PandA

Planning **and** Analysis

Quick Start Manual

for use with PowerExcel

PowerExcel

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1. PandA Quick Start -- Introduction

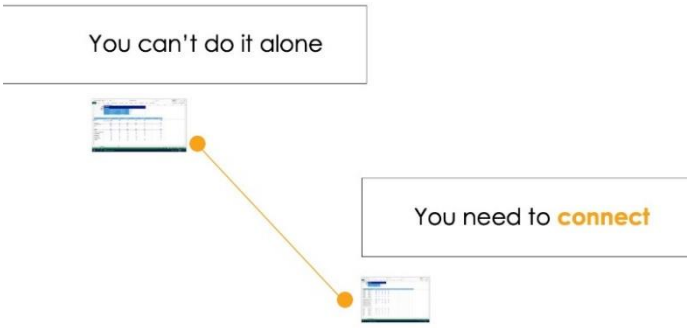
What the PandA Model Is, Why It Is Important

The **PandA** model—a solution for team-based **P**lanning **and A**nalytics (thus the name), and associated reporting from a PowerExcel front end—is a unique application for two key reasons:

- it is a pre-built application that will foster all the "learning" any user will need to understand the "write back" and driver-based planning and the limitless reporting it includes, and
- it can be customized, through end-user—which is to say, PowerExcel—capabilities to match just about any firm's profile: this includes adding or renaming not only *Accounts*, but all the other "dimensions" of the model: *Version* (e.g., adding *Forecast 30-60-90*); *Entity*; *Department*; *Year*, and *Month* [maybe an asterisk here, to How This Manual Works]

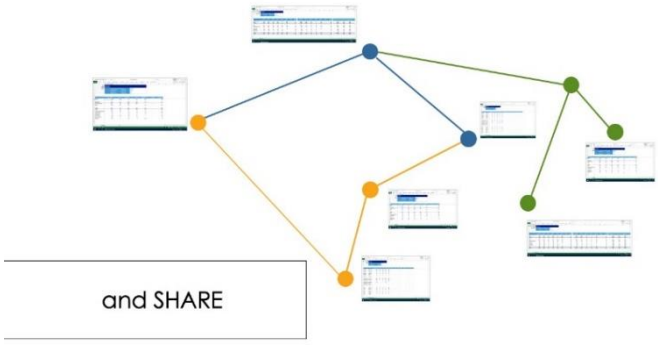
And, whether you are using the PandA model to learn and experience the benefits it affords or to remake the model to fit your company, it also demonstrates the great power and productivity that can be obtained through collaborative efforts when planning, analyzing and reporting on organizational data. In short, the PandA model has been built for team-based (i.e., multi-user) activities that increase the likelihood of business success.

What Problem PandA Addresses



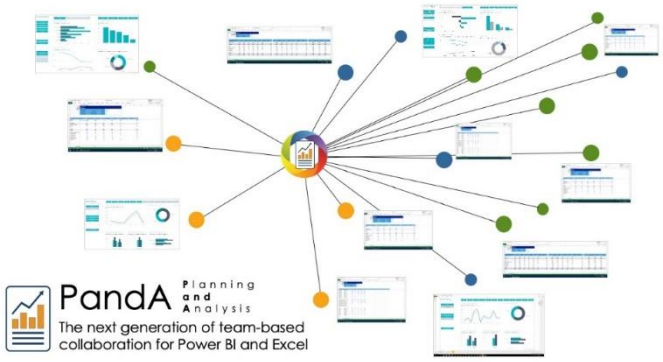
Finance Teams need to work with a shared plan not in disparate, disconnected spreadsheets.

Collaboration cannot happen when spreadsheets are emailed or put in shared directories.



Without a centralized system that truly allows staff to work collaboratively, businesses suffer, especially when they try to plan, budget, and forecast.

Enter **PandA**!—a planning and analytics application with a collaborative cloud based planning model for users of Power BI and PowerExcel.



This last point is important: The PandA model, upon an upgrade to a SQL Server back end, will provide the basis for dynamic connectivity not only via PowerExcel, but also Power BI and virtually any other Business Intelligence application—thus becoming a nexus Planning, Analysis and Reporting Information System (the acronym for the product's developer, PARIS Technologies) for any front end.

About the PandA Quick Start Manual

This manual will take you, step -by-step, through exercises that are meant to introduce you quickly and informatively through the PandA model. In the following pages you will learn to

- Report and Plan via a provided **Income Statement** spreadsheet that accesses all business date within the model, by *Version* (Actual, Budget, Forecast); *Entity*; *Department*; *Year*; *Month*; *Account*.
- Utilize various Drivers for Plan scenarios across selected Accounts, as well as other means to enter data for collaborative budgeting and forecasting.
- "Closing a month," and using the Dimension Editor to customize a PandA model to your business.
- Model management, including clearing the model; bringing in data in bulk; understanding Security; accessing default and creating custom Subsets, the use of "Excel Functions," and; saving a PowerExcel Slice.
- Lastly, there is a Resources section concerning the PowerExcel Sidebar and Add-In ribbon.

Important: The topics discussed in this Quick Start manual, and many others, are also covered in the **PowerExcel User Manual**, another resource to learn how to work with the PandA model.

2. The PandA Model and Income Statement Spreadsheet

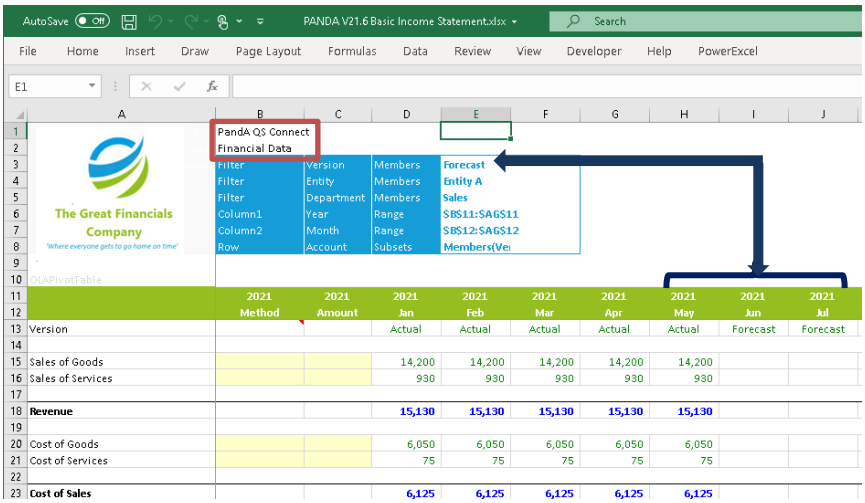
The PandA model is a pre-built planning and analysis solution that uses PowerExcel, from PARIS Technologies, as its front end. PowerExcel is a simple Add-in to your everyday spreadsheet that brings you freedom from errors and over-burdened Excel files, connecting you to an existing collaboration model—in this case, the PandA model—in the cloud.

The PandA model features the "dimensionality" that characterizes most companies, and so it allows for the kind of planning, analytics and reporting that users engage in to propel their companies towards greater success, by understanding performance and envisioning future scenarios. As you will learn, the PandA model will reveal the benefits of using such and model; as well, the PandA model can be customized to more precisely reflect the way your company operates.

Please Note: The PandA model will work for all the following steps describe—that said, the data that you see in the spreadsheets (and even the "meta data," e.g. Dimension Members)—may differ. This is owing to the fact that your model may have been utilized for learning/training exercises, or because other data changes/improvements were made to the model over time.

Your starting point—or "view"—into the PandA model will begin with an Income Statement spreadsheet provided to you (currently named *PANDA Basic Income Statement*.xlsx).

- Open the **PANDA Basic Income Statement** spreadsheet and press **F9**.
  By pressing F9 you establish a connection from this spreadsheet to the cloud-based PandA model. And, although you will not be changing them, Cells B1 and B2 contain important information—they are, respectively, the Connection name to the model database and the "Cube" in that model whose data the spreadsheet is showing [the Cells are red-boxed in the following image].



There are other things that we want to note about this Income Statement: for one, it is a "plan" template: the left-pointing blue arrow in the preceding image points to Cell E3, indicating **Forecast** (we will soon discuss how to change this "Slice" of the data); the downward arrow shows that in Column H we are looking at *2021* (H11), *May* (H12), *Actual* (H13) data, while Columns I and J (and onward through the year) indicate Forecast (I13, J13, etc.). The associated *Accounts* data in the rows below are blank, awaiting the forecast figures we might enter (also soon to be discussed).

An image of the entire spreadsheet appears on the next page. As you can see, in rows there is a not list of the accounts one would expect to see in an income statement. (Keep in mind that these can be customized—i.e., by changing names and/or adding to the list). We will reference this image in the coming pages, including the fact that there are columns—Columns B and C (where the upside-down bracket appears)—for "driver" methods; also, that not only June 2021 onward, but also the entire next year-period (2022) year is available for forecast planning (these areas are boxed in red).

Lastly, note that throughout the Income Statement spreadsheet there are calculated figures: these are defined in the underlying model, which means that users will not need to create/manage the many (sometimes thousands) of Excel calculations typically found in an income statement like this; for now we will note that PowerExcel "takes the burden off the user" from having to manage calculations, a tedious, time-consuming, often error-prone task when working with Excel.

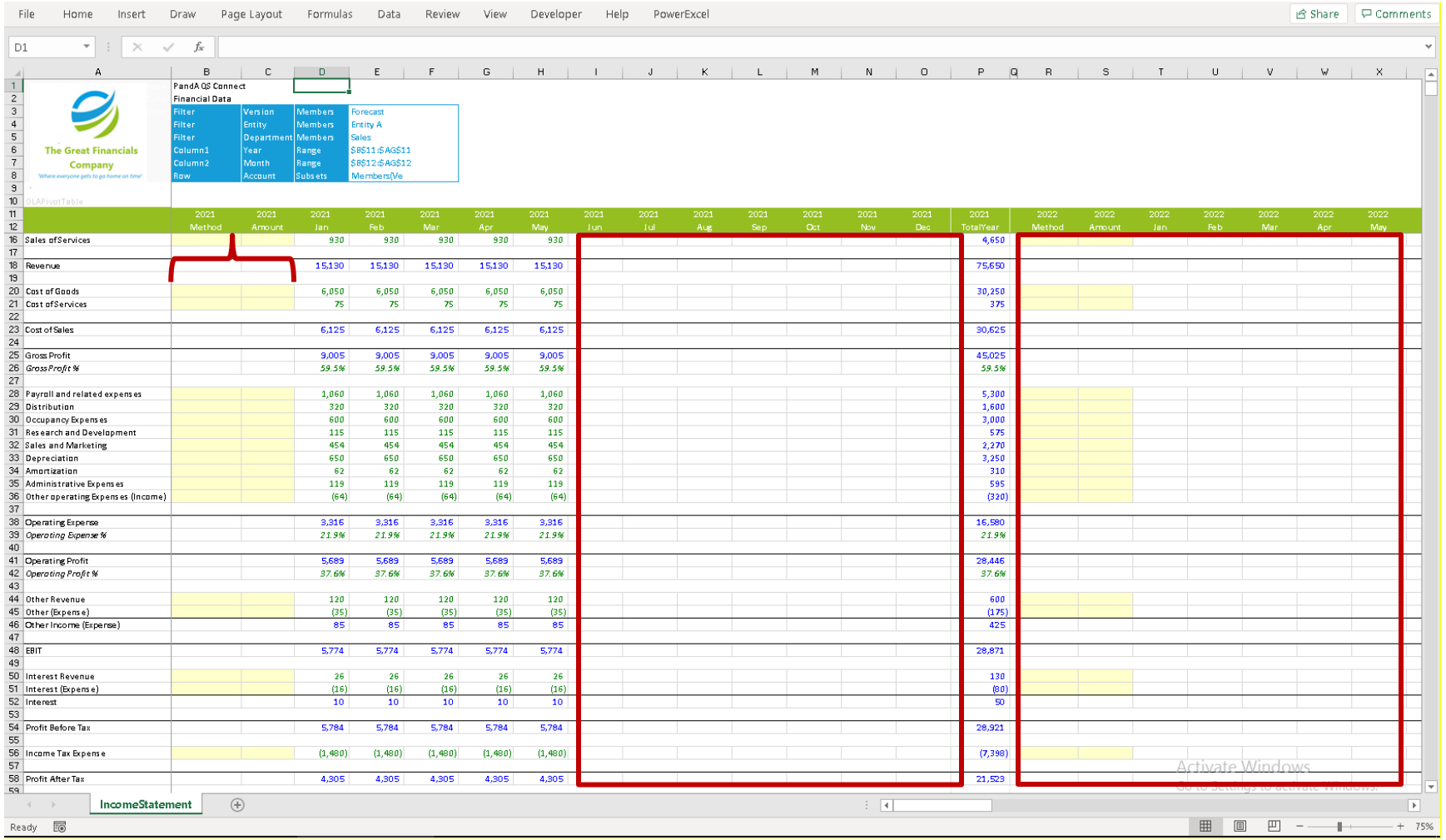
Examples of two types of calculations in the *Account* Dimension are shown below—calculations that are "defined once" in the model*, and which will be true for every *Version*, *Entity*, *Department*, *Month* and *Year*:

- Aggregation: a logical summation (can include negative numbers as well); here, *Revenue = Sale of Goods + Sale of Services*.
- Formula Calculation: any simple-to-complex mathematical expression; here, *Gross Profit % = Gross Profit/Revenue*.

*[There are many calculations throughout the model, taking the place of many thousands that would be necessary otherwise: note as you scroll right the *TotalYear* calculation in Column P; further down in rows there are *Operating Expense %* and *Operating Profit %;* additionally, all there are aggregations in the model for *Total Entity*, *Total Department*…and many others]

11		2021	2021	2021	2021	2021	2021	2021
12		Method	Amount	Jan	Feb	Mar	Apr	May
13	Version			Actual	Actual	Actual	Actual	Actual
14								
15	Sales of Goods			14,200	14,200	14,200	14,200	14,200
16	Sales of Services			930	930	930	930	930
17								
18	**Revenue**			**15,130**	**15,130**	**15,130**	**15,130**	**15,130**
19								
20	Cost of Goods			6,050	6,050	6,050	6,050	6,050
21	Cost of Services			75	75	75	75	75
22								
23	**Cost of Sales**			**6,125**	**6,125**	**6,125**	**6,125**	**6,125**
24								
25	**Gross Profit**			**9,005**	**9,005**	**9,005**	**9,005**	**9,005**
26	*Gross Profit %*			*59.5%*	*59.5%*	*59.5%*	*59.5%*	*59.5%*

If you put your cursor on any cell containing either an Aggregation or Formula Calculation you will see the value result. And if you trying typing a number into either of those types of cells, then press F9, the calculation value will return—there is great comfort, not to mention safety, in knowing that an error cannot be made in the model through accidentally mistyping! [As to why these figures are colored differently, so NEXT and OPTIONS SECTION IN ADDENDUM (ETC. and link to it)

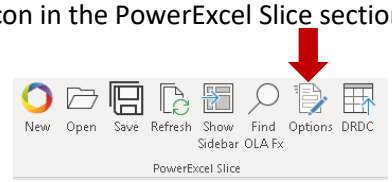


Full view of the PandA Income Statement with all Columns and Rows shown

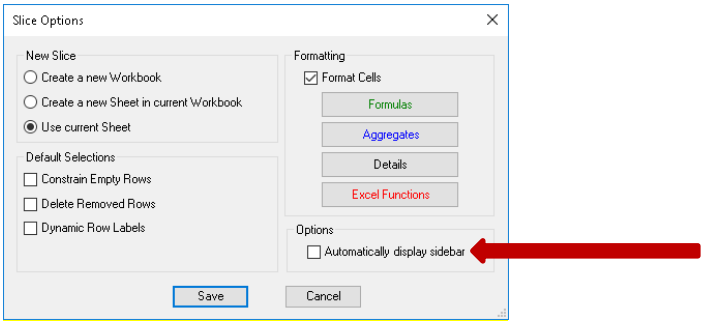
We discussed earlier being able to see any number of reports—other "views" or "Slices" of the data: we examine first what is doable from this Income Statement spreadsheet. (The next section, Ad Hoc Analytics/Reporting provides a fuller explanation of how the model can be "sliced and diced," virtually without limit.

First, to facilitate making the example steps appear as the do in the images that follow:

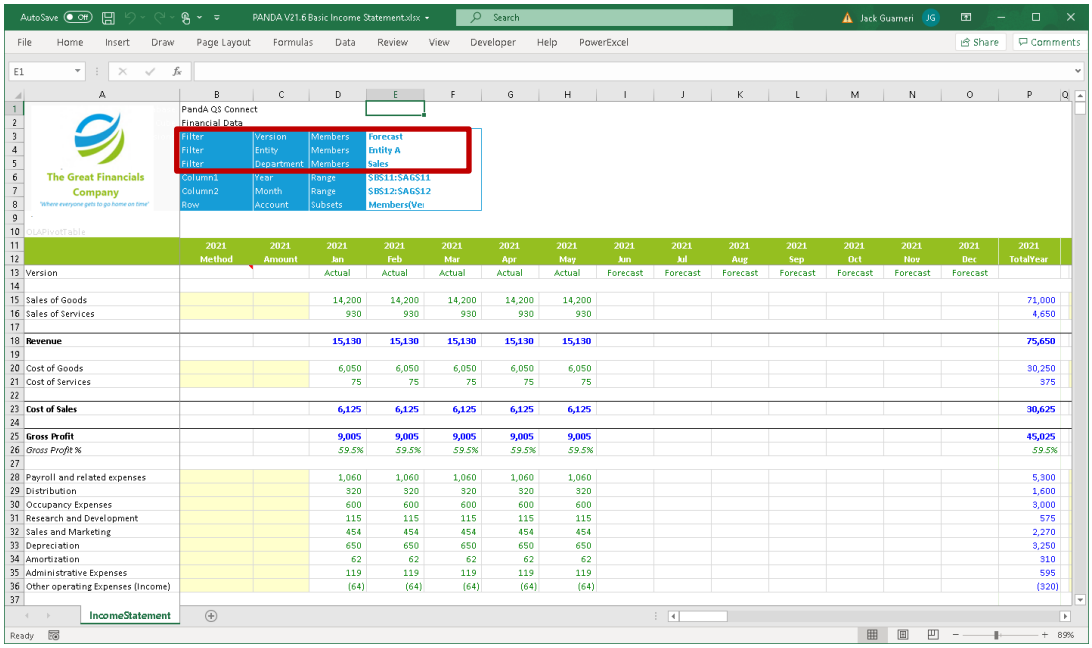
- **Click** on the **PowerExcel Ribbon**
  [see ADDENDUM/RESOURCES for more about the ribbon];
- **Click** on the **Options** icon in the PowerExcel Slice section (see arrow in the image below).



- In the Slice Options window, **disable** (**uncheck**) *Automatically display sidebar* (see arrow)

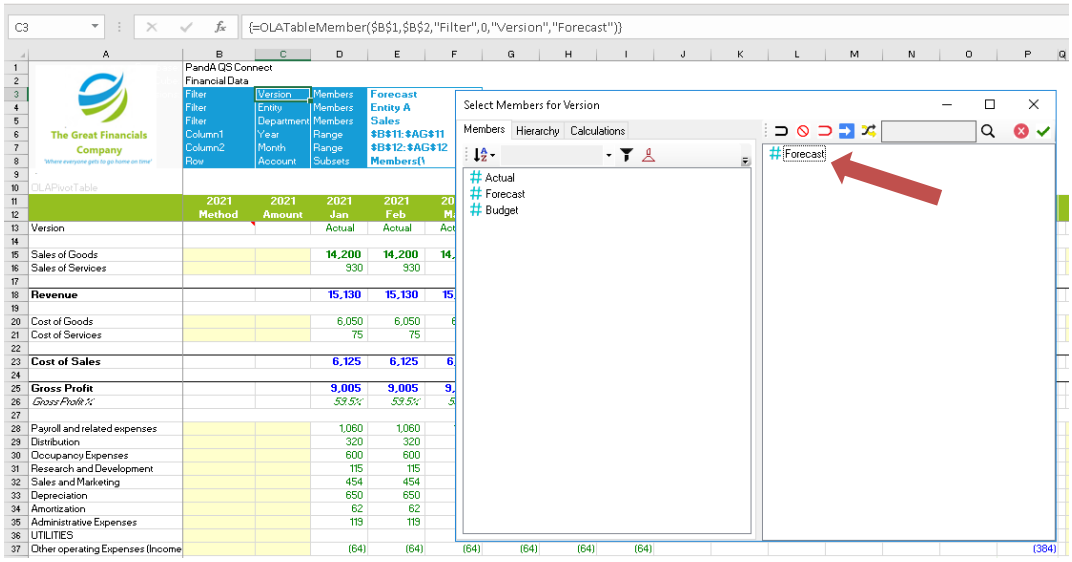


- Click **OK**. We can now examine the Filter area of the spreadsheet (boxed in the below image), whereby we can change/see all Slices of the model that relate to *Version*, *Entity* and *Department*.

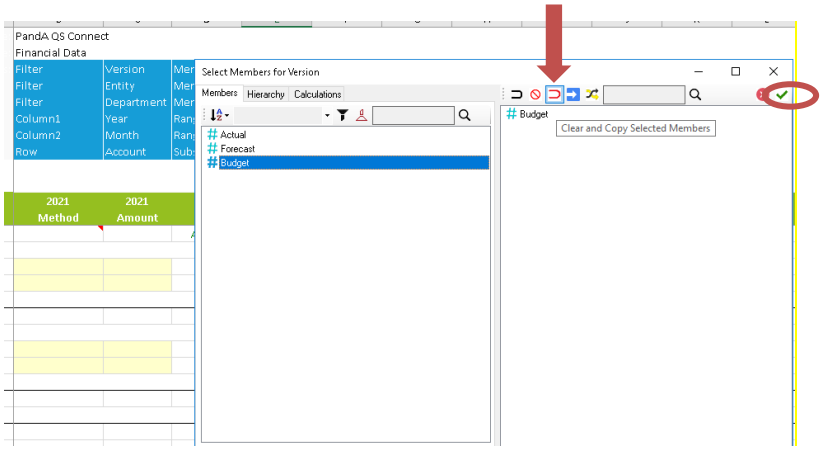


- **Double-click** on **Cell C3** (where Version appears—it is selected in the image below): the *Select Members for Version* window appears. (Note that in the Excel Formula bar there is a Range Reference function at work; the same function appears in Cells B3 – E3; thus you could double-click on any of these cells and the Select Members for Version window would appear.)

Note that **Forecast** shows in the pane on the righthand side of the window (where the arrow is pointing), an indication that it is the currently selected Member of the *Version* dimension in this spreadsheet.

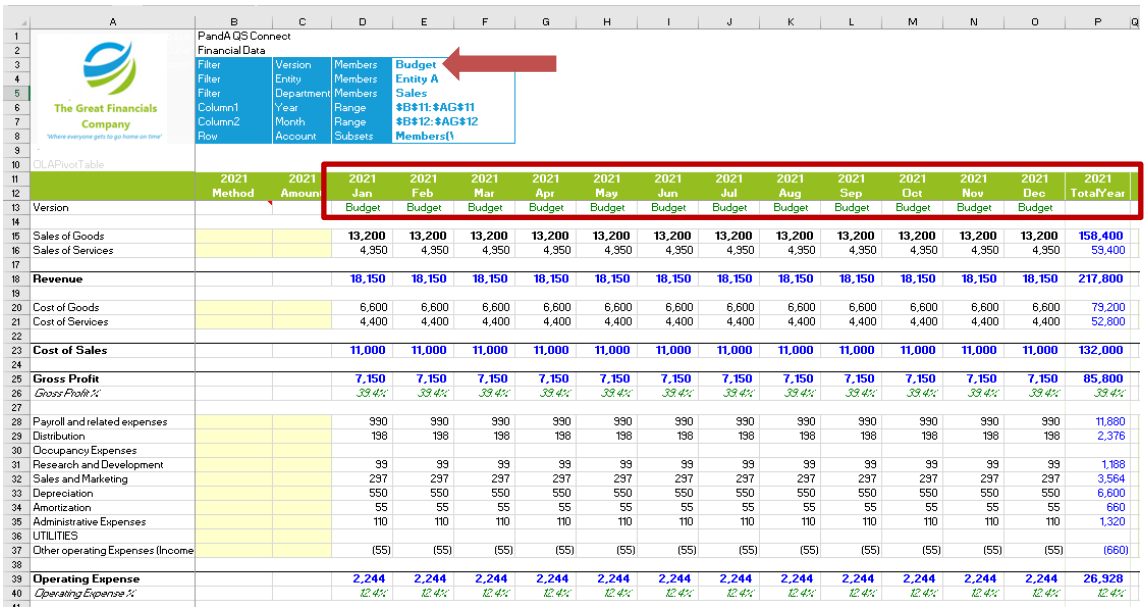


- Select **Budget** from the list in the left pane; then use the red horseshoe-like icon *Clear and Copy Selected Members* (see arrow below): this clears the selection(s) on the right and replaces it with the Member(s) selected on the left.



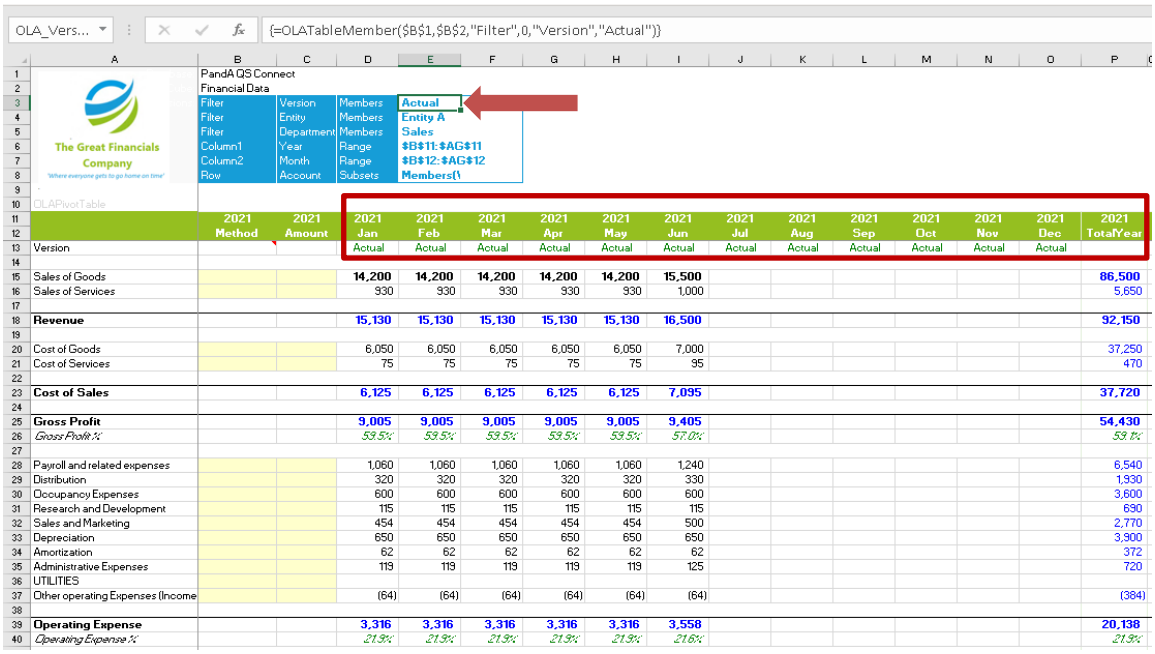
- Click **OK**—which is the little green checkmark near the top right of the window (circled in the image above).

After selection of **Budget** (see arrow in the image, next page), note that the cells that had been blank for Forecast are filled in through the year (Dec, 2021, and even *TotalYear*). That is because at this moment—presumptively, *May*, *2021*—the Budget plan has been established through the end of the year, while the Forecast plan has not. It should be pointed out, too, that the Income Statement has the "intelligence" to show Budget through the end of the year, as indicated in Row 13 (boxed in the following image, along with *Year* and *Month*).



PandA QS Connect																
Financial Data																
Filter	Version	Members	Budget													
Filter	Entity	Members	Entity A													
Filter	Department	Members	Sales													
Column1	Year	Range	$B$11:$AG$11													
Column2	Month	Range	$B$12:$AG$12													
Row	Account	Subsets	Members(\													
OLAPivotTable																
2021 Method	2021 Amount	2021 Jan	2021 Feb	2021 Mar	2021 Apr	2021 May	2021 Jun	2021 Jul	2021 Aug	2021 Sep	2021 Oct	2021 Nov	2021 Dec	2021 TotalYear		
Version		Budget	Budget	Budget	Budget	Budget	Budget	Budget	Budget	Budget	Budget	Budget	Budget			
Sales of Goods		13,200	13,200	13,200	13,200	13,200	13,200	13,200	13,200	13,200	13,200	13,200	13,200	158,400		
Sales of Services		4,950	4,950	4,950	4,950	4,950	4,950	4,950	4,950	4,950	4,950	4,950	4,950	59,400		
Revenue		18,150	18,150	18,150	18,150	18,150	18,150	18,150	18,150	18,150	18,150	18,150	18,150	217,800		
Cost of Goods		6,600	6,600	6,600	6,600	6,600	6,600	6,600	6,600	6,600	6,600	6,600	6,600	79,200		
Cost of Services		4,400	4,400	4,400	4,400	4,400	4,400	4,400	4,400	4,400	4,400	4,400	4,400	52,800		
Cost of Sales		11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000	132,000		
Gross Profit		7,150	7,150	7,150	7,150	7,150	7,150	7,150	7,150	7,150	7,150	7,150	7,150	85,800		
Gross Profit %		*39.4%*	*39.4%*	*39.4%*	*39.4%*	*39.4%*	*39.4%*	*39.4%*	*39.4%*	*39.4%*	*39.4%*	*39.4%*	*39.4%*	*39.4%*		
Payroll and related expenses		990	990	990	990	990	990	990	990	990	990	990	990	11,880		
Distribution		198	198	198	198	198	198	198	198	198	198	198	198	2,376		
Occupancy Expenses																
Research and Development		99	99	99	99	99	99	99	99	99	99	99	99	1,188		
Sales and Marketing		297	297	297	297	297	297	297	297	297	297	297	297	3,564		
Depreciation		550	550	550	550	550	550	550	550	550	550	550	550	6,600		
Amortization		55	55	55	55	55	55	55	55	55	55	55	55	660		
Administrative Expenses		110	110	110	110	110	110	110	110	110	110	110	110	1,320		
UTILITIES																
Other operating Expenses (Income		(55)	(55)	(55)	(55)	(55)	(55)	(55)	(55)	(55)	(55)	(55)	(55)	(660)		
Operating Expense		2,244	2,244	2,244	2,244	2,244	2,244	2,244	2,244	2,244	2,244	2,244	2,244	26,928		
Operating Expense %		*12.4%*	*12.4%*	*12.4%*	*12.4%*	*12.4%*	*12.4%*	*12.4%*	*12.4%*	*12.4%*	*12.4%*	*12.4%*	*12.4%*	*12.4%*		

- Using the same steps, select the **Actual** view (or "Slice"): here, too (see the image below)—like the Forecast Slice—there are no figures for *Jun*, *2021* onward: that is because, at this example moment in time, we have yet to "close" May. And, Actual is indicated for Version on Row 13 through the end of the year, as indicated in Row 13 (boxed in the following image, along with *Year* and *Month*).



PandA QS Connect																
Financial Data																
Filter	Version	Members	Actual													
Filter	Entity	Members	Entity A													
Filter	Department	Members	Sales													
Column1	Year	Range	$B$11:$AG$11													
Column2	Month	Range	$B$12:$AG$12													
Row	Account	Subsets	Members(\													
OLAPivotTable																
2021 Method	2021 Amount	2021 Jan	2021 Feb	2021 Mar	2021 Apr	2021 May	2021 Jun	2021 Jul	2021 Aug	2021 Sep	2021 Oct	2021 Nov	2021 Dec	2021 TotalYear		
Version		Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual			
Sales of Goods		14,200	14,200	14,200	14,200	14,200	15,500							86,500		
Sales of Services		930	930	930	930	930	1,000							5,650		
Revenue		15,130	15,130	15,130	15,130	15,130	16,500							92,150		
Cost of Goods		6,050	6,050	6,050	6,050	6,050	7,000							37,250		
Cost of Services		75	75	75	75	75	95							470		
Cost of Sales		6,125	6,125	6,125	6,125	6,125	7,095							37,720		
Gross Profit		9,005	9,005	9,005	9,005	9,005	9,405							54,430		
Gross Profit %		*59.5%*	*59.5%*	*59.5%*	*59.5%*	*59.5%*	*57.0%*							*59.1%*		
Payroll and related expenses		1,060	1,060	1,060	1,060	1,060	1,240							6,540		
Distribution		320	320	320	320	320	330							1,930		
Occupancy Expenses		600	600	600	600	600	600							3,600		
Research and Development		115	115	115	115	115	115							690		
Sales and Marketing		454	454	454	454	454	500							2,770		
Depreciation		650	650	650	650	650	650							3,900		
Amortization		62	62	62	62	62	62							372		
Administrative Expenses		119	119	119	119	119	125							720		
UTILITIES																
Other operating Expenses (Income		(64)	(64)	(64)	(64)	(64)	(64)							(384)		
Operating Expense		3,316	3,316	3,316	3,316	3,316	3,558							20,138		
Operating Expense %		*21.9%*	*21.9%*	*21.9%*	*21.9%*	*21.9%*	*21.6%*							*21.9%*		

So far we have looked at 3 *Version* dimension reports—for *Forecast*, *Actual* and *Budget*. But there could be any number of Versions you will might for planning at your firm. The PandA model can accommodate them. In like manner, consider the number of Entities or Departments you can reach: the possibilities for "multidimensional reporting" from this spreadsheet alone are impressive. In the next section we will expand on this topic—the virtually limitless reporting and associated analytics available from the PandA model.

3. The PandA Model – Ad Hoc Analytics/Reporting

In the previous section you worked with the Income Statement spreadsheet provided to you, and—insofar as reporting is concerned—you selected different Filter Members to change the Slice view. Before returning to the Income Statement and its use for Planning (Forecasting and Budgeting)—see next section—now you can demonstrate some of the vast capabilities we have been referring to for *ad hoc* reporting and analysis, which will be done by slicing and dicing the cloud-based PandA model that the Income Statement is connected to. As below, you will start with a blank Excel worksheet, not the Income Statement.

A few key terms and points of information are worth making clear:

- The *Income Statement* and indeed all the spreadsheets that follow are making use of **PowerExcel**, which is evidenced by the add-in ribbon shown previously. [See the last section—the PowerExcel Ribbon—for more on this topic.] As a user, you can make full use of PowerExcel when reaching the PandA model in the cloud, which this and following sections will demonstrate.
- The PandA model exists and is saved as a **Nexus** database, a type of **Olation®** database, from PARIS Technologies, that provides the multidimensional modeling for collaborative planning, analytics and reporting—by any number of users, from anywhere in the world.

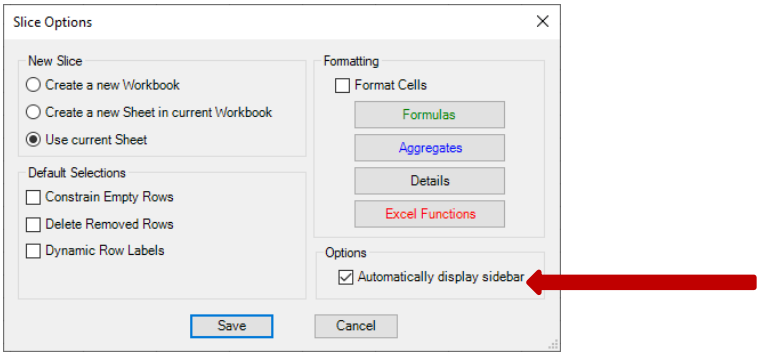
Returning to the matter at hand: you will proceed, starting with a blank worksheet, by creating and rearranging a PowerExcel Slice, and then dragging and dropping Dimensions to the Filters, Columns and Rows boxes (along with making Filter selections, as shown previously). Further, you will select specific sets of Members to be displayed along the Columns and Rows. The end result will be a more basic Income Statement report than the spreadsheet provided to you.

Begin—as Finance professionals so often do—by launching a New Excel worksheet.

Next, to follow the example steps, so that they appear as they do in the images that follow, you will need to work with the "PowerExcel Sidebar":

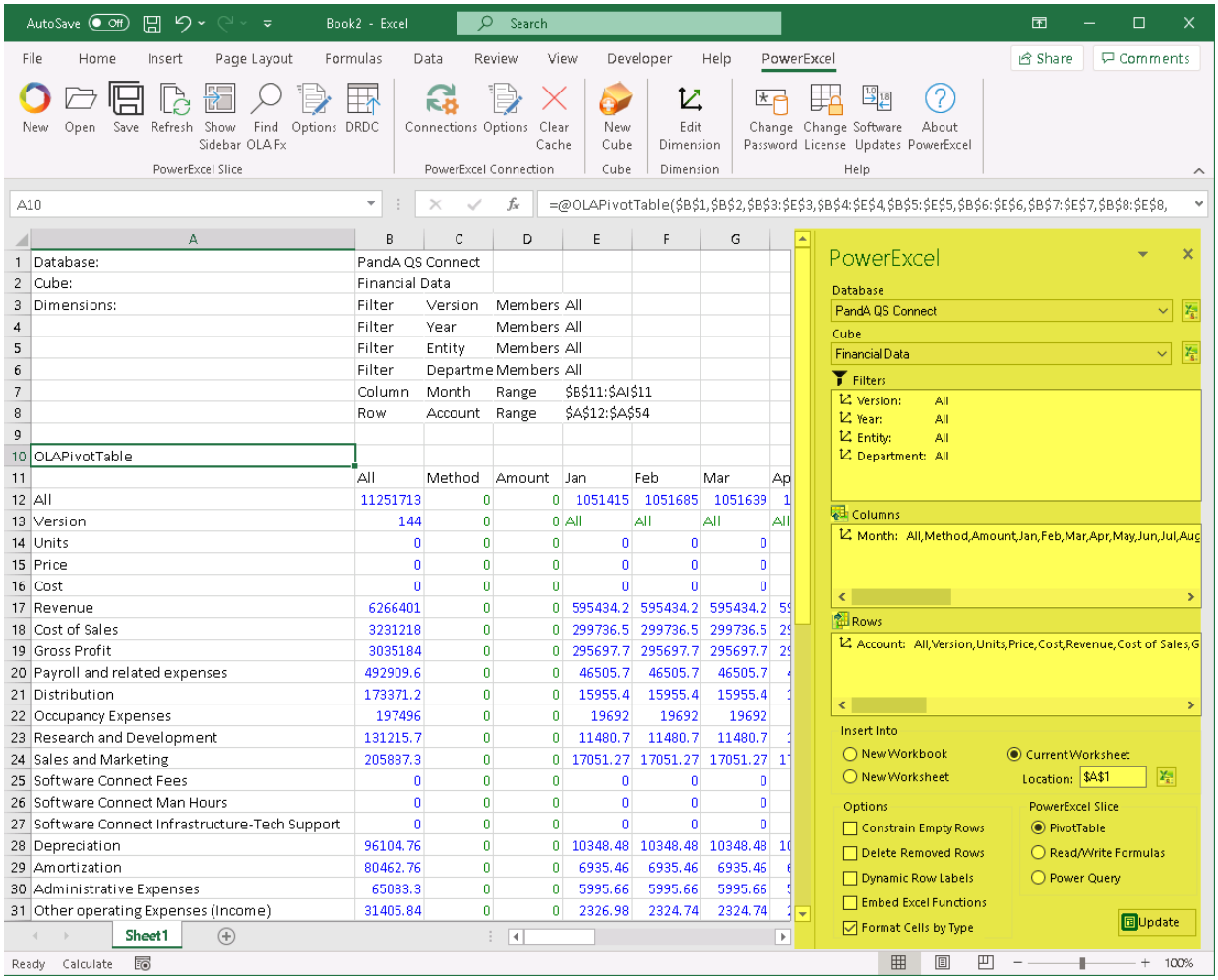
- **Click** on the **PowerExcel Ribbon**
- **Click** on the **Options** icon in the PowerExcel Slice section (see arrow in the image below).

- In the Slice Options window, **disable** (**uncheck**) *Automatically display sidebar* (see arrow)



When this option is enabled, whenever a user clicks on any cell containing a PowerExcel reference, it will automatically display the PowerExcel sidebar on the left side of the Excel worksheet. Whereas when this option is disabled, you would have to click through any PowerExcel reference then click on the Show

A sample PowerExcel Slice is shown below. The section highlighted in yellow is the PowerExcel sidebar.



The **PowerExcel sidebar** (shaded in yellow in the above screenshot)

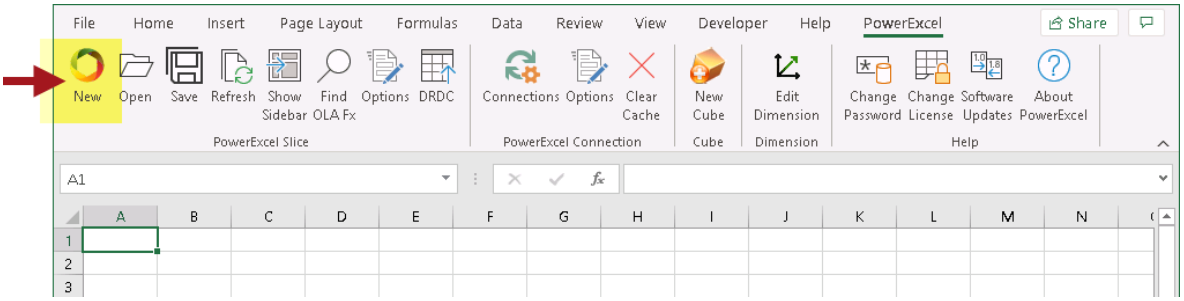
As an overview of the following exercises, we will step through the following:

- Create a New PowerExcel Slice
- Reorganize the Slice orientation (switch Dimensions between Rows and Columns)
- Change the Filter Member
- Change the Display Members along Rows and Columns
- Insert Empty Rows
- Nest Dimensions
- Enable the Format Cells setting of a PowerExcel Slice
- Create a Basic PandA Income Statement Report—one that is similar, but more basic, than the one you have been provided.

To begin with these PowerExcel exercises:

1. Create a basic PowerExcel Slice from the *PandA* model:

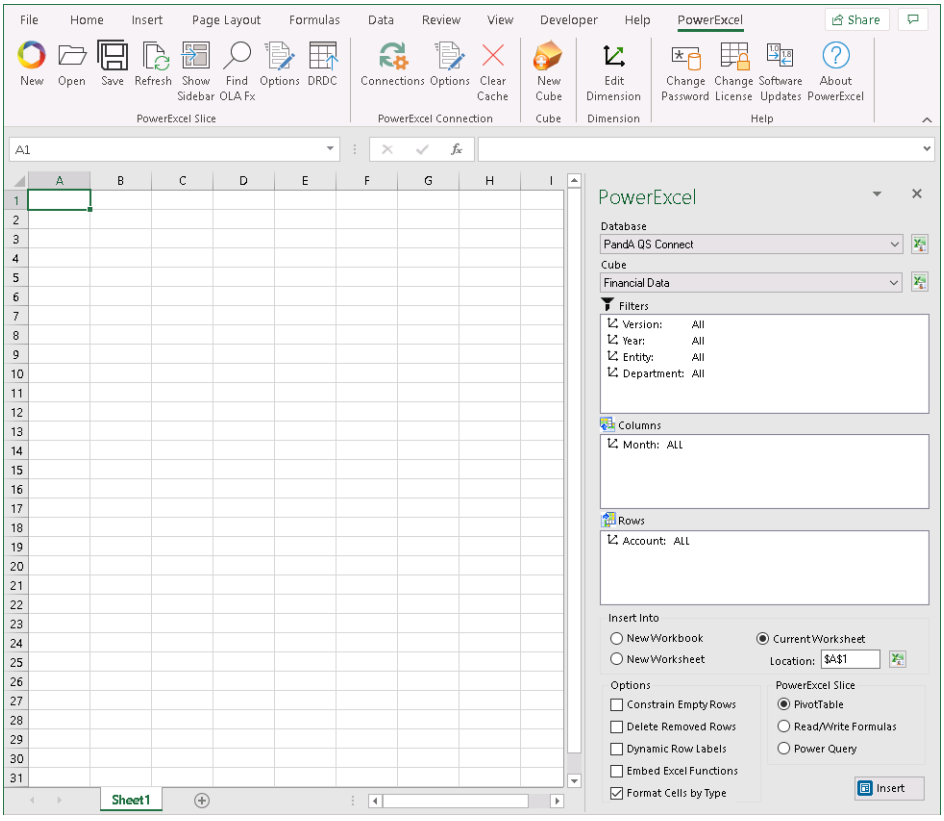
   - Go to the **PowerExcel Tab** of the Excel ribbon and click the **New PowerExcel Slice** icon (highlighted in yellow in the image below).



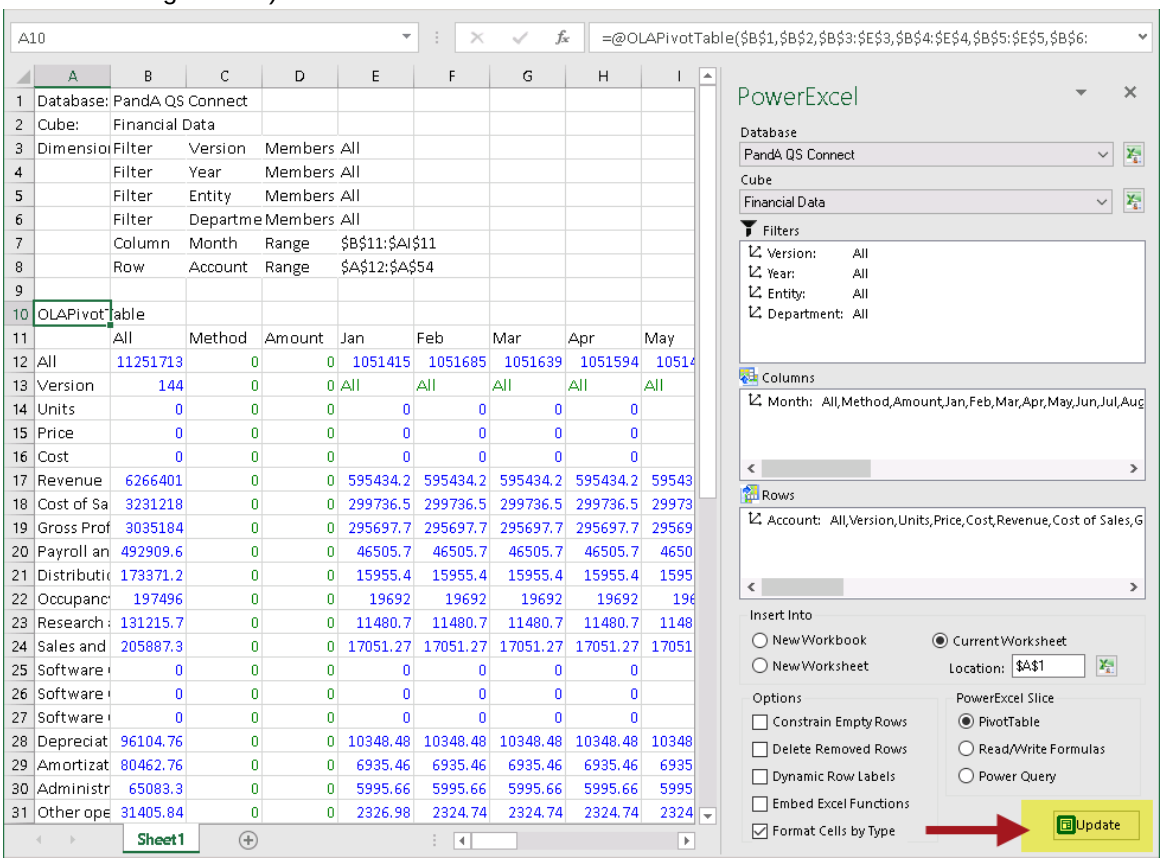
   - The PowerExcel sidebar appears on the right section of the Excel worksheet. Select the following:

     Database/Database Connection: **PandA QS Connect**
     Cube: **Financial Data**
     Filters display: **default**
     Columns display: **default**
     Rows display: **default**
     Insert into: **Current Worksheet**
     Worksheet Location/Cell: **$A$1**
     PowerExcel Slice: **PivotTable**

   - Leave the rest of the checkbox options unchecked *except* **Format cells by type**.

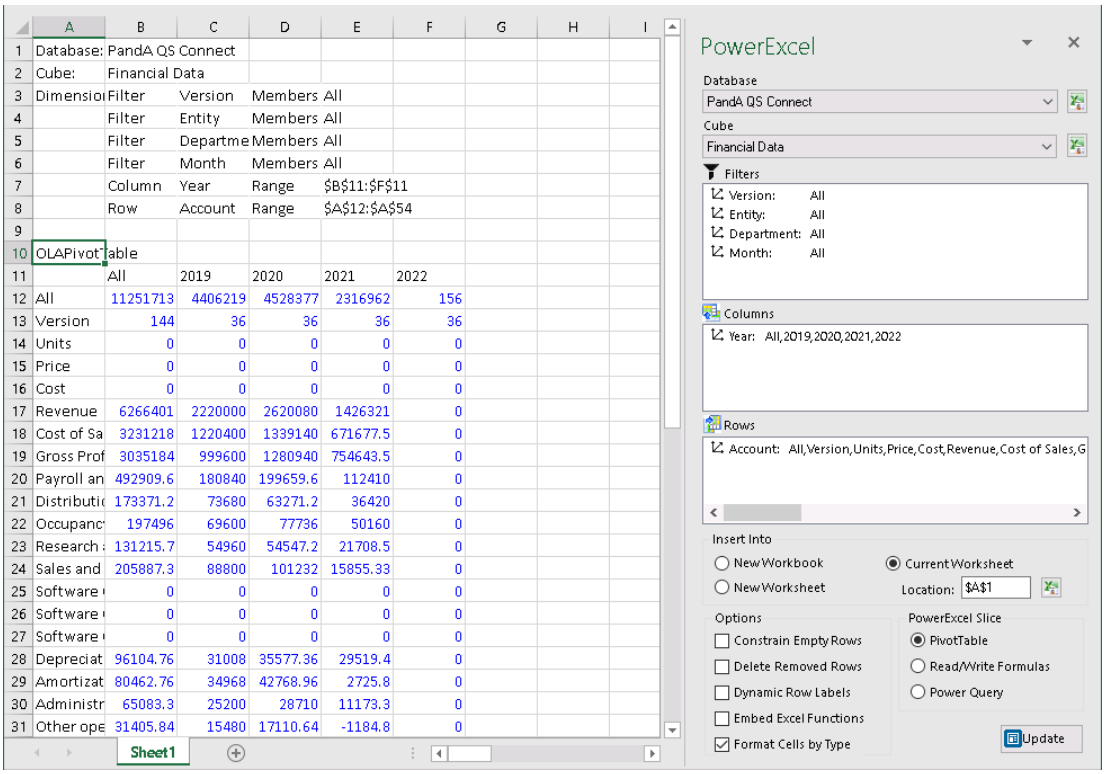


- Click on the **Insert** button. We will call this the “default Slice.”
  If you try clicking on any call with a PowerExcel reference, you will see the PowerExcel sidebar appear—the result of the option selection you made earlier.
  Important: Notice how the Insert button changes to Update (highlighted in yellow in the image below).



2. Change the position of Dimensions within the Slice:
   Re-arranging the Slice is as simple as dragging and dropping the Dimensions between the Filters, Columns and Row boxes of the PowerExcel sidebar.
   For this example, move the *Year* dimension to Columns and the *Month* dimension to the Filters:

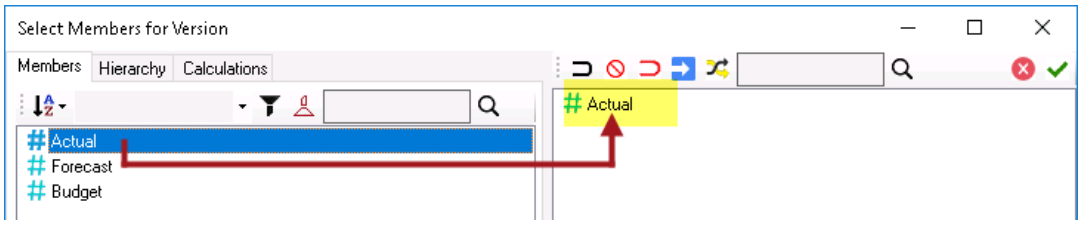
   - Go to the PowerExcel sidebar and drag and drop the **Month** dimension from the Columns to the **Filters** area.
   - Next, drag and drop the **Year** dimension from the Filters to the **Columns** area.
   - Click the **Update** button.
     The Slice will now be displayed with the *Year* members (*All*, *2019*, *2020*, *2021* and *2022*) showing up along the Columns and with *Month* among the Filters, displaying the default Member (*All*)—see next image.



- For this example, revert to the original Slice arrangement where *Year* is displayed among the Filters and *Month* is displayed in Columns. Make sure to click **Update** button.

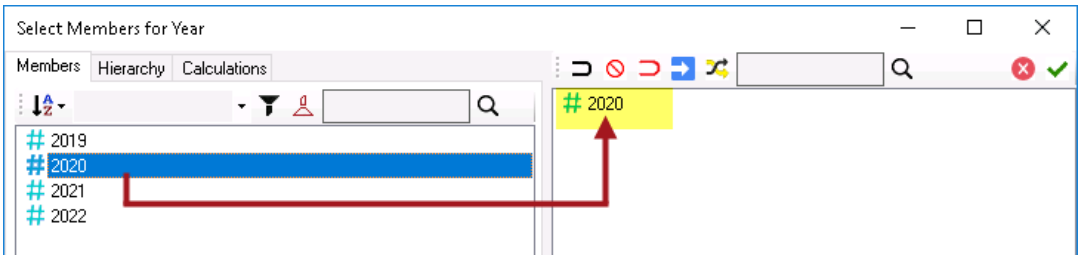
3. Change a **Filter** Member, so that the *Version* dimension shows only *Actual* values and the *Year* dimension displays *2020* values:

   - Go to the **Filter area** of the PowerExcel sidebar and double-click on the **Version** dimension; the Select Members dialog appears (here, *Select Members for Version*). In this dialog, the Members tab lists all the Members that exist for the selected Dimension (*Version*), while the right-hand side defines the current display Member. Currently, *All* is the Filter Member display for the *Version* dimension.
   - Remove the currently displayed Member (*All*) by clicking the **Clear button**.
   - Drag and drop the **Actual** member from the Members Tab (on the left) to the display window (on the right). *Actual* will now be the only Member in the right-hand pane:

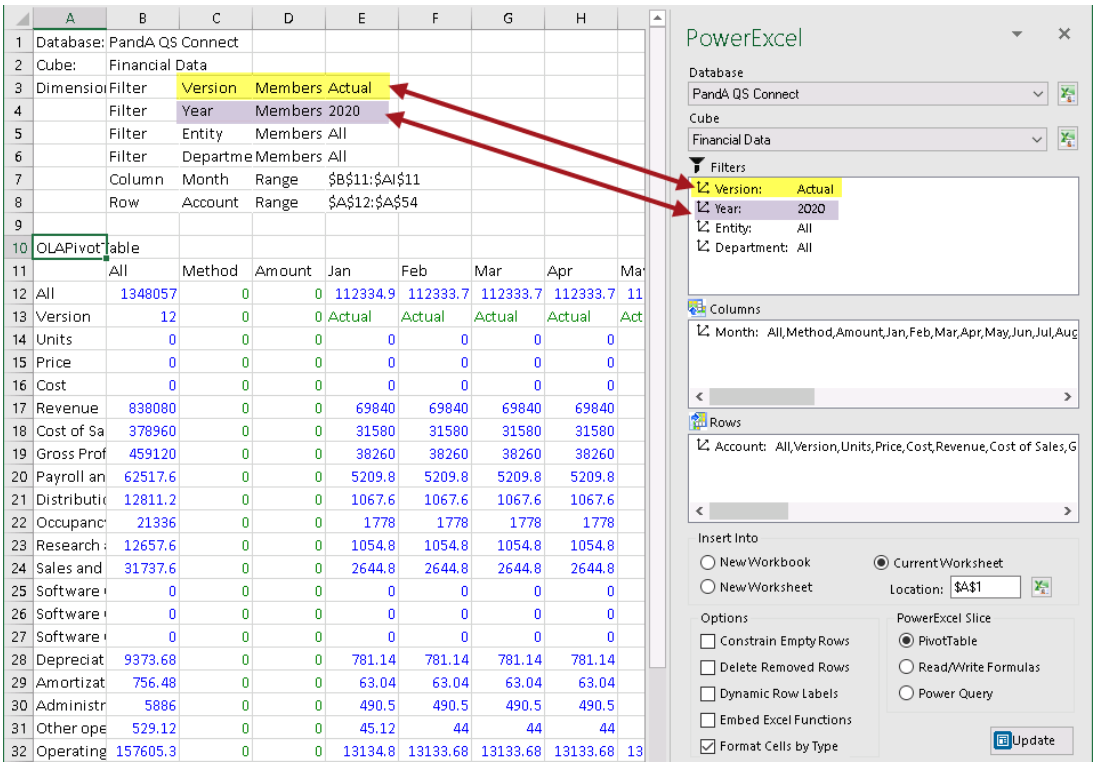


   - Click the **Use Selected Members button** (green checkmark button) to commit the changes.
   - Back in the PowerExcel sidebar, the*Version* dimension now indicates *Actual* as the display Member.

- Still in the **Filter area** of the PowerExcel sidebar, double-click on the **Year** dimension. Currently, the *All* member is displayed for the *Year* dimension. Double-click on it: In the Select Members dialog that appears, delete the Members displayed on the right-hand pane (via the **Clear button**); then drag and drop **2020** to the display window on the right.

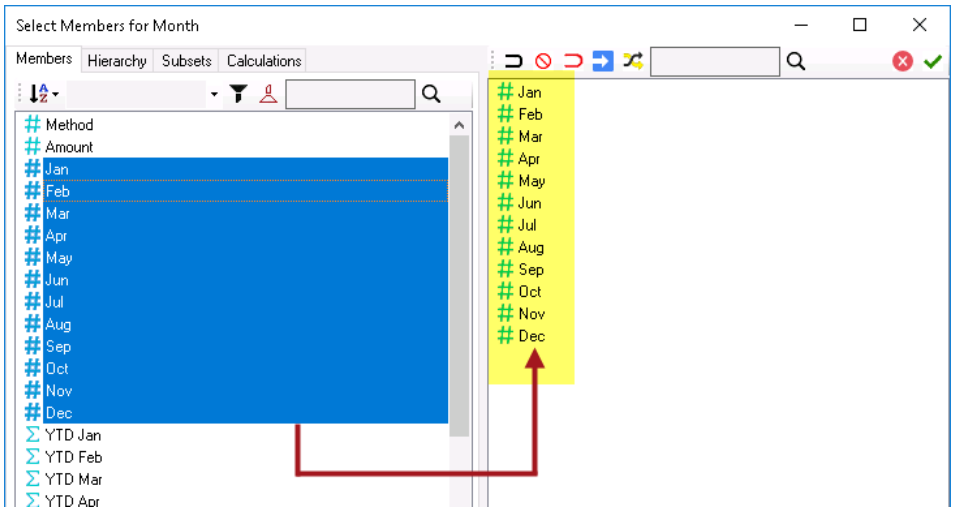


- Click the **Update button** to refresh the Slice.
  The Slice now shows *Actual* as the display Member for *Version* (highlighted in yellow); and *2020* as the display Member for *Year* (highlighted in purple).

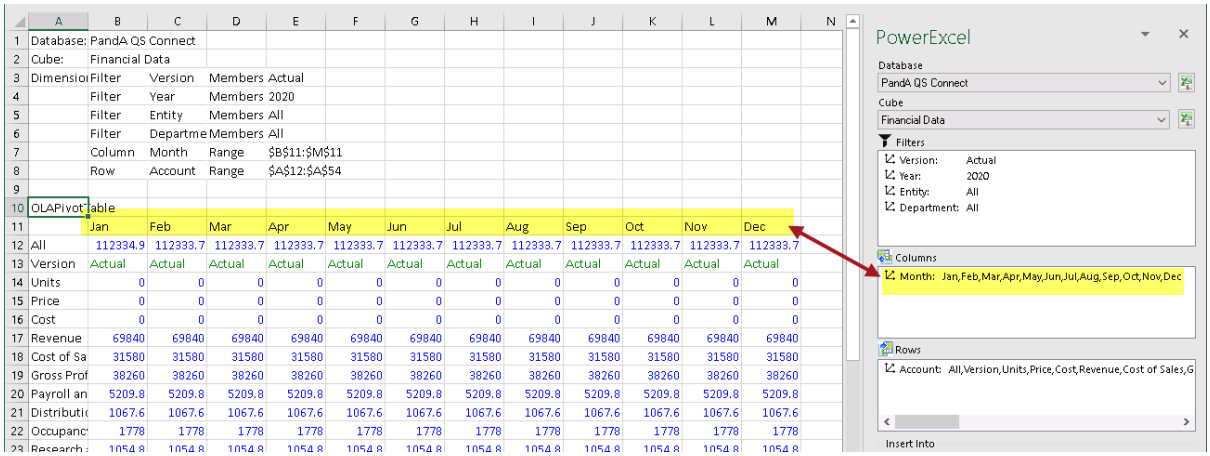


4. Change the Display Member for Columns:
   The procedure for changing the Columns and Rows display Members is identical to the procedure for changing Filter Members; here, to change Column display Members to show only the individual months *Jan* to *Dec*:

   - Go to the **Columns area** of the PowerExcel sidebar and double-click on the **Month** dimension. The Select Members dialog appears.
     Currently, all Members are displayed for the *Month* dimension.
   - Remove the currently displayed Members by clicking the **Clear button**.
   - Drag and drop the months *Jan* to *Dec* from the Members Tab on the left to the display window on the right. (You can also shift-select Jan through Dec to do the same thing.)



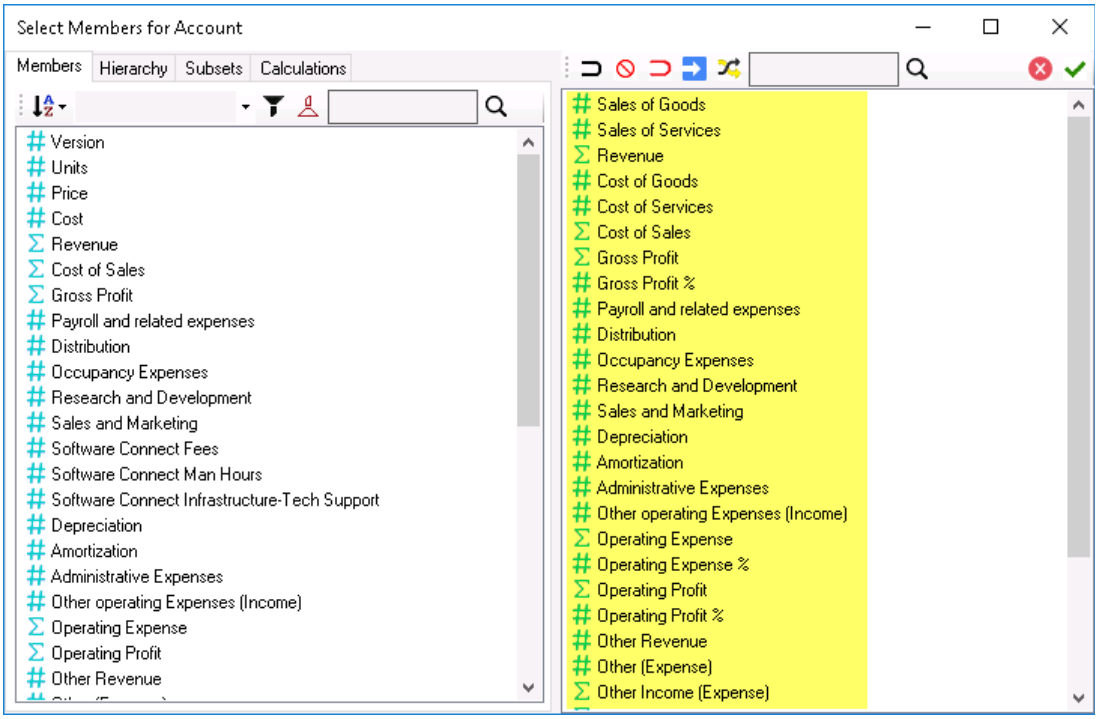
- Click the **Use Selected Members button** (green checkmark button) to commit the changes.
- Back in the PowerExcel sidebar, click the **Update button** to refresh the Slice. Now, the Slice shows the 12 individual months displayed along the Columns (**B11** to **M11**).



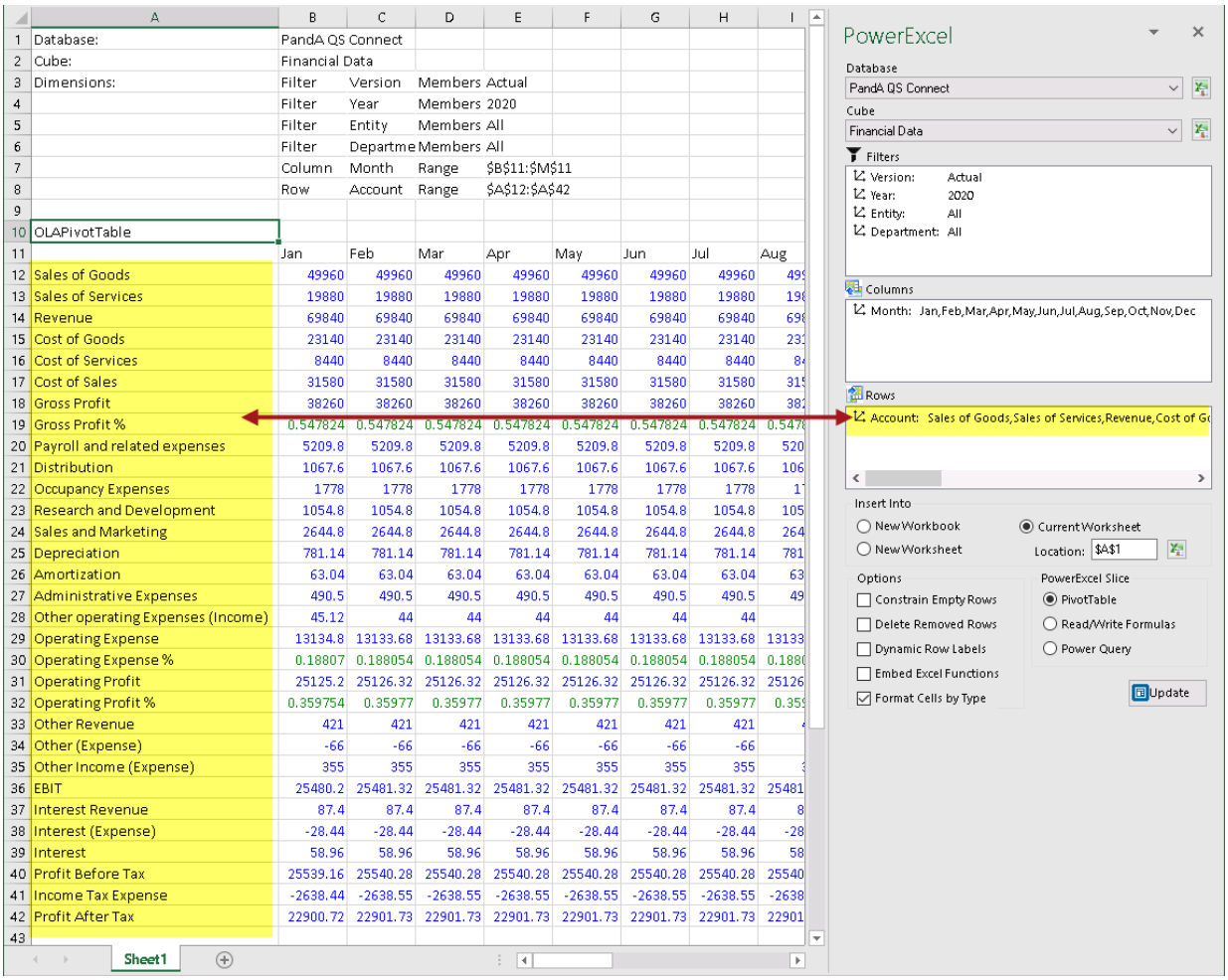
5. Change the Display Member for Rows:
   Next, change the *Account* members displayed along the rows so that only individual Income Statement *Accounts* appear, as in the following:

Sales of Goods Sales of Services Revenue Cost of Goods Cost of Services Cost of Sales Gross Profit Gross Profit % Payroll and related expenses Distribution Occupancy Expenses Research and Development Sales and Marketing Depreciation Amortization Administrative Expenses	Other operating Expenses (Income) Operating Expense Operating Expense % Operating Profit Operating Profit % Other Revenue Other (Expense) Other Income (Expense) EBIT Interest Revenue Interest (Expense) Interest Profit Before Tax Income Tax Expense Profit After Tax

- Go to the **Rows area** of the PowerExcel sidebar and double-click on the **Account** dimension. Currently, all Members are displayed for the *Account* dimension. In the Select Members dialog that appears, delete the Members displayed on the right-hand pane (via the **Clear button**); then drag and drop the correct Members (see list above) from the left-hand pane to the right-hand pane.

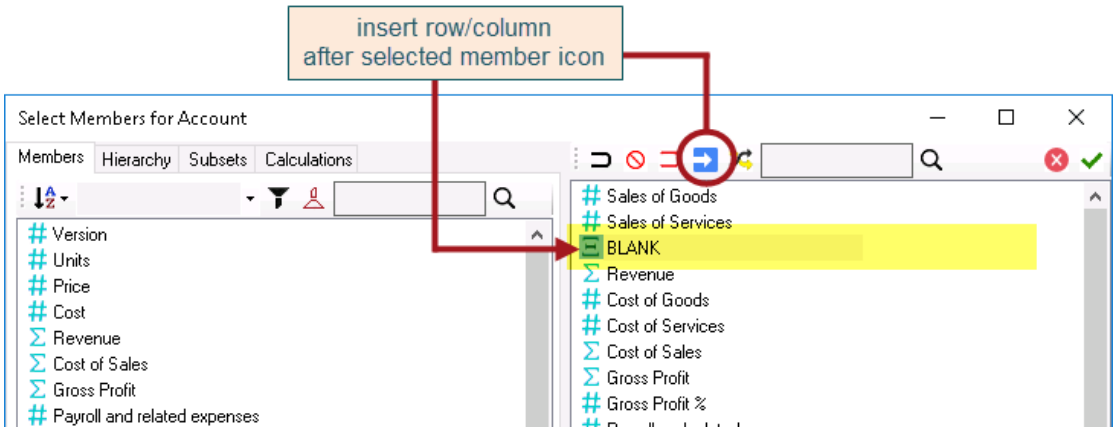


- Click the **Use Selected Members button** (green checkmark button) to commit the changes.
- Back in the PowerExcel sidebar, click the **Update button** to refresh the Slice. Now, the Slice shows the selected accounts displayed along the Rows (**A12** to **A42**), as in the following image:

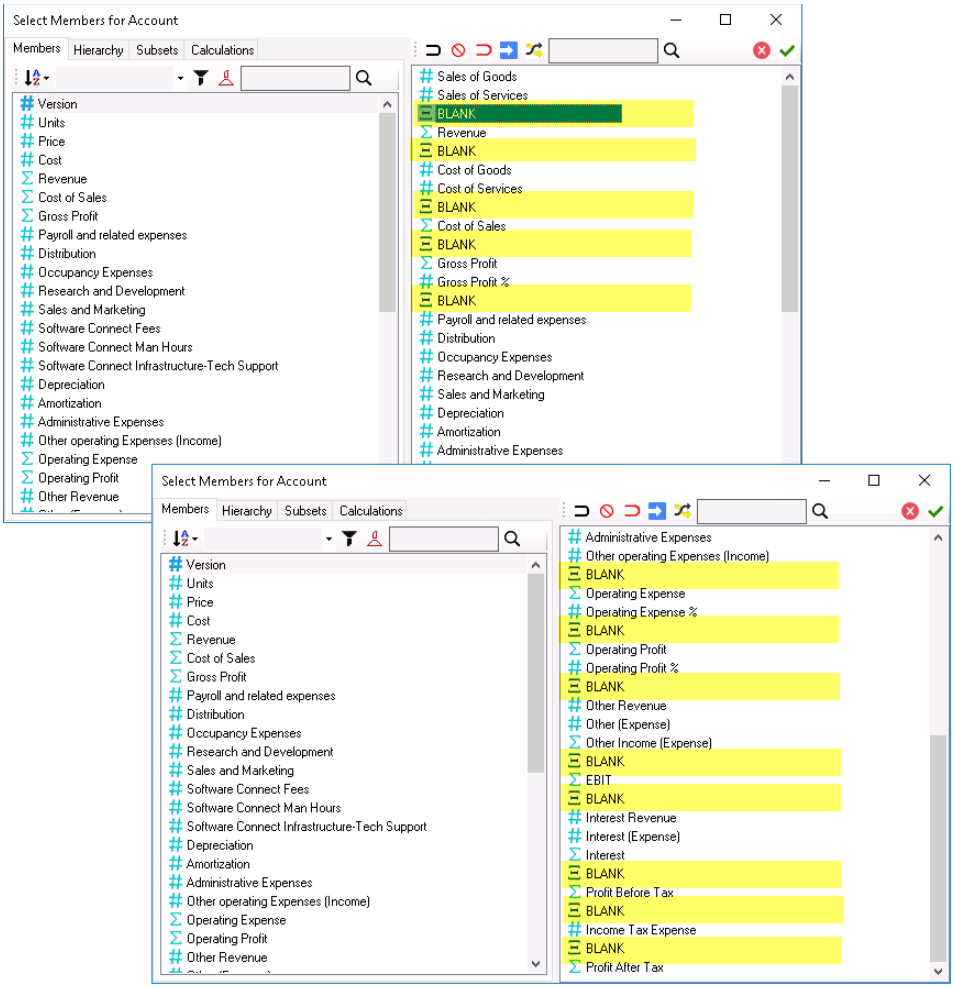


6. Insert EMPTY ROWS OR COLUMNS
   Now, we will configure the PowerExcel Slice to include blank rows so that the Slice will include them in the desired areas of the Slice when we update the Slice. Note that when we modify the Slice, the blank rows will remain in their position every time the slice is updated or re-generated.

   - In the Rows section of the PowerExcel sidebar, double-click on the **Account** dimension. Insert blank or empty rows/columns by using the **Insert empty row/column after selected member** button along the upper right-hand pane of the Select Members dialog. This will insert an empty row or column (see 'BLANK' highlighted in yellow in the succeeding image) right after the currently selected Member.
     You can also reposition the empty rows/column by dragging and dropping them before or after any Member.



- In the Select Members dialog, identify where you want to insert an empty row; then, select a Member directly above that area and click on the indicated icon.
  In the above example, to put a blank row between *Sales of Services* and *Revenue*, select **Sales of Services** then click the **Insert empty row/column icon**.
- Follow the same procedure and insert empty rows as shown in the screenshot below:

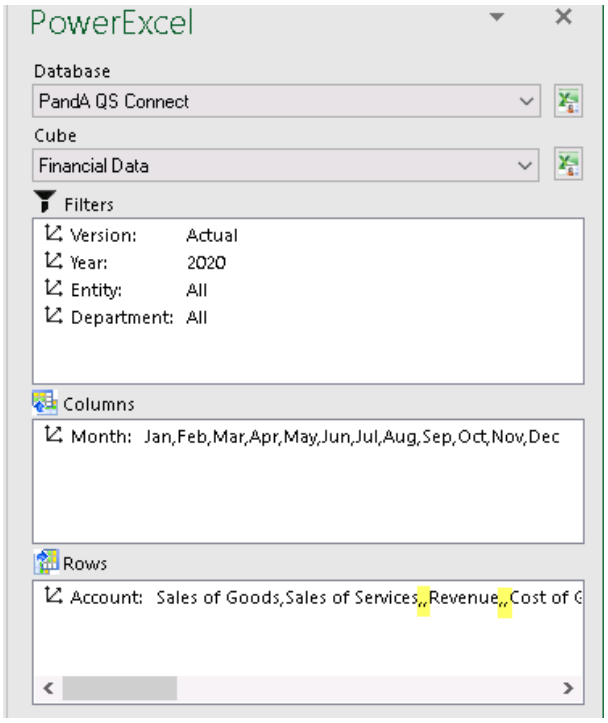


- Click the **Use Selected Members button** (green checkmark button) to commit the changes.
- Click the **Update** button. This updates the PowerExcel Slice.
  Notice the blank rows now appear in the Slice (in Rows 14, 16, 19, 21, ,24, 34, 37, 40, 44, 46, 50, 52, 54)

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Database:	PandA QS Connect											
2	Cube:	Financial Data											
3	Dimensions:	Filter	Version	Members	Actual								
4		Filter	Year	Members	2020								
5		Filter	Entity	Members	All								
6		Filter	Departme	Members	All								
7		Column	Month	Range	$B$11:$M$11								
8		Row	Account	Range	$A$12:$A$55								
9													
10	OLAPivotTable												
11		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
12	Sales of Goods	49960	49960	49960	49960	49960	49960	49960	49960	49960	49960	49960	49960
13	Sales of Services	19880	19880	19880	19880	19880	19880	19880	19880	19880	19880	19880	19880
14													
15	Revenue	69840	69840	69840	69840	69840	69840	69840	69840	69840	69840	69840	69840
16													
17	Cost of Goods	23140	23140	23140	23140	23140	23140	23140	23140	23140	23140	23140	23140
18	Cost of Services	8440	8440	8440	8440	8440	8440	8440	8440	8440	8440	8440	8440
19													
20	Cost of Sales	31580	31580	31580	31580	31580	31580	31580	31580	31580	31580	31580	31580
21													
22	Gross Profit	38260	38260	38260	38260	38260	38260	38260	38260	38260	38260	38260	38260
23	Gross Profit %	0.547824	0.547824	0.547824	0.547824	0.547824	0.547824	0.547824	0.547824	0.547824	0.547824	0.547824	0.547824
24													
25	Payroll and related expenses	5209.8	5209.8	5209.8	5209.8	5209.8	5209.8	5209.8	5209.8	5209.8	5209.8	5209.8	5209.8
26	Distribution	1067.6	1067.6	1067.6	1067.6	1067.6	1067.6	1067.6	1067.6	1067.6	1067.6	1067.6	1067.6
27	Occupancy Expenses	1778	1778	1778	1778	1778	1778	1778	1778	1778	1778	1778	1778
28	Research and Development	1054.8	1054.8	1054.8	1054.8	1054.8	1054.8	1054.8	1054.8	1054.8	1054.8	1054.8	1054.8
29	Sales and Marketing	2644.8	2644.8	2644.8	2644.8	2644.8	2644.8	2644.8	2644.8	2644.8	2644.8	2644.8	2644.8
30	Depreciation	781.14	781.14	781.14	781.14	781.14	781.14	781.14	781.14	781.14	781.14	781.14	781.14
31	Amortization	63.04	63.04	63.04	63.04	63.04	63.04	63.04	63.04	63.04	63.04	63.04	63.04
32	Administrative Expenses	490.5	490.5	490.5	490.5	490.5	490.5	490.5	490.5	490.5	490.5	490.5	490.5
33	Other operating Expenses (Income)	45.12	44	44	44	44	44	44	44	44	44	44	44
34													
35	Operating Expense	13134.8	13133.68	13133.68	13133.68	13133.68	13133.68	13133.68	13133.68	13133.68	13133.68	13133.68	13133.68
36	Operating Expense %	0.18807	0.188054	0.188054	0.188054	0.188054	0.188054	0.188054	0.188054	0.188054	0.188054	0.188054	0.188054
37													
38	Operating Profit	25125.2	25126.32	25126.32	25126.32	25126.32	25126.32	25126.32	25126.32	25126.32	25126.32	25126.32	25126.32
39	Operating Profit %	0.359754	0.35977	0.35977	0.35977	0.35977	0.35977	0.35977	0.35977	0.35977	0.35977	0.35977	0.35977
40													
41	Other Revenue	421	421	421	421	421	421	421	421	421	421	421	421
42	Other (Expense)	-66	-66	-66	-66	-66	-66	-66	-66	-66	-66	-66	-66
43	Other Income (Expense)	355	355	355	355	355	355	355	355	355	355	355	355
44													
45	EBIT	25480.2	25481.32	25481.32	25481.32	25481.32	25481.32	25481.32	25481.32	25481.32	25481.32	25481.32	25481.32
46													
47	Interest Revenue	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4
48	Interest (Expense)	-28.44	-28.44	-28.44	-28.44	-28.44	-28.44	-28.44	-28.44	-28.44	-28.44	-28.44	-28.44
49	Interest	58.96	58.96	58.96	58.96	58.96	58.96	58.96	58.96	58.96	58.96	58.96	58.96
50													
51	Profit Before Tax	25539.16	25540.28	25540.28	25540.28	25540.28	25540.28	25540.28	25540.28	25540.28	25540.28	25540.28	25540.28
52													
53	Income Tax Expense	-2638.44	-2638.55	-2638.55	-2638.55	-2638.55	-2638.55	-2638.55	-2638.55	-2638.55	-2638.55	-2638.55	-2638.55
54													
55	Profit After Tax	22900.72	22901.73	22901.73	22901.73	22901.73	22901.73	22901.73	22901.73	22901.73	22901.73	22901.73	22901.73
56													

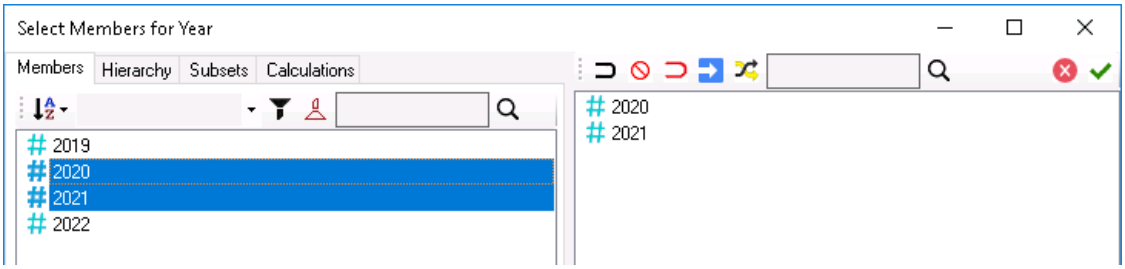
Sheet1

- If you look at the Columns area of PowerExcel sidebar, notice that the areas where a blank row is inserted appear with a double comma (highlighted in the image below)

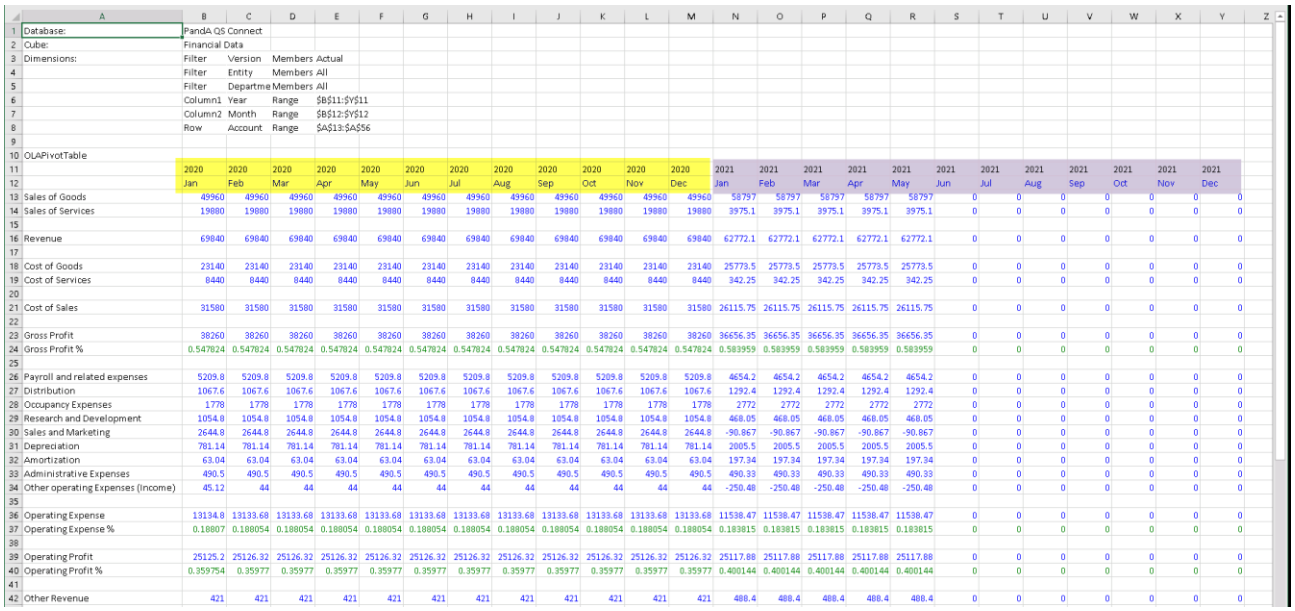


7. To Next Dimensions:
   You can further customize the report by 'Nesting' or 'Stacking' the Dimensions. Try nesting the **Year** and **Month** dimensions along Columns. We will make a comparative report that shows *2020* and *2021* data, showing data per month of each year.

   - Since *Month* dimension is already positioned along the Columns (and is displaying the individual months *Jan* to *Dec*), just drag and drop the **Year** dimension from the Filters to the **Columns area** right above the *Month* dimension.
   - Double-click on the **Year** dimension. In the Select Members dialog that appears, delete the Members displayed on the right-hand pane (via the **Clear button**); then drag and drop **2020** and **2021** to the display window on the right.



   - Click the **Use Selected Members button** (green checkmark button) to commit the changes.
   - Back in the PowerExcel sidebar, click the **Update button** to refresh the Slice.
     The Slice appears as below, with *2020* months showing in columns B to M, while *2021* months are displayed along columns N to Y.



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1	Database:	PandA QS Connect																								
2	Cube:	Financial Data																								
3	Dimensions:	Filter	Version	Members	Actual																					
4		Filter	Entity	Members	All																					
5		Filter	Departme	Members	All																					
6		Column1	Year	Range	$B$11:$Y$11																					
7		Column2	Month	Range	$B$12:$Y$12																					
8		Row	Account	Range	$A$13:$A$56																					
9																										
10	OLAPivotTable																									
11		2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2021	2021	2021	2021	2021	2021	2021	2021	2021	2021	2021	2021	
12		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
13	Sales of Goods	49960	49960	49960	49960	49960	49960	49960	49960	49960	49960	49960	49960	58797	58797	58797	58797	58797	0	0	0	0	0	0	0	
14	Sales of Services	19880	19880	19880	19880	19880	19880	19880	19880	19880	19880	19880	19880	3975.1	3975.1	3975.1	3975.1	3975.1	0	0	0	0	0	0	0	
15																										
16	Revenue	69840	69840	69840	69840	69840	69840	69840	69840	69840	69840	69840	69840	62772.1	62772.1	62772.1	62772.1	62772.1	0	0	0	0	0	0	0	
17																										
18	Cost of Goods	23140	23140	23140	23140	23140	23140	23140	23140	23140	23140	23140	23140	25773.5	25773.5	25773.5	25773.5	25773.5	0	0	0	0	0	0	0	
19	Cost of Services	8440	8440	8440	8440	8440	8440	8440	8440	8440	8440	8440	8440	342.25	342.25	342.25	342.25	342.25	0	0	0	0	0	0	0	
20																										
21	Cost of Sales	31580	31580	31580	31580	31580	31580	31580	31580	31580	31580	31580	31580	26115.75	26115.75	26115.75	26115.75	26115.75	0	0	0	0	0	0	0	
22																										
23	Gross Profit	38260	38260	38260	38260	38260	38260	38260	38260	38260	38260	38260	38260	36656.35	36656.35	36656.35	36656.35	36656.35	0	0	0	0	0	0	0	
24	Gross Profit %	0.547824	0.547824	0.547824	0.547824	0.547824	0.547824	0.547824	0.547824	0.547824	0.547824	0.547824	0.547824	0.583959	0.583959	0.583959	0.583959	0.583959	0	0	0	0	0	0	0	
25																										
26	Payroll and related expenses	5209.8	5209.8	5209.8	5209.8	5209.8	5209.8	5209.8	5209.8	5209.8	5209.8	5209.8	5209.8	4654.2	4654.2	4654.2	4654.2	4654.2	0	0	0	0	0	0	0	
27	Distribution	1067.6	1067.6	1067.6	1067.6	1067.6	1067.6	1067.6	1067.6	1067.6	1067.6	1067.6	1067.6	1292.4	1292.4	1292.4	1292.4	1292.4	0	0	0	0	0	0	0	
28	Occupancy Expenses	1778	1778	1778	1778	1778	1778	1778	1778	1778	1778	1778	1778	2772	2772	2772	2772	2772	0	0	0	0	0	0	0	
29	Research and Development	1054.8	1054.8	1054.8	1054.8	1054.8	1054.8	1054.8	1054.8	1054.8	1054.8	1054.8	1054.8	468.05	468.05	468.05	468.05	468.05	0	0	0	0	0	0	0	
30	Sales and Marketing	2644.8	2644.8	2644.8	2644.8	2644.8	2644.8	2644.8	2644.8	2644.8	2644.8	2644.8	2644.8	-90.867	-90.867	-90.867	-90.867	-90.867	0	0	0	0	0	0	0	
31	Depreciation	781.14	781.14	781.14	781.14	781.14	781.14	781.14	781.14	781.14	781.14	781.14	781.14	2005.5	2005.5	2005.5	2005.5	2005.5	0	0	0	0	0	0	0	
32	Amortization	63.04	63.04	63.04	63.04	63.04	63.04	63.04	63.04	63.04	63.04	63.04	63.04	197.34	197.34	197.34	197.34	197.34	0	0	0	0	0	0	0	
33	Administrative Expenses	490.5	490.5	490.5	490.5	490.5	490.5	490.5	490.5	490.5	490.5	490.5	490.5	490.33	490.33	490.33	490.33	490.33	0	0	0	0	0	0	0	
34	Other operating Expenses (Income)	45.12	44	44	44	44	44	44	44	44	44	44	44	-250.48	-250.48	-250.48	-250.48	-250.48	0	0	0	0	0	0	0	
35																										
36	Operating Expense	13134.8	13133.68	13133.68	13133.68	13133.68	13133.68	13133.68	13133.68	13133.68	13133.68	13133.68	13133.68	11538.47	11538.47	11538.47	11538.47	11538.47	0	0	0	0	0	0	0	
37	Operating Expense %	0.18807	0.188054	0.188054	0.188054	0.188054	0.188054	0.188054	0.188054	0.188054	0.188054	0.188054	0.188054	0.183815	0.183815	0.183815	0.183815	0.183815	0	0	0	0	0	0	0	
38																										
39	Operating Profit	25125.2	25126.32	25126.32	25126.32	25126.32	25126.32	25126.32	25126.32	25126.32	25126.32	25126.32	25126.32	25117.88	25117.88	25117.88	25117.88	25117.88	0	0	0	0	0	0	0	
40	Operating Profit %	0.359754	0.35977	0.35977	0.35977	0.35977	0.35977	0.35977	0.35977	0.35977	0.35977	0.35977	0.35977	0.400144	0.400144	0.400144	0.400144	0.400144	0	0	0	0	0	0	0	
41																										
42	Other Revenue	421	421	421	421	421	421	421	421	421	421	421	421	488.4	488.4	488.4	488.4	488.4	0	0	0	0	0	0	0	

8. Create a Basic Income Statement:
   Next, you can create a basic Income Statement from the PandA model—one which tracks, but does not match the Income Statement spreadsheet provided to you.

   - Drag and drop the **Year** dimension back to the **Filters area**, then select **2020** as the display Member.
   - Leave **Month** displayed along the **Columns** with individual months *Jan* to *Dec* as display Members.
   - Apply **Accounting format** where numbers appear with two decimals.
   - Also apply **Percent format** for numbers that should appear as percentages (i.e., *Gross Profit %*, *Operating Expense %* and *Operating Profit %*)
   - Add some formatting where single lines appear above subtotals (e.g., *Revenue*, *Cost of Sales*, etc.) and a double line appear under the final net income (here, *Profit After Tax*).
   - You can also add a header for the Income Statement report such as:
     The Great Financials Company
     Income Statement
     For the year ended December 31, 2020
   - The Basic Income Statement report will appear as follows:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Database:	PandA QS Connect												
2	Cube:	Financial Data												
3	Dimensions:	Filter	Version	Members	Actual									
4		Filter	Year	Members	2020									
5		Filter	Entity	Members	All									
6		Filter	Departmer	Members	All									
7		Column	Month	Range	$B$13:$M$13									
8		Row	Account	Range	$A$14:$A$57									
9														
10	**The Great Financials Company**													
11	**Income Statement**													
12	**For the year ended December 31, 2020**													
13														
14	OLAPivotTable													
15		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
16	Sales of Goods	49,960.00	49,960.00	49,960.00	49,960.00	49,960.00	49,960.00	49,960.00	49,960.00	49,960.00	49,960.00	49,960.00	49,960.00	
17	Sales of Services	19,880.00	19,880.00	19,880.00	19,880.00	19,880.00	19,880.00	19,880.00	19,880.00	19,880.00	19,880.00	19,880.00	19,880.00	
18														
19	Revenue	69,840.00	69,840.00	69,840.00	69,840.00	69,840.00	69,840.00	69,840.00	69,840.00	69,840.00	69,840.00	69,840.00	69,840.00	
20														
21	Cost of Goods	23,140.00	23,140.00	23,140.00	23,140.00	23,140.00	23,140.00	23,140.00	23,140.00	23,140.00	23,140.00	23,140.00	23,140.00	
22	Cost of Services	8,440.00	8,440.00	8,440.00	8,440.00	8,440.00	8,440.00	8,440.00	8,440.00	8,440.00	8,440.00	8,440.00	8,440.00	
23														
24	Cost of Sales	31,580.00	31,580.00	31,580.00	31,580.00	31,580.00	31,580.00	31,580.00	31,580.00	31,580.00	31,580.00	31,580.00	31,580.00	
25														
26	Gross Profit	38,260.00	38,260.00	38,260.00	38,260.00	38,260.00	38,260.00	38,260.00	38,260.00	38,260.00	38,260.00	38,260.00	38,260.00	
27	Gross Profit %	55%	55%	55%	55%	55%	55%	55%	55%	55%	55%	55%	55%	
28														
29	Payroll and related expenses	5,209.80	5,209.80	5,209.80	5,209.80	5,209.80	5,209.80	5,209.80	5,209.80	5,209.80	5,209.80	5,209.80	5,209.80	
30	Distribution	1,067.60	1,067.60	1,067.60	1,067.60	1,067.60	1,067.60	1,067.60	1,067.60	1,067.60	1,067.60	1,067.60	1,067.60	
31	Occupancy Expenses	1,778.00	1,778.00	1,778.00	1,778.00	1,778.00	1,778.00	1,778.00	1,778.00	1,778.00	1,778.00	1,778.00	1,778.00	
32	Research and Development	1,054.80	1,054.80	1,054.80	1,054.80	1,054.80	1,054.80	1,054.80	1,054.80	1,054.80	1,054.80	1,054.80	1,054.80	
33	Sales and Marketing	2,644.80	2,644.80	2,644.80	2,644.80	2,644.80	2,644.80	2,644.80	2,644.80	2,644.80	2,644.80	2,644.80	2,644.80	
34	Depreciation	781.14	781.14	781.14	781.14	781.14	781.14	781.14	781.14	781.14	781.14	781.14	781.14	
35	Amortization	63.04	63.04	63.04	63.04	63.04	63.04	63.04	63.04	63.04	63.04	63.04	63.04	
36	Administrative Expenses	490.50	490.50	490.50	490.50	490.50	490.50	490.50	490.50	490.50	490.50	490.50	490.50	
37	Other operating Expenses (Income)	45.12	44.00	44.00	44.00	44.00	44.00	44.00	44.00	44.00	44.00	44.00	44.00	
38														
39	Operating Expense	13,134.80	13,133.68	13,133.68	13,133.68	13,133.68	13,133.68	13,133.68	13,133.68	13,133.68	13,133.68	13,133.68	13,133.68	
40	Operating Expense %	19%	19%	19%	19%	19%	19%	19%	19%	19%	19%	19%	19%	
41														
42	Operating Profit	25,125.20	25,126.32	25,126.32	25,126.32	25,126.32	25,126.32	25,126.32	25,126.32	25,126.32	25,126.32	25,126.32	25,126.32	
43	Operating Profit %	36%	36%	36%	36%	36%	36%	36%	36%	36%	36%	36%	36%	
44														
45	Other Revenue	421.00	421.00	421.00	421.00	421.00	421.00	421.00	421.00	421.00	421.00	421.00	421.00	
46	Other (Expense)	(66.00)	(66.00)	(66.00)	(66.00)	(66.00)	(66.00)	(66.00)	(66.00)	(66.00)	(66.00)	(66.00)	(66.00)	
47	Other Income (Expense)	355.00	355.00	355.00	355.00	355.00	355.00	355.00	355.00	355.00	355.00	355.00	355.00	
48														
49	EBIT	25,480.20	25,481.32	25,481.32	25,481.32	25,481.32	25,481.32	25,481.32	25,481.32	25,481.32	25,481.32	25,481.32	25,481.32	
50														
51	Interest Revenue	87.40	87.40	87.40	87.40	87.40	87.40	87.40	87.40	87.40	87.40	87.40	87.40	
52	Interest (Expense)	(28.44)	(28.44)	(28.44)	(28.44)	(28.44)	(28.44)	(28.44)	(28.44)	(28.44)	(28.44)	(28.44)	(28.44)	
53	Interest	58.96	58.96	58.96	58.96	58.96	58.96	58.96	58.96	58.96	58.96	58.96	58.96	
54														
55	Profit Before Tax	25,539.16	25,540.28	25,540.28	25,540.28	25,540.28	25,540.28	25,540.28	25,540.28	25,540.28	25,540.28	25,540.28	25,540.28	
56														
57	Income Tax Expense	(2,638.44)	(2,638.55)	(2,638.55)	(2,638.55)	(2,638.55)	(2,638.55)	(2,638.55)	(2,638.55)	(2,638.55)	(2,638.55)	(2,638.55)	(2,638.55)	
58														
59	Profit After Tax	22,900.72	22,901.73	22,901.73	22,901.73	22,901.73	22,901.73	22,901.73	22,901.73	22,901.73	22,901.73	22,901.73	22,901.73	
60														
61														

Sheet1

A basic Income Statement from the *PandA* model.

4. Creating a Forecast Plan

This section concerns the very important topic of leveraging the PandA model for planning—i.e., the kind of forecast or budget planning application that is essential to business success. We will want to keep in mind that this kind of application almost always includes multiple users who need to work collaboratively (which is not possible with a single shared—often emailed—stand-alone spreadsheet). With the PandA model, any number of contributors can connect to the collaboration plan model in the cloud.

The section immediately below demonstrates how to enter forecast data simply by typing in numbers.

The second section shows how to work with the sophisticated driver logic built into the PandA model in order to expedite the entry—essentially via "spreading"—of forecast numbers.

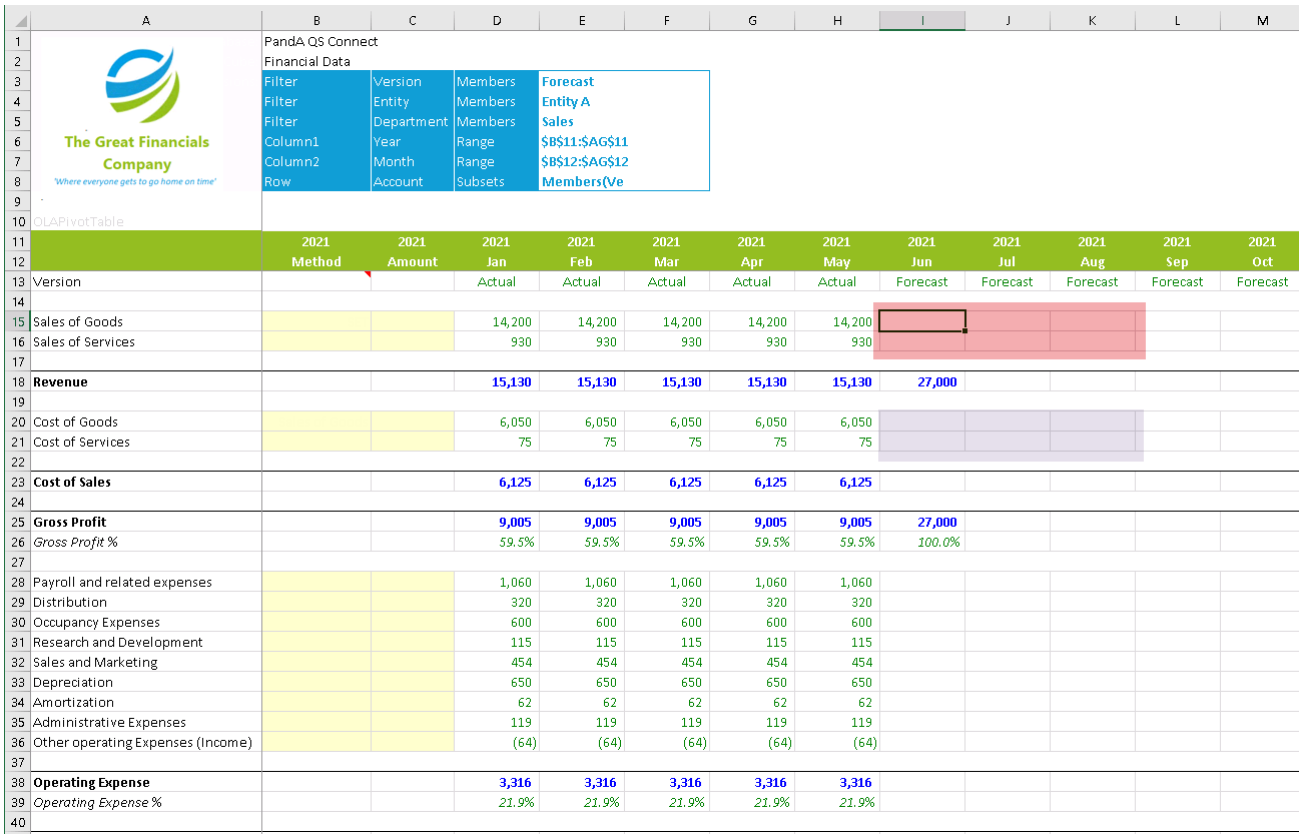
For these exercises we will return to the *Income Statement* spreadsheet provided to you, with the Version dimension Filter set on the Forecast template.

4.1 Data Entry – Typing in Values

For this exercise, we will enter forecast data in the PandA Basic Income Statement template for Income Statement account for a three-month period covering *Jun*, *Jul* and *Aug*.

Important: Remember that you can enter data only for Detail Member "intersections", meaning ALL the cells (whether in Filters, Column or Row) must have detail Members at the intersection where you want to enter data.

Looking at the ***PandA Basic Income Statement***, we enter data in the cells corresponding, first, to *Revenue* accounts, then in *Cost of Sales* accounts. The cells into which we will enter data into are highlighted in pink for the *Revenue* accounts and purple for the *Cost of Sales* accounts (see image below).

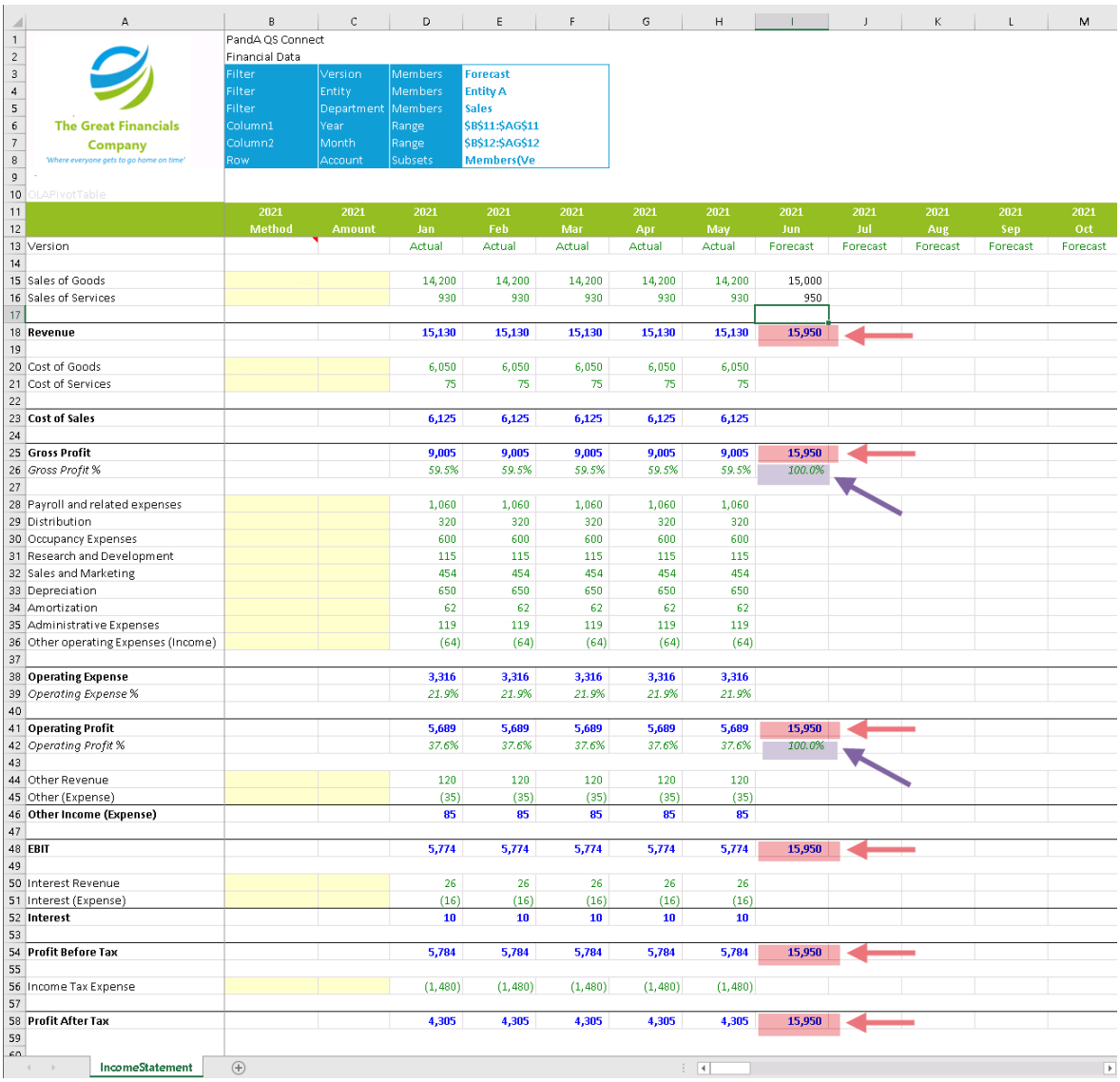


	A	B	C	D	E	F	G	H	I	J	K	L	M
1		PandA QS Connect											
2		Financial Data											
3		Filter	Version	Members	Forecast								
4		Filter	Entity	Members	Entity A								
5		Filter	Department	Members	Sales								
6		Column1	Year	Range	$B$11:$AG$11								
7		Column2	Month	Range	$B$12:$AG$12								
8		Row	Account	Subsets	Members(Ve								
9													
10	OLAPivotTable												
11		2021	2021	2021	2021	2021	2021	2021	2021	2021	2021	2021	2021
12		Method	Amount	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
13	Version			Actual	Actual	Actual	Actual	Actual	Forecast	Forecast	Forecast	Forecast	Forecast
14													
15	Sales of Goods			14,200	14,200	14,200	14,200	14,200					
16	Sales of Services			930	930	930	930	930					
17													
18	**Revenue**			**15,130**	**15,130**	**15,130**	**15,130**	**15,130**	**27,000**				
19													
20	Cost of Goods			6,050	6,050	6,050	6,050	6,050					
21	Cost of Services			75	75	75	75	75					
22													
23	**Cost of Sales**			**6,125**	**6,125**	**6,125**	**6,125**	**6,125**					
24													
25	**Gross Profit**			**9,005**	**9,005**	**9,005**	**9,005**	**9,005**	**27,000**				
26	*Gross Profit %*			*59.5%*	*59.5%*	*59.5%*	*59.5%*	*59.5%*	*100.0%*				
27													
28	Payroll and related expenses			1,060	1,060	1,060	1,060	1,060					
29	Distribution			320	320	320	320	320					
30	Occupancy Expenses			600	600	600	600	600					
31	Research and Development			115	115	115	115	115					
32	Sales and Marketing			454	454	454	454	454					
33	Depreciation			650	650	650	650	650					
34	Amortization			62	62	62	62	62					
35	Administrative Expenses			119	119	119	119	119					
36	Other operating Expenses (Income)			(64)	(64)	(64)	(64)	(64)					
37													
38	**Operating Expense**			**3,316**	**3,316**	**3,316**	**3,316**	**3,316**					
39	*Operating Expense %*			*21.9%*	*21.9%*	*21.9%*	*21.9%*	*21.9%*					
40													

The Revenue accounts where we will enter data are cells **I15** to **K15**, i.e., *Forecast*, *Entity A*, *Sales* [these are the Filter selections] for *Sales of Goods* for *Jun*, *Jul*, *Aug,* and; **I16** to **K16**, i.e., *Forecast*, *Entity A*, *Sales* [the same the Filter selections] for *Sales of Services* for the same 3 months.

1. Open the **PandA Basic Income Statement** template. Click **F9** to refresh the cloud-based data.
2. Type in *Sales of Goods* and *Sales of Services* forecast data for the month of *June*:

   - Go to cell **I15** (*Sales of Goods* for *Jun*) and enter **15000** and hit **Enter** key.
   - Next, in cell **I16** (*Sales of Services* for *Jun*) enter **950** and hit the **Enter** key.
   - Press **F9** to refresh the worksheet values.
     Observe how the related Aggregate cells are updated within the worksheet (cells highlighted in pink in the next image: cells *I18*, *I25*, *I41*, *I48*, *I54* and *I58*).
     These corresponds to the aggregate accounts: *Revenue*, *Gross Profit*, *Operating Profit*, *EBIT*, *Profit Before Tax*, *Profit After Tax*. Additionally, notice that the related ratios—which are in fact Formula-driven cells (which exist in the underlying model)—are updated as well (cells highlighted in *purple: I26* for *Gross Profit %*; and *I42* for *Operating Profit %*).



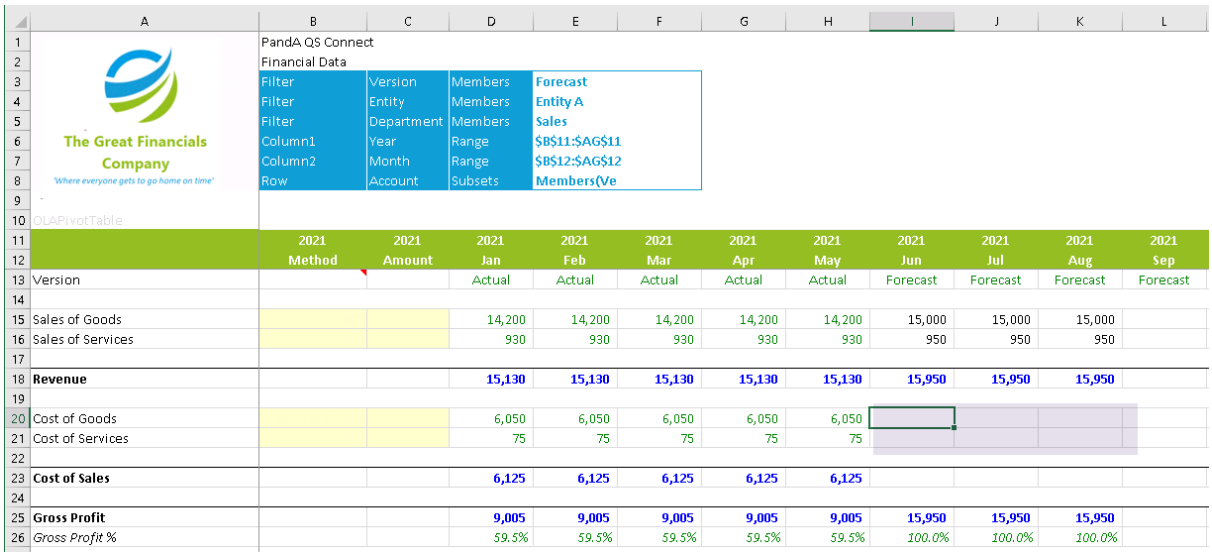
	A	B	C	D	E	F	G	H	I	J	K	L	M
1		PandA QS Connect											
2		Financial Data											
3		Filter	Version	Members	Forecast								
4		Filter	Entity	Members	Entity A								
5		Filter	Department	Members	Sales								
6		Column1	Year	Range	$B$11:$AG$11								
7		Column2	Month	Range	$B$12:$AG$12								
8		Row	Account	Subsets	Members(Ve								
9													
10	OLAPivotTable												
11		2021	2021	2021	2021	2021	2021	2021	2021	2021	2021	2021	2021
12		Method	Amount	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
13	Version			Actual	Actual	Actual	Actual	Actual	Forecast	Forecast	Forecast	Forecast	Forecast
14													
15	Sales of Goods			14,200	14,200	14,200	14,200	14,200	15,000				
16	Sales of Services			930	930	930	930	930	950				
17													
18	**Revenue**			**15,130**	**15,130**	**15,130**	**15,130**	**15,130**	**15,950**				
19													
20	Cost of Goods			6,050	6,050	6,050	6,050	6,050					
21	Cost of Services			75	75	75	75	75					
22													
23	**Cost of Sales**			**6,125**	**6,125**	**6,125**	**6,125**	**6,125**					
24													
25	**Gross Profit**			**9,005**	**9,005**	**9,005**	**9,005**	**9,005**	**15,950**				
26	*Gross Profit %*			*59.5%*	*59.5%*	*59.5%*	*59.5%*	*59.5%*	*100.0%*				
27													
28	Payroll and related expenses			1,060	1,060	1,060	1,060	1,060					
29	Distribution			320	320	320	320	320					
30	Occupancy Expenses			600	600	600	600	600					
31	Research and Development			115	115	115	115	115					
32	Sales and Marketing			454	454	454	454	454					
33	Depreciation			650	650	650	650	650					
34	Amortization			62	62	62	62	62					
35	Administrative Expenses			119	119	119	119	119					
36	Other operating Expenses (Income)			(64)	(64)	(64)	(64)	(64)					
37													
38	**Operating Expense**			**3,316**	**3,316**	**3,316**	**3,316**	**3,316**					
39	*Operating Expense %*			*21.9%*	*21.9%*	*21.9%*	*21.9%*	*21.9%*					
40													
41	**Operating Profit**			**5,689**	**5,689**	**5,689**	**5,689**	**5,689**	**15,950**				
42	*Operating Profit %*			*37.6%*	*37.6%*	*37.6%*	*37.6%*	*37.6%*	*100.0%*				
43													
44	Other Revenue			120	120	120	120	120					
45	Other (Expense)			(35)	(35)	(35)	(35)	(35)					
46	**Other Income (Expense)**			**85**	**85**	**85**	**85**	**85**					
47													
48	**EBIT**			**5,774**	**5,774**	**5,774**	**5,774**	**5,774**	**15,950**				
49													
50	Interest Revenue			26	26	26	26	26					
51	Interest (Expense)			(16)	(16)	(16)	(16)	(16)					
52	**Interest**			**10**	**10**	**10**	**10**	**10**					
53													
54	**Profit Before Tax**			**5,784**	**5,784**	**5,784**	**5,784**	**5,784**	**15,950**				
55													
56	Income Tax Expense			(1,480)	(1,480)	(1,480)	(1,480)	(1,480)					
57													
58	**Profit After Tax**			**4,305**	**4,305**	**4,305**	**4,305**	**4,305**	**15,950**				
59													

IncomeStatement

3. Next, type in the same forecast values for the corresponding accounts for *Jul* and *Aug*:

   - Type **15000** in cells **J15** (*Sales of Goods* for *Jul*) and **K15** (*Sales of Goods* for *Aug*) and hit the **Enter** key.
   - Type **950** in cells **J16** (*Sales of Services* for *Jul*) and **K16** (*Sales of Services* for *Aug*) and hit **Enter** key.
   - Press **F9** to refresh the Income Statement values.
     Once again, *all affected Aggregate cells and Formula governed cells* in **columns J** and **K** are updated. **Note:** At this point, the two Profitability Ratios (*Gross Profit %* and *Operating Profit %*) are still at 100% because we have only entered Revenue items.

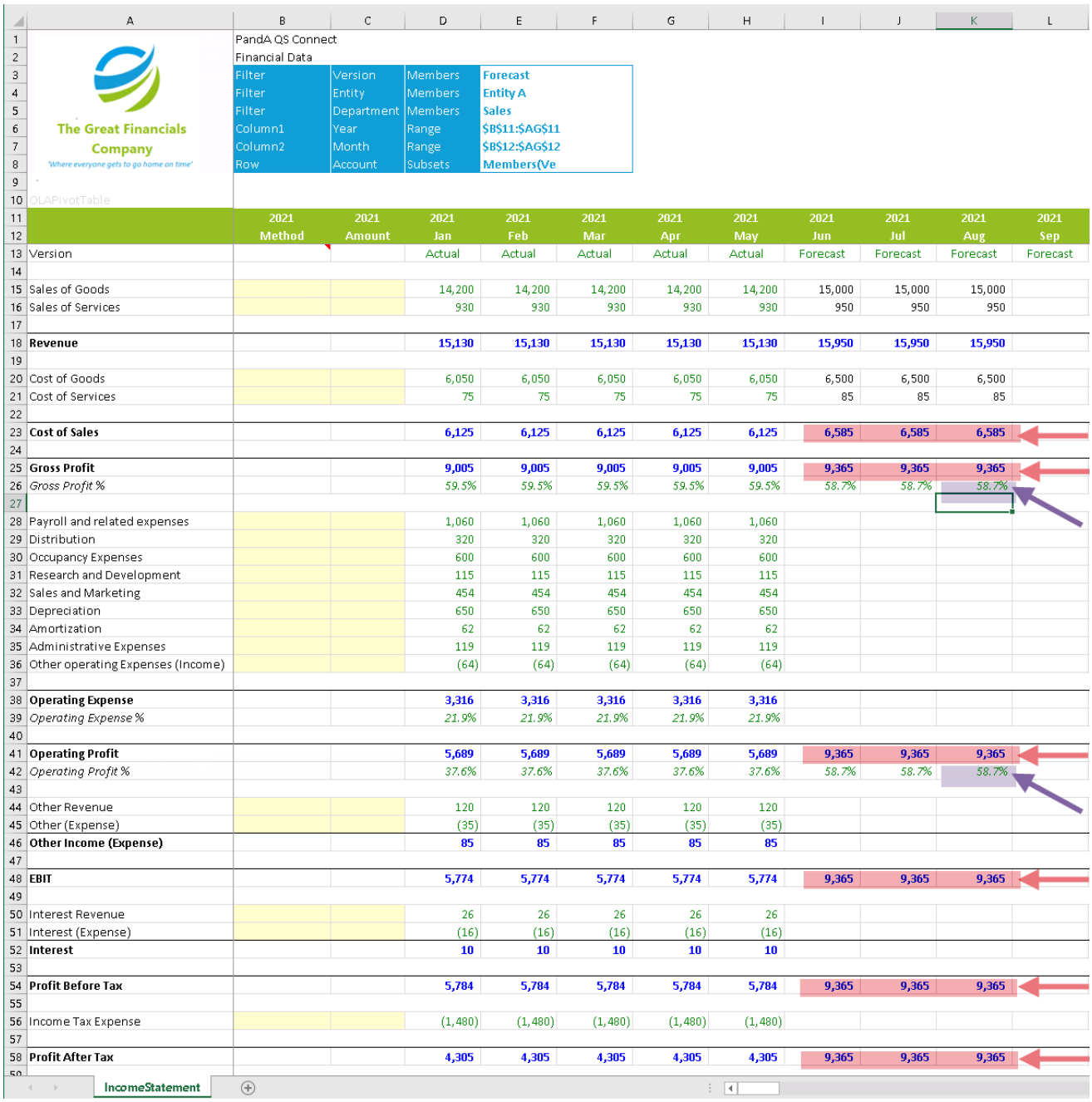
Proceed with the exercise, but this time, enter *Cost of Sales* items (data entry fields are highlighted in purple in the image below).



	A	B	C	D	E	F	G	H	I	J	K	L
1		PandA QS Connect										
2		Financial Data										
3		Filter	Version	Members	Forecast							
4		Filter	Entity	Members	Entity A							
5		Filter	Department	Members	Sales							
6		Column1	Year	Range	$B$11:$AG$11							
7		Column2	Month	Range	$B$12:$AG$12							
8		Row	Account	Subsets	Members(Ve							
9												
10	OLAPivotTable											
11		2021	2021	2021	2021	2021	2021	2021	2021	2021	2021	2021
12		Method	Amount	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
13	Version			Actual	Actual	Actual	Actual	Actual	Forecast	Forecast	Forecast	Forecast
14												
15	Sales of Goods			14,200	14,200	14,200	14,200	14,200	15,000	15,000	15,000	
16	Sales of Services			930	930	930	930	930	950	950	950	
17												
18	**Revenue**			**15,130**	**15,130**	**15,130**	**15,130**	**15,130**	**15,950**	**15,950**	**15,950**	
19												
20	Cost of Goods			6,050	6,050	6,050	6,050	6,050				
21	Cost of Services			75	75	75	75	75				
22												
23	**Cost of Sales**			**6,125**	**6,125**	**6,125**	**6,125**	**6,125**				
24												
25	**Gross Profit**			**9,005**	**9,005**	**9,005**	**9,005**	**9,005**	**15,950**	**15,950**	**15,950**	
26	*Gross Profit %*			*59.5%*	*59.5%*	*59.5%*	*59.5%*	*59.5%*	*100.0%*	*100.0%*	*100.0%*	

4. Enter forecast *Cost of Sales* data (*Cost of Goods* and *Cost of Services*):

   - Go cells **I20** to **K20** (*Cost of Goods* for months *Jun* to *Aug*) and enter **6500**.
   - Next, go to cells **I21** to **K21** (*Cost of Services* for months *Jun* to *Aug*) and enter **85**.
   - Press **F9** to refresh the worksheet values.
     Once again, notice that the affected Aggregate points are updated within the worksheet: for the accounts *Cost of Sales*, *Gross Profit*, *Operating Profit*, *EBIT*, *Profit Before Tax*, *Profit After Tax* (cells highlighted in pink in the succeeding image).
     The Formula-driven cells are updated as well: the Profitability ratios change, where now it reflects 58.7% values both for *Gross Profit %* and *Operating Profit %* (cells highlighted in purple in the succeeding image).

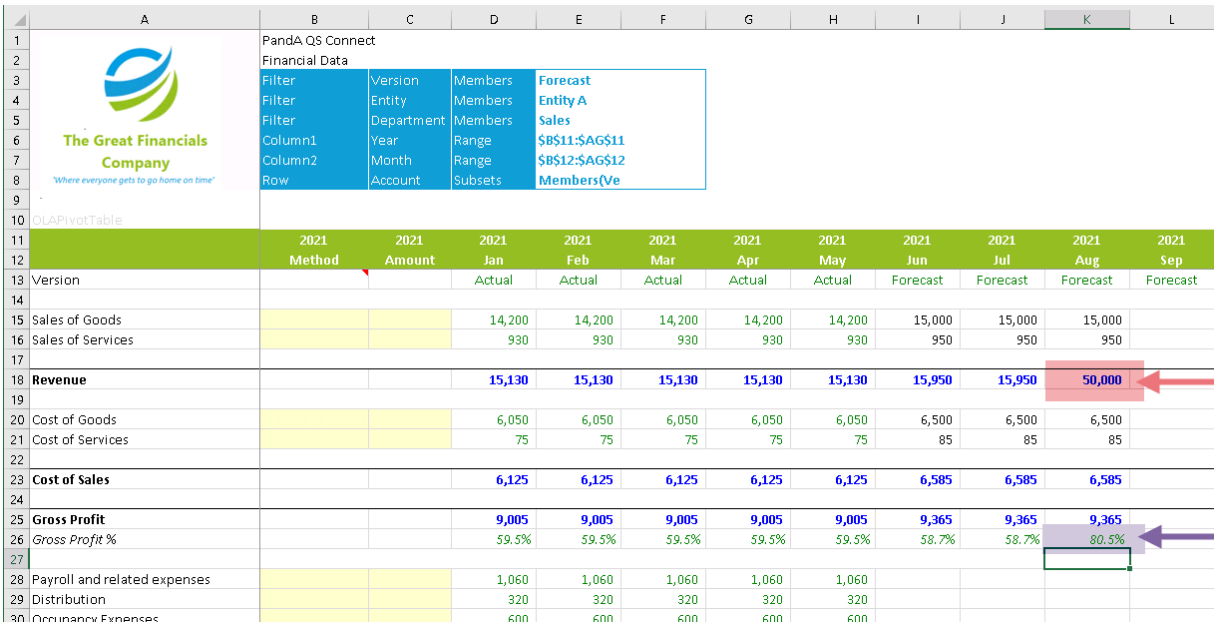


	A	B	C	D	E	F	G	H	I	J	K	L
1		PandA QS Connect										
2		Financial Data										
3		Filter	Version	Members	Forecast							
4		Filter	Entity	Members	Entity A							
5		Filter	Department	Members	Sales							
6		Column1	Year	Range	$B$11:$AG$11							
7		Column2	Month	Range	$B$12:$AG$12							
8		Row	Account	Subsets	Members(Ve							
9												
10	OLAPivotTable											
11		2021	2021	2021	2021	2021	2021	2021	2021	2021	2021	2021
12		Method	Amount	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
13	Version			Actual	Actual	Actual	Actual	Actual	Forecast	Forecast	Forecast	Forecast
14												
15	Sales of Goods			14,200	14,200	14,200	14,200	14,200	15,000	15,000	15,000	
16	Sales of Services			930	930	930	930	930	950	950	950	
17												
18	**Revenue**			**15,130**	**15,130**	**15,130**	**15,130**	**15,130**	**15,950**	**15,950**	**15,950**	
19												
20	Cost of Goods			6,050	6,050	6,050	6,050	6,050	6,500	6,500	6,500	
21	Cost of Services			75	75	75	75	75	85	85	85	
22												
23	**Cost of Sales**			**6,125**	**6,125**	**6,125**	**6,125**	**6,125**	**6,585**	**6,585**	**6,585**	
24												
25	**Gross Profit**			**9,005**	**9,005**	**9,005**	**9,005**	**9,005**	**9,365**	**9,365**	**9,365**	
26	*Gross Profit %*			*59.5%*	*59.5%*	*59.5%*	*59.5%*	*59.5%*	*58.7%*	*58.7%*	*58.7%*	
27												
28	Payroll and related expenses			1,060	1,060	1,060	1,060	1,060				
29	Distribution			320	320	320	320	320				
30	Occupancy Expenses			600	600	600	600	600				
31	Research and Development			115	115	115	115	115				
32	Sales and Marketing			454	454	454	454	454				
33	Depreciation			650	650	650	650	650				
34	Amortization			62	62	62	62	62				
35	Administrative Expenses			119	119	119	119	119				
36	Other operating Expenses (Income)			(64)	(64)	(64)	(64)	(64)				
37												
38	**Operating Expense**			**3,316**	**3,316**	**3,316**	**3,316**	**3,316**				
39	*Operating Expense %*			*21.9%*	*21.9%*	*21.9%*	*21.9%*	*21.9%*				
40												
41	**Operating Profit**			**5,689**	**5,689**	**5,689**	**5,689**	**5,689**	**9,365**	**9,365**	**9,365**	
42	*Operating Profit %*			*37.6%*	*37.6%*	*37.6%*	*37.6%*	*37.6%*	*58.7%*	*58.7%*	*58.7%*	
43												
44	Other Revenue			120	120	120	120	120				
45	Other (Expense)			(35)	(35)	(35)	(35)	(35)				
46	**Other Income (Expense)**			**85**	**85**	**85**	**85**	**85**				
47												
48	**EBIT**			**5,774**	**5,774**	**5,774**	**5,774**	**5,774**	**9,365**	**9,365**	**9,365**	
49												
50	Interest Revenue			26	26	26	26	26				
51	Interest (Expense)			(16)	(16)	(16)	(16)	(16)				
52	**Interest**			**10**	**10**	**10**	**10**	**10**				
53												
54	**Profit Before Tax**			**5,784**	**5,784**	**5,784**	**5,784**	**5,784**	**9,365**	**9,365**	**9,365**	
55												
56	Income Tax Expense			(1,480)	(1,480)	(1,480)	(1,480)	(1,480)				
57												
58	**Profit After Tax**			**4,305**	**4,305**	**4,305**	**4,305**	**4,305**	**9,365**	**9,365**	**9,365**	

IncomeStatement

5. We can test what will happen to the Aggregate cells and Formula-driven cells by typing over numbers in them.

    - Go to any aggregate cell, (e.g., *Revenue* for *Aug* 2021 in cell **K18**) and type in **50000**. Press **Enter**. (See highlighted in pink in the following image)
    - Next go to any formula-driven cell, (e.g., *Gross Profit %* for *Aug* 2021 in cell **K26**) and type in **80.5 %**. Press **Enter**. (See highlighted in purple in the following image)



	A	B	C	D	E	F	G	H	I	J	K	L
1		PandA QS Connect										
2		Financial Data										
3		Filter	Version	Members	Forecast							
4		Filter	Entity	Members	Entity A							
5		Filter	Department	Members	Sales							
6		Column1	Year	Range	$B$11:$AG$11							
7		Column2	Month	Range	$B$12:$AG$12							
8		Row	Account	Subsets	Members(Ve							
9												
10	OLAPivotTable											
11		2021	2021	2021	2021	2021	2021	2021	2021	2021	2021	2021
12		Method	Amount	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
13	Version			Actual	Actual	Actual	Actual	Actual	Forecast	Forecast	Forecast	Forecast
14												
15	Sales of Goods			14,200	14,200	14,200	14,200	14,200	15,000	15,000	15,000	
16	Sales of Services			930	930	930	930	930	950	950	950	
17												
18	**Revenue**			**15,130**	**15,130**	**15,130**	**15,130**	**15,130**	**15,950**	**15,950**	**50,000**	
19												
20	Cost of Goods			6,050	6,050	6,050	6,050	6,050	6,500	6,500	6,500	
21	Cost of Services			75	75	75	75	75	85	85	85	
22												
23	**Cost of Sales**			**6,125**	**6,125**	**6,125**	**6,125**	**6,125**	**6,585**	**6,585**	**6,585**	
24												
25	**Gross Profit**			**9,005**	**9,005**	**9,005**	**9,005**	**9,005**	**9,365**	**9,365**	**9,365**	
26	*Gross Profit %*			*59.5%*	*59.5%*	*59.5%*	*59.5%*	*59.5%*	*58.7%*	*58.7%*	*80.5%*	
27												
28	Payroll and related expenses			1,060	1,060	1,060	1,060	1,060				
29	Distribution			320	320	320	320	320				
30	Occupancy Expenses			600	600	600	600	600				

- Press **F9** and observe what happens:
  The previous figures return: those Aggregate and Formula-driven cells DO NOT allow data entry and will always be calculated based on how their sub-accounts were rolled up in the Hierarchy (for aggregates like in cell **K18**) and on the Formula defined within the source model (formula-driven cells like in cell **K26**).
  This is a very important feature of the PandA model, as it ensures that as long as the Hierarchies are properly set up and the formula statements correctly written, corresponding cells will always return correct calculations. This eliminates potential Excel disasters, e.g., unintentional deletion of numbers or overwriting Excel formulas.

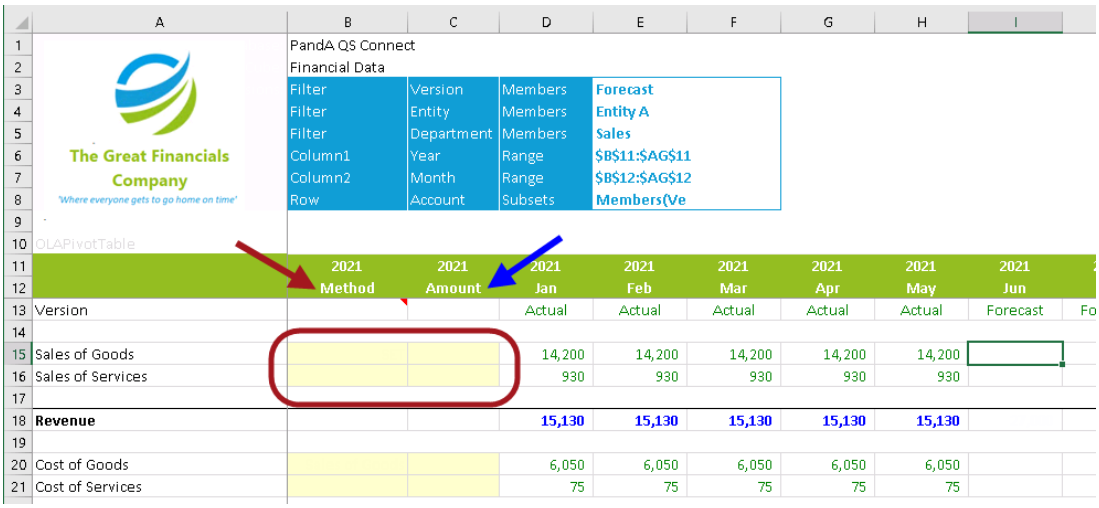
6. You can continue using the Income Statement template by typing in numbers for the rest of the Accounts and see how the sub-totals (or the Aggregate cells) and the ratios (Formula-driven cells) change as you input figures for the rest of the Detail accounts.

   - Try entering figures for the sub-accounts of the *Operating Expense* (rows 28 to 36).
   - Press **F9** and observe what happens.
   - Continue exploring the worksheet by crunching in figures for the rest of the Detail accounts.

4.2 Use of Drivers – Method/Amount

The previous topic concerned manual data entry in the *PandA Basic Income Statement* and touched on how calculations work within the model. Here we will explore how to use "driver-based logic" that has been built into the PandA model, a very convenient way to populate (or "spread") forecast data within the template.

Before proceeding with this exercise, let's examine the different logic drivers or 'spreads' that can be used in this template: when you inspect the Income Statement template, you will notice two seemingly odd Members in the *Month* dimension, displayed along the columns: **Method** (B12) and **Amount** (C12), and shown in the following image. These correspond to the 'spreading methods that can be applied to input data into your Panda Basic Income Statement spreadsheet.

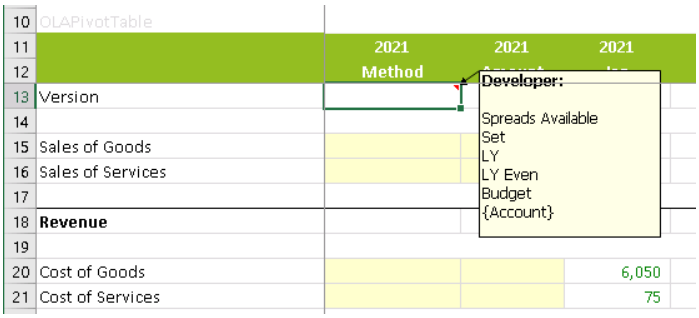


The '**Method**' column (RED Arrow) is where you will type in (given the set of selections) the 'spread' method to be used, to dictate how the resulting forecast data will be derived.

The '**Amount**' column (BLUE Arrow) is where you will type in a number for the Method to operate on, to "send" the data into Forecast cells—here, indicated in Row 12, from *Jun* onward. As will be shown, depending on the 'Method' chosen, the 'Amount' you type in will be a numeric value or a percentage figure (where 1 = 100%, 1.25 = 125%, etc.).

Important: The yellow-shaded cells (in columns B and C) in the PandA Basic Income Statement, corresponding to Method and Amount are the cells where you can make use of the 'Spreads' since they correspond to the Detail data entry points. Logically, you can't use the 'Spreads' on the Aggregate or formula-driven cells because the computation for those cells exist within the PandA model and will always be the basis for calculating the resulting values.

By hovering the cursor over cell **B13** (where you can see a red triangle at the upper right corner), you will see a list of the available 'Spreads' that you can use for easy generation of forecast figures:



The spreading ("driver") methods available are

Methods/ Spreads	How they work
Set	The Set method will use the value specified in the 'Amount' column and send those values into the Forecast cells.
LY	The LY method will use Last Year's value and multiply it by the number typed into the 'Amount' column, then send the resulting values to the corresponding Forecast months.
LY Even	The LY Even method will grab Last Year's Total Year value and calculate the average of the 12 months, then multiply it by the number typed into the 'Amount' column; then send the resulting values to the Forecast months.
Budget	The Budget method will obtain the Budget value and multiply it by the number typed into the 'Amount' column, then send the resulting values to the corresponding Forecast months.
{Account}	The Account method will obtain the value of the specified 'Account' and multiply it by the number typed into the 'Amount' column, then send the resulting values to the corresponding Forecast months.

Back in the *PandA Basic Income Statement*, we can see that we are following the calendar year system; our objective will be to supply Forecast data for the remaining months covered by the Years *2021* (here we assume that from Jun onward there are no Forecast numbers entered yet) and all months in *2022.* What follows are examples using the different Methods indicated above.

Let us begin with creating forecast numbers for the remainder of *2021*.

1. Open the **PandA Basic Income Statement** template. Click **F9** to refresh data in the Excel file.
   Note: For this exercise—and generally—you can clear out existing data by typing zero in the cells.

   Begin by creating Forecast values for the Revenue sub-accounts *Sales of Goods* and *Sales of Services*.

2. For this example, we will just type in our forecast figures for *Sales of Goods*. For discussion purposes, assume that revenue coming from *Sales of Goods* have lean and peak seasons. The lean season covers the months *Jun* to *Sep* while the peak season is the last-quarter months, i.e., *Oct*, *Nov* and *Dec*.

- Ensure that columns corresponding to *Method* (cell B15) and *Amount* (cell C15) for *Sales of Goods* account are empty.
- In cell **I15** (*Sales of Goods* for *Jun*) type in **10000**. Press **Enter** key.
- Copy the value in I15 and paste to cells **J15 to L15** (*Sales of Goods* for months *Jul* to *Sep*).
- In cell **M15** (*Sales of Goods* for *Oct*) type in **16000**. Press **Enter** key.
- Copy the value in cell M15 and paste to cells **N15 to O15** (Sales of Goods for *Nov* and *Dec*).
- Press **F9** to refresh the worksheet.
- The lean season is highlighted in pink in the image below, while the peak season is highlighted in purple—and, just like in the previous topic, all Aggregate cells and Formula-driven cells are updated.

	2021 Method	2021 Amount	2021 Jan	2021 Feb	2021 Mar	2021 Apr	2021 May	2021 Jun	2021 Jul	2021 Aug	2021 Sep	2021 Oct	2021 Nov	2021 Dec	2021 TotalYear	2022 Metho
Version			Actual	Actual	Actual	Actual	Actual	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast		
Sales of Goods			14,200	14,200	14,200	14,200	14,200	10,000	10,000	10,000	10,000	16,000	16,000	16,000	159,000	
Sales of Services			930	930	930	930	930								4,650	
Revenue			**15,130**	**15,130**	**15,130**	**15,130**	**15,130**	**10,000**	**10,000**	**10,000**	**10,000**	**16,000**	**16,000**	**16,000**	**163,650**	
Cost of Goods			6,050	6,050	6,050	6,050	6,050								30,250	
Cost of Services			75	75	75	75	75								375	
Cost of Sales			**6,125**	**6,125**	**6,125**	**6,125**	**6,125**								**30,625**	
Gross Profit			**9,005**	**9,005**	**9,005**	**9,005**	**9,005**	**10,000**	**10,000**	**10,000**	**10,000**	**16,000**	**16,000**	**16,000**	**133,025**	
Gross Profit %			*59.5%*	*59.5%*	*59.5%*	*59.5%*	*59.5%*	*100.0%*	*100.0%*	*100.0%*	*100.0%*	*100.0%*	*100.0%*	*100.0%*	*81.3%*	
Payroll and related expenses			1,060	1,060	1,060	1,060	1,060								5,300	
Distribution			320	320	320	320	320								1,600	
Occupancy Expenses			600	600	600	600	600								3,000	
Research and Development			115	115	115	115	115								575	
Sales and Marketing			454	454	454	454	454								2,270	
Depreciation			650	650	650	650	650								3,250	
Amortization			62	62	62	62	62								310	
Administrative Expenses			119	119	119	119	119								595	
Other operating Expenses (Income)			(64)	(64)	(64)	(64)	(64)								(320)	
Operating Expense			**3,316**	**3,316**	**3,316**	**3,316**	**3,316**								**16,580**	
Operating Expense %			*21.9%*	*21.9%*	*21.9%*	*21.9%*	*21.9%*								*10.1%*	

3. Create forecast values using the **SET Method** (for *Sales of Services*):
   Assume that the revenue from *Sales of Services* is expected to be pretty much steady for the rest of the months in *2021*; therefore, in this example, we can use the **Set** method and will indicate the expected Forecast figure per month at 950.

   - In **B16** (*Method* for *Sales of Services*) type in **Set**.
   - Next, go to cell **C16** (*Amount* for *Sales of Services*) and type in **950**.
   - Press **Enter** key.
   - Press **F9** to refresh the worksheet.
     Notice how the cells I16 to O16 now display 950 as the Forecast value.
     The affected Aggregate cells and Formula-driven cells are likewise updated.

	2021 Method	2021 Amount	2021 Jan	2021 Feb	2021 Mar	2021 Apr	2021 May	2021 Jun	2021 Jul	2021 Aug	2021 Sep	2021 Oct	2021 Nov	2021 Dec	2021 TotalYear
Version			Actual	Actual	Actual	Actual	Actual	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	
Sales of Goods			14,200	14,200	14,200	14,200	14,200	10,000	10,000	10,000	10,000	16,000	16,000	16,000	159,000
Sales of Services	Set	950.00	930	930	930	930	930	950	950	950	950	950	950	950	11,300
Revenue			**15,130**	**15,130**	**15,130**	**15,130**	**15,130**	**10,950**	**10,950**	**10,950**	**10,950**	**16,950**	**16,950**	**16,950**	**170,300**
Cost of Goods			6,050	6,050	6,050	6,050	6,050								30,250
Cost of Services			75	75	75	75	75								375
Cost of Sales			**6,125**	**6,125**	**6,125**	**6,125**	**6,125**								**30,625**
Gross Profit			**9,005**	**9,005**	**9,005**	**9,005**	**9,005**	**10,950**	**10,950**	**10,950**	**10,950**	**16,950**	**16,950**	**16,950**	**139,675**
Gross Profit %			*59.5%*	*59.5%*	*59.5%*	*59.5%*	*59.5%*	*100.0%*	*100.0%*	*100.0%*	*100.0%*	*100.0%*	*100.0%*	*100.0%*	*82.0%*
Payroll and related expenses			1,060	1,060	1,060	1,060	1,060								5,300

4. Create Forecast values using the **{ACCOUNT} Method** (*Cost of Sales* sub-accounts):
   For the *Cost of Sales* sub-accounts, assume that per management's expectation, the *Cost of Goods* is to be computed at 50% based on the *Sales of Goods* value; also, the *Cost of Services* is pegged at 40% of the *Sales of Services* value.
   Given those assumptions, we can use the {Account} method to specify which accounts will be used as a reference and type in the corresponding percentages to be used for calculation.

   - In cell **B20** (*Method* for *Cost of Goods*) type in **Sales of Goods**.
     Note: Be mindful of the correct spelling of the account.
   - Next, in **C20** (*Amount* for *Cost of Goods*) type in **.5**. This means that we will compute the result as 50% of the *Sales of Goods* value.
   - Press **Enter** key.
   - Press **F9** to refresh the worksheet.
     Notice how cells I20 to O20 display a calculated value of 50% of each month's forecasted *Sales of Goods* for *2021*.

	2021 Method	2021 Amount	2021 Jan	2021 Feb	2021 Mar	2021 Apr	2021 May	2021 Jun	2021 Jul	2021 Aug	2021 Sep	2021 Oct	2021 Nov	2021 Dec	2021 TotalYear
Version			Actual	Actual	Actual	Actual	Actual	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	
Sales of Goods	set		14,200	14,200	14,200	14,200	14,200	10,000	10,000	10,000	10,000	16,000	16,000	16,000	159,000
Sales of Services	Set	950.00	930	930	930	930	930	950	950	950	950	950	950	950	11,300
Revenue			**15,130**	**15,130**	**15,130**	**15,130**	**15,130**	**10,950**	**10,950**	**10,950**	**10,950**	**16,950**	**16,950**	**16,950**	**170,300**
Cost of Goods	Sales of Goods	0.50	6,050	6,050	6,050	6,050	6,050	5,000	5,000	5,000	5,000	8,000	8,000	8,000	74,250
Cost of Services			75	75	75	75	75								375
Cost of Sales			**6,125**	**6,125**	**6,125**	**6,125**	**6,125**	**5,000**	**5,000**	**5,000**	**5,000**	**8,000**	**8,000**	**8,000**	**74,625**
Gross Profit			**9,005**	**9,005**	**9,005**	**9,005**	**9,005**	**5,950**	**5,950**	**5,950**	**5,950**	**8,950**	**8,950**	**8,950**	**95,675**
Gross Profit %			*59.5%*	*59.5%*	*59.5%*	*59.5%*	*59.5%*	*54.3%*	*54.3%*	*54.3%*	*54.3%*	*52.8%*	*52.8%*	*52.8%*	*56.2%*

To do the same for *Cost of Services*:

- In cell **B21** type **Sales of Services**.
- Then in the corresponding Amount column, i.e., **C21**, type **.4**, since we are computing for 40% of the *Sales of Services* value.
- Press **Enter** key.
- Press **F9** to refresh the worksheet.
  Cells I21 to O21 will reflect a calculated value of 40% corresponding to each month's forecasted *Sales of Services* for *2021*.

	2021 Method	2021 Amount	2021 Jan	2021 Feb	2021 Mar	2021 Apr	2021 May	2021 Jun	2021 Jul	2021 Aug	2021 Sep	2021 Oct	2021 Nov	2021 Dec	2021 TotalYear
Version			Actual	Actual	Actual	Actual	Actual	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	
Sales of Goods	set		14,200	14,200	14,200	14,200	14,200	10,000	10,000	10,000	10,000	16,000	16,000	16,000	159,000
Sales of Services	Set	950.00	930	930	930	930	930	950	950	950	950	950	950	950	11,300
Revenue			**15,130**	**15,130**	**15,130**	**15,130**	**15,130**	**10,950**	**10,950**	**10,950**	**10,950**	**16,950**	**16,950**	**16,950**	**170,300**
Cost of Goods	Sales of Goods	0.50	6,050	6,050	6,050	6,050	6,050	5,000	5,000	5,000	5,000	8,000	8,000	8,000	74,250
Cost of Services	Sales of Services	0.40	75	75	75	75	75	380	380	380	380	380	380	380	3,035
Cost of Sales			**6,125**	**6,125**	**6,125**	**6,125**	**6,125**	**5,380**	**5,380**	**5,380**	**5,380**	**8,380**	**8,380**	**8,380**	**77,285**
Gross Profit			**9,005**	**9,005**	**9,005**	**9,005**	**9,005**	**5,570**	**5,570**	**5,570**	**5,570**	**8,570**	**8,570**	**8,570**	**93,015**
Gross Profit %			*59.5%*	*59.5%*	*59.5%*	*59.5%*	*59.5%*	*50.9%*	*50.9%*	*50.9%*	*50.9%*	*50.6%*	*50.6%*	*50.6%*	*54.6%*

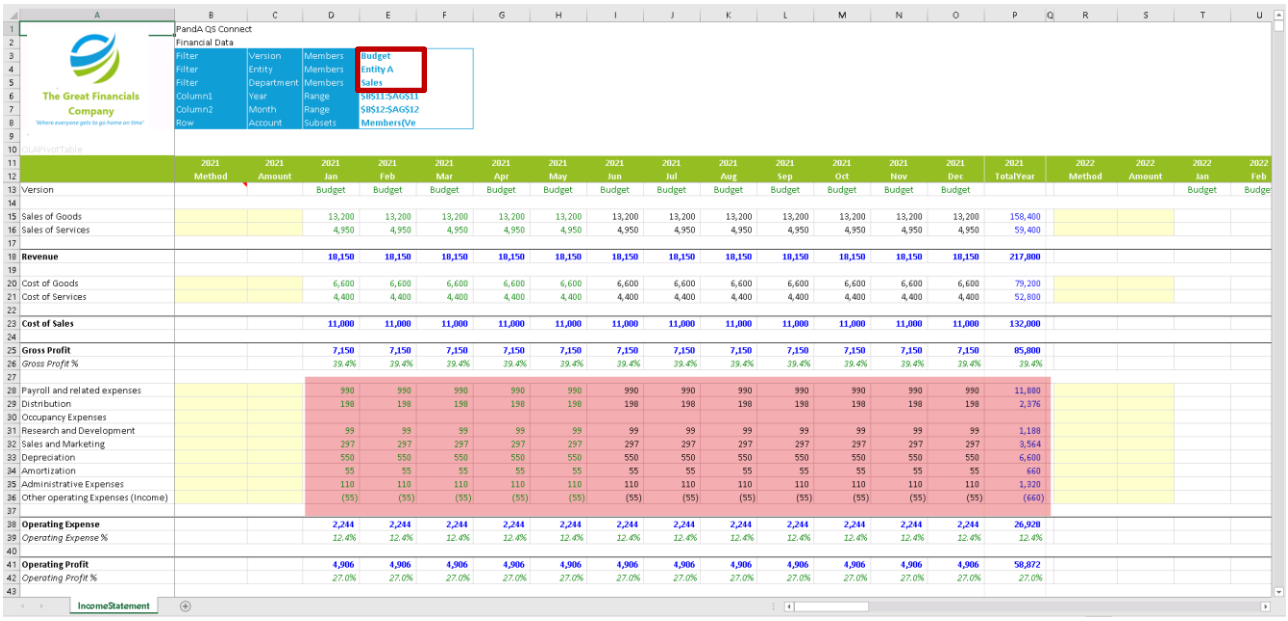
Notice also how the aggregate cells (*Cost of Sales*, *Gross Profit* and the rest of the affected sub-totals for the *Account* dimension; and *Total Year* column) get updated. Additionally, the Gross Profit % is updated to reflect the correct ratio.

- Create forecast values using the **BUDGET Method** (*Operating Expense sub-accounts*):
  Assume that the company wants to base the forecasted Operating Expenses based on Budget figures. Therefore, we will want to make use of the **Budget Method** here.

To begin, change the version to see the *Budget* values for *2021*.
Ensure that the Filter selections are as follows (and shown in the following image, boxed, cells E3, E4, E5):

Filter	Version: *Budget*
	Entity: *Entity A*
	Department: *Sales*

- Press **F9** to see the Budget data to reference to the budget data for the *Operating Expense* sub-accounts.
  These will be the accounts: *Payroll and related expenses*, *Distribution*, *Occupancy Expenses*, *Research and Development*, *Sales and Marketing*, *Depreciation*, *Amortization*, *Administrative Expenses*, *Other operating Expenses (Income)*.
  The budget values to be referenced to are highlighted in pink.

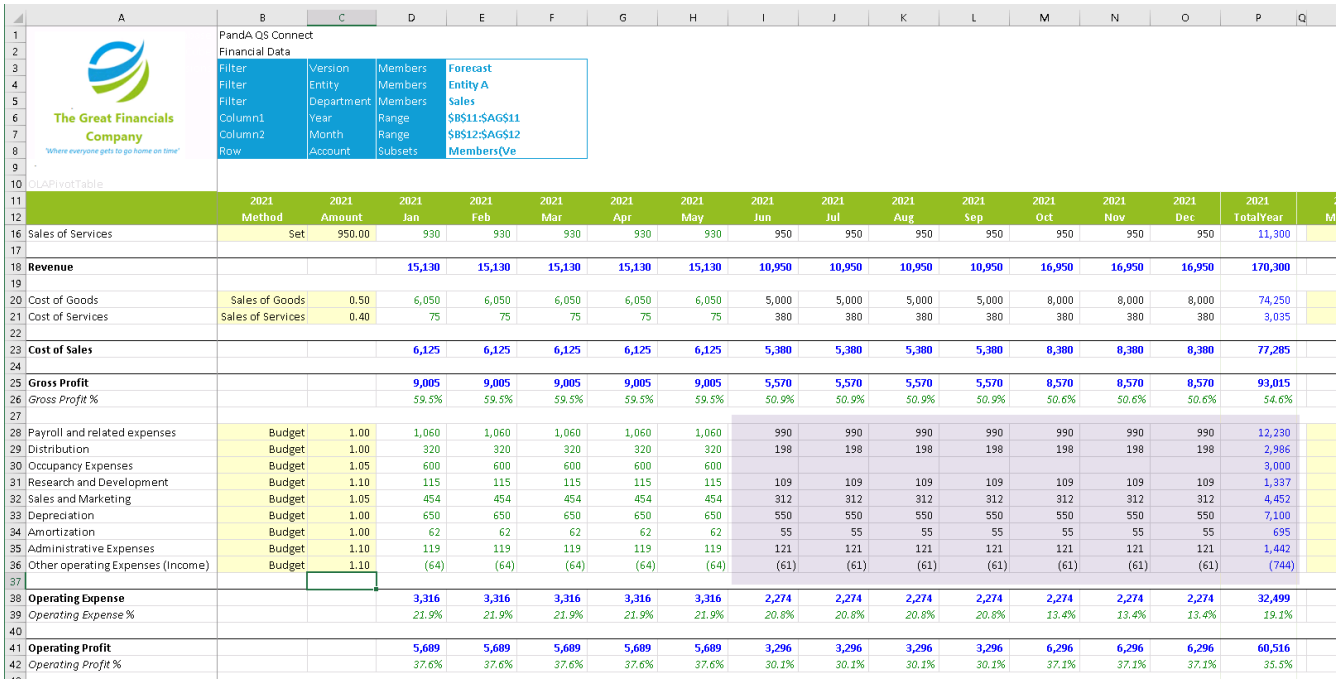


BUDGET Slice

- For **Payroll and related expenses**: in cell **B28** type **Budget**; in **C28** type in **1**, so that the Forecast figure will be the same as the Budget figure.
- For **Distribution**: in cell **B29** type **Budget**; in **C29** type in **1**, likewise, so that the Forecast figure will be the same as the Budget figure.
- For **Occupancy Expenses**: in cell **B30** type **Budget**; in **C30** type **1.05**, thus forecasting a 5% increase over the budgeted figure.
- For **Research and Development**: in cell **B31** type **Budget**; in **C31** type in **1.1**, thus forecasting a 10% increase over the budgeted figure.
- For **Sales and Marketing**: in cell **B32** type **Budget**; in **C32** type **1.05**, thus forecasting a 5% increase over the budgeted figure.
- For **Depreciation**: in cell **B33** type **Budget**; in **C33** type **1**.
- For **Amortization**: in cell **B34** type **Budget**; in **C34** type **1**.
- For **Administrative Expenses**: in cell **B35** type **Budget**; in **C35** type **1.1**.

- Finally, for **Other operating Expenses (Income)**: in cell **B36** type **Budget**; in **C36** type in **1.1**.
- Press **Enter** and hit **F9** to update the worksheet.

We can now see that the Forecast cells for each Operating Expenses sub-account used the Budget value for the corresponding month and multiplied that value by number defined in the Amount column.



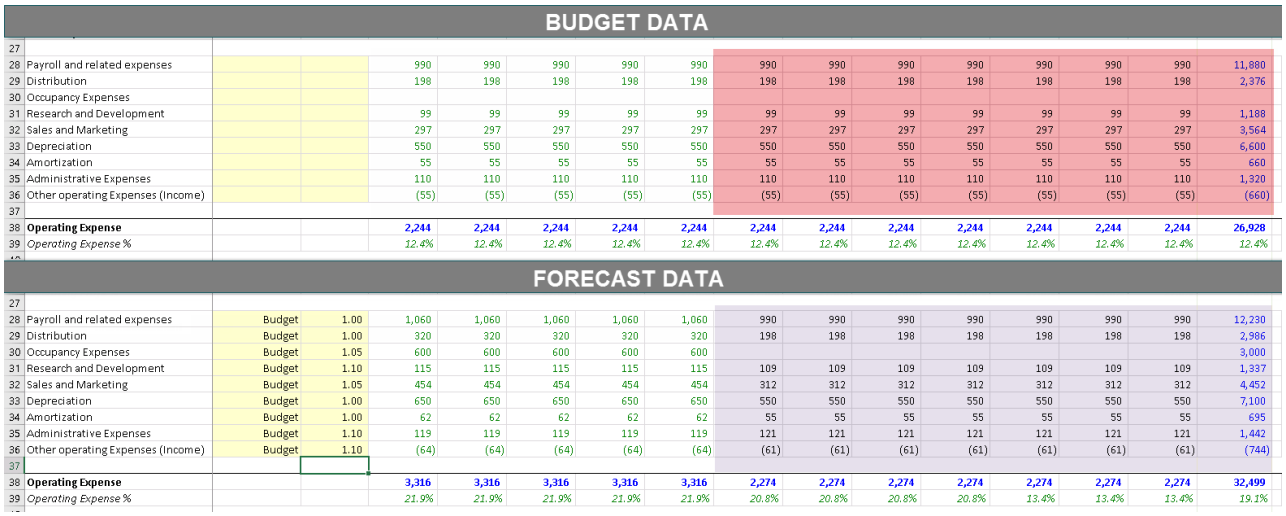
1	PandA QS Connect															
2	Financial Data															
3	Filter	Version	Members	Forecast												
4	Filter	Entity	Members	Entity A												
5	Filter	Department	Members	Sales												
6	Column1	Year	Range	$B$11:$AG$11												
7	Column2	Month	Range	$B$12:$AG$12												
8	Row	Account	Subsets	Members(Ve												
10	OLAPivotTable															
11		2021	2021	2021	2021	2021	2021	2021	2021	2021	2021	2021	2021	2021	2021	2021
12		Method	Amount	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TotalYear
16	Sales of Services	Set	950.00	930	930	930	930	930	950	950	950	950	950	950	950	11,300
18	**Revenue**			**15,130**	**15,130**	**15,130**	**15,130**	**15,130**	**10,950**	**10,950**	**10,950**	**10,950**	**16,950**	**16,950**	**16,950**	**170,300**
20	Cost of Goods	Sales of Goods	0.50	6,050	6,050	6,050	6,050	6,050	5,000	5,000	5,000	5,000	8,000	8,000	8,000	74,250
21	Cost of Services	Sales of Services	0.40	75	75	75	75	75	380	380	380	380	380	380	380	3,035
23	**Cost of Sales**			**6,125**	**6,125**	**6,125**	**6,125**	**6,125**	**5,380**	**5,380**	**5,380**	**5,380**	**8,380**	**8,380**	**8,380**	**77,285**
25	**Gross Profit**			**9,005**	**9,005**	**9,005**	**9,005**	**9,005**	**5,570**	**5,570**	**5,570**	**5,570**	**8,570**	**8,570**	**8,570**	**93,015**
26	*Gross Profit %*			*59.5%*	*59.5%*	*59.5%*	*59.5%*	*59.5%*	*50.9%*	*50.9%*	*50.9%*	*50.9%*	*50.6%*	*50.6%*	*50.6%*	*54.6%*
28	Payroll and related expenses	Budget	1.00	1,060	1,060	1,060	1,060	1,060	990	990	990	990	990	990	990	12,230
29	Distribution	Budget	1.00	320	320	320	320	320	198	198	198	198	198	198	198	2,986
30	Occupancy Expenses	Budget	1.05	600	600	600	600	600								3,000
31	Research and Development	Budget	1.10	115	115	115	115	115	109	109	109	109	109	109	109	1,337
32	Sales and Marketing	Budget	1.05	454	454	454	454	454	312	312	312	312	312	312	312	4,452
33	Depreciation	Budget	1.00	650	650	650	650	650	550	550	550	550	550	550	550	7,100
34	Amortization	Budget	1.00	62	62	62	62	62	55	55	55	55	55	55	55	695
35	Administrative Expenses	Budget	1.10	119	119	119	119	119	121	121	121	121	121	121	121	1,442
36	Other operating Expenses (Income)	Budget	1.10	(64)	(64)	(64)	(64)	(64)	(61)	(61)	(61)	(61)	(61)	(61)	(61)	(744)
38	**Operating Expense**			**3,316**	**3,316**	**3,316**	**3,316**	**3,316**	**2,274**	**2,274**	**2,274**	**2,274**	**2,274**	**2,274**	**2,274**	**32,499**
39	*Operating Expense %*			*21.9%*	*21.9%*	*21.9%*	*21.9%*	*21.9%*	*20.8%*	*20.8%*	*20.8%*	*20.8%*	*13.4%*	*13.4%*	*13.4%*	*19.1%*
41	**Operating Profit**			**5,689**	**5,689**	**5,689**	**5,689**	**5,689**	**3,296**	**3,296**	**3,296**	**3,296**	**6,296**	**6,296**	**6,296**	**60,516**
42	*Operating Profit %*			*37.6%*	*37.6%*	*37.6%*	*37.6%*	*37.6%*	*30.1%*	*30.1%*	*30.1%*	*30.1%*	*37.1%*	*37.1%*	*37.1%*	*35.5%*

FORECAST Slice

Note: The side-by-side comparison figure below shows the Budget data in pink highlight while the Forecast data is in purple highlight.

By comparing the Budget vs the Forecast values, we can see that the forecasted *Payroll and related expenses* grabbed the exact Budget values per month, which is at a rate of 990 (the rate is the same for all months since the monthly budget is pretty much even across all months).

The same is true for the accounts *Distribution*, *Depreciation* and *Amortization*, as shown in the next image.



BUDGET DATA

27																
28	Payroll and related expenses			990	990	990	990	990	990	990	990	990	990	990	990	11,880
29	Distribution			198	198	198	198	198	198	198	198	198	198	198	198	2,376
30	Occupancy Expenses															
31	Research and Development			99	99	99	99	99	99	99	99	99	99	99	99	1,188
32	Sales and Marketing			297	297	297	297	297	297	297	297	297	297	297	297	3,564
33	Depreciation			550	550	550	550	550	550	550	550	550	550	550	550	6,600
34	Amortization			55	55	55	55	55	55	55	55	55	55	55	55	660
35	Administrative Expenses			110	110	110	110	110	110	110	110	110	110	110	110	1,320
36	Other operating Expenses (Income)			(55)	(55)	(55)	(55)	(55)	(55)	(55)	(55)	(55)	(55)	(55)	(55)	(660)
37																
38	**Operating Expense**			2,244	2,244	2,244	2,244	2,244	2,244	2,244	2,244	2,244	2,244	2,244	2,244	26,928
39	*Operating Expense %*			*12.4%*	*12.4%*	*12.4%*	*12.4%*	*12.4%*	*12.4%*	*12.4%*	*12.4%*	*12.4%*	*12.4%*	*12.4%*	*12.4%*	*12.4%*

FORECAST DATA

27																
28	Payroll and related expenses	Budget	1.00	1,060	1,060	1,060	1,060	1,060	990	990	990	990	990	990	990	12,230
29	Distribution	Budget	1.00	320	320	320	320	320	198	198	198	198	198	198	198	2,986
30	Occupancy Expenses	Budget	1.05	600	600	600	600	600								3,000
31	Research and Development	Budget	1.10	115	115	115	115	115	109	109	109	109	109	109	109	1,337
32	Sales and Marketing	Budget	1.05	454	454	454	454	454	312	312	312	312	312	312	312	4,452
33	Depreciation	Budget	1.00	650	650	650	650	650	550	550	550	550	550	550	550	7,100
34	Amortization	Budget	1.00	62	62	62	62	62	55	55	55	55	55	55	55	695
35	Administrative Expenses	Budget	1.10	119	119	119	119	119	121	121	121	121	121	121	121	1,442
36	Other operating Expenses (Income)	Budget	1.10	(64)	(64)	(64)	(64)	(64)	(61)	(61)	(61)	(61)	(61)	(61)	(61)	(744)
37																
38	**Operating Expense**			3,316	3,316	3,316	3,316	3,316	2,274	2,274	2,274	2,274	2,274	2,274	2,274	32,499
39	*Operating Expense %*			*21.9%*	*21.9%*	*21.9%*	*21.9%*	*21.9%*	*20.8%*	*20.8%*	*20.8%*	*20.8%*	*13.4%*	*13.4%*	*13.4%*	*19.1%*

Comparison view for Budget and Forecast data

However, looking at the forecasted *Research and Development* account, we notice a 10% increase compared to the Budget values; this is consistent with the "1.1" used to indicate a 110% against the Budget value for that account. The same logic applies to *Administrative Expenses* and *Other operating Expenses (Income)*.

Likewise, for *Sales and Marketing*, note the 5% increase vs the Budget values, since we pegged the forecast for this account to be computed at 105% against Budget.

The row corresponding to *Occupancy Expenses* is left blank for the months *Jun* to *Dec* because the reference values for those cells is zero (or blank).

Important: Please take note that we will only be looking at results for the months *Jun* to *Dec* since those are the only cells affected by the Spread in the PandA template. If you look at the values of each account covering the months *Jan* to *May*, they are formatted green, which signifies that those cells are governed by a formula: formulas always override the use of Spread or Data entry.

5. Define Forecast data for the remaining sub-accounts:
   For simplicity, use the Set Method to define the forecast data for the **Other Income (Expense) sub-accounts** and **Interest sub-accounts**. Additionally, make the Amount even through the months *Jun* to *Dec*.

   Define forecast data for *Other Income (Expense)* sub-accounts:

   - In cell **B44** (*Method* for *Other Revenue*) type **Set**.
     In the corresponding **Amount** column, type **130**.
     Press **Enter** then **F9**.
     Note: the affected cells *I44 to O44* are updated.
   - In cell **B45** (*Method* for *Other (Expense)*) type **Set**.
     In the corresponding **Amount** column, type **-45**.
     Press **Enter** then **F9**.
     Note: the affected cells *I45 to O45* are updated.

	2021 Method	2021 Amount	2021 Jan	2021 Feb	2021 Mar	2021 Apr	2021 May	2021 Jun	2021 Jul	2021 Aug	2021 Sep	2021 Oct	2021 Nov	2021 Dec	2021 TotalYear
Operating Profit			5,689	5,689	5,689	5,689	5,689	3,296	3,296	3,296	3,296	6,296	6,296	6,296	60,516
Operating Profit %			*37.6%*	*37.6%*	*37.6%*	*37.6%*	*37.6%*	*30.1%*	*30.1%*	*30.1%*	*30.1%*	*37.1%*	*37.1%*	*37.1%*	*35.5%*
Other Revenue	Set	130.00	120	120	120	120	120	130	130	130	130	130	130	130	1,510
Other (Expense)	Set	(45.00)	(35)	(35)	(35)	(35)	(35)	(45)	(45)	(45)	(45)	(45)	(45)	(45)	(490)
Other Income (Expense)			85	85	85	85	85	85	85	85	85	85	85	85	1,020
EBIT			5,774	5,774	5,774	5,774	5,774	3,381	3,381	3,381	3,381	6,381	6,381	6,381	61,536
Interest Revenue			26	26	26	26	26								130
Interest (Expense)			(16)	(16)	(16)	(16)	(16)								(80)
Interest			10	10	10	10	10								50
Profit Before Tax			5,784	5,784	5,784	5,784	5,784	3,381	3,381	3,381	3,381	6,381	6,381	6,381	61,586
Income Tax Expense			(1,480)	(1,480)	(1,480)	(1,480)	(1,480)								(7,398)
Profit After Tax			4,305	4,305	4,305	4,305	4,305	3,381	3,381	3,381	3,381	6,381	6,381	6,381	54,188

Define forecast data for *Interest* sub-accounts.

- In cell **B50** (*Method* for *Interest Revenue*) type **Set**.
  In the corresponding **Amount** column, type **30**.
  Press **Enter** then **F9**.
  Note: cells *I50* to *O50* will update to show the defined value.
- In cell **B51** (*Method* for *Interest (Expense)*) type **Set**.
  In the corresponding **Amount** column, type **-20**.
  Press **Enter** then **F9**.
  Note: cells *I51 to O51* will update to show the defined value.

	2021 Method	2021 Amount	2021 Jan	2021 Feb	2021 Mar	2021 Apr	2021 May	2021 Jun	2021 Jul	2021 Aug	2021 Sep	2021 Oct	2021 Nov	2021 Dec	2021 TotalYear
Operating Profit			5,689	5,689	5,689	5,689	5,689	3,296	3,296	3,296	3,296	6,296	6,296	6,296	60,516
Operating Profit %			*37.6%*	*37.6%*	*37.6%*	*37.6%*	*37.6%*	*30.1%*	*30.1%*	*30.1%*	*30.1%*	*37.1%*	*37.1%*	*37.1%*	*35.5%*
Other Revenue	Set	130.00	120	120	120	120	120	130	130	130	130	130	130	130	1,510
Other (Expense)	Set	(45.00)	(35)	(35)	(35)	(35)	(35)	(45)	(45)	(45)	(45)	(45)	(45)	(45)	(490)
Other Income (Expense)			85	85	85	85	85	85	85	85	85	85	85	85	1,020
EBIT			5,774	5,774	5,774	5,774	5,774	3,381	3,381	3,381	3,381	6,381	6,381	6,381	61,536
Interest Revenue	Set	30.00	26	26	26	26	26	30	30	30	30	30	30	30	340
Interest (Expense)	Set	(20.00)	(16)	(16)	(16)	(16)	(16)	(20)	(20)	(20)	(20)	(20)	(20)	(20)	(220)
Interest			10	10	10	10	10	10	10	10	10	10	10	10	120
Profit Before Tax			5,784	5,784	5,784	5,784	5,784	3,391	3,391	3,391	3,391	6,391	6,391	6,391	61,656
Income Tax Expense			(1,480)	(1,480)	(1,480)	(1,480)	(1,480)								(7,398)
Profit After Tax			4,305	4,305	4,305	4,305	4,305	3,391	3,391	3,391	3,391	6,391	6,391	6,391	54,258

6. To complete the forecast for year 2021, define the value for the last account, i.e., *Income Tax Expense*. Assume that the Income Tax rate is pegged at **25%**.
   We will use the **{Account}** method to compute for the *Income Tax Expense*.

   - In cell **B56** (*Method* for *Income Tax Expense*) type **Profit Before Tax**.
     Note: Be mindful of the correct spelling of the account.
   - Next, in cell **C20** (*Amount* for *Income Tax Expense*) type **0.25.**
     (meaning, we are computing for 25% of the *Profit Before Tax* value to derive the *Income Tax Expense* value.)
   - Press **Enter** key.
   - Press **F9** to refresh the worksheet.

	2021 Method	2021 Amount	2021 Jan	2021 Feb	2021 Mar	2021 Apr	2021 May	2021 Jun	2021 Jul	2021 Aug	2021 Sep	2021 Oct	2021 Nov	2021 Dec	2021 TotalYear
Operating Profit			5,689	5,689	5,689	5,689	5,689	3,296	3,296	3,296	3,296	6,296	6,296	6,296	60,516
Operating Profit %			*37.6%*	*37.6%*	*37.6%*	*37.6%*	*37.6%*	*30.1%*	*30.1%*	*30.1%*	*30.1%*	*37.1%*	*37.1%*	*37.1%*	*35.5%*
Other Revenue	Set	130.00	120	120	120	120	120	130	130	130	130	130	130	130	1,510
Other (Expense)	Set	(45.00)	(35)	(35)	(35)	(35)	(35)	(45)	(45)	(45)	(45)	(45)	(45)	(45)	(490)
Other Income (Expense)			85	85	85	85	85	85	85	85	85	85	85	85	1,020
EBIT			5,774	5,774	5,774	5,774	5,774	3,381	3,381	3,381	3,381	6,381	6,381	6,381	61,536
Interest Revenue	Set	30.00	26	26	26	26	26	30	30	30	30	30	30	30	340
Interest (Expense)	Set	(20.00)	(16)	(16)	(16)	(16)	(16)	(20)	(20)	(20)	(20)	(20)	(20)	(20)	(220)
Interest			10	10	10	10	10	10	10	10	10	10	10	10	120
Profit Before Tax			5,784	5,784	5,784	5,784	5,784	3,391	3,391	3,391	3,391	6,391	6,391	6,391	61,656
Income Tax Expense	Profit Before Tax	0.25	(1,480)	(1,480)	(1,480)	(1,480)	(1,480)	848	848	848	848	1,598	1,598	1,598	786
Profit After Tax			4,305	4,305	4,305	4,305	4,305	4,238	4,238	4,238	4,238	7,988	7,988	7,988	62,442

7. You have completed your projection of *2021 Forecast* data. Notice that all Aggregate points and Formula-driven cells calculate correctly. You can now see your final projected *Profit After Tax*. Of course, at any point you can change the figures and the Methods/Amounts used to meet your forecasting and analytical requirements.

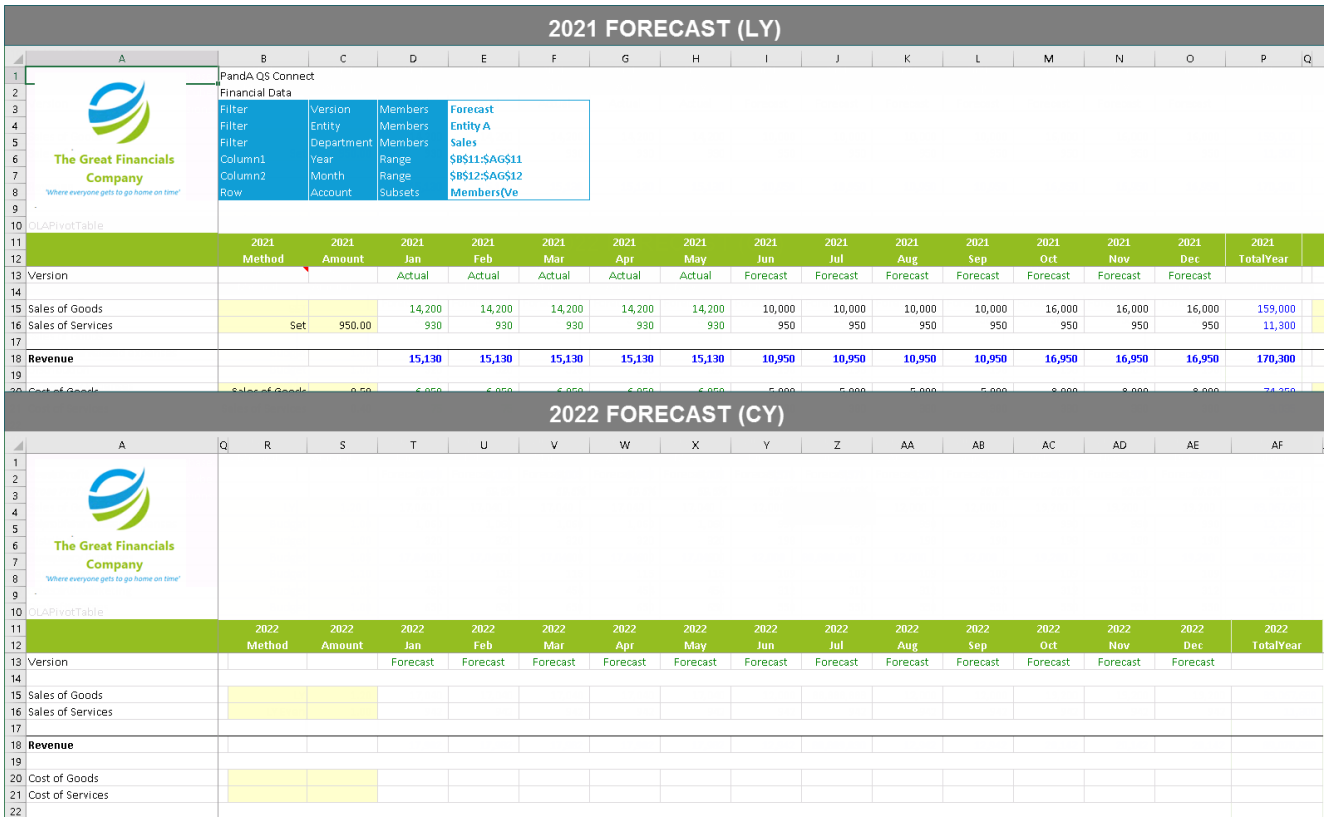
PandA QS Connect
Financial Data

Filter	Version	Members	Forecast
Filter	Entity	Members	Entity A
Filter	Department	Members	Sales
Column1	Year	Range	$B$11:$AG$11
Column2	Month	Range	$B$12:$AG$12
Row	Account	Subsets	Members(Ve

	2021 Method	2021 Amount	2021 Jan	2021 Feb	2021 Mar	2021 Apr	2021 May	2021 Jun	2021 Jul	2021 Aug	2021 Sep	2021 Oct	2021 Nov	2021 Dec	2021 TotalYear
Version			Actual	Actual	Actual	Actual	Actual	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	
Sales of Goods			14,200	14,200	14,200	14,200	14,200	10,000	10,000	10,000	10,000	16,000	16,000	16,000	159,000
Sales of Services	Set	950.00	930	930	930	930	930	950	950	950	950	950	950	950	11,300
Revenue			15,130	15,130	15,130	15,130	15,130	10,950	10,950	10,950	10,950	16,950	16,950	16,950	170,300
Cost of Goods	Sales of Goods	0.50	6,050	6,050	6,050	6,050	6,050	5,000	5,000	5,000	5,000	8,000	8,000	8,000	74,250
Cost of Services	Sales of Services	0.40	75	75	75	75	75	380	380	380	380	380	380	380	3,035
Cost of Sales			6,125	6,125	6,125	6,125	6,125	5,380	5,380	5,380	5,380	8,380	8,380	8,380	77,285
Gross Profit			9,005	9,005	9,005	9,005	9,005	5,570	5,570	5,570	5,570	8,570	8,570	8,570	93,015
Gross Profit %			*59.5%*	*59.5%*	*59.5%*	*59.5%*	*59.5%*	*50.9%*	*50.9%*	*50.9%*	*50.9%*	*50.6%*	*50.6%*	*50.6%*	*54.6%*
Payroll and related expenses	Budget	1.00	1,060	1,060	1,060	1,060	1,060	990	990	990	990	990	990	990	12,230
Distribution	Budget	1.00	320	320	320	320	320	198	198	198	198	198	198	198	2,986
Occupancy Expenses	Budget	1.05	600	600	600	600	600								3,000
Research and Development	Budget	1.10	115	115	115	115	115	109	109	109	109	109	109	109	1,337
Sales and Marketing	Budget	1.05	454	454	454	454	454	312	312	312	312	312	312	312	4,452
Depreciation	Budget	1.00	650	650	650	650	650	550	550	550	550	550	550	550	7,100
Amortization	Budget	1.00	62	62	62	62	62	55	55	55	55	55	55	55	695
Administrative Expenses	Budget	1.10	119	119	119	119	119	121	121	121	121	121	121	121	1,442
Other operating Expenses (Income)	Budget	1.10	(64)	(64)	(64)	(64)	(64)	(61)	(61)	(61)	(61)	(61)	(61)	(61)	(744)
Operating Expense			3,316	3,316	3,316	3,316	3,316	2,274	2,274	2,274	2,274	2,274	2,274	2,274	32,499
Operating Expense %			*21.9%*	*21.9%*	*21.9%*	*21.9%*	*21.9%*	*20.8%*	*20.8%*	*20.8%*	*20.8%*	*13.4%*	*13.4%*	*13.4%*	*19.1%*
Operating Profit			5,689	5,689	5,689	5,689	5,689	3,296	3,296	3,296	3,296	6,296	6,296	6,296	60,516
Operating Profit %			*37.6%*	*37.6%*	*37.6%*	*37.6%*	*37.6%*	*30.1%*	*30.1%*	*30.1%*	*30.1%*	*37.1%*	*37.1%*	*37.1%*	*35.5%*
Other Revenue	Set	130.00	120	120	120	120	120	130	130	130	130	130	130	130	1,510
Other (Expense)	Set	(45.00)	(35)	(35)	(35)	(35)	(35)	(45)	(45)	(45)	(45)	(45)	(45)	(45)	(490)
Other Income (Expense)			85	85	85	85	85	85	85	85	85	85	85	85	1,020
EBIT			5,774	5,774	5,774	5,774	5,774	3,381	3,381	3,381	3,381	6,381	6,381	6,381	61,536
Interest Revenue	Set	30.00	26	26	26	26	26	30	30	30	30	30	30	30	340
Interest (Expense)	Set	(20.00)	(16)	(16)	(16)	(16)	(16)	(20)	(20)	(20)	(20)	(20)	(20)	(20)	(220)
Interest			10	10	10	10	10	10	10	10	10	10	10	10	120
Profit Before Tax			5,784	5,784	5,784	5,784	5,784	3,391	3,391	3,391	3,391	6,391	6,391	6,391	61,656
Income Tax Expense	Profit Before Tax	0.25	(1,480)	(1,480)	(1,480)	(1,480)	(1,480)	848	848	848	848	1,598	1,598	1,598	786
Profit After Tax			4,305	4,305	4,305	4,305	4,305	4,238	4,238	4,238	4,238	7,988	7,988	7,988	62,442

We can now move to the section of the Income Statement that allows us to complete and compare a forecast for two consecutive years, i.e., *2021* and *2022*.

This time, our target will be to create a 2022 Income Statement Forecast. Since our focus now is *2022*, this will be considered as our Current Year (CY) while *2021* will be our Last Year (LY). The next image, and those that follow, show LY (*2021*) on top, corresponding with Columns B and C (*Method* and *Amount*) through Column O (*2021*, *Dec*, *Forecast*) and then, for CY (*2022*), Columns R and S (*Method* and *Amount*) through Column AE (*2022*, *Dec*, *Forecast*). Note that Total Year for each year is also shown, corresponding with Column P and AF, respectively.

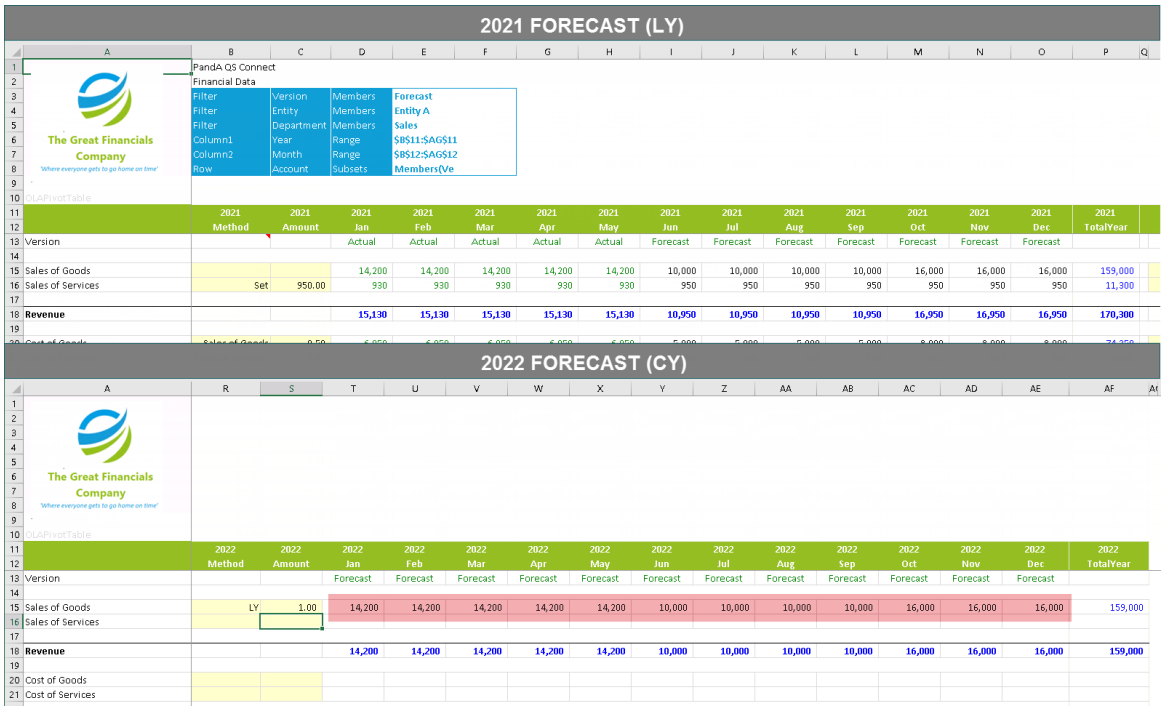


8. Create forecast values using the **LY Method** (*Sales of Goods* for year *2022*)
   This time, use the LY Method for defining the *Sales of Goods* data.

   First, just use LY *Sales of Goods* forecast data and bring it into our Current Year (*2022*) forecast.

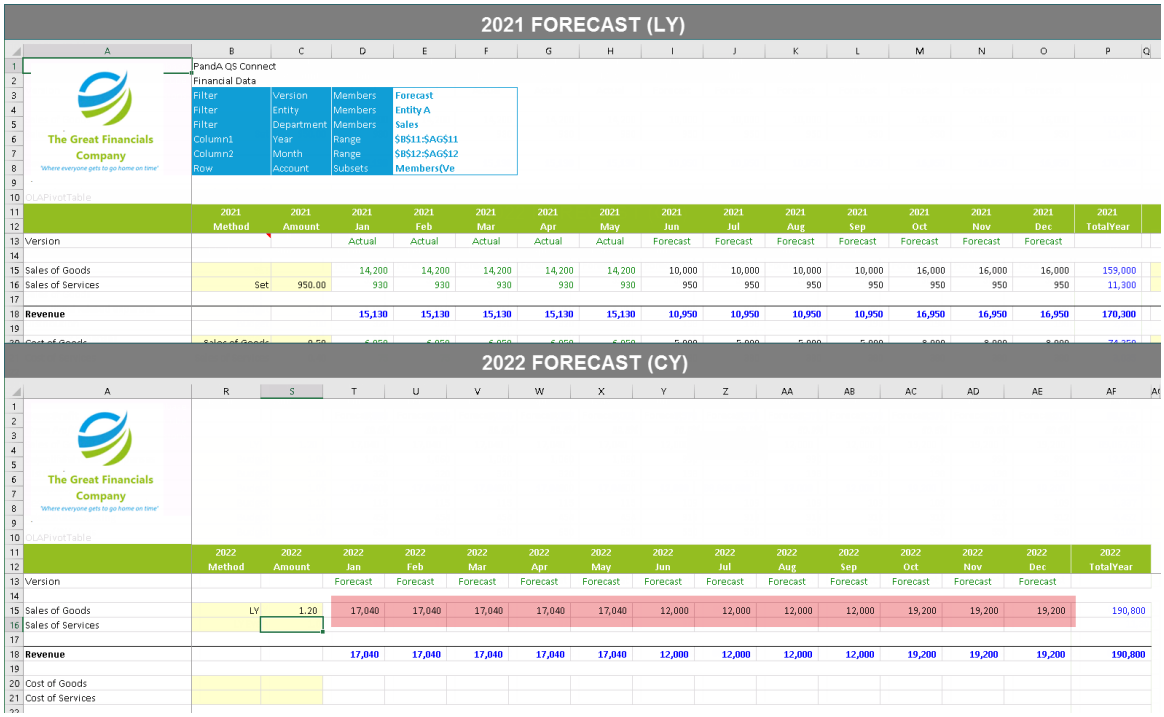
   - In cell **R15** (*Method* for *Sales of Goods*) and type in **LY**.
   - Next, go to cell **S15** (*Amount* for *Sales of Goods*) and type in **1**. As you know, this means that we want to use the *Sales of Goods* value for last year (*2021*) and send those values to their corresponding columns for the current year (*2022*).
   - Press **Enter** key.
   - Press **F9** to refresh the worksheet.
     The result is as follows (see the lower section, corresponding to *2022 Forecast* at cells **T15** to **AE15**).

     Notice that it now displays the same Forecast values per month as occurred last year (LY), i.e., for *2021*.



Next, assume that management decides to change the forecast *Sales of Goods* for *2022* and increase the forecast figures by 20% against LY forecast.

- Leave **LY** as the method selected for **Sales of Goods** (**R15**).
- In the Amount column, change the value to **1.2**.
- Press **Enter** key then **F9** to refresh the worksheet.
  The results now show that the forecast value is at 120% of last year's figures (see cells **T15** to **AE15**).



9. Create forecast values for *Sales of Services* for year *2022* using the **LY EVEN Method**:
   Looking at last year's forecast for *Sales of Services*, we can see that the values vary. The first five months, *Jan* to *May*, have a forecast value of 930, while there is an increase for the succeeding 7 months, *Jun* to *Dec*, which have a value of 950.
   For *2022*, assume that we want to get the average of the forecast values for 2021 and use the calculated figure as the forecast value for *2022*:

   - In cell **R16** (*Method* for *Sales of Services*) type **LY Even**.
   - Next, in cell **S16** (*Amount* for *Sales of Services*) and type **1**.
   - Press **Enter** key.
   - Press **F9** to update the worksheet. The resulting values are as follows:

2021 FORECAST (LY)

PandA QS Connect
Financial Data

Filter	Version	Members	Forecast
Filter	Entity	Members	Entity A
Filter	Department	Members	Sales
Column1	Year	Range	$B$11:$AG$11
Column2	Month	Range	$B$12:$AG$12
Row	Account	Subsets	Members(Ve

	2021 Method	2021 Amount	2021 Jan	2021 Feb	2021 Mar	2021 Apr	2021 May	2021 Jun	2021 Jul	2021 Aug	2021 Sep	2021 Oct	2021 Nov	2021 Dec	2021 TotalYear
Version			Actual	Actual	Actual	Actual	Actual	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	
Sales of Goods			14,200	14,200	14,200	14,200	14,200	10,000	10,000	10,000	10,000	16,000	16,000	16,000	159,000
Sales of Services	Set	950.00	930	930	930	930	930	950	950	950	950	950	950	950	11,300
Revenue			**15,130**	**15,130**	**15,130**	**15,130**	**15,130**	**10,950**	**10,950**	**10,950**	**10,950**	**16,950**	**16,950**	**16,950**	**170,300**

2022 FORECAST (CY)

	2022 Method	2022 Amount	2022 Jan	2022 Feb	2022 Mar	2022 Apr	2022 May	2022 Jun	2022 Jul	2022 Aug	2022 Sep	2022 Oct	2022 Nov	2022 Dec	2022 TotalYear
Version			Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	
Sales of Goods	LY	1.20	17,040	17,040	17,040	17,040	17,040	12,000	12,000	12,000	12,000	19,200	19,200	19,200	190,800
Sales of Services	LY Even	1.00	942	942	942	942	942	942	942	942	942	942	942	942	11,300
Revenue			**17,982**	**17,982**	**17,982**	**17,982**	**17,982**	**12,942**	**12,942**	**12,942**	**12,942**	**20,142**	**20,142**	**20,142**	**202,100**
Cost of Goods															
Cost of Services															
Cost of Sales															
Gross Profit			**17,982**	**17,982**	**17,982**	**17,982**	**17,982**	**12,942**	**12,942**	**12,942**	**12,942**	**20,142**	**20,142**	**20,142**	**202,100**

The total *Sales of Services* for 2021 amounts to 11,300, which is then divided by 12. The resulting value, 942, is the average *Sales of Services* per month. This computed value is therefore used in the *Sales of Services* forecast cells (**T16** to **AE**16) for *2022*.

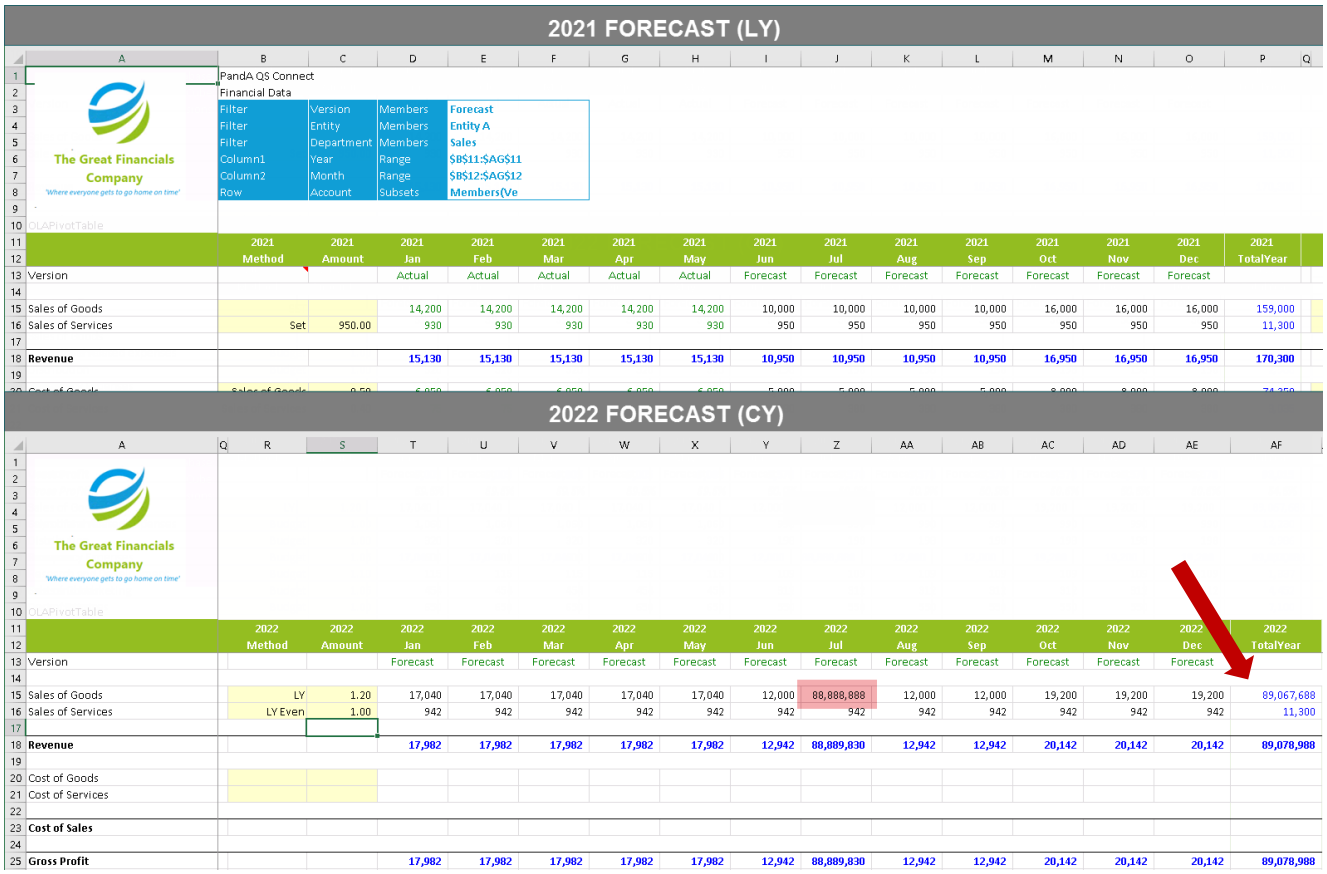
Important: As you will see in a subsequent section, Using the PandA Bulk Transfer Template, there are intelligent ways to re-make your forecast, in part or in its entirely—and this includes the ability to "clear" data from Forecast Version so that you "start fresh." In fact, you can justifiably jump ahead to learn how to return the Income Statement to its original state—this may be helpful, as the following exercises do not pick up on work done above, but rather with an Income Statement with no data entered into it yet.

4.3 Overriding Drivers / Embed Excel Functions

Until now we have shown the use of drivers to create figures throughout the year (or an entire year) by using the Method/Amount capabilities in the PandA model. Assuming you have done so, you may yet need to make an adjustment, for example, to "override" a particular value in a single Month. This can easily be accomplished easily: you can either simply type in a value for a particular Month, or you can use an Excel function to determine a value that will be sent back to the PandA model. These two capabilities are demonstrated next:

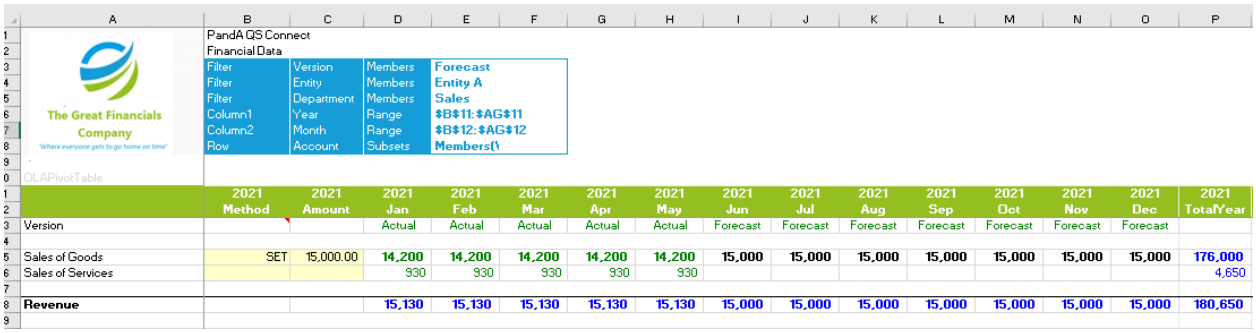
Typing in a value over any of the cells where a driver is used:
For this example, enter a number in one of the cells corresponding to Forecast *Sales of Goods* for the year *2022*. (Note: remember that we used the **LY Method** to derive the value for those cells in preceding previous steps). Use a big number, so you can easily spot it, e.g., **88888888**.

- Go to cell **Z15** (Forecast *Sales of Goods* for *Jul 2022*) and type in **88888888**.
- Press **Enter**, then press **F9** to recalculate the worksheet.
  Notice that the cell accepted the data entry in that cell (i.e., **Z15**).
  This demonstrates that with values are determined by the driver (Method/Amount), you are still able to enter, on a single cell, a unique value, thereby overriding the driver. The entry of this value is evidenced in the *2022, Total Year* value (see arrow in the image below) and other affected aggregate points.



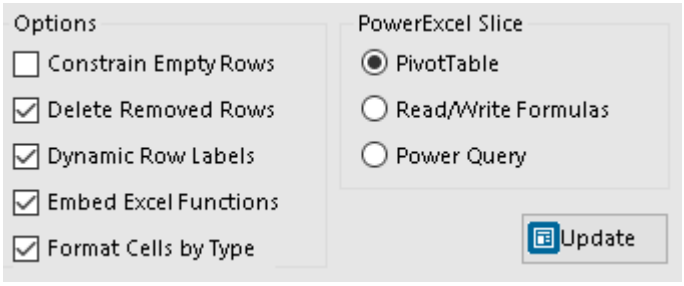
Using **Embed Excel Functions** to override the value of cells where a driver is used

For this example, we start with an Income Statement where the SET Method has been used to populate *2021 Forecast* figures for *Jun* through *Dec* with the Amount 15,000 (see following figure).

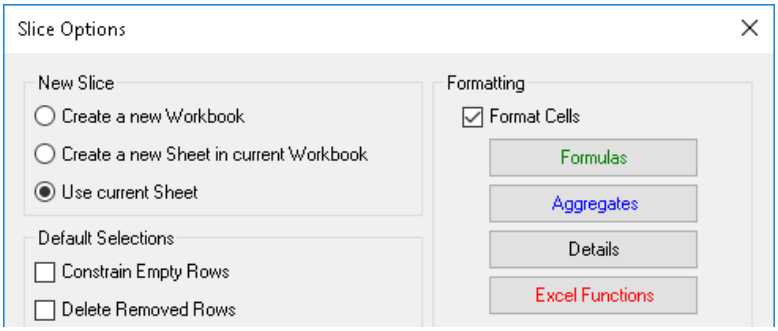


	PandA QS Connect															
	Financial Data															
	Filter	Version	Members	Forecast												
	Filter	Entity	Members	Entity A												
	Filter	Department	Members	Sales												
	Column1	Year	Range	$B$11:$AG$11												
	Column2	Month	Range	$B$12:$AG$12												
	Row	Account	Subsets	Members(\												
	2021 Method	2021 Amount	2021 Jan	2021 Feb	2021 Mar	2021 Apr	2021 May	2021 Jun	2021 Jul	2021 Aug	2021 Sep	2021 Oct	2021 Nov	2021 Dec	2021 TotalYear	
Version			Actual	Actual	Actual	Actual	Actual	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast		
Sales of Goods	SET	15,000.00	14,200	14,200	14,200	14,200	14,200	15,000	15,000	15,000	15,000	15,000	15,000	15,000	176,000	
Sales of Services			930	930	930	930	930								4,650	
Revenue			15,130	15,130	15,130	15,130	15,130	15,000	15,000	15,000	15,000	15,000	15,000	15,000	180,650	

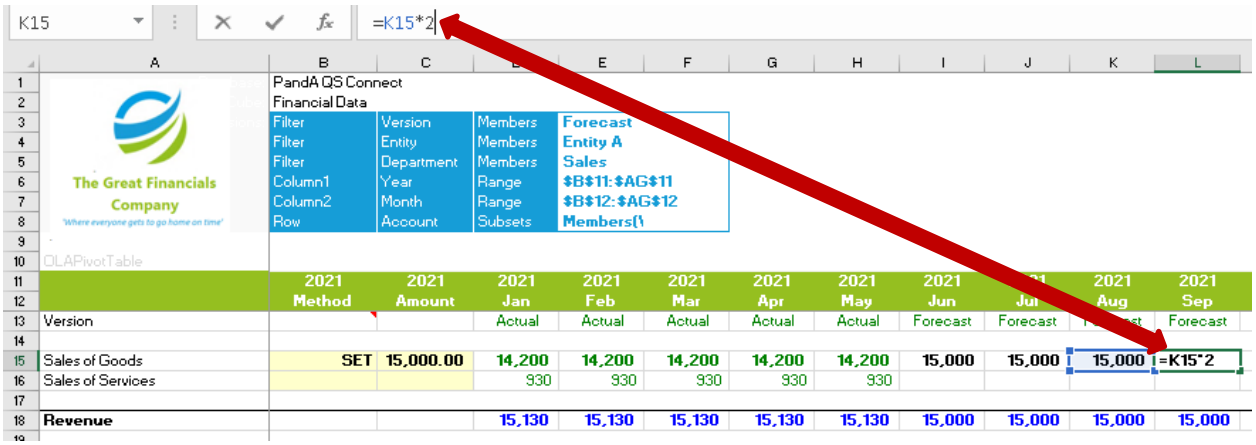
- As we intend to use a standard Excel Function to calculate a figure for particular Month—in this case, *Sep*—so that it will be double the number in *Aug*, you will first need to enable the **Embed Excel Functions checkbox**, which appears at the bottom of the Excel Sidebar:



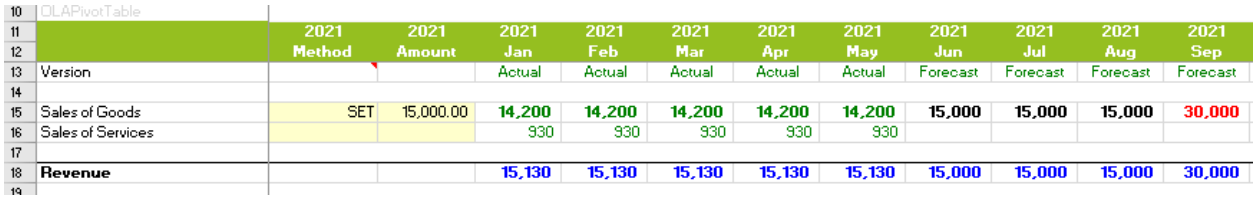
- Click **Update**, to return to the Income Statement spreadsheet.
- As well, we want this Excel Function to be visible to us in the spreadsheet: therefore, click on the Slice **Options** icon on the PowerExcel ribbon and ensure the that **Format Cells** checkbox is enabled, so that the number calculated by the function appears in red.



- Given that the *Aug* figure for Sale of Goods has been SET to 15,000, and we want Sep to be double that number, put your cursor in cell L15 and use a standard Excel formula so that it equals cell K15*2 (see arrow in the next image).



- After typing the Excel formula, hit **Enter**.
  Then press **F9** to update the spreadsheet—the number **30,000** for 2021, Sep, Forecast will appear in red, as in the following image.



Important: As the word “embed” suggests, the Excel function will remain if you clear the data for that Member (in this case, *Sale of Goods*). In order to remove the Excel function in that cell, you must delete it.

5. The Dimension Editor

The **Dimension Editor** or the **Edit Dimension command** is found on the PowerExcel ribbon.

The Dimension Editor is a very important feature of the PandA model: it allows you to create a new member or rename an existing Members; change the Hierarchy structure or create a new Hierarchy; edit Hierarchy Weights, and; sort and filter the Member list directly from Excel. (However, you will be restricted from deleting Members that exist within the Dimension.) In sum, it is the primary means of customizing the PandA model to match your business's own dimensional logic.

Note: The PowerExcel Dimension Editor is enabled on the basis of customer licensing, but is part of the PandA model. If your PowerExcel installation does not allow Edit Dimension capabilities, reach PARIS Technologies for further information.

These exercises demonstrate how to use the Dimension Editor to:

- "Close" a month, so that it appears as "Actual" rather than "Forecast", and
- Create an entirely new Member(s) within the PowerExcel, adding it to the *Account* dimension.
- Rename a Member

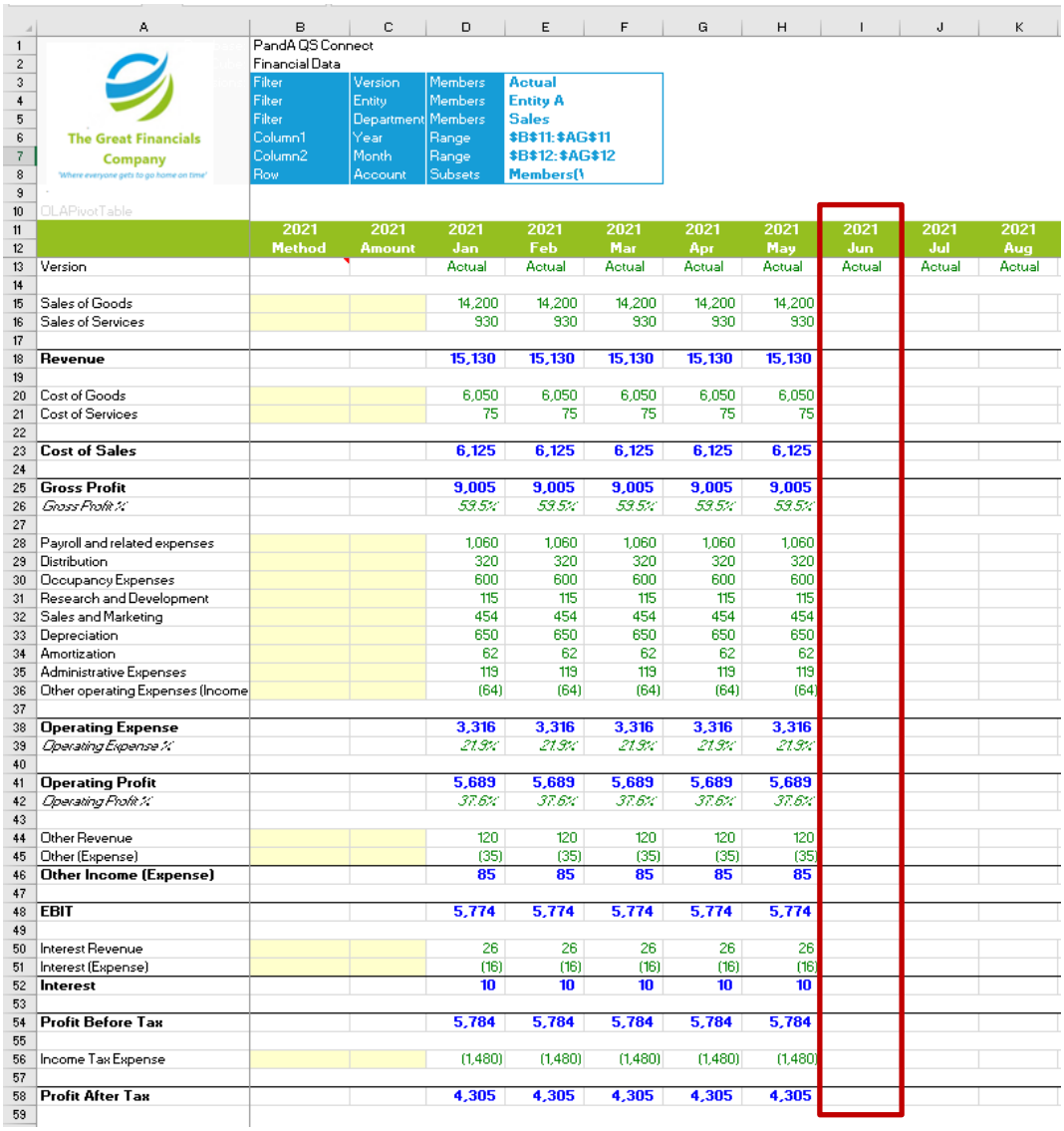
Important: This section uses the Income Statement in its original state, i.e., before any forecasting has been done, as in the immediately preceding section.

To proceed with the exercise:

5.1 Closing a Month

The first example use of the Dimension Editor is a kind of "use case," the practical step of "closing a month."

We begin in the "Actual" view of the Income Statement—we are on the cusp of *Jun*, *2021*, and there are no Actual figures yet for June onward—Colum I, *Jun*, is blank (red boxed in the following image) as is the case for subsequent months.



	A	B	C	D	E	F	G	H	I	J	K
1		PandA QS Connect									
2		Financial Data									
3		Filter	Version	Members	Actual						
4		Filter	Entity	Members	Entity A						
5		Filter	Department	Members	Sales						
6		Column1	Year	Range	$B$11:$AG$11						
7		Column2	Month	Range	$B$12:$AG$12						
8		Row	Account	Subsets	Members(\						
9											
10	CLAPivotTable										
11		2021	2021	2021	2021	2021	2021	2021	2021	2021	2021
12		Method	Amount	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
13	Version			Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual
14											
15	Sales of Goods			14,200	14,200	14,200	14,200	14,200			
16	Sales of Services			930	930	930	930	930			
17											
18	**Revenue**			**15,130**	**15,130**	**15,130**	**15,130**	**15,130**			
19											
20	Cost of Goods			6,050	6,050	6,050	6,050	6,050			
21	Cost of Services			75	75	75	75	75			
22											
23	**Cost of Sales**			**6,125**	**6,125**	**6,125**	**6,125**	**6,125**			
24											
25	**Gross Profit**			**9,005**	**9,005**	**9,005**	**9,005**	**9,005**			
26	*Gross Profit %*			*59.5%*	*59.5%*	*59.5%*	*59.5%*	*59.5%*			
27											
28	Payroll and related expenses			1,060	1,060	1,060	1,060	1,060			
29	Distribution			320	320	320	320	320			
30	Occupancy Expenses			600	600	600	600	600			
31	Research and Development			115	115	115	115	115			
32	Sales and Marketing			454	454	454	454	454			
33	Depreciation			650	650	650	650	650			
34	Amortization			62	62	62	62	62			
35	Administrative Expenses			119	119	119	119	119			
36	Other operating Expenses (Income			(64)	(64)	(64)	(64)	(64)			
37											
38	**Operating Expense**			**3,316**	**3,316**	**3,316**	**3,316**	**3,316**			
39	*Operating Expense %*			*21.9%*	*21.9%*	*21.9%*	*21.9%*	*21.9%*			
40											
41	**Operating Profit**			**5,689**	**5,689**	**5,689**	**5,689**	**5,689**			
42	*Operating Profit %*			*37.6%*	*37.6%*	*37.6%*	*37.6%*	*37.6%*			
43											
44	Other Revenue			120	120	120	120	120			
45	Other (Expense)			(35)	(35)	(35)	(35)	(35)			
46	**Other Income (Expense)**			**85**	**85**	**85**	**85**	**85**			
47											
48	**EBIT**			**5,774**	**5,774**	**5,774**	**5,774**	**5,774**			
49											
50	Interest Revenue			26	26	26	26	26			
51	Interest (Expense)			(16)	(16)	(16)	(16)	(16)			
52	**Interest**			**10**	**10**	**10**	**10**	**10**			
53											
54	**Profit Before Tax**			**5,784**	**5,784**	**5,784**	**5,784**	**5,784**			
55											
56	Income Tax Expense			(1,480)	(1,480)	(1,480)	(1,480)	(1,480)			
57											
58	**Profit After Tax**			**4,305**	**4,305**	**4,305**	**4,305**	**4,305**			
59											

Next, imagine that June has finished and the figures for all Accounts exist. How those *Actual* numbers for *Jun* make their way into the PandA model is a topic we will leave aside for the moment (more on this is explained in the last section in this manual—Bulk Copy/Paste of Data into the PandA Model—as well as in the *PowerExcel User Manual*). Just note here that the red boxed area in the *following* figure (Column I) are the final figures, now that *Jun* has closed.

		2021 Method	2021 Amount	2021 Jan	2021 Feb	2021 Mar	2021 Apr	2021 May	2021 Jun
13	Version			Actual	Actual	Actual	Actual	Actual	Actual
14									
15	Sales of Goods			14,200	14,200	14,200	14,200	14,200	15,500
16	Sales of Services			930	930	930	930	930	1,000
17									
18	**Revenue**			**15,130**	**15,130**	**15,130**	**15,130**	**15,130**	
19									
20	Cost of Goods			6,050	6,050	6,050	6,050	6,050	7,000
21	Cost of Services			75	75	75	75	75	95
22									
23	**Cost of Sales**			**6,125**	**6,125**	**6,125**	**6,125**	**6,125**	
24									
25	**Gross Profit**			**9,005**	**9,005**	**9,005**	**9,005**	**9,005**	
26	*Gross Profit %*			*59.5%*	*59.5%*	*59.5%*	*59.5%*	*59.5%*	
27									
28	Payroll and related expenses			1,060	1,060	1,060	1,060	1,060	1,240
29	Distribution			320	320	320	320	320	330
30	Occupancy Expenses			600	600	600	600	600	600
31	Research and Development			115	115	115	115	115	115
32	Sales and Marketing			454	454	454	454	454	500
33	Depreciation			650	650	650	650	650	650
34	Amortization			62	62	62	62	62	62
35	Administrative Expenses			119	119	119	119	119	125
36	Other operating Expenses (Income			(64)	(64)	(64)	(64)	(64)	(64)
37									
38	**Operating Expense**			**3,316**	**3,316**	**3,316**	**3,316**	**3,316**	
39	*Operating Expense %*			*21.9%*	*21.9%*	*21.9%*	*21.9%*	*21.9%*	
40									
41	**Operating Profit**			**5,689**	**5,689**	**5,689**	**5,689**	**5,689**	
42	*Operating Profit %*			*37.6%*	*37.6%*	*37.6%*	*37.6%*	*37.6%*	
43									
44	Other Revenue			120	120	120	120	120	120
45	Other (Expense)			(35)	(35)	(35)	(35)	(35)	(35)
46	**Other Income (Expense)**			**85**	**85**	**85**	**85**	**85**	
47									
48	**EBIT**			**5,774**	**5,774**	**5,774**	**5,774**	**5,774**	
49									
50	Interest Revenue			26	26	26	26	26	26
51	Interest (Expense)			(16)	(16)	(16)	(16)	(16)	(16)
52	**Interest**			**10**	**10**	**10**	**10**	**10**	
53									
54	**Profit Before Tax**			**5,784**	**5,784**	**5,784**	**5,784**	**5,784**	
55									
56	Income Tax Expense			(1,480)	(1,480)	(1,480)	(1,480)	(1,480)	(1,480)
57									
58	**Profit After Tax**			**4,305**	**4,305**	**4,305**	**4,305**	**4,305**	

We know that once those numbers hit the model—and this could very well be happening at intervals (weekly, or even daily), or even dynamically (if the underlying modeling engine provides for Live updating), the cells that result from Aggregates and Formulas calculate dynamically. These cells are yellow-highlighted in the following image.

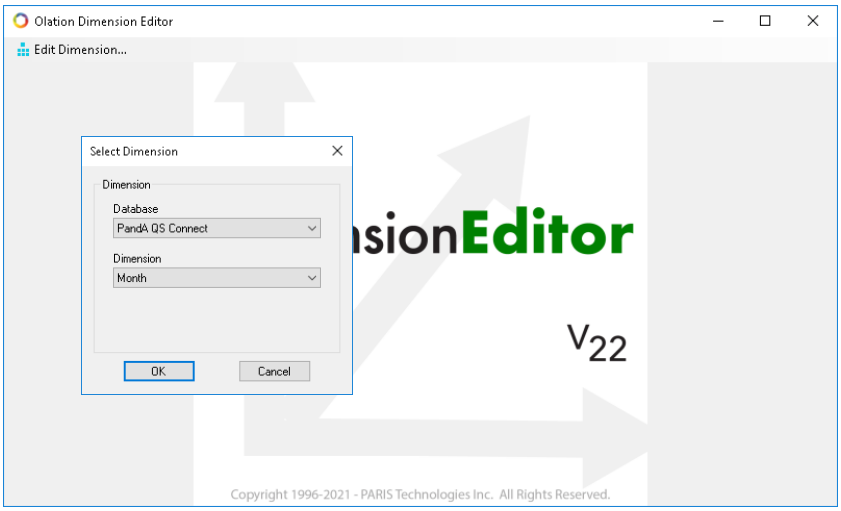
	2021 Method	2021 Amount	2021 Jan	2021 Feb	2021 Mar	2021 Apr	2021 May	2021 Jun	2021 Jul
Version			Actual	Actual	Actual	Actual	Actual	Actual	Actual
Sales of Goods			14,200	14,200	14,200	14,200	14,200	15,500	
Sales of Services			930	930	930	930	930	1,000	
Revenue			15,130	15,130	15,130	15,130	15,130	16,500	
Cost of Goods			6,050	6,050	6,050	6,050	6,050	7,000	
Cost of Services			75	75	75	75	75	95	
Cost of Sales			6,125	6,125	6,125	6,125	6,125	7,095	
Gross Profit			9,005	9,005	9,005	9,005	9,005	9,405	
Gross Profit %			*59.5%*	*59.5%*	*59.5%*	*59.5%*	*59.5%*	*57.0%*	
Payroll and related expenses			1,060	1,060	1,060	1,060	1,060	1,240	
Distribution			320	320	320	320	320	330	
Occupancy Expenses			600	600	600	600	600	600	
Research and Development			115	115	115	115	115	115	
Sales and Marketing			454	454	454	454	454	500	
Depreciation			650	650	650	650	650	650	
Amortization			62	62	62	62	62	62	
Administrative Expenses			119	119	119	119	119	125	
Other operating Expenses (Income)			(64)	(64)	(64)	(64)	(64)	(64)	
Operating Expense			3,316	3,316	3,316	3,316	3,316	3,558	
Operating Expense %			*21.9%*	*21.9%*	*21.9%*	*21.9%*	*21.9%*	*21.6%*	
Operating Profit			5,689	5,689	5,689	5,689	5,689	5,847	
Operating Profit %			*37.6%*	*37.6%*	*37.6%*	*37.6%*	*37.6%*	*35.4%*	
Other Revenue			120	120	120	120	120	120	
Other (Expense)			(35)	(35)	(35)	(35)	(35)	(35)	
Other Income (Expense)			85	85	85	85	85	85	
EBIT			5,774	5,774	5,774	5,774	5,774	5,932	
Interest Revenue			26	26	26	26	26	26	
Interest (Expense)			(16)	(16)	(16)	(16)	(16)	(16)	
Interest			10	10	10	10	10	10	
Profit Before Tax			5,784	5,784	5,784	5,784	5,784	5,942	
Income Tax Expense			(1,480)	(1,480)	(1,480)	(1,480)	(1,480)	(1,480)	
Profit After Tax			4,305	4,305	4,305	4,305	4,305	4,462	

The important thing to re-iterate is that the month of *Jun* is closed…so how do we go about "telling" the model that this is so? Here is where we can demonstrate use of the Dimension Editor…

1. Click on the **PowerExcel ribbon**, locate the Edit Dimension icon (as shown at the start of this section).

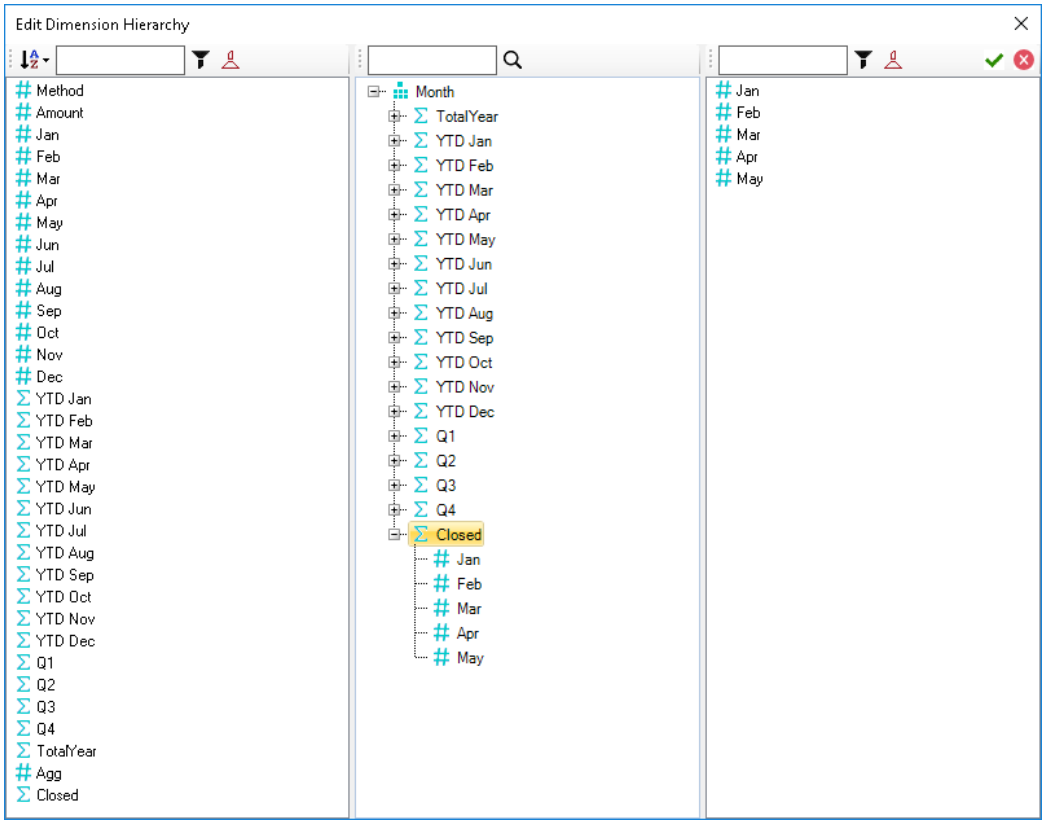
2. Click on **Edit Dimension icon**, then in the top left, click on Edit Dimension;
   a Select Dimension window will appear.

3. From the first drop-down, *Database*, select **PandA QS Connect**; from the *Dimension* drop-down, select Month (as shown in the next image).

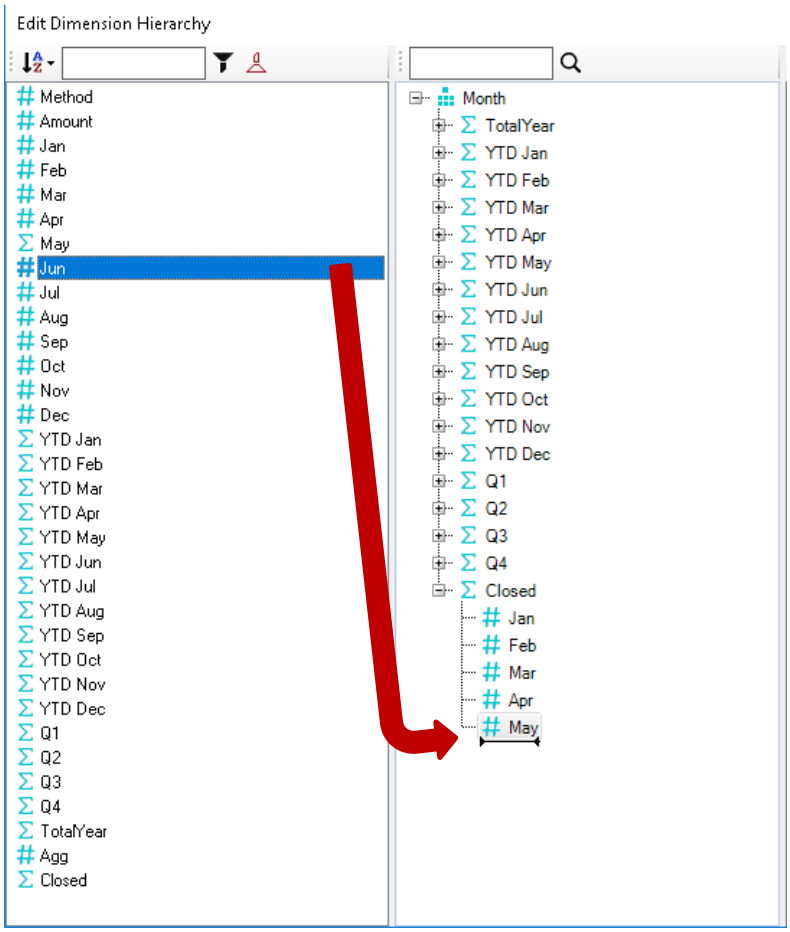


4. Click **OK**. The Edit Dimension Hierarchy window appears.

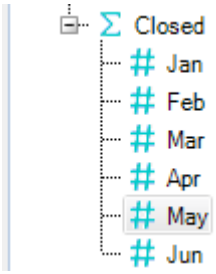
As shown in the image below, all Members for the *Month* dimension are listed in the leftmost section, which has been expanded to show the full list. Note that the Member *Closed* appears at the bottom. Furthermore, all Hierarchies that exist in the Dimension appear in the middle section—*Closed* shows there as well; when you expand on *Closed*, its constituent Members appear in the third (rightmost) section.



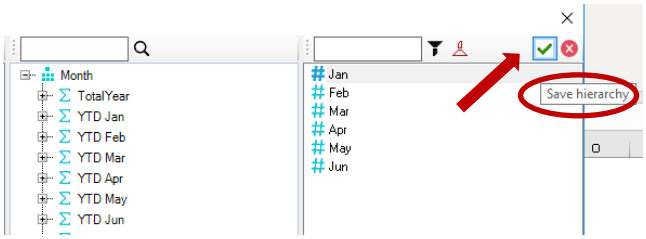
5. Move ***Jun*** to just below *May* in the *Closed* hierarchy, carefully positioning the horizontal bar so that it appears as in the following image.



A detail view of the new Closed hierarchy appears nect:

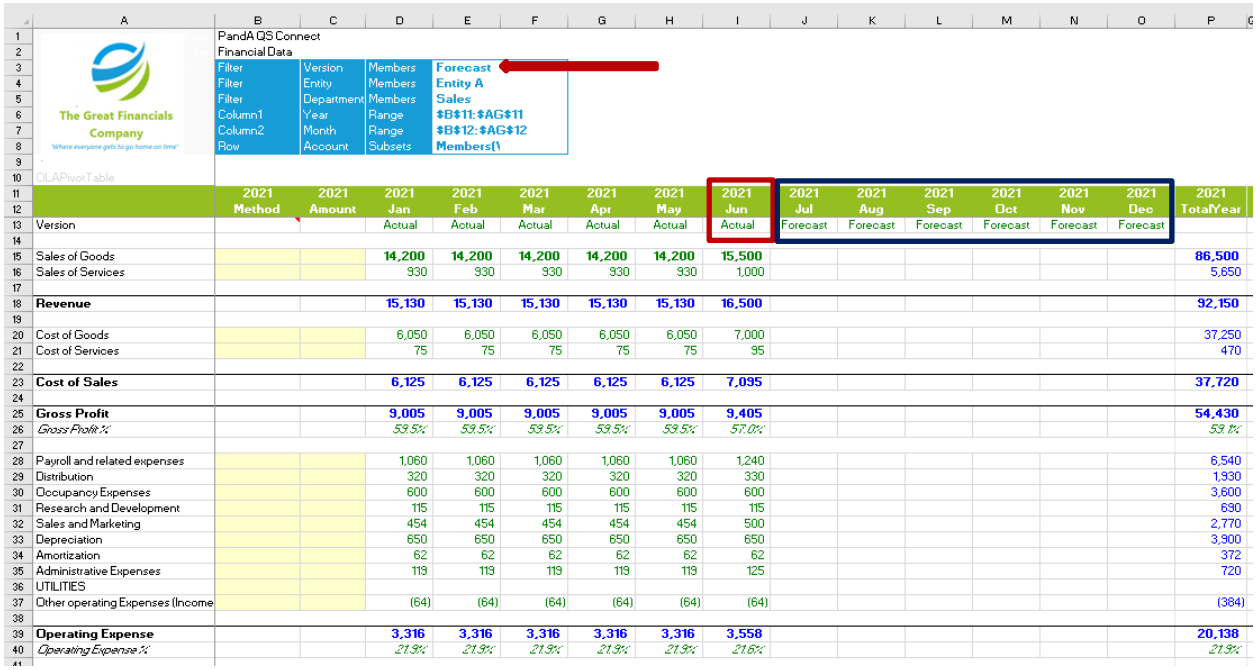


6. In the Dimension Editor window, click the green checkmark (see arrow, next image) to **Save Hierarchy** (circled).



7. Next, change the Filter selection for the *Version* dimension in the spreadsheet you have been working in from Actual to ***Forecast*** (see arrow in the next image).

8. Hit **F9** to update.
   Note that you have accomplished the objective of making *Jun* a "Closed" month—the word *Actual* appears under *2021*, *Jun* in Column I (in Cell I13, see red box); the remaining months, *Jul* to *Dec*, remain *Forecast* (blue box).

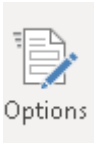


	PandA QS Connect															
	Financial Data															
	Filter	Version	Members	Forecast												
	Filter	Entity	Members	Entity A												
	Filter	Department	Members	Sales												
	Column1	Year	Range	$B$11:$AG$11												
	Column2	Month	Range	$B$12:$AG$12												
	Row	Account	Subsets	Members(\												
	OLAPivotTable															
	2021 Method	2021 Amount	2021 Jan	2021 Feb	2021 Mar	2021 Apr	2021 May	2021 Jun	2021 Jul	2021 Aug	2021 Sep	2021 Oct	2021 Nov	2021 Dec	2021 TotalYear	
Version			Actual	Actual	Actual	Actual	Actual	Actual	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast		
Sales of Goods			14,200	14,200	14,200	14,200	14,200	15,500							86,500	
Sales of Services			930	930	930	930	930	1,000							5,650	
Revenue			15,130	15,130	15,130	15,130	15,130	16,500							92,150	
Cost of Goods			6,050	6,050	6,050	6,050	6,050	7,000							37,250	
Cost of Services			75	75	75	75	75	95							470	
Cost of Sales			6,125	6,125	6,125	6,125	6,125	7,095							37,720	
Gross Profit			9,005	9,005	9,005	9,005	9,005	9,405							54,430	
Gross Profit %			*59.5%*	*59.5%*	*59.5%*	*59.5%*	*59.5%*	*57.0%*							*59.1%*	
Payroll and related expenses			1,060	1,060	1,060	1,060	1,060	1,240							6,540	
Distribution			320	320	320	320	320	330							1,930	
Occupancy Expenses			600	600	600	600	600	600							3,600	
Research and Development			115	115	115	115	115	115							690	
Sales and Marketing			454	454	454	454	454	500							2,770	
Depreciation			650	650	650	650	650	650							3,900	
Amortization			62	62	62	62	62	62							372	
Administrative Expenses			119	119	119	119	119	125							720	
UTILITIES																
Other operating Expenses (Income			(64)	(64)	(64)	(64)	(64)	(64)							(384)	
Operating Expense			3,316	3,316	3,316	3,316	3,316	3,558							20,138	
Operating Expense %			*21.9%*	*21.9%*	*21.9%*	*21.9%*	*21.9%*	*21.6%*							*21.9%*	

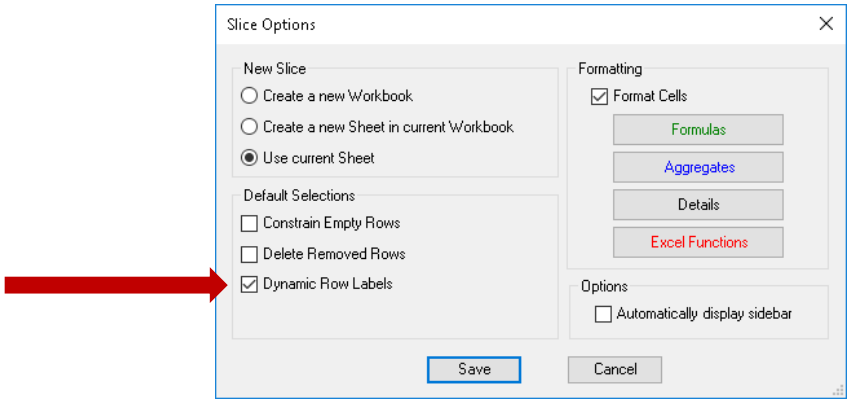
A final observation: whereas in the Actual view (when the Filter Version selection is Actual), the Detail Member intersections allow input, now, as above—in the *Forecast* selection--all cells are colored (whether green or dark blue), which indicates that they are, respectively, the result of Formulas or Aggregates. In other words, they can not be typed over, once they are "closed" and made Actual on this Forecast template.

5.2 Adding Dimension Members

This example of the use of the Dimension Editor could be key to deployment—adding or renaming Members, to "make the model your own."



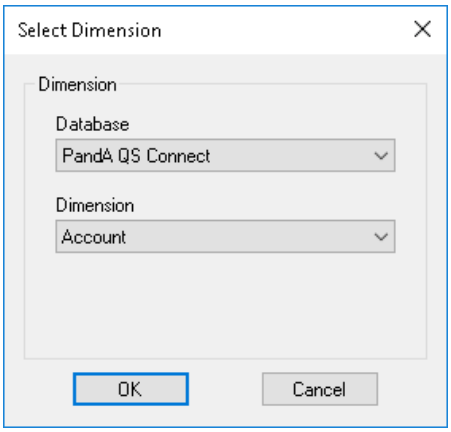
We are also going to show another capability along the way—**Dynamic Row Labels**. To that end, go to the PowerExcel ribbon and click on **Options** in the PowerExcel Slice section. In the ensuing Slice Options window, enable **Dynamic Row Labels** (as shown, arrow, in the following image).



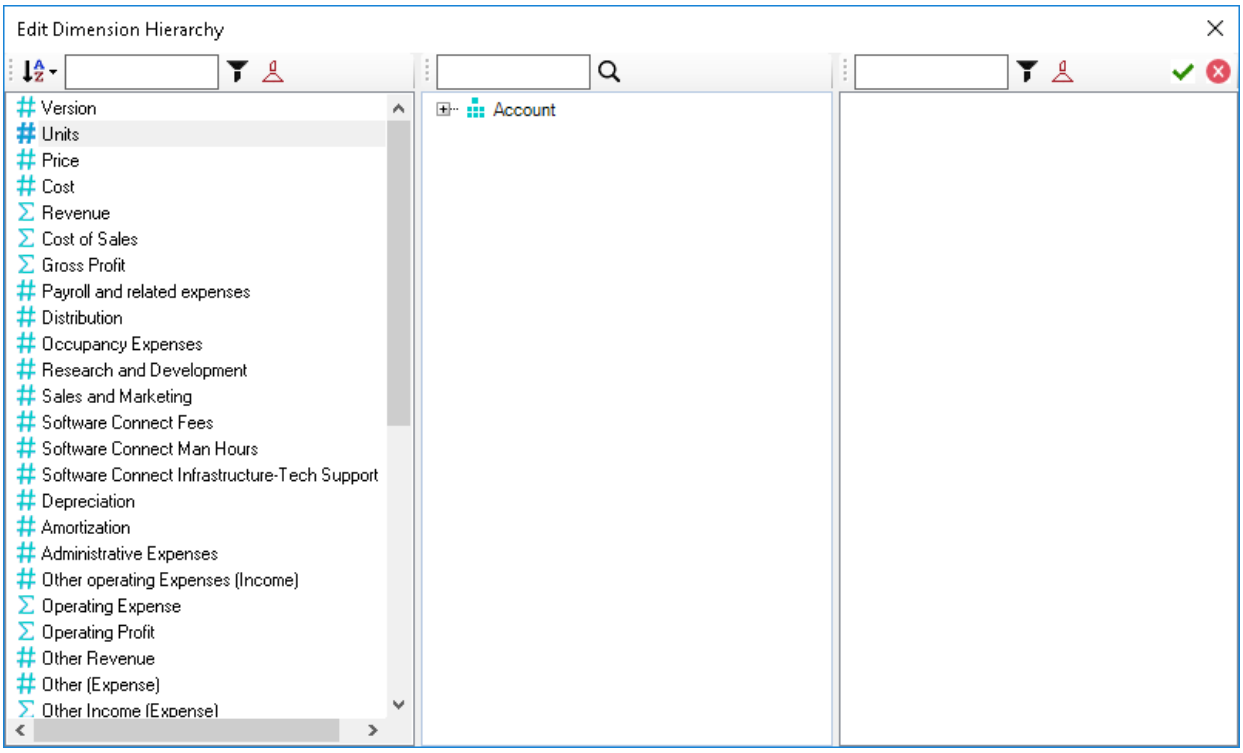
To proceed with Adding a new Member—and this will be to the *Account* dimension:

1. Click on **Edit Dimension icon**, then in the top left, click on **Edit Dimension**; a Select Dimension window will appear.

2. From the first drop-down, *Database*, select **PandA QS Connect**; from the *Dimension* drop-down, select Account (as shown below).

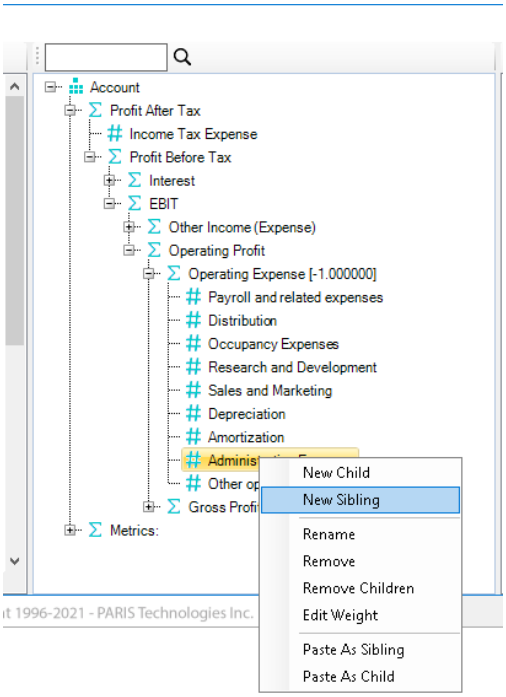


3. Click **OK**. You will next see the Edit Dimension Hierarchy window for the *Account* dimension.

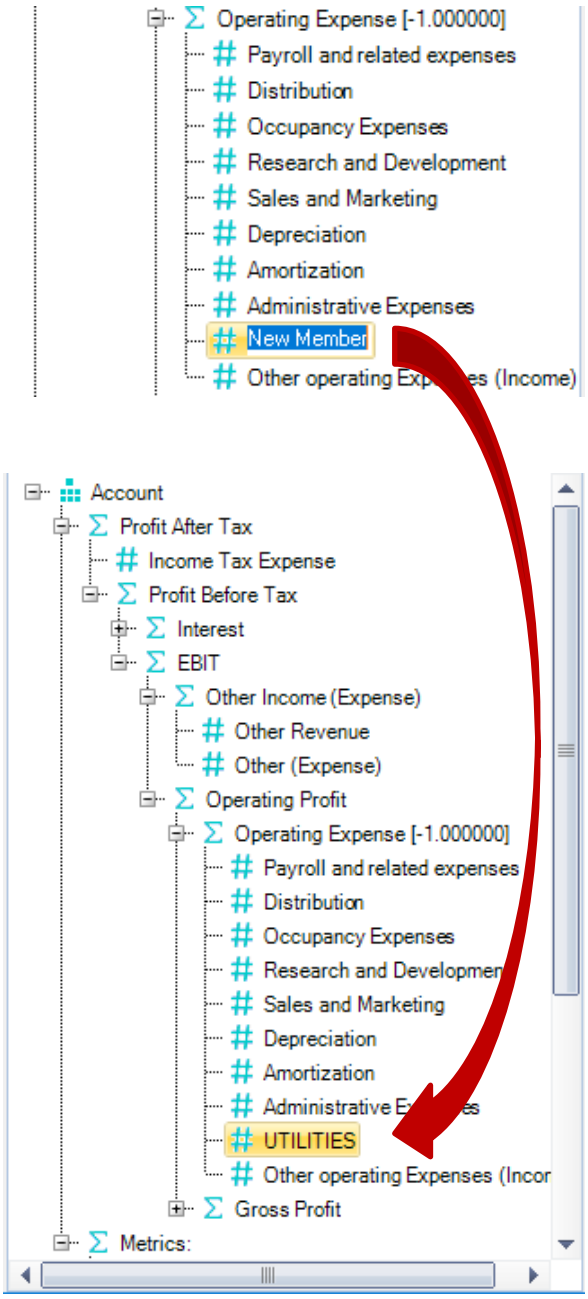


The way to add a Member—in particular, to add one to an existing hierarchy—is to work in the middle pane. Here we will add a new Member, ***UTILITIES***, to the hierarchy *Operating Expense*, placing it under *Administrative Expenses*.

4. Expand the hierarchy tree for *Account*, locate the Member under which you want the new Member to appear (shown in the next image); right-click on that Member and select **New Sibling**.



5. A “New Member” will be inserted below the Member that you selected (here, Administrative Expenses); you can now type over that name and click Enter—the new Member will appear and be included in the hierarchy, all as shown below



6. Close the window by clicking on **Save hierarchy** (green checkmark); exit the Dimension Editor window.

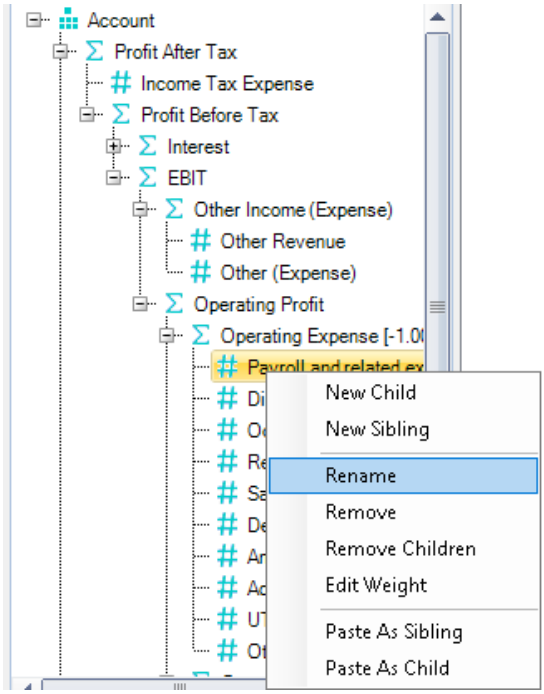
7. When you return to the Income Statement spreadsheet and press **F9** to update, the new Member, ***UTILITIES***, appears as expected, below *Administrative Expenses*, in the report (see next image). This new Member—or any like it you might add—shows in this report because you earlier enabled Dynamic Row Labels.

		2021 Method	2021 Amount	2021 Jan	2021 Feb	2021 Mar	2021 Apr	2021 May	2021 Jun	2021 Jul
13	Version			Actual	Actual	Actual	Actual	Actual	Actual	Forecast
14										
15	Sales of Goods			**14,200**	**14,200**	**14,200**	**14,200**	**14,200**	**15,500**	
16	Sales of Services			930	930	930	930	930	1,000	
17										
18	**Revenue**			**15,130**	**15,130**	**15,130**	**15,130**	**15,130**	**16,500**	
19										
20	Cost of Goods			6,050	6,050	6,050	6,050	6,050	7,000	
21	Cost of Services			75	75	75	75	75	95	
22										
23	**Cost of Sales**			**6,125**	**6,125**	**6,125**	**6,125**	**6,125**	**7,095**	
24										
25	**Gross Profit**			**9,005**	**9,005**	**9,005**	**9,005**	**9,005**	**9,405**	
26	*Gross Profit %*			*59.5%*	*59.5%*	*59.5%*	*59.5%*	*59.5%*	*57.0%*	
27										
28	Payroll and related expenses			1,060	1,060	1,060	1,060	1,060	1,240	
29	Distribution			320	320	320	320	320	330	
30	Occupancy Expenses			600	600	600	600	600	600	
31	Research and Development			115	115	115	115	115	115	
32	Sales and Marketing			454	454	454	454	454	500	
33	Depreciation			650	650	650	650	650	650	
34	Amortization			62	62	62	62	62	62	
35	Administrative Expenses			119	119	119	119	119	125	
36	UTILITIES									
37	Other operating Expenses (Income			(64)	(64)	(64)	(64)	(64)	(64)	
38										
39	**Operating Expense**			**3,316**	**3,316**	**3,316**	**3,316**	**3,316**	**3,558**	
40	*Operating Expense %*			*21.9%*	*21.9%*	*21.9%*	*21.9%*	*21.9%*	*21.6%*	

***UTILITIES*, a new Member in the *Account* Dimension, appears in the updated Income Statement.**

5.3 Renaming Dimension Members

The steps involved in renaming an existing Dimension member are largely the same as add a new Member. In brief order they concern: accessing Edit Dimension; expanding the hierarchy to which the Member belongs (in the middle pane of the window, as below); right-clicking on the Member and selecting Rename, and; typing in the new Member name—then saving the hierarchy, exiting the Edit Dimension Window.



6. PandA Model Management

The last section, which concerned Edit Dimension capabilities, is just one example of the PandA model management that can be accomplished from the user front end—namely your Excel spreadsheet, powered by PowerExcel.

This section concerns additional tasks, both "bulk" in nature (use of a Bulk Transfer template, and Bulk Copy/Paste of data into a model) and otherwise user-controlled, all of which are managed by the user in furtherance of creating an application for your firm's requirements.

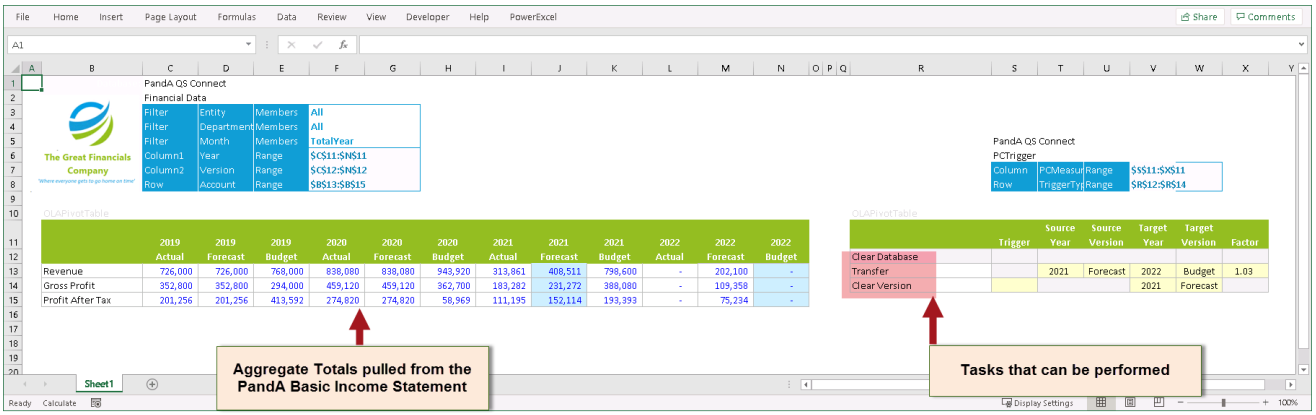
6.1 Using the PandA Bulk Transfer Template

This next exercise will demonstrate how some tasks can be simplified and 'automated' (i.e., Clear Data Tasks, Transfer Data Tasks and even Cleat Database Task) through the use of another PandA custom template called **PANDA Bulk Transfer**.

The *PANDA Bulk Transfer* template is comprised of a single worksheet that allows you to simplify some frequently performed tasks such as:

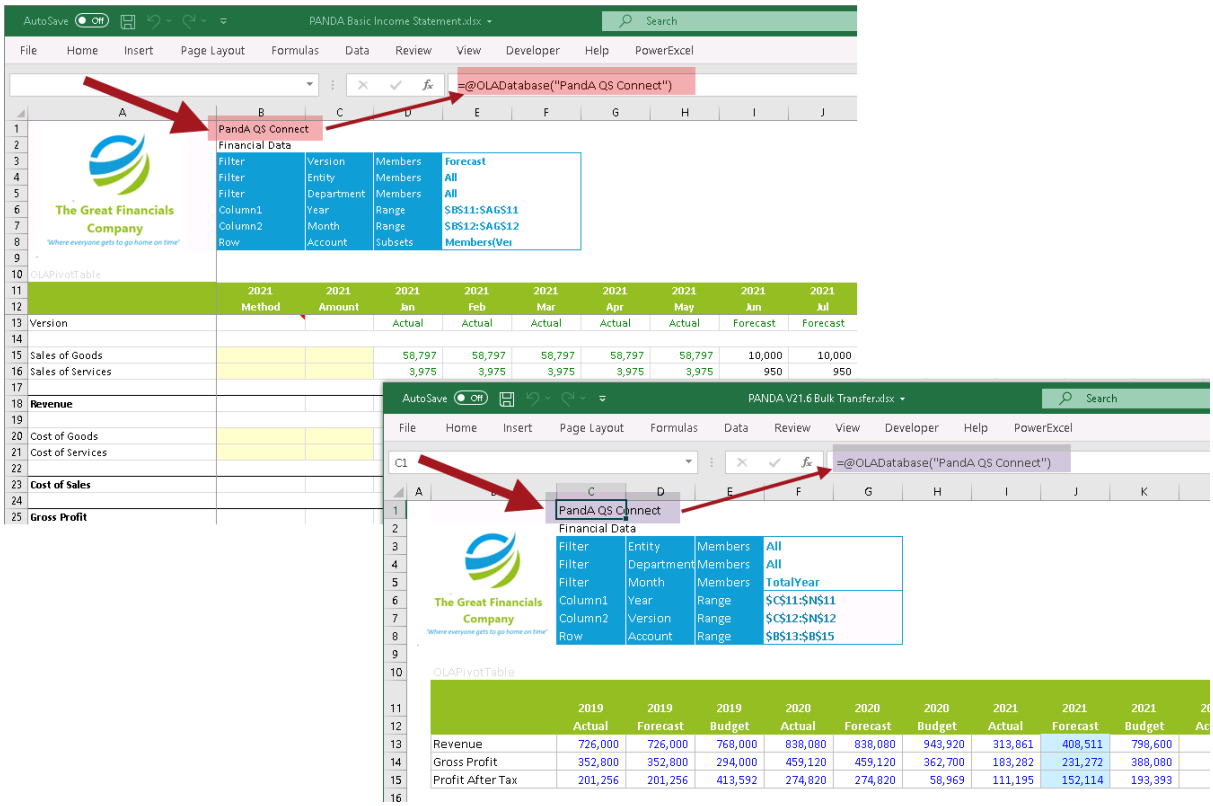
- Clear data for specific areas of your Panda Model based on Version and Year.
- Transfer data to a specific area of the Panda Model based on data from coming from another Version+Year (i.e., Budget data for XX year to Forecast data for YY year).
- Clear fact data of the entire Panda Model (Clear Database)

When the PANDA Bulk Transfer template is opened you will see the following data:



A view of the *PANDA Bulk Transfer* template

Important: Ensure that you are using the correct and same **OLADatabase connection reference** for both the *PandA Basic Income Statement* template (located along cell **B1** shaded pink) and the *PANDA Bulk Transfer* template (located along cell **C1** shaded purple). Otherwise, your template could be returning #VALUE errors. Refer to the image below to see where the PowerExcel references live for each template.



OLADatabase references in *PandA Basic Income Statement* and *PANDA Bulk Transfer* templates

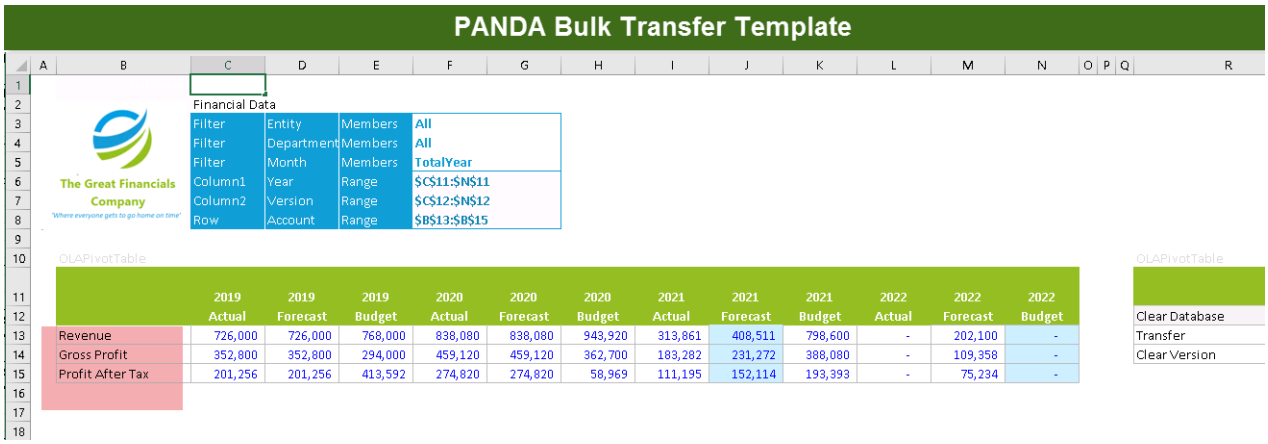
To begin exploring how to use this other template in planning and forecasting activities:

Recall that in a previous topic, you used the different Method/Spreads for populating Forecast data. For the succeeding exercises, we will explore how to use the *PANDA Bulk Transfer* template to make wholesale changes to the PandA model.

First, let us explore the *PandA Bulk Transfer* template

1. Open the *PANDA Bulk Transfer* template

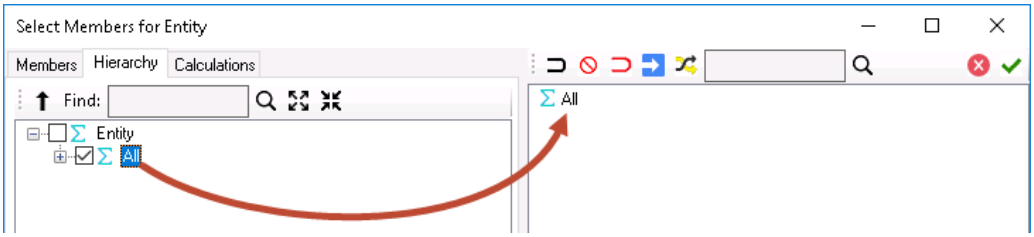
   - **Note:** Ensure that the template is using the correct references.
     [Go to cell C1 and check that you are using the **PandA QS Connect** as the Database connection.] Press **F9** to refresh values
   - You will see the correct Total values appearing in your *PANDA Bulk Transfer* template. The aggregate Total for the accounts *Revenue*, *Gross Profit* and *Profit After Tax* are on display in this template (displayed along column B on cells B13, B14 and B15 respectively)
     Take note in the following image that the template is currently configured to show data for *All Entities* (F3), *All Departments*(F4) and *Total Year*(F5).



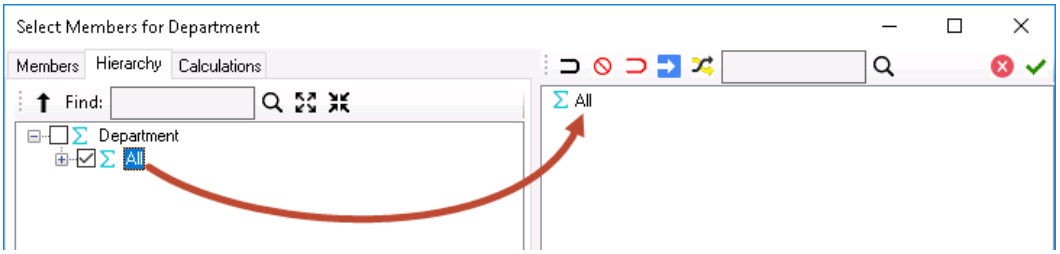
- You can configure both templates to display the same data by changing the Filters to make a better comparison that they are indeed bringing back the correct calculations.
  If we recall in the last topic, we created a Forecast for a specific Entity (*Entity A*) and Department (*Sales*).

Next, to change the Filters in the *PandA Basic Income Statement* to be identical to the Filters in the *PANDA Bulk Transfer* template.

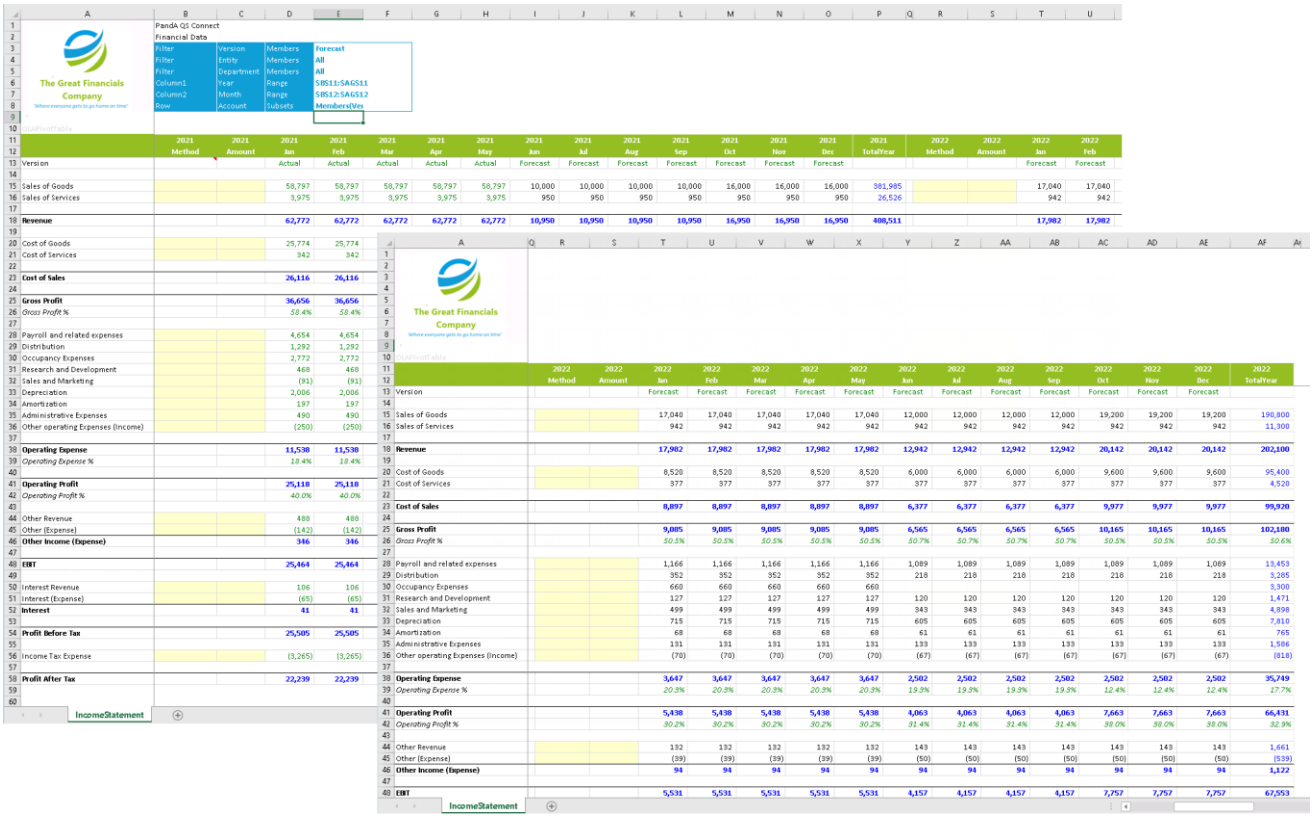
- In the *PandA Basic Income Statement* template, double-click on cell **E4** (Filter display for *Entity* dimension). In the Select Member dialog, click the **Clear** button to remove the current display Member (i.e., *Entity A*) then go to the **Hierarchy Tab**, check the box corresponding to **All** and drag and drop that to the right-hand pane (Display Member pane).



- Click **Use Selected Members button** (green checkmark) to update the display Member selection.
- Do the same for *Department* dimension.
  Double-click on cell **E5** (Filter display for the *Department* dimension).
  Following the same steps, clear the currently displayed Member: go to **Hierarchy Tab**, check the box corresponding to **All**, and drag and drop to the right-hand pane.



- Again, click the **Use Selected Members** button (green checkmark) to update the display Member selection.
  Back in the template, you will see the following data:

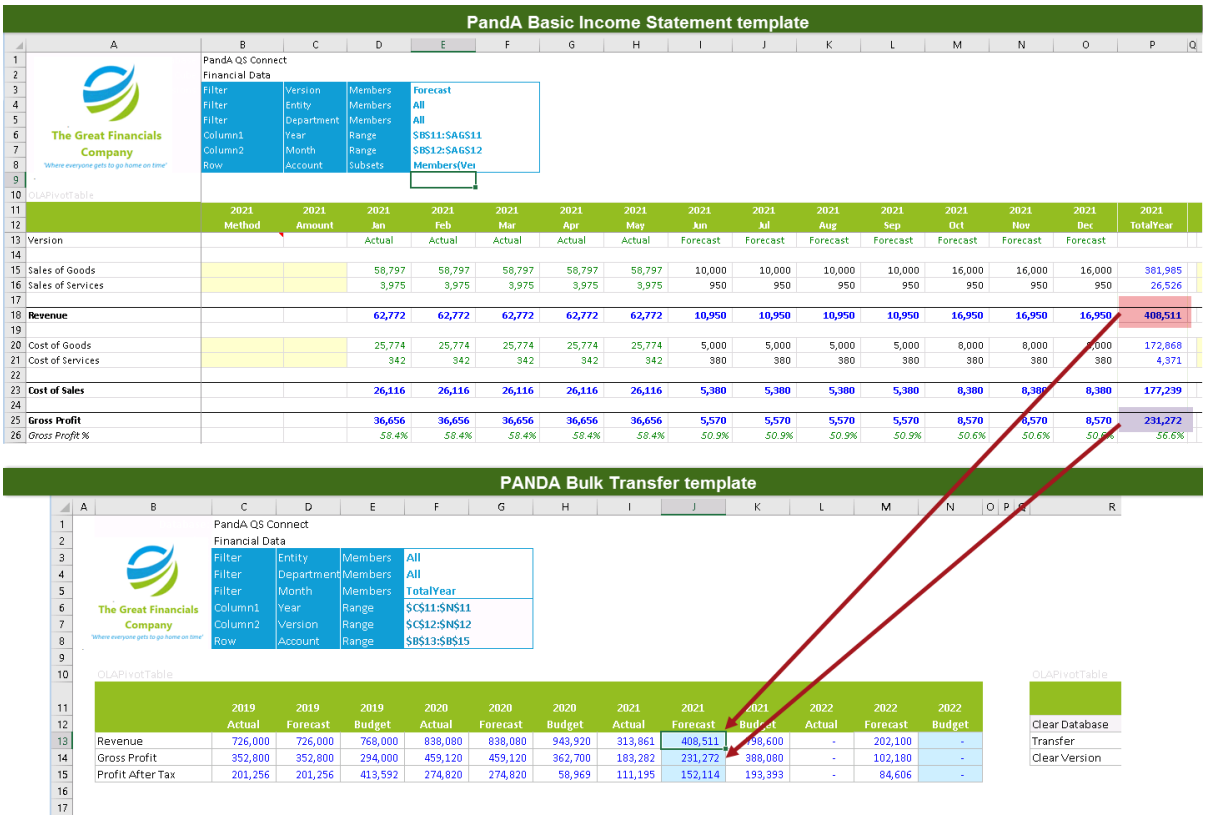


A sample PandA Basic Income Statement template showing Forecast data for years 2021 and 2022

By inspecting the *Total Year Forecast Revenue* for *2021* (cell **P18**) in the *PandA Basic Income Statement* template, notice that it did indeed return the same value in *2021 Forecast Revenue* (cell **J13**) in the PANDA Bulk Transfer template, which is at **408,511**.

The same is true for *Gross Profit* (cell **P25** in IS; while **J14** in Bulk Transfer) and *Profit After Tax* (cell **P58** in IS; while **J15** in Bulk Transfer).

If you care to compare *2022 Forecast* values, you will see that it also brought back the same numbers for those intersections.



A sample image showing comparison of Panda Basic IS vs PANDA Bulk Transfer template for the same intersections

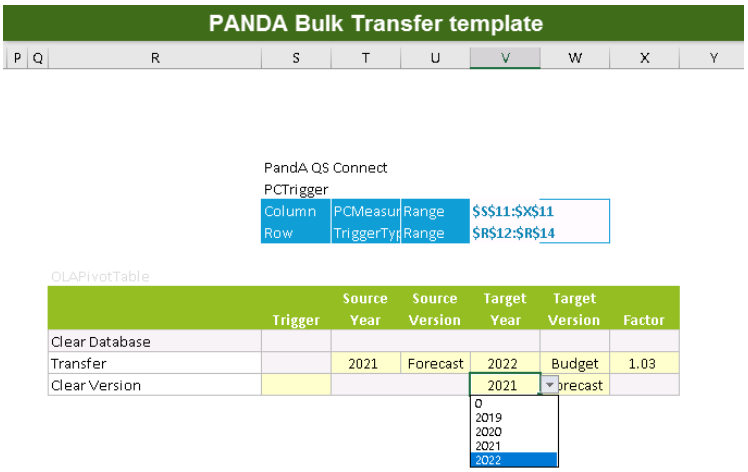
Assume that as per Management directive, we are to reference to the *2021 Forecast* and use those numbers for the *2022 Forecast* data.

[Before you proceed, check that there is Forecast 2022 data in your *PandA Basic Income Statement*]

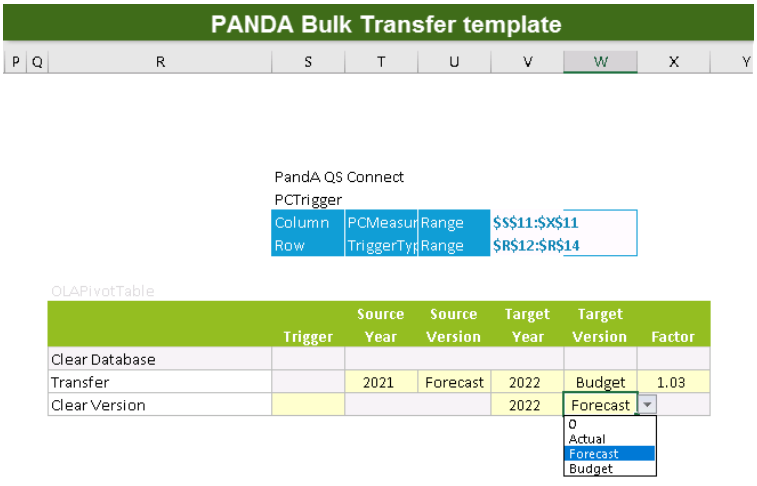
For the first exercise, remove 2022 Forecast data.

2. CLEAR VERSION Task: Clear 2022 Forecast data

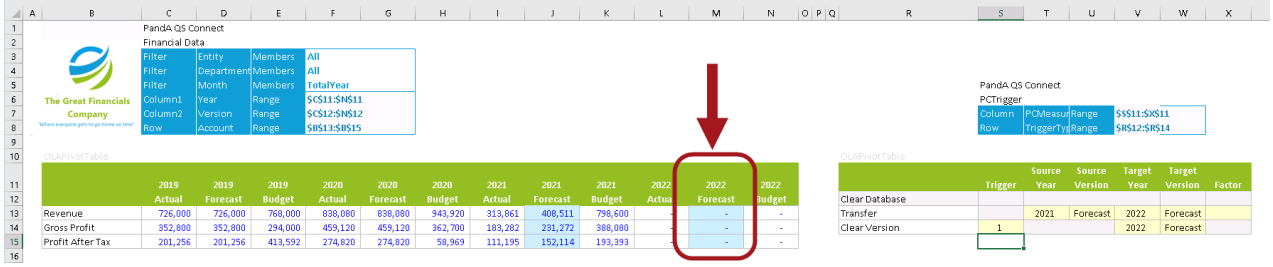
- Locate the Clear Version task in the *PANDA Bulk Transfer* template (cell **R14**).
- Specify the **Target Year** to be cleared:
  Go to cell **V14**, click the drop-down and select **2022** from the list.



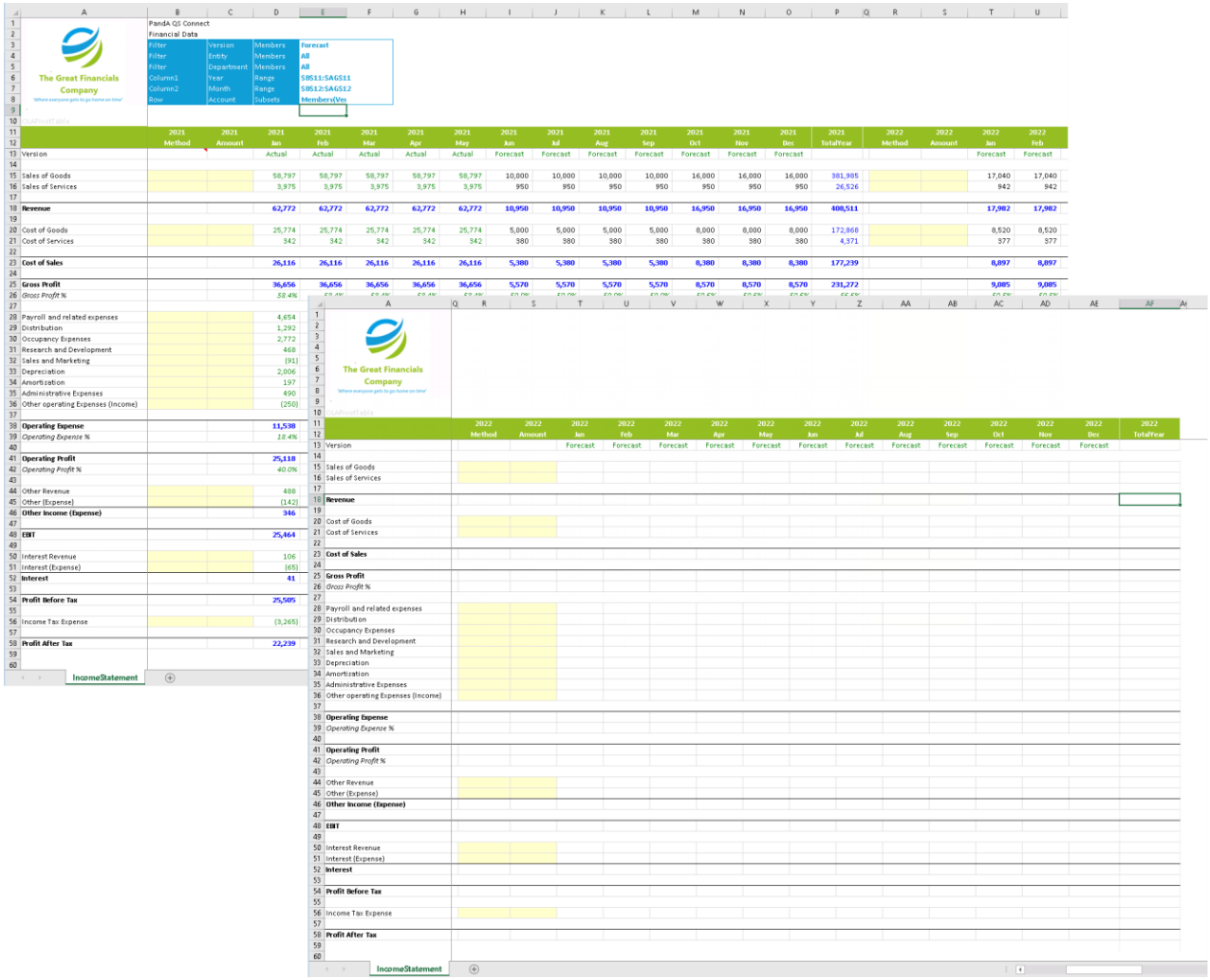
- Next, specify the **Target Version** to be cleared.
  Go to cell **W14**, click the drop-down and select **Forecast** from the list.



- To execute task, go to cell **S14** and enter a value to trigger task execution.
  Enter **1**. [Note: This could be any numeric value]
- Press **Enter**.
  This will clear your *2022 Forecast* data in the Income Statement.
- Press **F9** to refresh the values in both templates.
  Notice that the *PANDA Bulk Transfer* data has updated: whereas before there was data for *2022 Forecast*, now those corresponding cells are empty (cells **M13 to M15**, encircled in the image below).



- Check the *PandA Basic Income Statement* template.
  Notice that the cells corresponding to *2022 Forecast* now appear empty (rows **T to AF**), whilst the *2021 Forecast* data are retained (rows **D to P**).



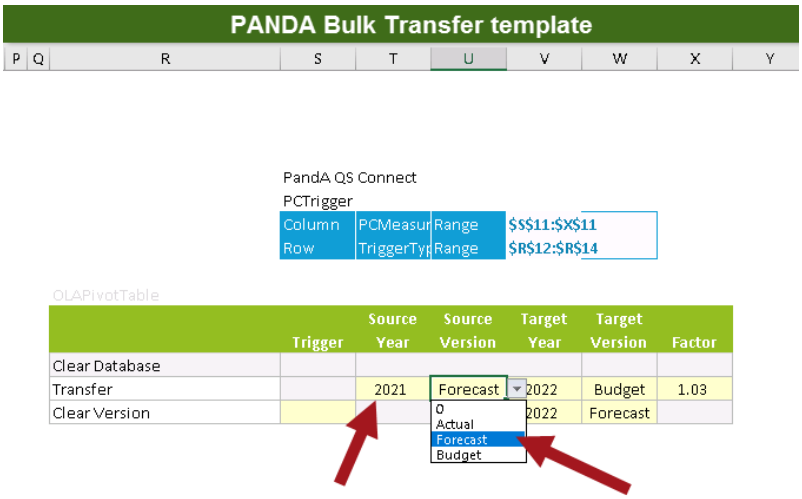
For the second exercise, we will do a Transfer Data Task that will demonstrate how to obtain existing data from another Version+Year combination.

3. TRANSFER DATA Task: Transfer 2021 Forecast data to 2022 Forecast

   - Go back to cell **S14** (trigger value for Clear Version task) and **Delete** the value.
     [This is an extra step to ensure that no other task gets executed at the same time]
   - Next, go to the Transfer Task (**R13**).

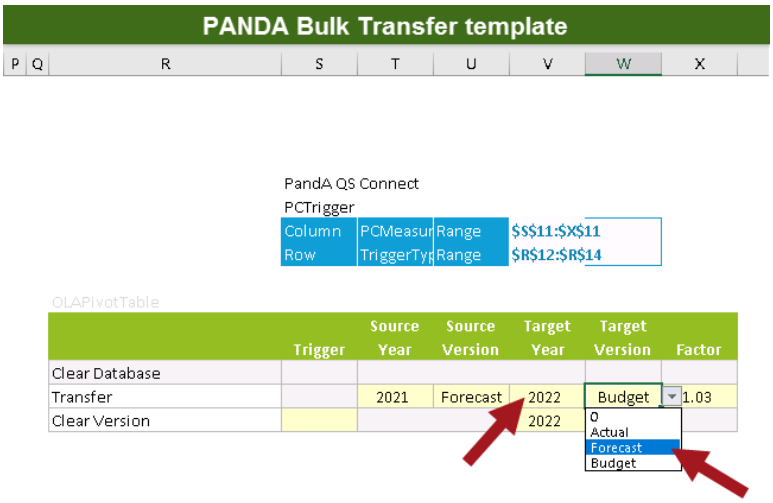
   Pick the **Source Year** and **Source Version** from which the target values are to be pulled from:

   - Specify the **Source Year**:
     Go to cell **T13**, click the drop-down and select **2021** from the list.
   - Specify the **Source Version**:
     Go to cell **U13**, click the drop-down and select **Forecast** from the list.

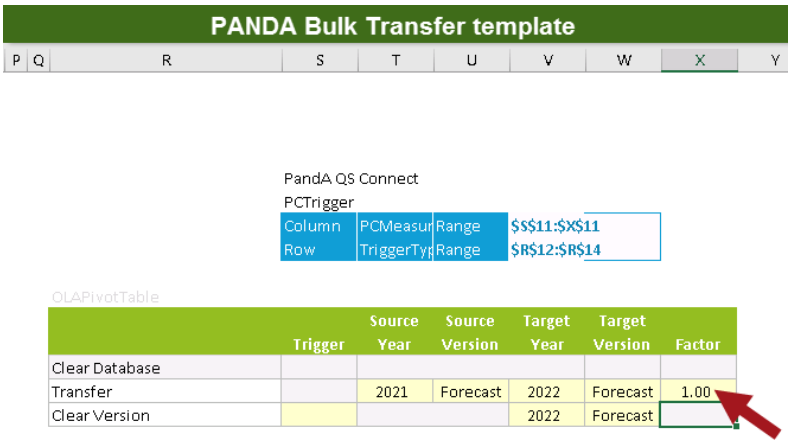


Pick the **Target Year** and **Target Version** (destination cells):

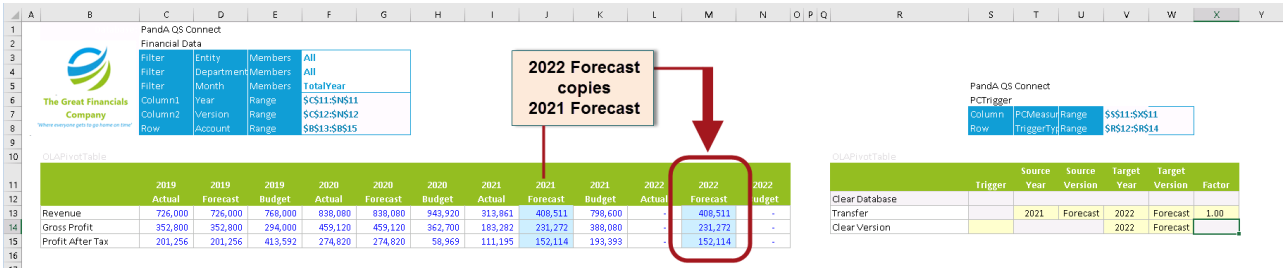
- Specify the **Target Year**.
  Go to cell **V13**, click the drop-down and select **2022** from the list.
- Specify the **Source Version**.
  Go to cell **W13**, click the drop-down and select **Forecast** from the list.



- Enter the **Factor** value.
  Note: The factor value will define how the reference values will be computed as they are sent to the target cells. This field accepts a numeric value as a valid entry and this factor value will be multiplied to the source data for sending to the target cells.
  For this example, enter **1**. This means that it will populate the *2022 Forecast* target cells with the same values as those coming from the *2021 Forecast* data.



- Press **Enter** then press **F9** to update both templates.
  Notice how the corresponding aggregate cells for *2022 Forecast* are updated (**M13 to M15**) to show identical values with *2021 Forecast* (**J13 to J15**).



- Again, check the *PandA Basic Income Statement* template and see the updated values. Note that new values are reflected in the *2022 Forecast* cells (purple highlights). Upon further inspection, notice that it did indeed bring back the same exact values from the *2021 Forecast* (pink highlights).

PANDA Basic Income Statement - 2021 Forecast

PandA QS Connect
Financial Data

Filter	Version	Members	Forecast
Filter	Entity	Members	All
Filter	Department	Members	All
Column1	Year	Range	SBS11:SAGS11
Column2	Month	Range	SBS12:SAGS12
Row	Account	Subsets	Members(Ver

	2021 Method	2021 Amount	2021 Jan	2021 Feb	2021 Mar	2021 Apr	2021 May	2021 Jun	2021 Jul	2021 Aug	2021 Sep	2021 Oct	2021 Nov	2021 Dec	2021 TotalYear
Version			Actual	Actual	Actual	Actual	Actual	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	
Sales of Goods			58,797	58,797	58,797	58,797	58,797	10,000	10,000	10,000	10,000	16,000	16,000	16,000	381,985
Sales of Services			3,975	3,975	3,975	3,975	3,975	950	950	950	950	950	950	950	26,526
Revenue			**62,772**	**62,772**	**62,772**	**62,772**	**62,772**	**10,950**	**10,950**	**10,950**	**10,950**	**16,950**	**16,950**	**16,950**	**408,511**
Cost of Goods			25,774	25,774	25,774	25,774	25,774	5,000	5,000	5,000	5,000	8,000	8,000	8,000	172,868
Cost of Services			342	342	342	342	342	380	380	380	380	380	380	380	4,371
Cost of Sales			**26,116**	**26,116**	**26,116**	**26,116**	**26,116**	**5,380**	**5,380**	**5,380**	**5,380**	**8,380**	**8,380**	**8,380**	**177,239**
Gross Profit			**36,656**	**36,656**	**36,656**	**36,656**	**36,656**	**5,570**	**5,570**	**5,570**	**5,570**	**8,570**	**8,570**	**8,570**	**231,272**
Gross Profit %			*58.4%*	*58.4%*	*58.4%*	*58.4%*	*58.4%*	*50.9%*	*50.9%*	*50.9%*	*50.9%*	*50.6%*	*50.6%*	*50.6%*	*56.6%*
Payroll and related expenses			4,654	4,654	4,654	4,654	4,654	990	990	990	990	990	990	990	30,201
Distribution			1,292	1,292	1,292	1,292	1,292	198	198	198	198	198	198	198	7,848
Occupancy Expenses			2,772	2,772	2,772	2,772	2,772								13,860
Research and Development			468	468	468	468	468	109	109	109	109	109	109	109	3,103
Sales and Marketing			(91)	(91)	(91)	(91)	(91)	312	312	312	312	312	312	312	1,729
Depreciation			2,006	2,006	2,006	2,006	2,006	550	550	550	550	550	550	550	13,878
Amortization			197	197	197	197	197	55	55	55	55	55	55	55	1,372
Administrative Expenses			490	490	490	490	490	121	121	121	121	121	121	121	3,299
Other operating Expenses (Income)			(250)	(250)	(250)	(250)	(250)	(61)	(61)	(61)	(61)	(61)	(61)	(61)	(1,676)
Operating Expense			**11,538**	**11,538**	**11,538**	**11,538**	**11,538**	**2,274**	**2,274**	**2,274**	**2,274**	**2,274**	**2,274**	**2,274**	**73,612**
Operating Expense %			*18.4%*	*18.4%*	*18.4%*	*18.4%*	*18.4%*	*20.8%*	*20.8%*	*20.8%*	*20.8%*	*13.4%*	*13.4%*	*13.4%*	*18.0%*
Operating Profit			**25,118**	**25,118**	**25,118**	**25,118**	**25,118**	**3,296**	**3,296**	**3,296**	**3,296**	**6,296**	**6,296**	**6,296**	**157,660**
Operating Profit %			*40.0%*	*40.0%*	*40.0%*	*40.0%*	*40.0%*	*30.1%*	*30.1%*	*30.1%*	*30.1%*	*37.1%*	*37.1%*	*37.1%*	*38.6%*
Other Revenue			488	488	488	488	488	130	130	130	130	130	130	130	3,352
Other (Expense)			(142)	(142)	(142)	(142)	(142)	(45)	(45)	(45)	(45)	(45)	(45)	(45)	(1,027)
Other Income (Expense)			**346**	**346**	**346**	**346**	**346**	**85**	**85**	**85**	**85**	**85**	**85**	**85**	**2,325**
EBT			**25,464**	**25,464**	**25,464**	**25,464**	**25,464**	**3,381**	**3,381**	**3,381**	**3,381**	**6,381**	**6,381**	**6,381**	**159,984**
Interest Revenue			106	106	106	106	106	30	30	30	30	30	30	30	739
Interest (Expense)			(65)	(65)	(65)	(65)	(65)	(20)	(20)	(20)	(20)	(20)	(20)	(20)	(466)
Interest			**41**	**41**	**41**	**41**	**41**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**274**
Profit Before Tax			**25,505**	**25,505**	**25,505**	**25,505**	**25,505**	**3,391**	**3,391**	**3,391**	**3,391**	**6,391**	**6,391**	**6,391**	**160,258**
Income Tax Expense			(3,265)	(3,265)	(3,265)	(3,265)	(3,265)	848	848	848	848	1,598	1,598	1,598	(8,144)
Profit After Tax			**22,239**	**22,239**	**22,239**	**22,239**	**22,239**	**4,238**	**4,238**	**4,238**	**4,238**	**7,988**	**7,988**	**7,988**	**152,114**

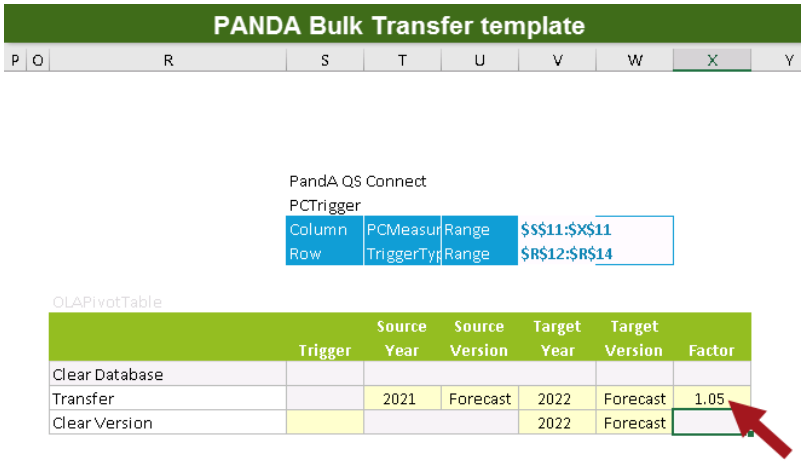
IncomeStatement

PANDA Basic Income Statement - 2022 Forecast

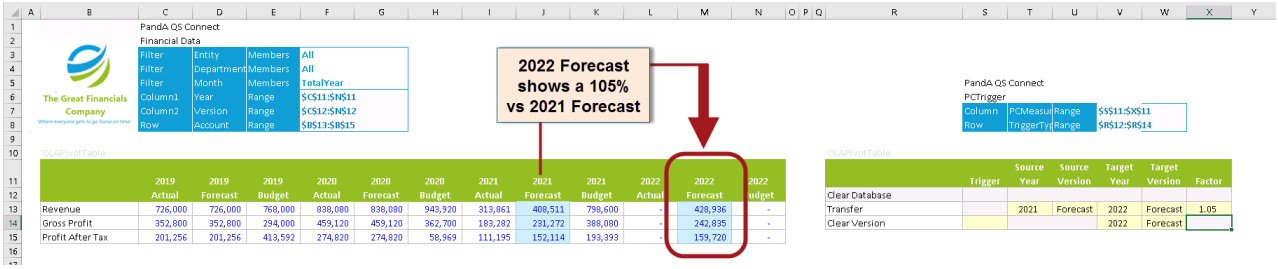
	2022 Method	2022 Amount	2022 Jan	2022 Feb	2022 Mar	2022 Apr	2022 May	2022 Jun	2022 Jul	2022 Aug	2022 Sep	2022 Oct	2022 Nov	2022 Dec	2022 TotalYear
Version			Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	
Sales of Goods			58,797	58,797	58,797	58,797	58,797	10,000	10,000	10,000	10,000	16,000	16,000	16,000	381,985
Sales of Services			3,975	3,975	3,975	3,975	3,975	950	950	950	950	950	950	950	26,526
Revenue			**62,772**	**62,772**	**62,772**	**62,772**	**62,772**	**10,950**	**10,950**	**10,950**	**10,950**	**16,950**	**16,950**	**16,950**	**408,511**
Cost of Goods			25,774	25,774	25,774	25,774	25,774	5,000	5,000	5,000	5,000	8,000	8,000	8,000	172,868
Cost of Services			342	342	342	342	342	380	380	380	380	380	380	380	4,371
Cost of Sales			**26,116**	**26,116**	**26,116**	**26,116**	**26,116**	**5,380**	**5,380**	**5,380**	**5,380**	**8,380**	**8,380**	**8,380**	**177,239**
Gross Profit			**36,656**	**36,656**	**36,656**	**36,656**	**36,656**	**5,570**	**5,570**	**5,570**	**5,570**	**8,570**	**8,570**	**8,570**	**231,272**
Gross Profit %			*58.4%*	*58.4%*	*58.4%*	*58.4%*	*58.4%*	*50.9%*	*50.9%*	*50.9%*	*50.9%*	*50.6%*	*50.6%*	*50.6%*	*56.6%*
Payroll and related expenses			4,654	4,654	4,654	4,654	4,654	990	990	990	990	990	990	990	30,201
Distribution			1,292	1,292	1,292	1,292	1,292	198	198	198	198	198	198	198	7,848
Occupancy Expenses			2,772	2,772	2,772	2,772	2,772								13,860
Research and Development			468	468	468	468	468	109	109	109	109	109	109	109	3,103
Sales and Marketing			(91)	(91)	(91)	(91)	(91)	312	312	312	312	312	312	312	1,729
Depreciation			2,006	2,006	2,006	2,006	2,006	550	550	550	550	550	550	550	13,878
Amortization			197	197	197	197	197	55	55	55	55	55	55	55	1,372
Administrative Expenses			490	490	490	490	490	121	121	121	121	121	121	121	3,299
Other operating Expenses (Income)			(250)	(250)	(250)	(250)	(250)	(61)	(61)	(61)	(61)	(61)	(61)	(61)	(1,676)
Operating Expense			**11,538**	**11,538**	**11,538**	**11,538**	**11,538**	**2,274**	**2,274**	**2,274**	**2,274**	**2,274**	**2,274**	**2,274**	**73,612**
Operating Expense %			*18.4%*	*18.4%*	*18.4%*	*18.4%*	*18.4%*	*20.8%*	*20.8%*	*20.8%*	*20.8%*	*13.4%*	*13.4%*	*13.4%*	*18.0%*
Operating Profit			**25,118**	**25,118**	**25,118**	**25,118**	**25,118**	**3,296**	**3,296**	**3,296**	**3,296**	**6,296**	**6,296**	**6,296**	**157,660**
Operating Profit %			*40.0%*	*40.0%*	*40.0%*	*40.0%*	*40.0%*	*30.1%*	*30.1%*	*30.1%*	*30.1%*	*37.1%*	*37.1%*	*37.1%*	*38.6%*
Other Revenue			488	488	488	488	488	130	130	130	130	130	130	130	3,352
Other (Expense)			(142)	(142)	(142)	(142)	(142)	(45)	(45)	(45)	(45)	(45)	(45)	(45)	(1,027)
Other Income (Expense)			**346**	**346**	**346**	**346**	**346**	**85**	**85**	**85**	**85**	**85**	**85**	**85**	**2,325**
EBT			**25,464**	**25,464**	**25,464**	**25,464**	**25,464**	**3,381**	**3,381**	**3,381**	**3,381**	**6,381**	**6,381**	**6,381**	**159,984**
Interest Revenue			106	106	106	106	106	30	30	30	30	30	30	30	739
Interest (Expense)			(65)	(65)	(65)	(65)	(65)	(20)	(20)	(20)	(20)	(20)	(20)	(20)	(466)
Interest			**41**	**41**	**41**	**41**	**41**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**274**
Profit Before Tax			**25,505**	**25,505**	**25,505**	**25,505**	**25,505**	**3,391**	**3,391**	**3,391**	**3,391**	**6,391**	**6,391**	**6,391**	**160,258**
Income Tax Expense			(3,265)	(3,265)	(3,265)	(3,265)	(3,265)	848	848	848	848	1,598	1,598	1,598	(8,144)
Profit After Tax			**22,239**	**22,239**	**22,239**	**22,239**	**22,239**	**4,238**	**4,238**	**4,238**	**4,238**	**7,988**	**7,988**	**7,988**	**152,114**

IncomeStatement

- Assume it was decided that in the CY forecast (*Forecast 2022*), there should be a 5% increase vs LY forecast (*Forecast 2021*).
  You can easily adjust the values by changing the Factor value. Since we want a 5% increase, enter 1.05 (equivalent to 105%).
  Go to cell **X13** and enter the new factor value of **1.05**.



- Press **Enter** then press **F9** to update both templates.
  Notice how the corresponding aggregate cells are updated to show *2022 Forecast* (**M13 to M15**) is at 105% vs *2021 Forecast* (**J13 to J15**).



- Back in the *PandA Basic Income Statement* template, see the updated values.
  [*2021 Forecast* is in pink highlights; *2022 Forecast* is in purple highlights.]

PANDA Basic Income Statement - 2021 Forecast

PandA QS Connect
Financial Data

Filter	Version	Members	Forecast
Filter	Entity	Members	All
Filter	Department	Members	All
Column1	Year	Range	SB$11:SAG$11
Column2	Month	Range	SB$12:SAG$12
Row	Account	Subsets	Members(Ve

	2021 Method	2021 Amount	2021 Jan	2021 Feb	2021 Mar	2021 Apr	2021 May	2021 Jun	2021 Jul	2021 Aug	2021 Sep	2021 Oct	2021 Nov	2021 Dec	2021 TotalYear
Version			Actual	Actual	Actual	Actual	Actual	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	
Sales of Goods			58,797	58,797	58,797	58,797	58,797	10,000	10,000	10,000	10,000	16,000	16,000	16,000	381,985
Sales of Services			3,975	3,975	3,975	3,975	3,975	950	950	950	950	950	950	950	26,526
Revenue			**62,772**	**62,772**	**62,772**	**62,772**	**62,772**	**10,950**	**10,950**	**10,950**	**10,950**	**16,950**	**16,950**	**16,950**	**408,511**
Cost of Goods			25,774	25,774	25,774	25,774	25,774	5,000	5,000	5,000	5,000	8,000	8,000	8,000	172,868
Cost of Services			342	342	342	342	342	380	380	380	380	380	380	380	4,371
Cost of Sales			**26,116**	**26,116**	**26,116**	**26,116**	**26,116**	**5,380**	**5,380**	**5,380**	**5,380**	**8,380**	**8,380**	**8,380**	**177,239**
Gross Profit			**36,656**	**36,656**	**36,656**	**36,656**	**36,656**	**5,570**	**5,570**	**5,570**	**5,570**	**8,570**	**8,570**	**8,570**	**231,272**
Gross Profit %			*58.4%*	*58.4%*	*58.4%*	*58.4%*	*58.4%*	*50.9%*	*50.9%*	*50.9%*	*50.9%*	*50.6%*	*50.6%*	*50.6%*	*56.6%*
Payroll and related expenses			4,654	4,654	4,654	4,654	4,654	990	990	990	990	990	990	990	30,201
Distribution			1,292	1,292	1,292	1,292	1,292	198	198	198	198	198	198	198	7,848
Occupancy Expenses			2,772	2,772	2,772	2,772	2,772								13,860
Research and Development			468	468	468	468	468	109	109	109	109	109	109	109	3,103
Sales and Marketing			(91)	(91)	(91)	(91)	(91)	312	312	312	312	312	312	312	1,729
Depreciation			2,006	2,006	2,006	2,006	2,006	550	550	550	550	550	550	550	13,878
Amortization			197	197	197	197	197	55	55	55	55	55	55	55	1,372
Administrative Expenses			490	490	490	490	490	121	121	121	121	121	121	121	3,299
Other operating Expenses (Income)			(250)	(250)	(250)	(250)	(250)	(61)	(61)	(61)	(61)	(61)	(61)	(61)	(1,676)
Operating Expense			**11,538**	**11,538**	**11,538**	**11,538**	**11,538**	**2,274**	**2,274**	**2,274**	**2,274**	**2,274**	**2,274**	**2,274**	**73,612**
Operating Expense %			*18.4%*	*18.4%*	*18.4%*	*18.4%*	*18.4%*	*20.8%*	*20.8%*	*20.8%*	*20.8%*	*13.4%*	*13.4%*	*13.4%*	*18.0%*
Operating Profit			**25,118**	**25,118**	**25,118**	**25,118**	**25,118**	**3,296**	**3,296**	**3,296**	**3,296**	**6,296**	**6,296**	**6,296**	**157,660**
Operating Profit %			*40.0%*	*40.0%*	*40.0%*	*40.0%*	*40.0%*	*30.1%*	*30.1%*	*30.1%*	*30.1%*	*37.1%*	*37.1%*	*37.1%*	*38.6%*
Other Revenue			488	488	488	488	488	130	130	130	130	130	130	130	3,352
Other (Expense)			(142)	(142)	(142)	(142)	(142)	(45)	(45)	(45)	(45)	(45)	(45)	(45)	(1,027)
Other Income (Expense)			**346**	**346**	**346**	**346**	**346**	**85**	**85**	**85**	**85**	**85**	**85**	**85**	**2,325**
EBT			**25,464**	**25,464**	**25,464**	**25,464**	**25,464**	**3,381**	**3,381**	**3,381**	**3,381**	**6,381**	**6,381**	**6,381**	**159,984**
Interest Revenue			106	106	106	106	106	30	30	30	30	30	30	30	739
Interest (Expense)			(65)	(65)	(65)	(65)	(65)	(20)	(20)	(20)	(20)	(20)	(20)	(20)	(466)
Interest			**41**	**41**	**41**	**41**	**41**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**274**
Profit Before Tax			**25,505**	**25,505**	**25,505**	**25,505**	**25,505**	**3,391**	**3,391**	**3,391**	**3,391**	**6,391**	**6,391**	**6,391**	**160,258**
Income Tax Expense			(3,265)	(3,265)	(3,265)	(3,265)	(3,265)	848	848	848	848	1,598	1,598	1,598	(8,144)
Profit After Tax			**22,239**	**22,239**	**22,239**	**22,239**	**22,239**	**4,238**	**4,238**	**4,238**	**4,238**	**7,988**	**7,988**	**7,988**	**152,114**

IncomeStatement

PANDA Basic Income Statement - 2022 Forecast

	2022 Method	2022 Amount	2022 Jan	2022 Feb	2022 Mar	2022 Apr	2022 May	2022 Jun	2022 Jul	2022 Aug	2022 Sep	2022 Oct	2022 Nov	2022 Dec	2022 TotalYear
Version			Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	
Sales of Goods			61,737	61,737	61,737	61,737	61,737	10,500	10,500	10,500	10,500	16,800	16,800	16,800	401,084
Sales of Services			4,174	4,174	4,174	4,174	4,174	998	998	998	998	998	998	998	27,852
Revenue			**65,911**	**65,911**	**65,911**	**65,911**	**65,911**	**11,498**	**11,498**	**11,498**	**11,498**	**17,798**	**17,798**	**17,798**	**428,936**
Cost of Goods			27,062	27,062	27,062	27,062	27,062	5,250	5,250	5,250	5,250	8,400	8,400	8,400	181,511
Cost of Services			359	359	359	359	359	399	399	399	399	399	399	399	4,590
Cost of Sales			**27,422**	**27,422**	**27,422**	**27,422**	**27,422**	**5,649**	**5,649**	**5,649**	**5,649**	**8,799**	**8,799**	**8,799**	**186,101**
Gross Profit			**38,489**	**38,489**	**38,489**	**38,489**	**38,489**	**5,849**	**5,849**	**5,849**	**5,849**	**8,999**	**8,999**	**8,999**	**242,835**
Gross Profit %			*58.4%*	*58.4%*	*58.4%*	*58.4%*	*58.4%*	*50.9%*	*50.9%*	*50.9%*	*50.9%*	*50.6%*	*50.6%*	*50.6%*	*56.6%*
Payroll and related expenses			4,887	4,887	4,887	4,887	4,887	1,040	1,040	1,040	1,040	1,040	1,040	1,040	31,711
Distribution			1,357	1,357	1,357	1,357	1,357	208	208	208	208	208	208	208	8,240
Occupancy Expenses			2,911	2,911	2,911	2,911	2,911								14,553
Research and Development			491	491	491	491	491	114	114	114	114	114	114	114	3,258
Sales and Marketing			(95)	(95)	(95)	(95)	(95)	327	327	327	327	327	327	327	1,815
Depreciation			2,106	2,106	2,106	2,106	2,106	578	578	578	578	578	578	578	14,571
Amortization			207	207	207	207	207	58	58	58	58	58	58	58	1,440
Administrative Expenses			515	515	515	515	515	127	127	127	127	127	127	127	3,464
Other operating Expenses (Income)			(263)	(263)	(263)	(263)	(263)	(64)	(64)	(64)	(64)	(64)	(64)	(64)	(1,760)
Operating Expense			**12,115**	**12,115**	**12,115**	**12,115**	**12,115**	**2,388**	**2,388**	**2,388**	**2,388**	**2,388**	**2,388**	**2,388**	**77,293**
Operating Expense %			*18.4%*	*18.4%*	*18.4%*	*18.4%*	*18.4%*	*20.8%*	*20.8%*	*20.8%*	*20.8%*	*13.4%*	*13.4%*	*13.4%*	*18.0%*
Operating Profit			**26,374**	**26,374**	**26,374**	**26,374**	**26,374**	**3,461**	**3,461**	**3,461**	**3,461**	**6,611**	**6,611**	**6,611**	**165,543**
Operating Profit %			*40.0%*	*40.0%*	*40.0%*	*40.0%*	*40.0%*	*30.1%*	*30.1%*	*30.1%*	*30.1%*	*37.1%*	*37.1%*	*37.1%*	*38.6%*
Other Revenue			513	513	513	513	513	137	137	137	137	137	137	137	3,520
Other (Expense)			(150)	(150)	(150)	(150)	(150)	(47)	(47)	(47)	(47)	(47)	(47)	(47)	(1,079)
Other Income (Expense)			**363**	**363**	**363**	**363**	**363**	**89**	**89**	**89**	**89**	**89**	**89**	**89**	**2,441**
EBT			**26,737**	**26,737**	**26,737**	**26,737**	**26,737**	**3,550**	**3,550**	**3,550**	**3,550**	**6,700**	**6,700**	**6,700**	**167,984**
Interest Revenue			111	111	111	111	111	32	32	32	32	32	32	32	776
Interest (Expense)			(68)	(68)	(68)	(68)	(68)	(21)	(21)	(21)	(21)	(21)	(21)	(21)	(489)
Interest			**43**	**43**	**43**	**43**	**43**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**287**
Profit Before Tax			**26,780**	**26,780**	**26,780**	**26,780**	**26,780**	**3,560**	**3,560**	**3,560**	**3,560**	**6,710**	**6,710**	**6,710**	**168,271**
Income Tax Expense			(3,429)	(3,429)	(3,429)	(3,429)	(3,429)	890	890	890	890	1,678	1,678	1,678	(8,551)
Profit After Tax			**23,351**	**23,351**	**23,351**	**23,351**	**23,351**	**4,450**	**4,450**	**4,450**	**4,450**	**8,388**	**8,388**	**8,388**	**159,720**

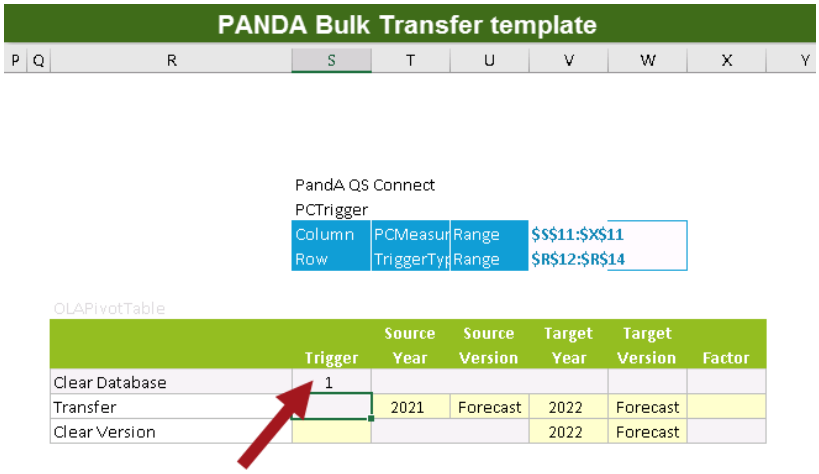
IncomeStatement

The last exercise is a simple Clear Database task that will wipe out all existing values from your Panda Model. Please EXERCISE CAUTION when using this feature.

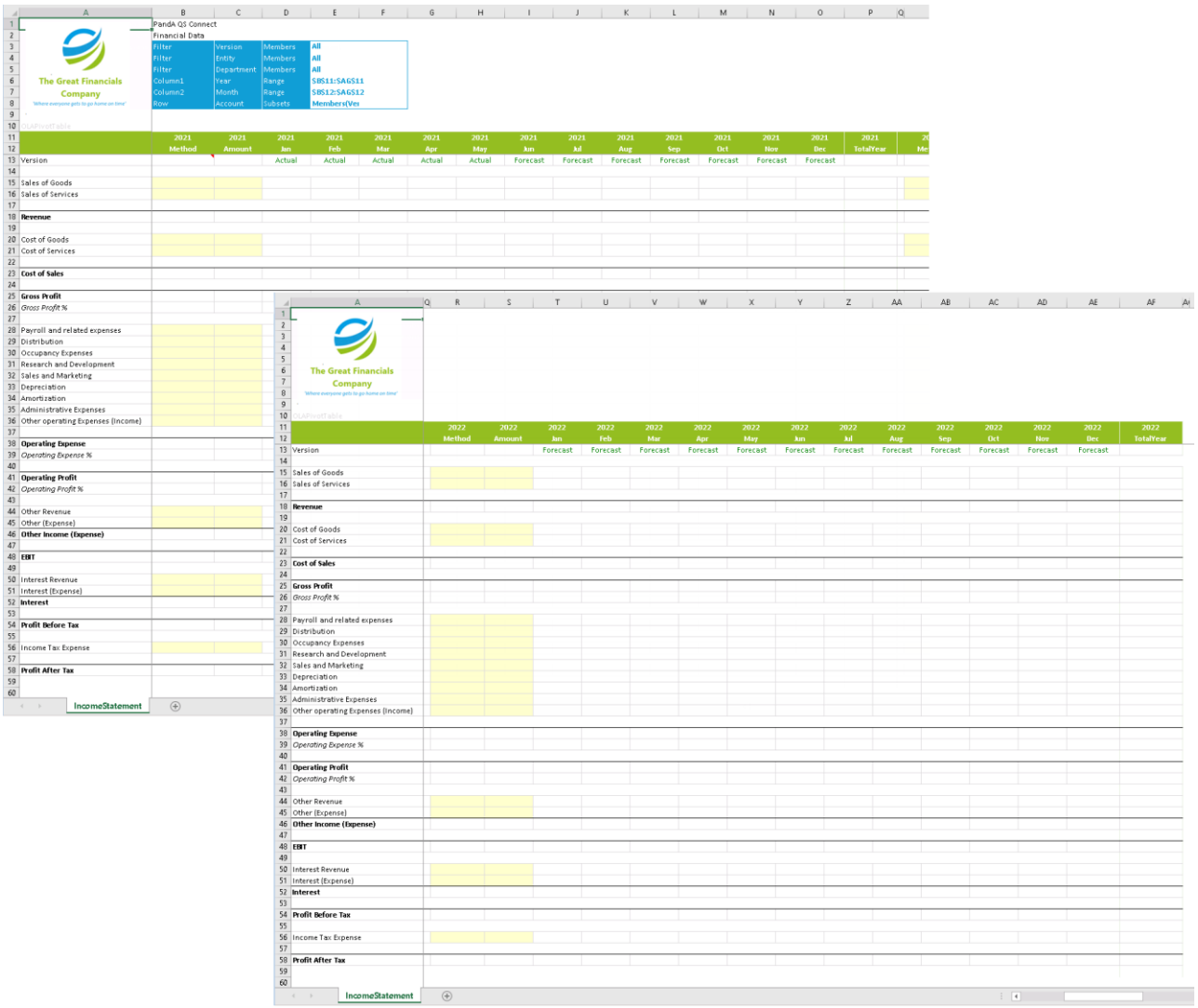
> **IMPORTANT – PROCEED WITH CAUTION: Use of this capability** within the *PandA Bulk Transfer* template will **CLEAR DATA FROM THE ENTIRE PandA Model, including all Actual data and Budget/Forecast data**. If you intend to use the data in your current model at some point, make a backup of your database in its current state.

4. CLEAR DATABASE Task

- Locate the Clear Database task in the *PANDA Bulk Transfer* template (cell **R12**).
- To execute the task, go to the trigger cell for the Clear Database task (**S12**) and enter a trigger value (e.g., **1**). Note: The trigger can be any numeric value.



- Press **Enter** then press **F9**.
  You can change the filters to display *All* Versions, *All* Entity and *All* Department.
  Both templates will now appear empty, as you have successfully cleared the values in the entire source *PandA Model* (see next image for the empty *Income Statement*, both CY and FY).


PandA QS Connect
Financial Data
The Great Financials Company
IncomeStatement

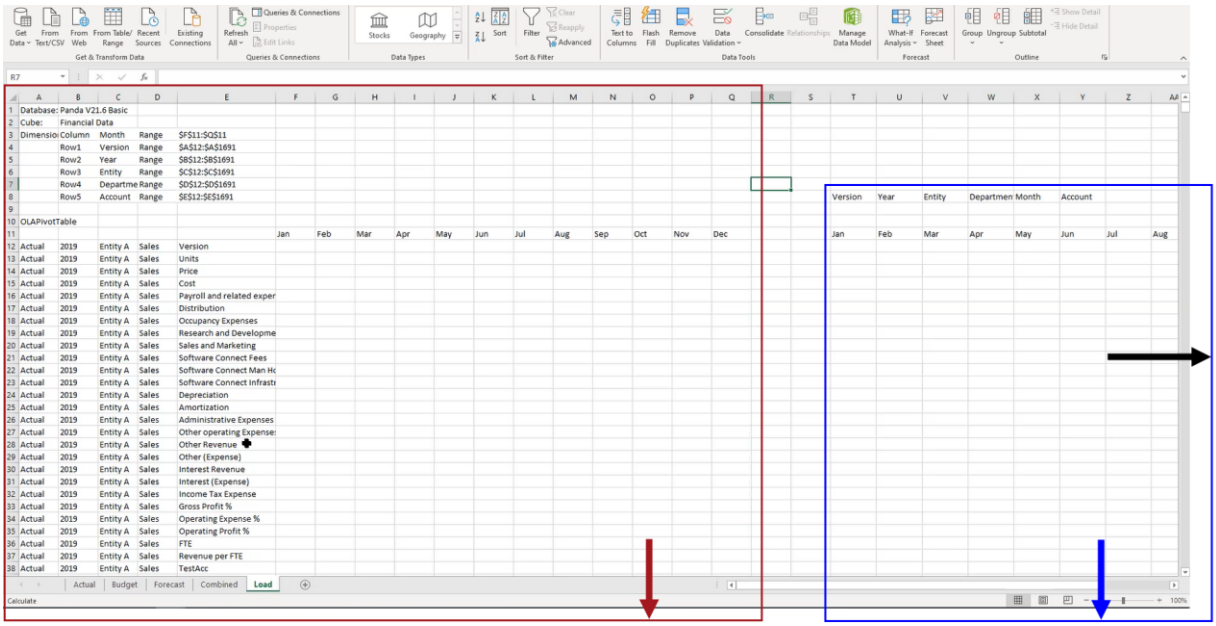
6.2 Bulk Copy/Paste of Data into the PandA Model

In Section 4 you considered ways to "get data into the PandA model"—typically, for forecast and budget planning—by typing in numbers or using driver-based entries (using the built-in Method/Amount capability). There will be other occasions, however, when you need to get "Actuals" into the model in a more wholesale way. In fact, you might also need to enter other Version figures (e.g., Budget, Forecast, etc.) in a similar manner. However, for present purposes we will consider how you can get many Actuals figures, based on a volume of transactions that occurred during a particular period (e.g., month, year), into the PandA model.

The way to accomplish this is through a bulk copy/paste of figures into the model, something that will be familiar to most intermediate users of Excel. Indeed, two workbooks can be used very effectively as the means to accomplish this— (1) an Excel spreadsheet that "contains" all the data to be bulk copy/pasted, and a (2) PowerExcel Slice, set up as a Load template to "receive" and "write back" the data to the PandA model. (It goes without saying that the Slice will have a live connection to the PandA model.)

Note: A more thorough exploration of this topic appears in the PowerExcel User manual. This section outlines the basics, without a step-by-step procedure.

Let's consider the second workbook first—the PowerExcel Slice that will be function as a Load template for the bulk data that needs to be entered: below is an example that tracks the PandA model, in which all Dimensions (save one, *Month*) are stacked on the left; *Month* is in Columns F through Q (see the red boxed area of the spreadsheet below, which will extend for many more Rows, as suggested by the downward-pointing red arrow).



Because many transactions with the same Member combination may occur in a single month, the area to the right (blue, boxed) will be used to Sum all the data from the individual transactions (which, in the extended example discussed in the PowerExcel User manual, come from the Combined tab).

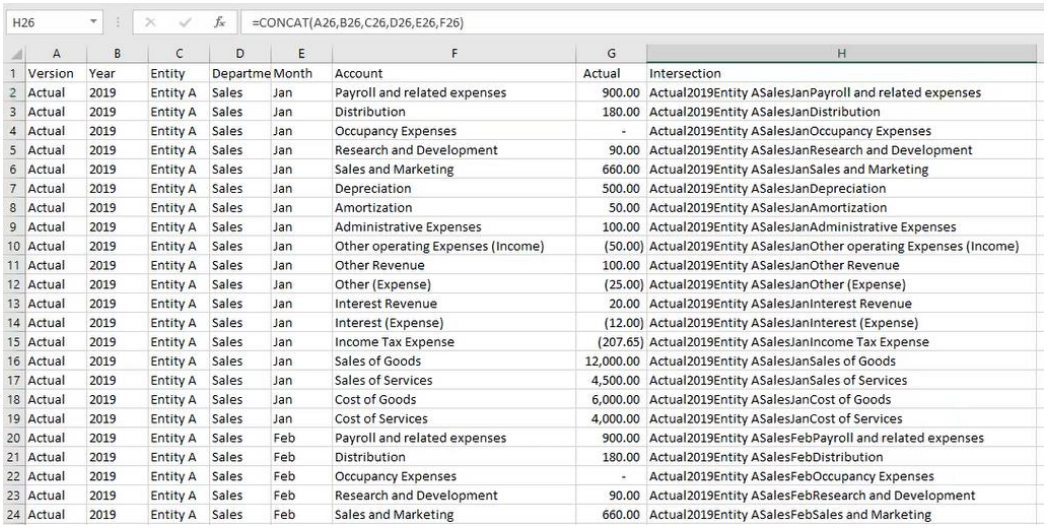
Concerning all those individual transactions: let's say that they have been organized on a worksheet—this is the data that will be bulk/copied into the blue boxed area in the spreadsheet above.

The worksheet below is a rendering of *Actual* data with row after row of transactions (this data set could extend thousands of rows), under headings that track the Dimensions of the PandA model: *Version*, *Year*, *Entity*, *Department*, *Month*, *Account*. (The last column, G, has the data point value for the indicated *Version*—this worksheet was created to accommodate other Versions as well.)

	A	B	C	D	E	F	G
1	Version	Year	Entity	Departme	Month	Account	Actual
2	Actual	2019	Entity A	Sales	Jan	Payroll and related expenses	900.00
3	Actual	2019	Entity A	Sales	Jan	Distribution	180.00
4	Actual	2019	Entity A	Sales	Jan	Occupancy Expenses	-
5	Actual	2019	Entity A	Sales	Jan	Research and Development	90.00
6	Actual	2019	Entity A	Sales	Jan	Sales and Marketing	660.00
7	Actual	2019	Entity A	Sales	Jan	Depreciation	500.00
8	Actual	2019	Entity A	Sales	Jan	Amortization	50.00
9	Actual	2019	Entity A	Sales	Jan	Administrative Expenses	100.00
10	Actual	2019	Entity A	Sales	Jan	Other operating Expenses (Income)	(50.00)
11	Actual	2019	Entity A	Sales	Jan	Other Revenue	100.00
12	Actual	2019	Entity A	Sales	Jan	Other (Expense)	(25.00)
13	Actual	2019	Entity A	Sales	Jan	Interest Revenue	20.00
14	Actual	2019	Entity A	Sales	Jan	Interest (Expense)	(12.00)
15	Actual	2019	Entity A	Sales	Jan	Income Tax Expense	(207.65)
16	Actual	2019	Entity A	Sales	Jan	Sales of Goods	12,000.00
17	Actual	2019	Entity A	Sales	Jan	Sales of Services	4,500.00
18	Actual	2019	Entity A	Sales	Jan	Cost of Goods	6,000.00
19	Actual	2019	Entity A	Sales	Jan	Cost of Services	4,000.00
20	Actual	2019	Entity A	Sales	Feb	Payroll and related expenses	900.00
21	Actual	2019	Entity A	Sales	Feb	Distribution	180.00
22	Actual	2019	Entity A	Sales	Feb	Occupancy Expenses	-
23	Actual	2019	Entity A	Sales	Feb	Research and Development	90.00
24	Actual	2019	Entity A	Sales	Feb	Sales and Marketing	660.00

A logical next step would be to create an identifier for each of the intersections—as an example, Column H. One can do this using the Excel concatenation formula function, as in the following image.

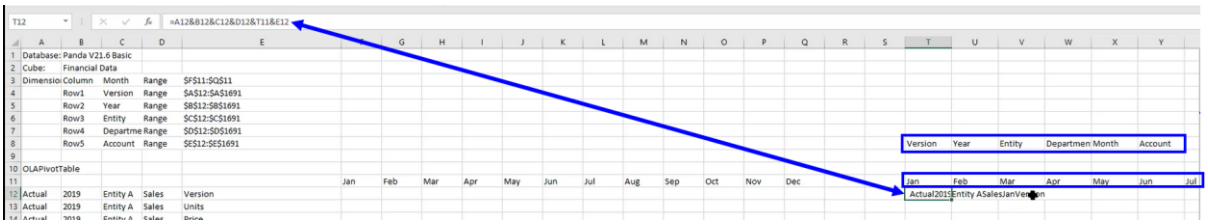
The logic of the concatenation would be extended to the end of the data set, so that each transaction row is identifiable-as below (once again, extending for many rows).



	A	B	C	D	E	F	G	H
1	Version	Year	Entity	Departme	Month	Account	Actual	Intersection
2	Actual	2019	Entity A	Sales	Jan	Payroll and related expenses	900.00	Actual2019Entity ASalesJanPayroll and related expenses
3	Actual	2019	Entity A	Sales	Jan	Distribution	180.00	Actual2019Entity ASalesJanDistribution
4	Actual	2019	Entity A	Sales	Jan	Occupancy Expenses	-	Actual2019Entity ASalesJanOccupancy Expenses
5	Actual	2019	Entity A	Sales	Jan	Research and Development	90.00	Actual2019Entity ASalesJanResearch and Development
6	Actual	2019	Entity A	Sales	Jan	Sales and Marketing	660.00	Actual2019Entity ASalesJanSales and Marketing
7	Actual	2019	Entity A	Sales	Jan	Depreciation	500.00	Actual2019Entity ASalesJanDepreciation
8	Actual	2019	Entity A	Sales	Jan	Amortization	50.00	Actual2019Entity ASalesJanAmortization
9	Actual	2019	Entity A	Sales	Jan	Administrative Expenses	100.00	Actual2019Entity ASalesJanAdministrative Expenses
10	Actual	2019	Entity A	Sales	Jan	Other operating Expenses (Income)	(50.00)	Actual2019Entity ASalesJanOther operating Expenses (Income)
11	Actual	2019	Entity A	Sales	Jan	Other Revenue	100.00	Actual2019Entity ASalesJanOther Revenue
12	Actual	2019	Entity A	Sales	Jan	Other (Expense)	(25.00)	Actual2019Entity ASalesJanOther (Expense)
13	Actual	2019	Entity A	Sales	Jan	Interest Revenue	20.00	Actual2019Entity ASalesJanInterest Revenue
14	Actual	2019	Entity A	Sales	Jan	Interest (Expense)	(12.00)	Actual2019Entity ASalesJanInterest (Expense)
15	Actual	2019	Entity A	Sales	Jan	Income Tax Expense	(207.65)	Actual2019Entity ASalesJanIncome Tax Expense
16	Actual	2019	Entity A	Sales	Jan	Sales of Goods	12,000.00	Actual2019Entity ASalesJanSales of Goods
17	Actual	2019	Entity A	Sales	Jan	Sales of Services	4,500.00	Actual2019Entity ASalesJanSales of Services
18	Actual	2019	Entity A	Sales	Jan	Cost of Goods	6,000.00	Actual2019Entity ASalesJanCost of Goods
19	Actual	2019	Entity A	Sales	Jan	Cost of Services	4,000.00	Actual2019Entity ASalesJanCost of Services
20	Actual	2019	Entity A	Sales	Feb	Payroll and related expenses	900.00	Actual2019Entity ASalesFebPayroll and related expenses
21	Actual	2019	Entity A	Sales	Feb	Distribution	180.00	Actual2019Entity ASalesFebDistribution
22	Actual	2019	Entity A	Sales	Feb	Occupancy Expenses	-	Actual2019Entity ASalesFebOccupancy Expenses
23	Actual	2019	Entity A	Sales	Feb	Research and Development	90.00	Actual2019Entity ASalesFebResearch and Development
24	Actual	2019	Entity A	Sales	Feb	Sales and Marketing	660.00	Actual2019Entity ASalesFebSales and Marketing

The concatenation would in turn be used as a criterion for the summation area back in the Load template—the area boxed in blue in the first image show in this section.

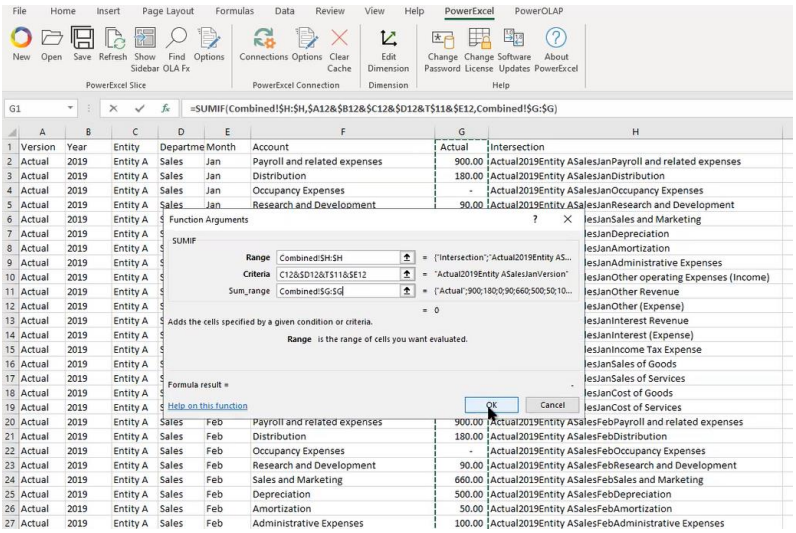
In the Load template, you would make certain the relative referencing to the Dimensions (Row 8 in the image below) and the Month indicator (Row 11) are correct.



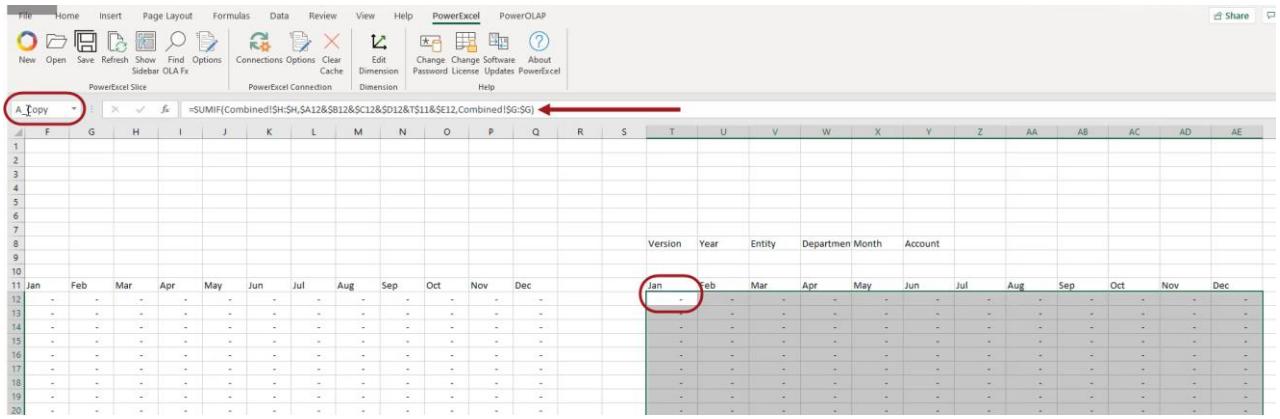
Next, you would create a SUMIF formula will be written to:

- Evaluate the Range of intersection points in Column H from the large block of data in the data worksheet;
- And IF the Criteria is met (by "equaling" the result of the concatenation formula), then
- SUM the correct values from Column G on the Combined tab appertaining to the Criteria (and make a Zero if the Criteria is not met).

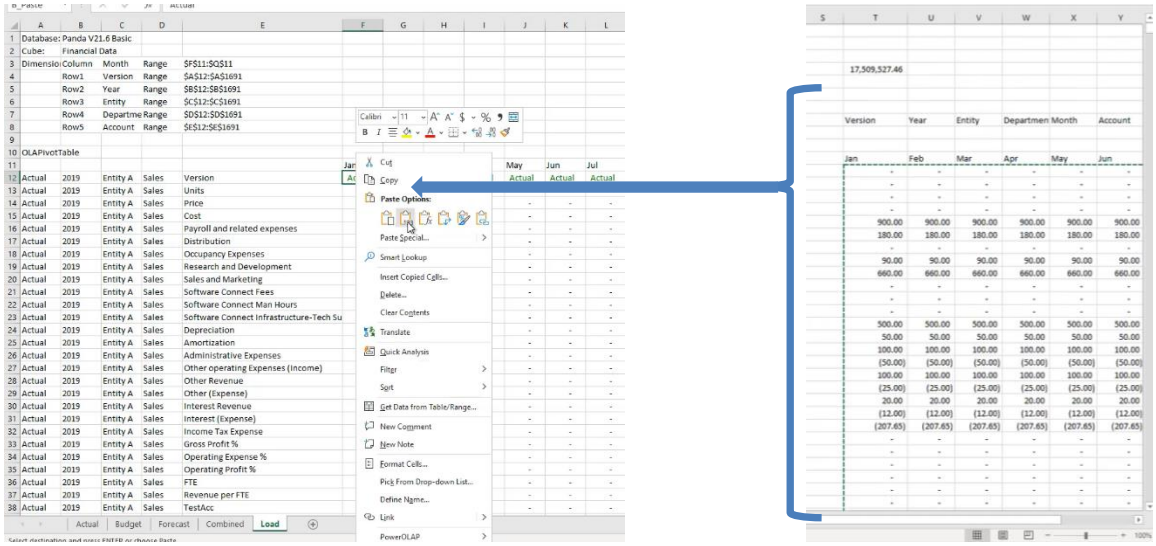
The full SUMIF function is shown next, with the data showing in the background.



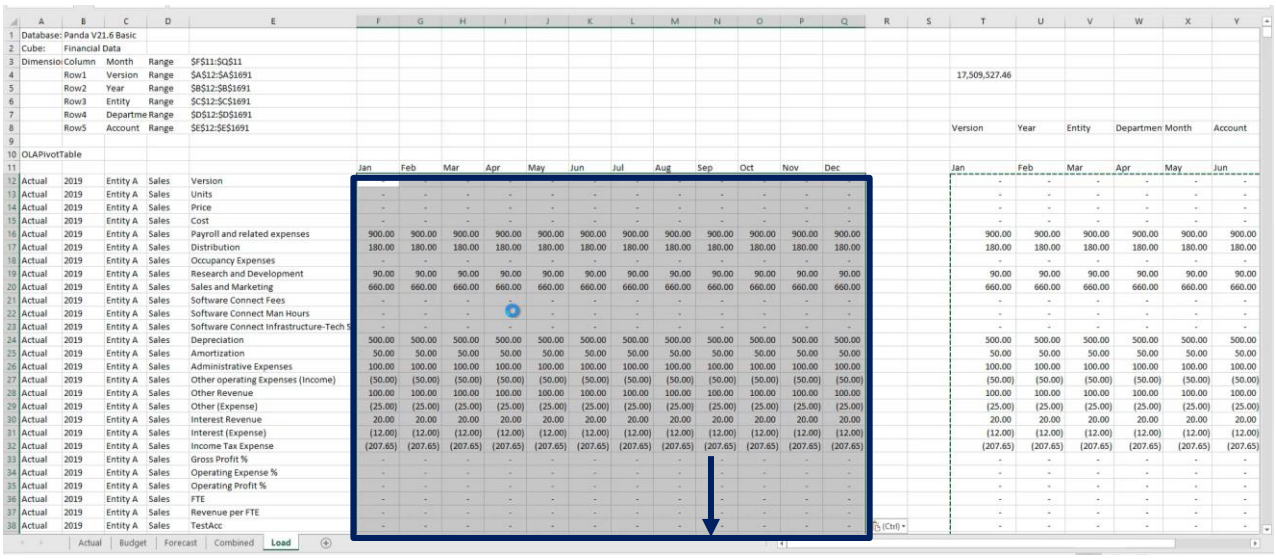
Before refreshing to execute the SUMIF formula (see red arrow below), you can indicate the full area (the "beginning" cell is red circled, on the right) where results will appear by indicating it as a Range, e.g., A_Copy (red circled, top left).



Execute the formula, and results will appear on the right, as below; then, finally, perform the bulk copy-paste those cells into the PowerExcel Slice area on the left, per the blue arrow.

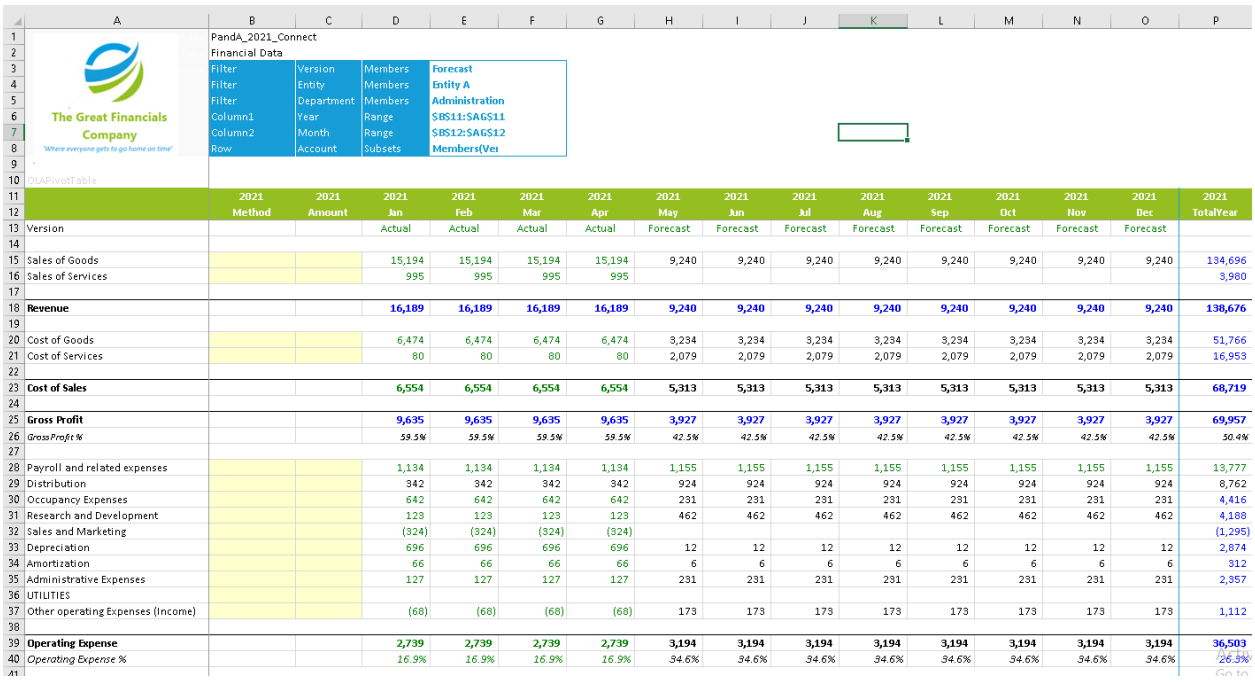


The effect of this bulk copy-paste into the PowerExcel Slice area of the spreadsheet is that all that data now "writes back" to the model—next image (blue outline). Upon refresh, you will find that the calculations—the results of aggregations and formulas within the PowerExcel model—will also appear (red circled area, see next page, second image).



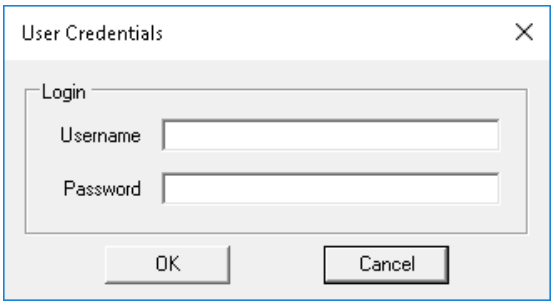
Numbers from the right-hand side—results of the SUMIF formula—bulk copy-pasted into the PowerExcel Slice

With the data "copied in" to the Load template—and upon refresh—you could view a PowerExcel Slice like the previously blank Income Statement Slice. You will find that data appears—by *Version* (whether *Actuals* only; or, if included, *Budget* and *Forecast* as well), *Department*, *Entity*, *Year*, with *Month* in Columns and *Account* is Rows [see next page].



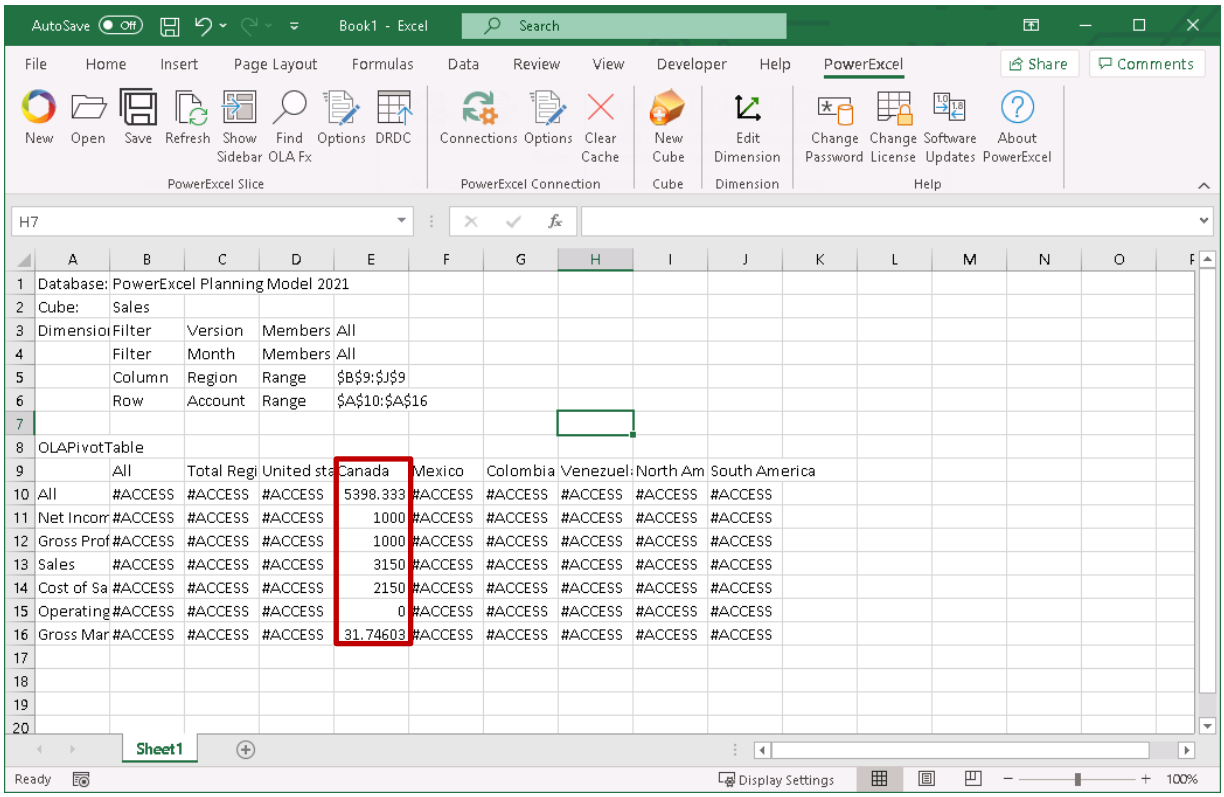
6.3 Security Considerations

Although Security is handled within the PandA model, typically by a developer/consultant, a user may encounter a login screen upon opening the model and pressing F9 to connect (see next image). In such case, the user will simply enter an assigned **Username** and **Password**.



Security within the model is, essentially, infinitely configurable for each user: this ensures that in a multi-user model only those users with security privileges can see or enter data where allowed. You may encounter this if your model is eventually set up with more a more complex security schema that precisely matches your business needs.

The following screen shot—which, *please note, is not from the PandA model*—serves as an illustration: with the User (who has a unique Username and Password) created and the data rule(s) saved for that User, the next time he or she opens a PowerExcel Slice, only Canada data will be visible (boxed in the image). The user would be able to "read" and possibly also "write" values in Detail intersection cells, assuming that were part of the application (e.g., a budget or forecast planning exercise). Note that all other cells show #ACCESS.



6.4 Default and Custom Subsets

A user PandA model user can use Default Subsets or create custom Subsets of Members within a Dimension; the latter is a great option if a subset is specific to your interest—i.e., you may need that subset frequently for setting up reports with, for example, a specified set of Accounts.

Default Subsets:

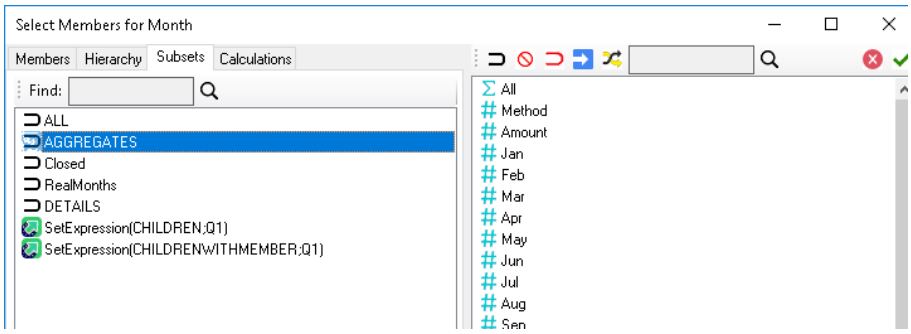
Every Dimension—or, more specifically, every Dimension that has at least one Hierarchy—includes Default Subsets: **ALL, AGGREGATES,** and **DETAILS**, which are described as follows.

ALL	Returns **ALL Members** in Rows or Columns in the PowerExcel slice.
AGGREGATES	Returns **AGGREGATE Members** in Rows or Columns in the PowerExcel slice
DETAILS	Returns **DETAIL Members** in Rows or Columns in the PowerExcel slice

The procedure to reach a defined Subset based for any of the above selections is the same (This subject is covered in depth in the *PowerExcel User Manual*.) From a PowerExcel Slice you will click on a Dimension in **Columns** or **Rows**. (Note: the Subset tab appears only for Dimensions placed in Columns or Rows.) The Select Member for [Dimension name] will appear.

You will then click on the Subset tab—following that, it is a matter of choosing one of the above (default Subsets, or any created in the model show a leftward facing horseshoe) and move it to the Display window on the right.

The following image show the selection of the AGGREGATES subset (before its move to the Display window)



After moving the subset to the Display window and clicking the green checkmark to update, back in the Slice you will hit F9. The AGGREGATES subset Members show in the Columns in the following example image (boxed, Row

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1	Database:	PandA_2021_Connect																		
2	Cube:	Financial Data																		
3	Dimensions:	Filter	Version	Members	Budget															
4		Filter	Year	Members	2021															
5		Filter	Entity	Members	Entity A															
6		Filter	Departme	Members	Sales															
7		Column	Month	Range	$B$11:$S$11															
8		Row	Account	Range	$A$12:$A$20															
9																				
10	OLAPivotTable																			
11		All	YTD Jan	YTD Feb	YTD Mar	YTD Apr	YTD May	YTD Jun	YTD Jul	YTD Aug	YTD Sep	YTD Oct	YTD Nov	YTD Dec	Q1	Q2	Q3	Q4	TotalYear	
12	Payroll and related expense	11880	990	1980	2970	3960	4950	5940	6930	7920	8910	9900	10890	11880	2970	2970	2970	2970	11880	
13	Distribution	2376	198	396	594	792	990	1188	1386	1584	1782	1980	2178	2376	594	594	594	594	2376	
14	Occupancy Expenses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
15	Research and Development	1188	99	198	297	396	495	594	693	792	891	990	1089	1188	297	297	297	297	1188	
16	Sales and Marketing	3564	297	594	891	1188	1485	1782	2079	2376	2673	2970	3267	3564	891	891	891	891	3564	
17	Depreciation	6600	550	1100	1650	2200	2750	3300	3850	4400	4950	5500	6050	6600	1650	1650	1650	1650	6600	
18	Amortization	660	55	110	165	220	275	330	385	440	495	550	605	660	165	165	165	165	660	
19	Administrative Expenses	1320	110	220	330	440	550	660	770	880	990	1100	1210	1320	330	330	330	330	1320	
20	Other operating Expenses (I	-660	-55	-110	-165	-220	-275	-330	-385	-440	-495	-550	-605	-660	-165	-165	-165	-165	-660	
21																				

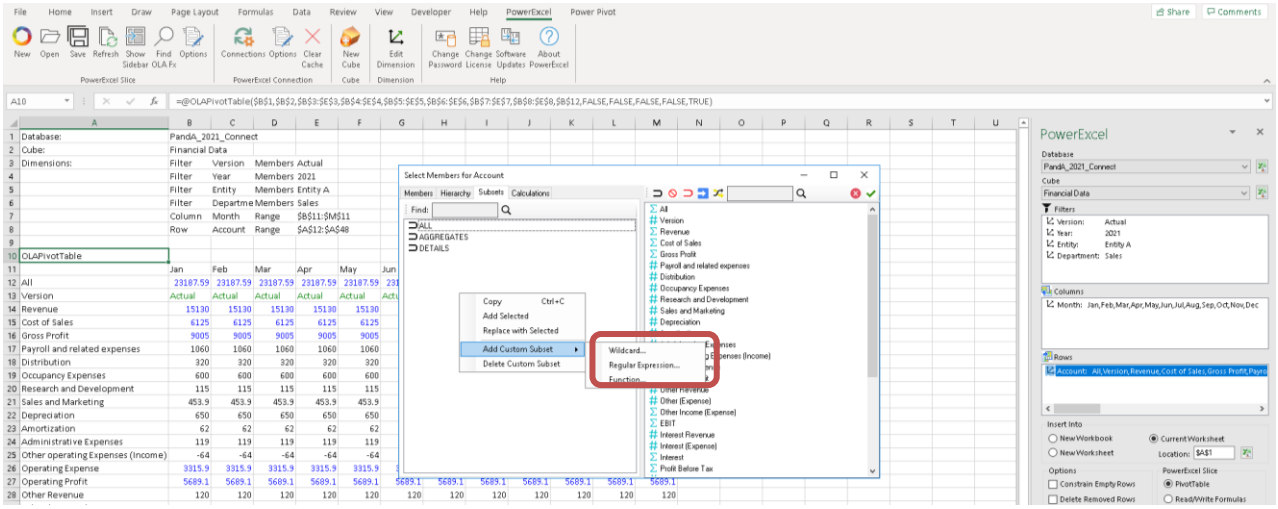
Custom Subsets;

There are three types of User-created Subsets:

Wildcard…	Returns a list of Members that satisfies the definition of the Wildcard expression.
Regular Expression…	Returns a list of Members that satisfies the definition of the Regular Expression.[*Not available in this version.*]
Function…	Returns a list of Members that satisfies the selected Multidimensional Set Expression

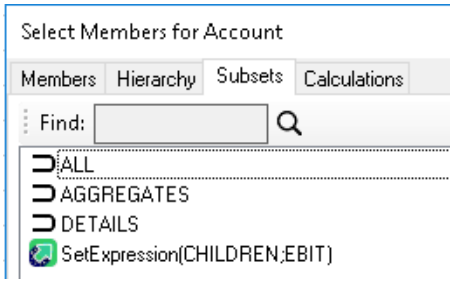
The first step in the procedure to create a custom Subset is (as with Default subsets) to access the Subset tab for a Dimension in Columns or Rows. (This subject is covered in depth in the PowerExcel User Manual.)

You will right-click in the blank area below the Default subsets: a pop-up window (boxed in red in the following image) appears, allowing you to select Add Custom Subset. (There is also a selection for Delete Custom Subset.) The selections for a Customer Subset appear

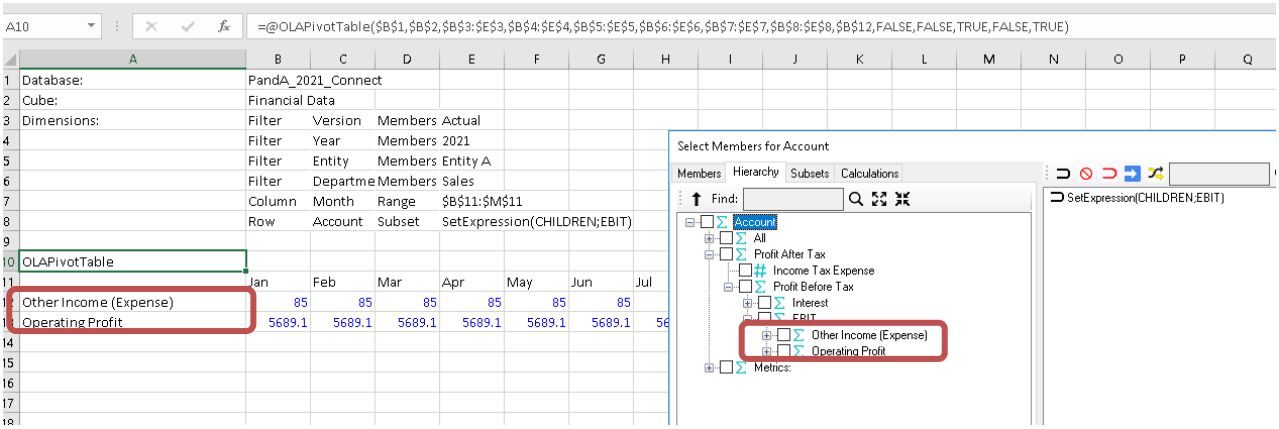


The **Function** subset is the simplest to explain: when it is selected, there are 3 subsequent selections from the drop-down menu in the Customer Subset window that appear: CHILDREN; MEMBERANDCHILDREN, and; DESCENDENTS.

The following shows a created Custom subset for CHILDREN:EBIT, from the *Account* dimension [a green icon and the defined subset appear to its left]



By using this Custom Subset in Rows in an updated PowerExcel Slice, the result will be as follows (see boxed areas), showing *Other Income (Expenses)* and *Operating Profit*, which are the 2 Child Members of *EBIT*'s immediate hierarchy.



6.5 Saving and Opening a Slice in the Cloud

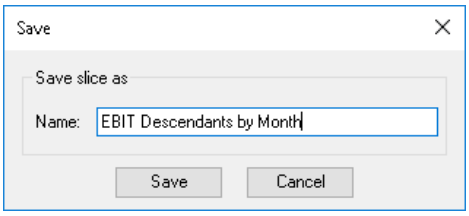
You can save PowerExcel Slices that you create so that they become accessible to other users who connect to the PandA model in the Cloud.

To save the PowerExcel Slice:

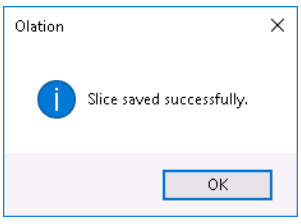
1. Create or Open a **PowerExcel Slice,** as in the example.

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Database:	PandA QS Connect											
2	Cube:	Financial Data											
3	Dimensions:	Filter	Version	Members	Budget								
4		Filter	Year	Members	2021								
5		Filter	Entity	Members	Entity A								
6		Filter	Department	Members	All								
7		Column	Month	Range	$B$11:$M$11								
8		Row	Account	Range	$A$12:$A$33								
9													
10	OLAPivotTable												
11		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
12	Other Income (Expense)	83	83	83	83	83	83	83	83	83	83	83	83
13	Other Revenue	110	110	110	110	110	110	110	110	110	110	110	110
14	Other (Expense)	(28)	(28)	(28)	(28)	(28)	(28)	(28)	(28)	(28)	(28)	(28)	(28)
15	Operating Profit	5,275	5,275	5,275	5,275	5,275	5,275	5,275	5,275	5,275	5,275	5,275	5,275
16	Operating Expense	5,616	5,616	5,616	5,616	5,616	5,616	5,616	5,616	5,616	5,616	5,616	5,616
17	Payroll and related expenses	2,090	2,090	2,090	2,090	2,090	2,090	2,090	2,090	2,090	2,090	2,090	2,090
18	Distribution	1,078	1,078	1,078	1,078	1,078	1,078	1,078	1,078	1,078	1,078	1,078	1,078
19	Occupancy Expenses	220	220	220	220	220	220	220	220	220	220	220	220
20	Research and Development	539	539	539	539	539	539	539	539	539	539	539	539
21	Sales and Marketing	627	627	627	627	627	627	627	627	627	627	627	627
22	Depreciation	561	561	561	561	561	561	561	561	561	561	561	561
23	Amortization	61	61	61	61	61	61	61	61	61	61	61	61
24	Administrative Expenses	330	330	330	330	330	330	330	330	330	330	330	330
25	UTILITIES	-	-	-	-	-	-	-	-	-	-	-	-
26	Other operating Expenses (Income)	110	110	110	110	110	110	110	110	110	110	110	110
27	Gross Profit	10,890	10,890	10,890	10,890	10,890	10,890	10,890	10,890	10,890	10,890	10,890	10,890
28	Revenue	26,950	26,950	26,950	26,950	26,950	26,950	26,950	26,950	26,950	26,950	26,950	26,950
29	Sales of Goods	22,000	22,000	22,000	22,000	22,000	22,000	22,000	22,000	22,000	22,000	22,000	22,000
30	Sales of Services	4,950	4,950	4,950	4,950	4,950	4,950	4,950	4,950	4,950	4,950	4,950	4,950
31	Cost of Sales	16,060	16,060	16,060	16,060	16,060	16,060	16,060	16,060	16,060	16,060	16,060	16,060
32	Cost of Goods	9,680	9,680	9,680	9,680	9,680	9,680	9,680	9,680	9,680	9,680	9,680	9,680
33	Cost of Services	6,380	6,380	6,380	6,380	6,380	6,380	6,380	6,380	6,380	6,380	6,380	6,380

2. Click on a cell containing a PowerExcel reference.
3. In the Excel ribbon, go to the **PowerExcel Tab** and click the **Save icon**. The Save (Slice) as dialog appears.



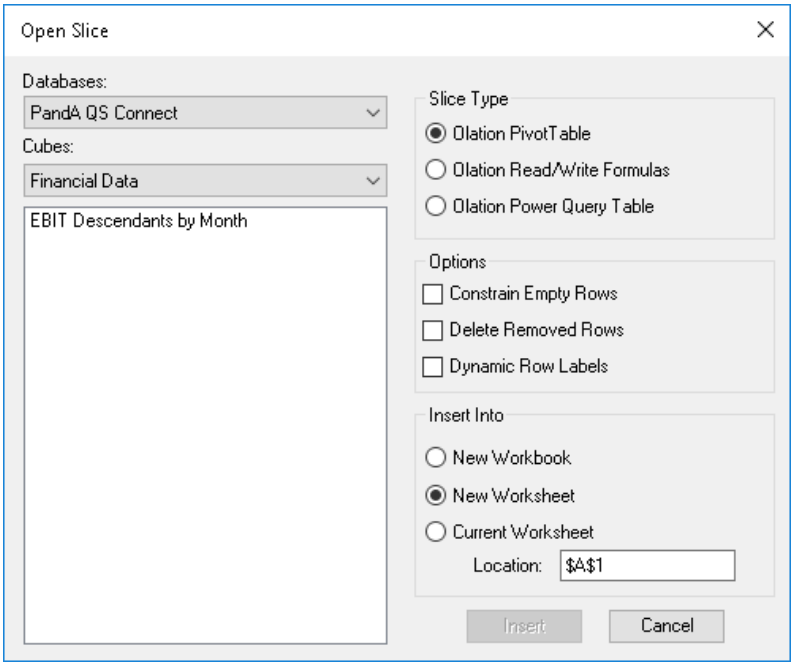
4. Type the <**name of the Slice**>, e.g., **EIB Descendants by Month**.
5. Click **Save**. You will see a prompt that says 'Slice saved successfully'.



6. Click **OK** to close the message prompt.

Next, another user—assuming he or she has a connection to the PandA model—can proceed as follows:

7. Launch **Excel**, create a **new workbook**.
8. From the **PowerExcel ribbon**, click on **Open**.
9. The Open Slice dialog appears, as below:



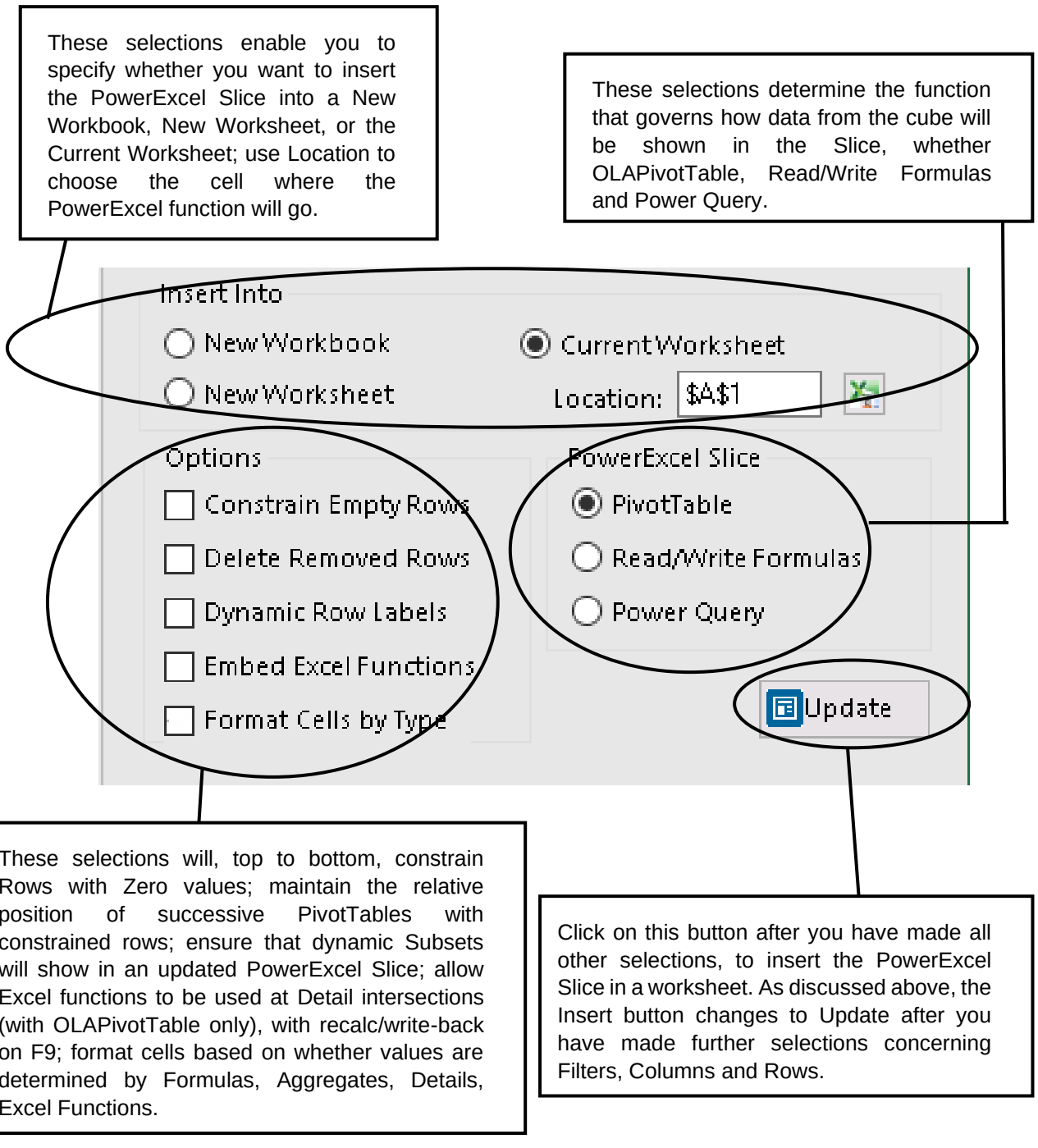
10. Once again: assuming that the next user has a connection to the database, he or she will see it (assuming also the same Connection name—in this case, *PandA QS Connect*) among the Databases that may be selected from the drop-down, top left. As well, the available Cubes will be shown (here, *Financial Data* is selected). Directly below, the available Slices are listed. The user can next create the PowerExcel Slice by using one of the Slice Types, and insert it into a New Workbook, a New Worksheet or the Current Worksheet in the specified location. (Naturally, the Slice will be the same as the one saved by the last user—as shown in the previous page.)

As such, the next user—indeed, any person working on the collaborative model—may see any Slice that has been saved and in that way be dynamically connected to the most updated data, or contribute budget/forecast figures to a company-wide planning model.

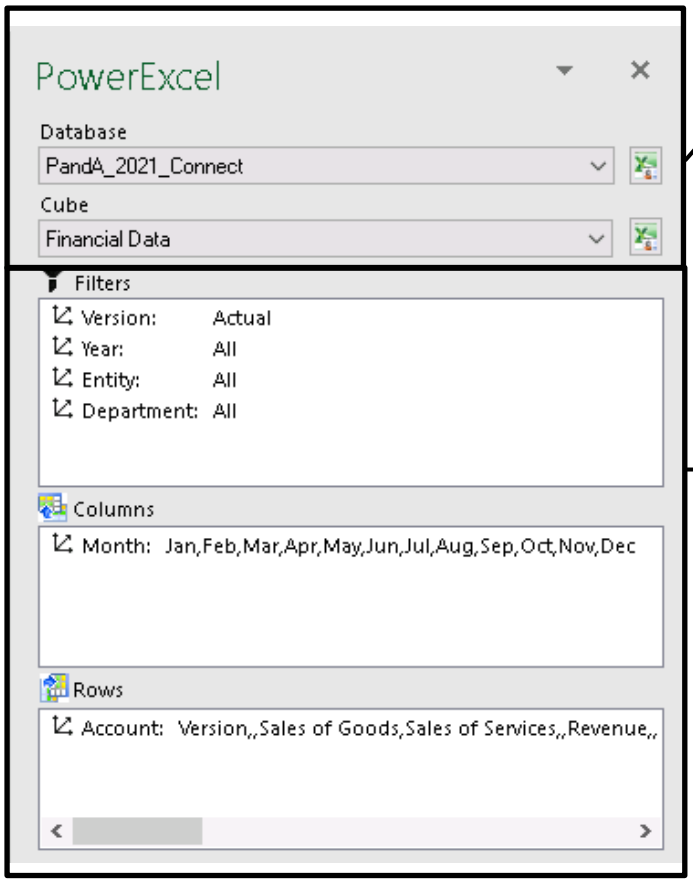
7. Resources

7.1 PowerExcel Sidebar

The selections at the bottom of the PowerExcel sidebar become visible at right when you click on the PowerExcel function.



Note the selections at the top of the PowerExcel sidebar, which becomes visible when you click on a PowerExcel function.

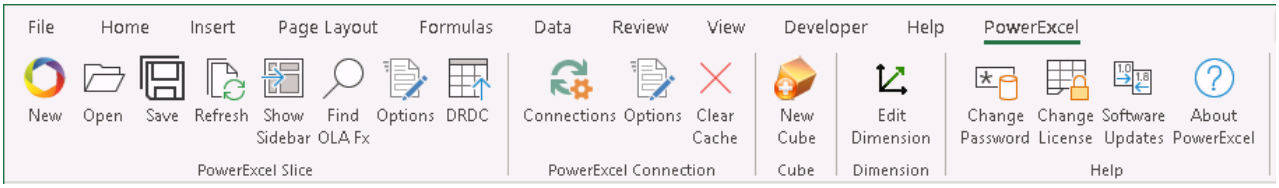


As shown previously: after creating a New Connection, this is where you will choose the PowerExcel database and the Cube in that database that you want to "Slice to Excel."

These boxes enable you to (a) reorient the Dimensions you want to see as "Page", Columns and Rows Members, and (b) select the individual Dimension Members that you wish to see in the PowerExcel Slice.

7.2 PowerExcel Ribbon

The following are the icons on the PowerExcel ribbon, with a brief description.



	Start here to create a Slice from a PowerExcel database (providing Connection exists).
	Opens a Saved Slice. Note that you will have further options about the Slice Type and where to insert the data.
	Saves a PowerExcel Slice, which can be viewed by another user with a connection to the same model
	Refreshes the Slice data after making Member selections
	Shows the PowerExcel Sidebar (pane) if you have unchecked the Option (see Option [PowerExcel Slice] below) to automatically display PowerExcel sidebar.
	Finds PowerExcel function in an open Slice governing the Slice [for current version: OLAPivotTable]
	[PowerExcel Slice] Brings up a dialog concerning Workbooks (Create a new Workbook, Create a new Sheet in current Workbook) and to enable Defaults (Constrain Rows, Delete Removed Rows, Dynamic Row Labels). Also includes Formatting options and a checkbox to automatically Show/Hide PowerExcel sidebar.
	[Licensed Feature] Saves a Slice as a View in a selected database (e.g., SQL Server) that reachable by third-party products (Tableau, etc.)
	Create a New connection (or Delete an existing one), or select an existing connection to an underlying database, and shows Name, URL, Database
	Brings up a dialog concerning Caching Options, including Cache Expiration (Hours) and Disable All Caching.

	Clears Cache in the open Slice.
	[Licensed Feature] Accesses the capability to create Cubes in Olation® from selected tabular data in an Excel spreadsheet –
	[Licensed Feature] Enables you to Add new Members (as a Sibling or Child to existing Members) and to reorganize existing Hierarchies.
	Enables the user to change Password on the selected database.
	Brings up the Register PowerExcel window.
	Clicking on this will check for latest PowerExcel release (note that this is a licensed feature).
	This shows information as to Version/build and License number of the PowerExcel User Client application.