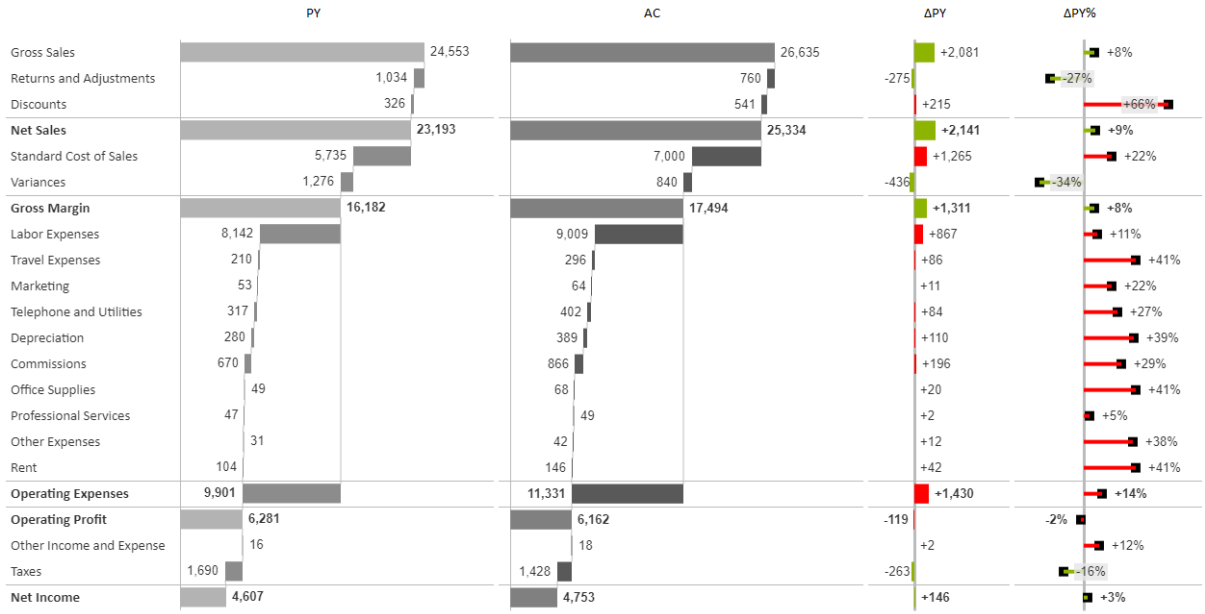
Fig. 2: Cumulated Variance

Impact/Contribution Analysis

Waterfall charts are an integral part of many management reports. They are an intuitive method of displaying the cumulative effect of positive and negative contributions to a grand total or between two grand totals. They are especially widespread in financial reporting and many companies spend a long time creating complex waterfall charts in software not originally designed for this.

XLCubed offers two main types of interactive waterfall charts that are both flexible and intuitive. The charts are connected directly to the underlying data and can be created in seconds. More complex cases can easily be created in a few minutes.

Structural waterfalls are used to show the contribution of structural elements, often the accounts, to the overall profitability.



Net income with year-on-year Variance and percentage Variance

The second type, Variance Waterfalls, allow the numbers at two points in time to be compared based on a different aspect of analysis, e.g. Product or region, or broken down by the intervening months.

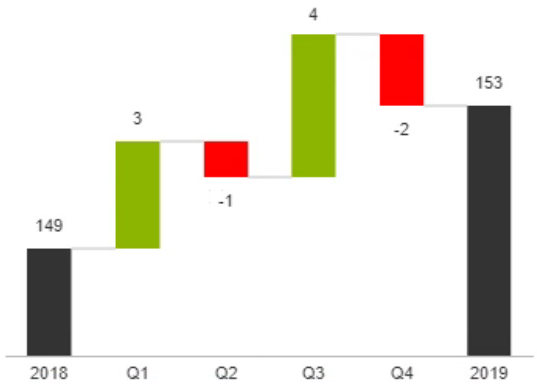


Fig. 1: Waterfall with quarterly contributions

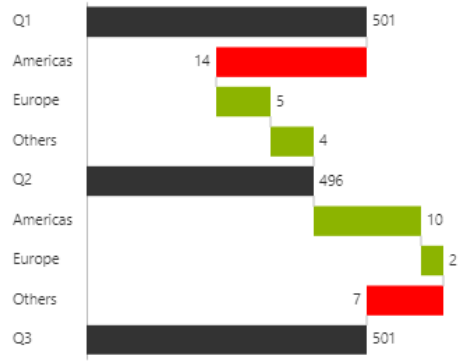


Fig. 2: Quarterly development by region

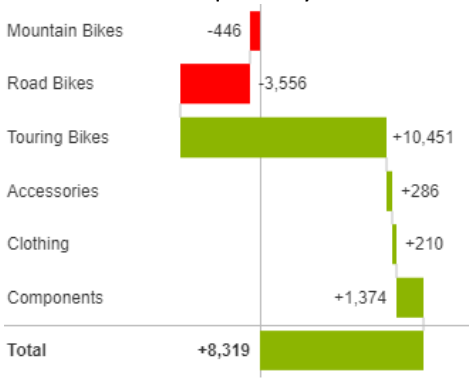


Fig. 3: Contribution to Variance by product

Variance waterfalls offer tremendous flexibility in how to display your data. In some cases, there may be too many elements contributing to variance, making the overall chart cluttered and difficult to read, as in the example below on the left.

It would make more sense to focus on the key elements contributing to the variance and use a Pareto-like approach.

The outlier grouping feature means we only show the top 5 (by default, this is done based on "absolute" variance, i.e. the positive and negatives) and everything else is grouped under "Other" for better insights (see below right).

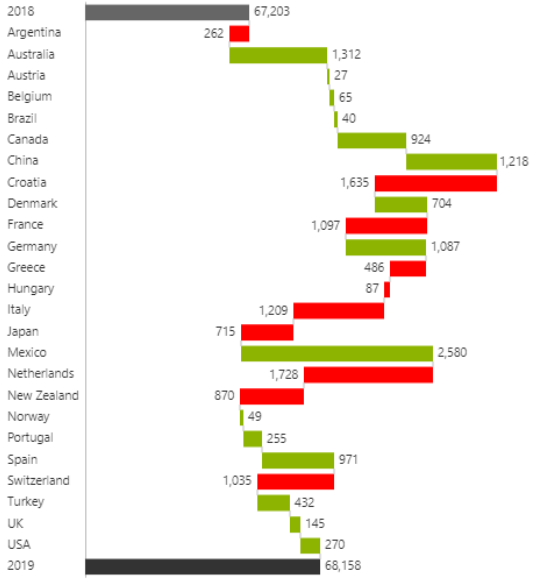


Fig. 1: All regional contributions/shares

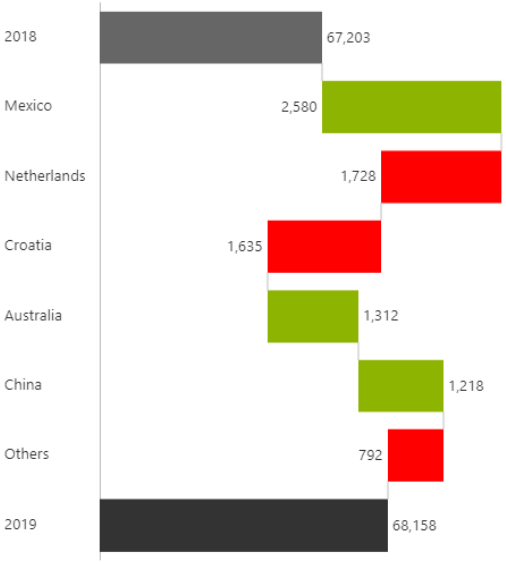


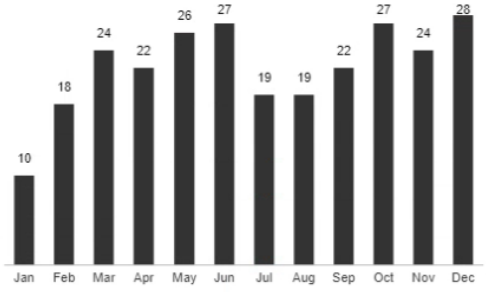
Fig. 2: The TOP 5 regional shares with an additional "Others" grouping

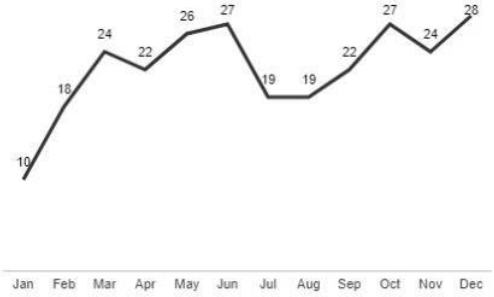
Time series and structural analysis

Time series analysis is a key part of business reporting. Changes are studied over time, and this is then used to make predictions for the future.

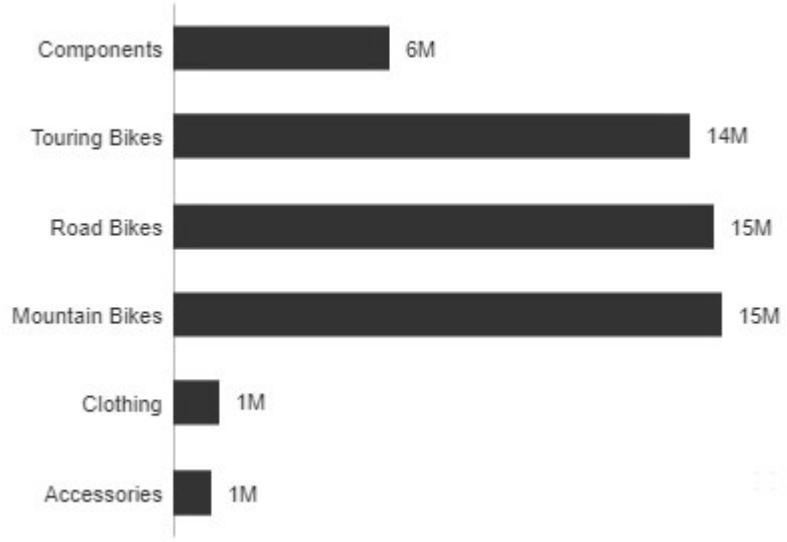
When looking at time-based charts, the time sequence often moves from left to right, with the oldest period being furthest to the left. IBCS recommends that we standardize our reporting to accommodate this by having time always displayed on the horizontal axis from left to right. If the chart is showing figures at one moment in time, the categories are shown on the vertical axis. If there is a time change, we use a horizontal axis. In this way, we can immediately see that a column chart represents an aspect of time, while a bar charts show structural elements at one precise moment.

Time series data can be presented as either bars or lines, the choice depends on the use case. Columns make it easier to compare between two values, while lines show the overall trend more clearly.





As already mentioned, for a structural analysis, the categories should be displayed on the Y-axis. As well as being easier to read and show that the numbers represent a particular moment in time, a vertical axis has the added benefit of creating larger label space to accommodate the longer name of non-time members.



Plan Analysis

In addition to the "actuals" - i.e. what actually happened - most companies also look at a number of other scenarios including the annual plan, the forecast and the budget.

Variance analyses can look specifically at the variance between these scenarios, XLCubed provides a comparison indicator chart to show how close to the actual and comparison scenario are.

Fig.: Actual values with Variance indicators

For a comparison over time, the comparison chart below is particularly effective. The Actuals are shown as the primary focus, while the budget or plan data is shown as the offset columns. In future months, there are no actual numbers so the plan column is fully visible.

Month	AC	BU
Jan	42	38
Feb	45	37
Mar	49	45
Apr	51	53
May	49	55
Jun	55	52
Jul	49	57
Aug	42	49
Sep	48	42
Oct		46
Nov		48
Dec		45

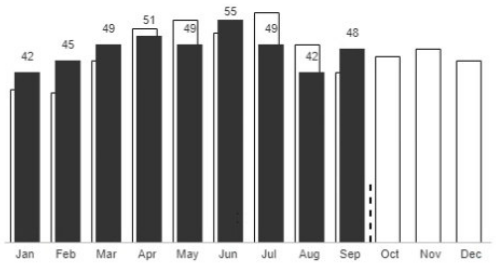


Fig.: Actual comparison to Plan

Using a consistent colour scheme for the scenarios, as recommended by IBCS, also contributes to immediate understanding from the reader.

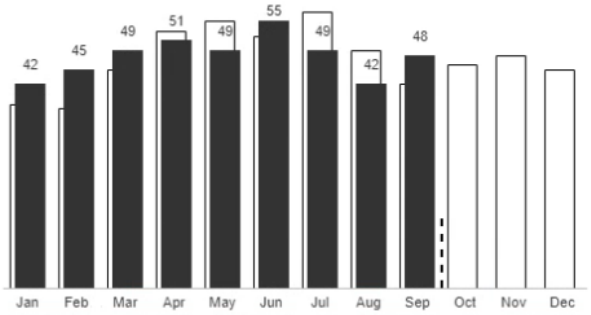


Fig. Current versus budget

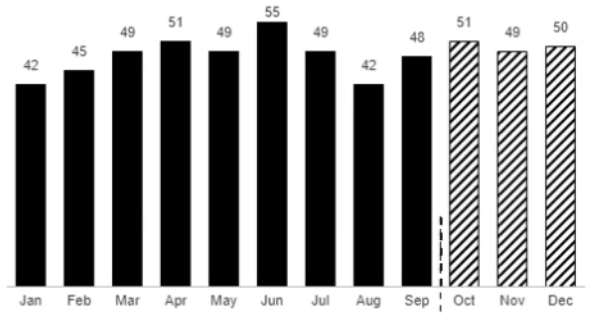


Fig. 1: Current versus forecast (Forecast)

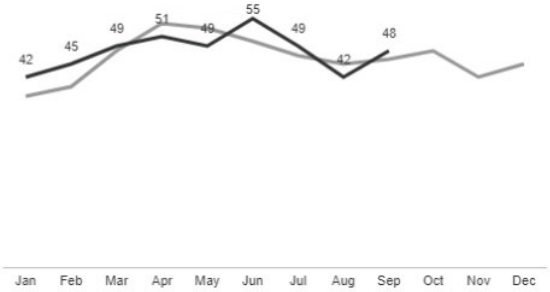


Fig. 2: Result compared to the previous year

Template Tables

A new ribbon and task pane for formatting interactive charts speed up the design process while the option to easily add row and column "breaks" provides more formatting and layout flexibility for dynamic grids.
These features have also been incorporated into a new type of table: the template table.

The tables can be built on a cube or a pivot view, so calculations can be integrated into the column definitions and used to break down line items.
Columns can be specified with standard number formats or as in-cell charts for simple visualisation.

IBCS formatting has also been applied to specified data categories such as actual, plan and forecast.

It is very useful (but not essential) to have defined business rules. If these are setup, default values are automatically filled, and a table can be created with just a few selections. The templates use the same rules as the business charts, so if you have them created for charts you don't have to repeat your work. If you don't have rules defined, you can still make the necessary selections in the table designer.

Numerical variances

Compares the actual values with the plan and previous year values, for the current month and the Year-To-Date.

November 2014								November 2014 YTD						
PY	PL	AC	AC-PY		AC-PL			PY	PL	AC	AC-PY		AC-PL	
173,208	168,517	169,892	-3,316	-2%	+1,375	+1%	Central Division	1,293,667	1,150,682	1,222,939	-70,728	-5%	+72,257	+6%
121,213	-39,315	-48,491	-169,704	-140%	-9,176	+23%	Northeast Division	598,166	48,850	238,160	-360,006	-60%	+189,310	+388%
163,528	125,125	65,638	-97,890	-60%	-59,487	-48%	Northwest Division	621,425	948,174	711,324	+89,899	+14%	-236,850	-25%
22,674	-12,974	31,772	+9,098	+40%	+44,746	-345%	Southeast Division	45,824	17,937	-23,088	-68,912	-150%	-41,025	-229%
422,513	234,683	338,438	-84,075	-20%	+103,755	+44%	Southwest Division	1,710,476	2,112,695	2,142,612	+432,136	+25%	+29,917	+1%
903,136	**476,035**	**557,249**	**-345,887**	**-38%**	**+81,214**	**+17%**	**USA Operations**	**4,269,558**	**4,278,339**	**4,291,947**	**+22,389**	**+1%**	**+13,608**	**+0%**
903,136	**476,035**	**557,249**	**-345,887**	**-38%**	**+81,214**	**+17%**	**North America Operations**	**4,269,558**	**4,278,339**	**4,291,947**	**+22,389**	**+1%**	**+13,608**	**+0%**
903,136	**476,035**	**557,249**	**-345,887**	**-38%**	**+81,214**	**+17%**	**AdventureWorks Cycle**	**4,269,558**	**4,278,339**	**4,291,947**	**+22,389**	**+1%**	**+13,608**	**+0%**

Chart Variances

Compares the actual values with the previous year values, both numerically and with in-cell charts, for the current month and YTD.

November 2014					November 2014 YTD				
PY	AC	ΔPY	ΔPY%		PY	AC	ΔPY	ΔPY%	
	124,225	**+124,225**		**Australia**		**630,451**	**+630,451**		
49,923	51,789	+1,866	+4	Alberta	418,593	539,139	+120,546	+29	
60,006	93,753	+33,747	+56	British Columbia	857,475	1,213,637	+356,162	+42	
				Brunswick	116,298	164,237	+47,939	+41	
5,112	6,114	+1,002	+20	Manitoba	25,078	8,745	-16,333	-65	
219,618	260,309	+40,691	+19	Ontario	2,003,871	2,120,148	+116,277	+6	
182,386	63,794	-118,592	-65	Quebec	932,163	1,132,842	+200,679	+22	
517,046	**475,759**	**-41,287**	**-8**	**Canada**	**4,353,478**	**5,178,749**	**+825,270**	**+19**	
189,339	**652,234**	**+462,895**	**+244**	**France**	**769,128**	**2,284,415**	**+1,515,287**	**+197**	
	185,311	**+185,311**		**Germany**		**937,675**	**+937,675**		
140,645	**211,032**	**+70,387**	**+50**	**United Kingdom**	**675,761**	**1,793,181**	**+1,117,419**	**+165**	
2,234,871	**2,004,523**	**-230,348**	**-10**	**United States**	**16,247,159**	**18,874,617**	**+2,627,458**	**+16**	
3,081,901	**3,653,083**	**+571,182**	**+19**	**All Geographies**	**22,045,527**	**29,699,087**	**+7,653,560**	**+35**	

Time Comparison

Compares plan data to actual or forecast data over several periods.

	CY 2012		CY 2013		CY 2014		CY 2015	
	PL	AC	PL	AC	PL	AC	PL	FC
Central Division	328,744	361,282	1,276,195	1,403,910	1,338,391	1,309,733	270,605	231,250
Northeast Division	275,375	116,673	923,550	632,286	90,910	294,253	-173,446	-82,964
Northwest Division	344,841	244,133	820,892	562,122	987,771	864,350	383,134	420,914
Southeast Division	426,519	311,853	187,822	46,526	14,986	-53,885	-164,345	-74,471
Southwest Division	1,063,268	840,528	2,220,168	1,866,399	2,360,792	2,295,400	619,567	1,124,197
USA Operations	**2,438,746**	**1,874,469**	**5,428,627**	**4,511,243**	**4,792,850**	**4,709,851**	**935,515**	**1,618,925**
North America Operations	**2,438,746**	**1,874,469**	**5,428,627**	**4,511,243**	**4,792,850**	**4,709,851**	**935,515**	**1,618,925**
AdventureWorks Cycle	**2,438,746**	**1,874,469**	**5,428,627**	**4,511,243**	**4,792,850**	**4,709,851**	**935,515**	**1,618,925**

Integrated Waterfall

Compares actuals to prior year or plan data, with waterfall and percentage deltas

	PY	AC	AC-PY	(AC-PY)%
+ Software revenue	265	278	+13	+5
+ Support revenue	87	90	+3	+3
+ Consulting revenue	121	128	+7	+6
= Revenue	**473**	**496**	**+23**	**+5**
- Cost of sales	122	128	+6	+5
= Gross profit	**351**	**368**	**+17**	**+5**
- Research and development expenses	78	91	+13	+17
- Selling and general administrative expenses	97	102	+5	+5
+ Other operating income	33	27	-6	-18
- Other operating expenses	11	10	-1	-9
+ Other financial income, net	34	30	-4	-12
= Income from continuing operations before tax	**232**	**222**	**-10**	**-4**
- Income tax expenses	23	27	+4	+17
= Income from continuing operations	**209**	**195**	**-14**	**-7**
+ Income from discontinue operations	6	25	+19	+317
= Net Income	**215**	**220**	**+5**	**+2**

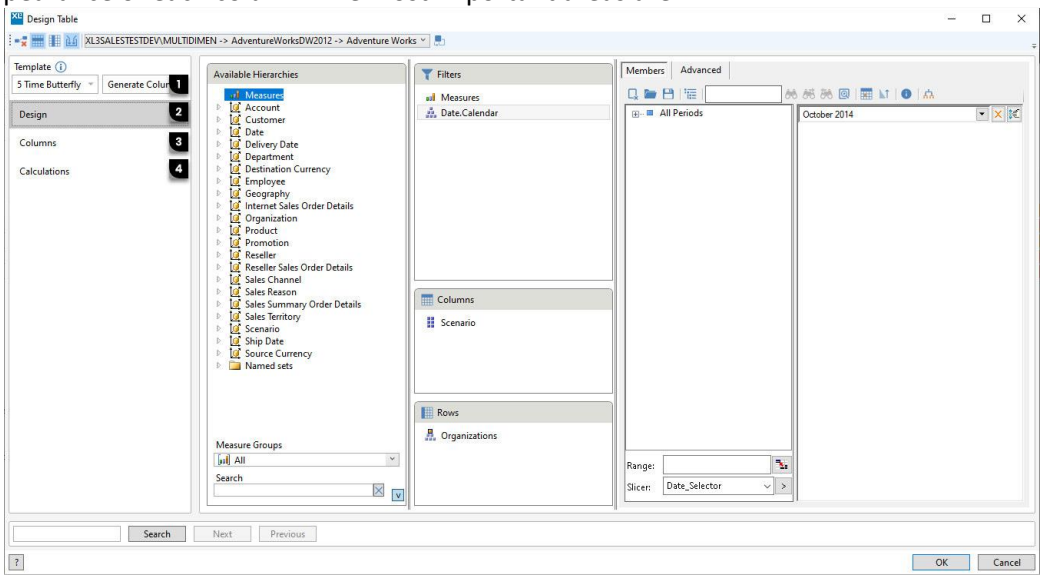
Time Butterfly

Compares actual and forecast values over several periods

January 2014	February 2014	March 2014	April 2014	May 2014	June 2014	July 2014	August 2014	September 2014	October 2014		November 2014	December 2014
						49,825	134,281	266,779	55,341	Australia	124,225	216,980
261,555	357,897	396,746	441,157	474,133	449,444	538,499	624,990	728,335	430,233	Canada	475,759	748,835
34,516	143,091	61,165	56,935	188,134	87,056	69,887	724,243	201,108	66,045	France	652,234	155,269
						180,041	254,388	125,723	192,212	Germany	185,311	161,192
36,791	121,274	115,841	48,081	112,218	130,529	159,434	231,469	503,786	122,726	United Kingdom	211,032	423,046
989,161	1,777,971	1,003,633	1,329,963	2,136,398	1,343,619	1,835,264	2,487,170	2,424,759	1,542,157	United States	2,004,523	1,954,906
1,322,023	**2,400,234**	**1,577,385**	**1,876,136**	**2,910,883**	**2,010,648**	**2,832,949**	**4,456,541**	**4,250,490**	**2,408,714**	**All Geographies**	**3,653,083**	**3,660,228**

Setup

The template table designer allows you to create tables based on the chosen template and customize the calculation and appearance of each column. The most important areas are



1.Template

The original design of the table and columns. This controls the formatting of the columns and the necessary inputs for calculations.

2. Design

The table layout allows you to define the hierarchies on filters, columns and rows that apply to the whole table. The setup is the same as XLCubed grids. It is common to set a

When you click the Apply button, the current columns are deleted, and new ones columns created based on selection.

3. Columns

This area is initially empty and will be filled in as soon as you click the "Apply" button. You can then customise the generated columns.

particular measure and define a month on the filters.

4. Calculations

Used to define parameters for required calculations, e.g. the year for YTD columns.

Data connections

XLCubed continues to broaden its reach, adding connectors for IBM TM1/PAL and icCube. With TM1, the rich native planning and budgeting capabilities are fully supported by the underlying platform, both in Excel and on the web. The SAP HANA connectivity has also been enhanced in a few areas.

XLCubed Proxy provides the ability to support SSO for Analysis Services in Web and Excel, replacing traditional MSMDPump connections. It integrates with many identity providers and preserves the security context and roles of the users.

As more and more customers use the products for reporting on SQL and other relational databases, we've made a number of performance improvements to our Pivot View technology.

- New connector for IBM TM1 / PAL
- New connector for icCube
- Support for forced SAP HANA encryption
- Breakout support for SAP HANA grids
- Improved support for SAP HANA parameters